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*Julia Nintemann, Maja Robbers,
Nicole Hober*

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A CROSS-LINGUISTIC STUDY

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Julia Nintemann, Maja Robbers, Nicole Hober

Here – Hither – Hence and Related Categories

A Cross-linguistic Study

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Preface and Acknowledgments

The present work is a follow-up study on the 2017 book-length publication *Spatial Interrogatives in Europe and Beyond: Where, Whither, Whence* (Studia Typologica 20) by Thomas Stolz, Nataliya Levkovych, Aina Urdze, Julia Nintemann, and Maja Robbers. The starting point for research on spatial relations at the University of Bremen was a talk given by Thomas Stolz in early 2013 (“Où va-t-elle? Où est-il? D’où venez-vous? Aspects typologiques de l’interrogeabilité des relations spatiales” at the French-German workshop on *Relations spatiales* (25-26 January, 2013). His work on spatial relations comprises, inter alia, a collaboration with Sander Lestrade and Christel Stolz on *The Crosslinguistics of Zero-Marking of Spatial Relations* (Studia Typologica 15) published in July 2014. Meanwhile, Thomas Stolz was joined by Nataliya Levkovych and Aina Urdze, and at this time, the group developed an interest in the crosslinguistics of spatial interrogatives. Their study aimed to fill a gap in functional typology by discussing the global and areal trends of coding the three basic spatial relations Place, Goal, and Source in interrogative constructions. In August 2016, the project *Where – Whither – Whence: Spatial interrogatives and their adverbial demonstrative equivalents in Europe and far beyond* (German: *Wo – Wohin – Woher: Räumliche Interrogativa und ihre lokal-deiktischen Entsprechungen in Europa und weit darüber hinaus*) (Grant number: STO 186/19-1) was granted by the *Deutsche Forschungsgemeinschaft (DFG)*. This project grant coincided with Maja Robbers and Julia Nintemann joining the research team, and they participated in the finalization of the first project phase, a comprehensive quantitative analysis of the morphological makeup of spatial interrogative constructions on the basis of 437 languages. This first project phase was completed in December 2016 and the outcome was published in August 2017.

After completing the first project phase that concentrated on spatial interrogatives, the second project phase was started in January 2017. At this point, Nicole Hober joined the team then consisting of Julia Nintemann and Maja Robbers, first as a student assistant. As she got more and more involved and took on more substantive work, she became a fullfledged member of the research team. In the second project phase, the focus lay on the “adverbial demonstrative equivalents” in comparison and in relation to spatial interrogatives. During data collection phase for the study on interrogatives only, it already turned out to be challenging to find the relevant information in descriptive grammars. Since the team did not only aim to compile complete sets of spatial interrogatives but also their adverbial demonstrative equivalents, the difficulty level was raised even higher. As the adverbial demonstrative

equivalents have at least two degrees of distance, viz. a proximal and a distal degree of distance (Diessel 1999: 50), combined with the three desired spatial functions, there is a minimum of nine relevant forms for each potential sample language. Thus, the combinatory possibilities of *morphological mismatches* multiplied in comparison to the first project phase, and a lower number of sample languages was chosen due to the rising complexity of paradigms and number of forms. While 437 languages were analyzed in terms of their spatial interrogatives in the first project phase, 50 languages per macro area were collected for the new sample, resulting in a sample of 250 languages in total. During data collection, a number of difficulties were encountered. To no surprise, the term “adverbial demonstrative” was quickly judged as too misleading, since it would describe forms that could easily be mistaken as prototypes. For this reason, the authors are more content with the German project title, as it contains a rather neutral wording (*lokal-deiktische Entsprechungen* meaning ‘spatial deictic equivalents’). Furthermore, it turned out that *unmarked* adverbs in Place, Goal, and Source relation are not a universally attested category. Data collection, therefore, turned out to be not only quite difficult, but also deeply interesting and revealing. A lot of time was spent on those languages for which no complete paradigm could be compiled in the end. Apart from grammars, the respective Bible translations quite often had to be consulted to confirm or complement missing forms. Nevertheless, it was possible to conduct a study which combines both qualitative and quantitative aspects of both spatial interrogatives and their adverbial demonstrative equivalents. Although this study represents just one puzzle piece in the very extensive and diverse research landscape on space representations in language, we are confident that it adds to the understanding of the complete picture of language and space.

We are deeply grateful to the language experts who helped us to obtain data by answering our questionnaires and inquiries. The late Alan R. King provided us with his invaluable and profound knowledge of Basque, Honduran Lenca, and El Salvadorian Pipil (Nawat), and his kindness and versatile linguistic interests inspired us beyond the writing of this book. We thank David Beck for taking our questions to the field and for providing us not only with the most interesting data but also with detailed discussions on Upper Necaxa Totonac and the Totonac group. Werner Drossard deserves to be mentioned for taking the time to discuss our data on Tagalog with his informant. We are thankful to René van den Berg who so kindly provided us with information and data on the Muna language. We are deeply indebted to Stephen R. Fischer and Steve Pagel who helped us gain data on Rapanui. Craig Volker kindly provided us with first-

hand Tok Pisin data. José Santiago Francisco deserves special thanks for answering and discussing our questionnaire for Filomeno Mata Totonac. Jeffrey Heath helped us with his great expertise on Songhay and Dogon languages and answered our questions about Tamasheq. We wish to thank Abbie Hantgan-Soko for kindly providing us with the necessary information on Bangime. We are also indebted to Mairi J. Blackings, who provided us with information on Ma'di. John Haiman was so kind to discuss with us our data on Khmer. Erik Anonby deserves our thanks for answering our questions on Mambay. Seino van Breugel kindly provided us with data on Atong. We also wish to thank José Antonio Flores Farfán for providing us with information and data on Guerrero Nahuatl, Olle Kejonen for information on the Saami group, Hitomi Otsuka for confirming our Japanese data, and Tamar Reseck for providing us with data on Georgian. Special thanks go to Helen Wambui Nintemann, who helped us compile our Kikuyu and Swahili paradigms, and to Valeria Perchio, who so kindly answered our questions about Italian. We would also like to thank Elena Lüke and Petra Novina for answering questions on their native languages Macedonian and Croatian, respectively. Aina Urdze and Kevin Behrens deserve to be mentioned for providing us with data on Latvian and Low German, respectively. We further thank Gary Holton for discussing Tanacross and stimulating the critical examination of the comparative approach.

We wish to thank Thomas Stolz not only for offering us the chance to work on this project, but also for the guidance he provided us with. We would like to give particular thanks to Nataliya Levkovich, who not only helped us collecting data on Slavic languages, but supported us during the whole process of conducting this study. Our heartfelt thanks go to Beke Seefried, who spent hours to help us plot the geographical maps used in this book, and to Benjamin Saade, who provided us with the means to evaluate the constructions statistically. Cornelia Stroh deserves to be mentioned for her technical support in the final stages of this book. Thanks also go to Marc Tang, Harald Hammarström, Bob Borges, and Philipp Rönchen for fruitful discussions on sundry issues. Despite receiving so much help and support, all errors are our sole responsibility.

Julia Nintemann, Maja Robbers, and Nicole Hober
Bremen/Germany and Uppsala/Sweden
December 2019

Contents

Preface and Acknowledgments — V

List of Abbreviations — XV

List of Figures — XIX

List of Maps — XXI

List of Schemes — XXIII

List of Tables — XXV

1 Introduction — 1

- 1.1 On the research topic — 1
- 1.2 Previous literature — 5
- 1.2.1 Previous work on spatial deixis — 5
- 1.2.2 Previous works on (a)syncretism of spatial relations — 10
- 1.3 Our background and previous research — 12
- 1.4 Our research questions and hypotheses — 14
- 1.5 Theory and methodology — 17
- 1.6 Internal structure of this book — 20

2 Formal relations of SI and SDD paradigms — 21

- 2.1 Definition of SIs — 21
- 2.2 Definition of SDDs — 22
- 2.3 The canonical model — 25
- 2.3.1 Definition — 25
- 2.3.2 Syncretism — 27
- 2.3.3 Why we do not test for other mismatches — 28
- 2.4 Obstacles and difficulties — 30
- 2.4.1 Gaps and variation in the descriptive sources — 30
- 2.4.2 A word on dialectal variation — 32
- 2.4.3 Restrictions and blind spots — 34

3 The qualitative side of syncretism — 37

- 3.1 Pattern I: Place \neq Goal \neq Source — 37
- 3.1.1 P \neq G \neq S in Africa — 38

- 3.1.1.1 The canonical case in Africa — **39**
- 3.1.1.2 Marker chaining in Africa — **40**
- 3.1.1.3 Complex marking in Africa — **42**
- 3.1.2 P≠G≠S in the Americas — **47**
- 3.1.2.1 The canonical case in the Americas — **49**
- 3.1.2.2 Zero-marking of Place in the Americas — **54**
- 3.1.2.3 Marker chaining in the Americas — **55**
- 3.1.3 P≠G≠S in Asia — **56**
- 3.1.3.1 The canonical case in Asia — **58**
- 3.1.3.2 Differentiated marking in Asia — **63**
- 3.1.3.3 Zero-marking of Place in Asia — **66**
- 3.1.4 P≠G≠S in Europe — **67**
- 3.1.4.1 P≠G≠S in Romance languages — **69**
- 3.1.4.2 P≠G≠S in Germanic languages — **71**
- 3.1.4.3 P≠G≠S in Slavic languages — **76**
- 3.1.5 P≠G≠S in Oceania — **86**
- 3.1.5.1 P≠G≠S in Oceanian languages — **88**
- 3.1.5.1.1 The canonical case in Oceania — **88**
- 3.1.5.1.2 Marker chaining in Oceania — **91**
- 3.1.5.1.3 Complex P≠G≠S in Oceania — **95**
- 3.1.5.1.4 Mixed systems in Oceania — **98**
- 3.1.5.2 P≠G≠S in Australia — **101**
- 3.1.5.2.1 Overt marking of Place, Goal, and Source in Australia — **104**
- 3.1.5.2.2 Zero-marking of Place in Australia — **109**
- 3.2 Pattern II: Place=Goal≠Source — **110**
- 3.2.1 P=G≠S in Africa — **110**
- 3.2.1.1 Obligatory P=G syncretism in Africa — **112**
- 3.2.1.2 P=G≠S reflected in only one expression class — **113**
- 3.2.1.3 Complex system with various options in Africa — **115**
- 3.2.2 P=G≠S in the Americas — **119**
- 3.2.2.1 Zero-marked P=G in the Americas — **120**
- 3.2.2.2 Overtly marked P=G in the Americas — **126**
- 3.2.2.3 Marker chaining in Source constructions in the Americas — **129**
- 3.2.2.4 Further cases of P=G syncretism in the Americas — **130**
- 3.2.3 P=G≠S in Asia — **133**
- 3.2.3.1 Zero-marked P=G in Asia — **134**
- 3.2.3.2 Optional overt marking of Place in Asia — **138**
- 3.2.3.3 Optional zero-marking of Place and Goal in Asia — **140**
- 3.2.3.4 Optional overt marking of Source in Asia — **144**

- 3.2.4 P=G≠S in Europe — **145**
- 3.2.4.1 P=G≠S in Romance languages — **147**
- 3.2.4.2 P=G≠S in Slavic languages — **151**
- 3.2.4.3 P=G≠S in Celtic languages — **160**
- 3.2.5 P=G≠S in Oceania — **164**
- 3.2.5.1 Zero-marked Place and Goal in Oceania — **165**
- 3.2.5.2 P=G≠S in Australia — **167**
- 3.3 Pattern III: Place≠Goal=Source — **172**
- 3.3.1 P≠G=S in Africa — **173**
- 3.3.2 P≠G=S in the Americas — **175**
- 3.3.3 P≠G=S in Asia — **177**
- 3.3.4 P≠G=S in Europe — **181**
- 3.3.5 P≠G=S in Oceania — **184**
- 3.4 Pattern IV: Place=Source≠Goal — **185**
- 3.4.1 P=S≠G in Africa — **186**
- 3.4.2 P=S≠G in the Americas — **191**
- 3.4.3 P=S≠G in Asia — **193**
- 3.4.4 P=S≠G in Europe — **195**
- 3.4.5 P=S≠G in Oceania — **197**
- 3.5 Pattern V: Place=Goal=Source — **202**
- 3.5.1 P=G=S in Africa — **203**
- 3.5.1.1 P=G=S in Mande languages — **204**
- 3.5.1.2 P=G=S in Bantu languages — **209**
- 3.5.1.3 P=G=S in Songhay languages — **215**
- 3.5.2 P=G=S in the Americas — **218**
- 3.5.2.1 P=G=S in South America — **219**
- 3.5.2.2 P=G=S in Mesoamerica — **224**
- 3.5.3 P=G=S in Asia — **238**
- 3.5.3.1 P=G=S in Austronesian languages of Asia — **239**
- 3.5.3.2 P=G=S on the Asian mainland — **243**
- 3.5.4 P=G=S in Europe — **244**
- 3.5.5 P=G=S in Oceania — **246**
- 3.5.5.1 Indistinct locative marking in Oceania — **247**
- 3.5.5.2 Irregular and split paradigms in Oceania — **249**
- 3.5.5.3 Disambiguation via syntax in Oceania — **251**
- 4 The quantitative side of syncretism — 257**
- 4.1 Africa — **257**
- 4.2 The Americas — **266**
- 4.3 Asia — **273**

4.4	Europe —	279
4.5	Oceania —	284
4.6	The world —	290
5	Complexity —	301
5.1	Complexity counts in Stolz et al. (2017) —	301
5.2	Measuring construction length —	305
5.3	Construction length of SIs —	307
5.3.1	Construction length of African SIs —	309
5.3.2	Construction length of American SIs —	312
5.3.3	Construction length of Asian SIs —	314
5.3.4	Construction length of European SIs —	315
5.3.5	Construction length of Oceanian SIs —	317
5.4	Construction length of SDDs —	319
5.4.1	Construction length of African SDDs —	321
5.4.2	Construction length of American SDDs —	323
5.4.3	Construction length of Asian SDDs —	324
5.4.4	Construction length of European SDDs —	326
5.4.5	Construction length of Oceanian SDDs —	328
5.5	Summary —	330
6	Further qualitative aspects of SIs and SDDs —	333
6.1	Beyond distance —	333
6.1.1	Vertical relations —	333
6.1.2	Elevational and river-oriented systems —	346
6.1.3	Interiority —	348
6.1.4	(In)visibility —	351
6.2	Inflection of SIs and SDDs —	353
6.3	Complex Source constructions —	361
6.4	Verbs —	367
6.4.1	Spatial coding in verbs —	367
6.4.2	Grammaticalization of markers —	377
6.4.3	Spatial coding in preverbs —	383
6.5	Sentence types —	387
7	Conclusions —	389
7.1	One or two grammars of space? —	389
7.2	Coding asymmetry in spatial relations —	397
7.3	Last thoughts on SDDs, verbs, and sundries —	401

References — 405

Appendix I: Africa — 425

Appendix II: The Americas — 441

Appendix III: Asia — 458

Appendix IV: Europe — 475

Appendix V: Oceania — 491

Appendix VI: Overview of the distribution of patterns over the five macro areas — 512

Appendix VII: Calculation on how often languages employ the same pattern in the SDDs as in the SIs — 526

Index of Authors — 529

Index of Languages — 534

Index of Subjects — 538

List of Abbreviations

[]	construction	CENTRIP	centripetal
∅	non-existent	CERT	certainty of assertion
<...>	morpheme	CF	contrastive focus
~2	person other than second	CL	classifier
1, 2, 3	1st, 2nd, 3rd person	Cl.	noun class
3II	third person pronoun type II	CLI	climax
A	A series agent/possessor	CMND	command
ABL	ablative	CMPL	complementizer
ABS	absolute	CN	connector
ABST	absential	CNJCTV	conjunctive
AC	actor	CNTMPL	contemplated aspect
ACC	accusative	CNV	converb
ACT	verbal action particle	CNV1	general converb
ACTFOC	action focus	COG	cognate object
ADDR	addressive	COLL	collective
ADH	adhortative	COM	comitative
ADJ	adjective	COMP	comparative
ADV	adverb	CON	contrastive
AG	agent	COND	conditional
AI	animate subject, intransitive verb stem	CONJ	conjunction
ALL	allative	CONSEC	consecutive
ANAPH	anaphor	CONST	construct suffix
ANIM	animate	CONT	continuative
ANR	action nominalizer	CONTES	contessive
AOR	eorist	COP	copula
APPL	applicative	COS	change of state
ART	article	CPL	completive
ASP	aspect	CPL.DS	completive different subject
ASS	assertive	CPL.SS	completive same subject
ASSC	associative	CSLOC	cislocative
AT	actor topic	CSR	coordinate same-referent
ATT	attenuative	CTR	contrast
ATTR	attributive	CTS	continuous
AUX	auxiliary	CUST	customary aspect
AVN	agentive verbal noun	D1	immediate proximal
B	B series undergoer/theme	D4	removed distal
BAS	basic cross-referencing	DAT	dative
BE	bound element	DECL	declarative
BEN	benefactive	DED	deductive
CA	connective adverbial	DEF	definite
CAUS	causative	DEM	demonstrative
CENTRIF	centrifugal	DEP	dependent
		DESID	desiderative

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XVI — List of Abbreviations

DI	DI-series aspectual suffix	HON	honorific form
DIFR	different-referent	HORT	hortative
DIM	diminutive	HPL	human plural
DIR	directional	HUM	human
DISP	dispersed	HYP	hypothetical
DIST	distal	I	agreement class I
DISTR	distributive	I-V	gender markers
DL	dual	IC	initial change
DLIM	delimitative	ICO	inanimate count
DM	development marker	ID	identification clitic
DOWN	down (directional)	IDO	internal direct object
DPAST	distant past	IE.be	identity/equation copula
DR	bivalent direct	IMP	imperative
DS	different subject	IMPERF	imperfect
DSO	dissociative	IMPERS	impersonal subject
DUR	durative	IMPF	imperfective
EDO	external direct object	INAL	inalienable
EFF	effector	INAN	inanimate
EL	elative	INC	inclusive
EMPH	emphatic	INCH	inchoative
ENC	enclitic	INCL	incomplete aspect
ERG	ergative	IND	indicative
EV	evidential	INDEF	indefinite
EVD	evidential – direct	INF	infinitive
EXC	exclusive	INF.EV	inferential evidential
EXCEP	exceptional (verbal derivation)	INJ	injunctive
EXI	existential	INST	instrumental
EXPECT	expectation marker	INTERJ	interjection
F	feminine	INTERR	interrogative
FA	factive	INTN	intention
FACT	factive	INTR	intransitive
FD	far deictic	INTS	intensity/intensifier
FIL	filler	IPSR	first person inclusive possessor
FOC	focus (marker)	IQR	interquartile range
FOR	frame of reference	IRR	irrealis
FREQ	frequentative	ITER	iterative
FUT	future	L	local gender
FV	final vowel	LAT	lative
G	goal marker	LF	linked form
GEN	genitive	LIG	ligature
GEN1	genitive 1	LIM	limitative
GL	general topic	LK	linker
GN	generic	LOC	locative
GVN	given	LOCAL	local class
H	affininal kin	LOCAT	general locative
HAB	habitual	LOG	logophoric (pronoun)

M	masculine/*non-feminine	PASS	passive
MAN	manner	PAST	past tense
MD	mood	PAST.UW	past unwitnessed
MED	medial	PAST.W	past witnessed
MID	middle voice	PC	paucal
MIR	mirative	PCN	past-continuous
MIT	mitigator	PERF	perfect
MLT	multiple event	PFCTV	perfective
MOB	mobilitative	PIMPF	past imperfect
MOD	modifier	PL	plural
MOT	motion affix	PLUPERF	pluperfect
MOV	continuous-moving suffix	POL	polite
MSS	inanimate mass	POS	positional
N	nominal	POSS	possessive
NA	not available	PP1	incompletive participle
ND	near deictic	PP2	completive participle
NEG	negative	PPOS	postposition
NEUT	neuter	PPP	personal pronoun plural
NF	non-finite	PRCL	preclusive
NFUT	nonfuture	PFRED	predicative marker
NH	non-human	PREF	prefix
NHPL	non-human plural	PREP	preposition
NMZ	nominalizer	PREP.EXT	prepositional extension
NOM	nominative	PRES	present
NON1	non first person	PRET	preterite
NONACT	non-active	PREV	preverb
NONAFF	non-affirmative	PRHB	prohibitive
NONDEM	non-demonstrative	PRO	pronoun
NONLOC	non-local	PROG	progressive
NONSG	non-singular	PROP	propriative
NOW	'now' discourse clitic	PROSP	prospective
NP	noun phrase	PROX	proximal
NPAST	non-past	PS	patient/subject agreement
NRLD	non-realized		
NTR	neutral	PSTN	narrative past
NV	non-visible	PSV	passive
OBJ	object	PTCL	particle
OBJ>SUBJ	object moves toward subject	PTCPL	participle
OBL	oblique	PURP	purposive/purpose
OPR	object congruence in the interlinear version	Q	interrogative stem
		Q1	first quartile
		Q3	third quartile
OPT	optative	QUOT	quotative
OST	ostensive	RCM	relative clause marker
P	place marker	REAL	realis
P.ART	person article	REC	recipient
PART	partitive	RECP	reciprocal

XVIII — List of Abbreviations

RED	reduplication	SUBORD	subordinator
REFL	reflexive	SUP	suppletive verb stem
REL	relative	TAM	general TAM
REM	remote past	TE	conjunctive particle
RES	reservative	TEMP	temporal
RESULT	resultative	TERM	terminative
RLY	really	TF	theme focus
RP	recent past	THM	thematic connective
RPT	reportative	TI	TI-series aspectual suffix
RSTR	restrictive	TNS	tense
RTR	retreating	TOP	topic
S	subject (intransitive)	TQ	question about the truth
S	source marker	TRANS	transitive
SBJV	subjunctive	TRANSP	transportative
SDD	spatial deictic declarative	TRLOC	translocative
SEQ	sequential	TRS	transitional
SFP	sentence-final particle	UNSPEC	unspecific
SG	singular	URGT	urgent, personal interest
SI	spatial interrogative	USPEC	underspecified verb
SIM	simultaneous	UTR	utrum
SP	speech utterance marker	V	verb
SPAT	spatial	VBZ	verbalizer
SPC	speculative	VCL	verb-stem closure
SPEC	specific	VEN	venitive
SR	same-referent	VERS	versative
SR	spatial relation	VN	verbal noun
SS	same subject	VOC	vocative
ST	transitive subject	VOL	volitional form
STAT	stative	VRBL	verbalizer
SUB	subordination through <i>-ille</i>	VT	versatile tense
SUBJ	subject	VTERM	verb-terminating classifier
		YK	'you know' clitic

List of Figures

- Figure 1 Shares of syncretism patterns per expression class in Africa — **259**
- Figure 2 Shares of syncretism patterns in Stolz et al.'s (2017) sample of African SIs — **260**
- Figure 3 Distribution of syncretism patterns across language families in Africa — **261**
- Figure 4 Afro-Asiatic distribution — **262**
- Figure 5 Atlantic-Congo distribution — **262**
- Figure 6 Shares of syncretism patterns per expression class in the Americas — **267**
- Figure 7 Shares of syncretism patterns in Stolz et al.'s (2017) sample of American SIs — **267**
- Figure 8 Distribution of syncretism patterns across language families in the Americas — **269**
- Figure 9 Shares of syncretism patterns per expression class in Asia — **274**
- Figure 10 Shares of syncretism patterns in Stolz et al.'s (2017) sample of Asian SIs — **275**
- Figure 11 Distribution of syncretism patterns across language families in Asia — **276**
- Figure 12 Shares of syncretism patterns per expression class in Europe — **279**
- Figure 13 Shares of syncretism patterns in Stolz et al.'s (2017) sample of European SIs — **280**
- Figure 14 Distribution of syncretism patterns across language families in Europe — **281**
- Figure 15 Shares of syncretism patterns per expression class in Oceania — **285**
- Figure 16 Shares of syncretism patterns in Stolz et al.'s (2017) sample of Oceanian SIs — **286**
- Figure 17 Distribution of syncretism patterns across language families in Oceania — **287**
- Figure 18 Shares of syncretism patterns per macro area — **291**
- Figure 19 Shares of configurations A-E of the total number of configurations per macro area — **297**
- Figure 20 Shares of configurations B-E of heterogeneous configurations with a pervasive split — **298**
- Figure 21 Degrees of consistency of syncretism pattern between the categories per macro area — **300**
- Figure 22 Complexity scores European vs. non-European languages (Stolz et al. 2017: 595) — **304**
- Figure 23 Construction length of SIs in P/G/S relation worldwide — **307**
- Figure 24 Construction length of African SIs in P/G/S relation — **310**
- Figure 25 Construction length of American SIs in P/G/S relation — **312**
- Figure 26 Construction length of Asian SIs in P/G/S relation — **314**
- Figure 27 Construction length of European SIs in P/G/S relation — **316**
- Figure 28 Construction length of Oceanian SIs in P/G/S relation — **318**
- Figure 29 Construction length of SDDs in P/G/S relation worldwide — **320**
- Figure 30 Construction length of African SDDs in P/G/S relation — **321**
- Figure 31 Construction length of American SDDs in P/G/S relation — **323**
- Figure 32 Construction length of Asian SDDs in P/G/S relation — **325**
- Figure 33 Construction length of European SDDs in P/G/S relation — **327**
- Figure 34 Construction length of American SDDs in P/G/S relation — **329**

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List of Maps

Map 1	Distribution of sample languages — 19
Map 2	Distribution of Pattern V against all other patterns in Africa — 263
Map 3	Distribution of patterns in Uto-Aztecan languages — 270
Map 4	Distribution of patterns in the Americas — 271
Map 5	Distribution of patterns in Asia — 277
Map 6	Distribution of patterns in Europe — 282
Map 7	Distribution of Patterns in Oceania — 288
Map 8	Global distribution of all patterns — 292
Map 9	Global distribution of Pattern V (P=G=S) — 294
Map 10	Conflated global distribution of Pattern V (P=G=S) in our and Stolz et al.'s (2017) sample languages — 295

<https://doi.org/10.1515/9783110672640-003>

List of Schemes

- Scheme 1 Semantic map of directionality (Nikitina 2009 as cited in Lestrade 2010: 94) — **11**
- Scheme 2 Markedness hierarchy (Stolz et al. 2017: 585) — **303**
- Scheme 3 Parallel markedness hierarchy (Stolz et al. 2017: 596) — **305**
- Scheme 4 Parallel hierarchy of construction length — **331**
- Scheme 5 The verbal complex in a motion event in Kaqchikel (García Matzar and Rodríguez Guaján 2001: 193) — **381**
- Scheme 6 Frequency hierarchy of homogeneous and heterogeneous configurations — **396**

<https://doi.org/10.1515/9783110672640-004>

List of Tables

Table 1	Early Modern English paradigm of SIs and SDDs — 2
Table 2	Logically possible patterns of formal distinctions (Stolz et al. 2017: 11) — 10
Table 3	Global distribution of syncretic patterns in SI paradigms — 13
Table 4	Canonical paradigm of SIs and SDDs (Stolz 2018: 315) — 25
Table 5	Real case of canonical paradigm: Mundari (Austroasiatic) (Cook 1965) — 26
Table 6	Limbu (Kiranti) syncretism (van Driem 1987) — 27
Table 7	Fijian [OC-11] SI and SDD paradigm (Milner 1972) — 33
Table 8	African languages that attest to P≠G≠S syncretism — 38
Table 9	American languages that attest to P≠G≠S syncretism — 48
Table 10	Crow locative-temporal deictic stems (Graczyk 2007: 67) — 50
Table 11	Asian languages that attest to P≠G≠S syncretism — 57
Table 12	European languages that attest to P≠G≠S syncretism — 67
Table 13	(Early Modern) English spatial interrogatives and sundry items (Stolz et al. 2017: 32) — 72
Table 14	Swedish SIs and SDDs — 72
Table 15	Scandinavian Goal expressions — 76
Table 16	Oceanian languages that attest to P≠G≠S syncretism — 86
Table 17	African languages that attest to P=G≠S syncretism — 111
Table 18	Yoruba expression pairs with <i>ní</i> and <i>sí</i> (cf. Rowlands 1969: 139) — 116
Table 19	American languages that attest to P=G≠S syncretism — 119
Table 20	San Blas Kuna SDDs (Smith 2014: 66) — 128
Table 21	Asian languages that attest to P=G≠S syncretism — 133
Table 22	Coverbs expressing ‘from (a starting point)’ (cf. Yip and Rimmington 2004: 167) — 143
Table 23	European languages that attest to P=G≠S syncretism — 146
Table 24	Extended Italian paradigm — 150
Table 25	Oceanian languages that attest to P=G≠S syncretism — 164
Table 26	Shares of Pattern III per expression class in each macro area — 172
Table 27	Languages that attest to P≠G=S syncretism — 172
Table 28	Shares of Pattern IV per expression class in each macro area — 185
Table 29	Languages that attest to P=S≠G syncretism — 186
Table 30	Paradigms of spatial interrogatives in three Saami LPP-varieties (cf. Stolz et al. 2017: 418) — 196
Table 31	African languages that attest to P=G=S syncretism — 203
Table 32	Major motion verbs in Koyra Chiini (cf. Heath 1998: 358) — 215
Table 33	American languages that attest to P=G=S syncretism — 218
Table 34	Comparison of two descriptive sources for Yaqui SIs — 228
Table 35	Upper Necaxa Totonac deictic adverbs (adopted from Beck 2011: 54) — 233
Table 36	Asian languages that attest to P=G=S syncretism — 239
Table 37	European languages that attest to P=G=S syncretism — 245
Table 38	Oceanian languages that attest to P=G=S syncretism — 247
Table 39	Tidore directional and locational expressions — 252
Table 40	Absolute distribution of patterns over the expression classes in Africa — 258

<https://doi.org/10.1515/9783110672640-005>

Table 41	African languages with heterogeneous configurations — 265
Table 42	Absolute distribution of patterns over the expression classes in the Americas — 266
Table 43	American languages with heterogeneous configurations — 272
Table 44	Absolute distribution of patterns over the expression classes in Asia — 273
Table 45	Asian languages with heterogeneous configurations — 278
Table 46	Absolute distribution of patterns over the expression classes in Europe — 279
Table 47	European languages with heterogeneous configurations — 283
Table 48	Absolute distribution of patterns over the expression classes in Oceania — 284
Table 49	Oceanian languages with heterogeneous configurations — 289
Table 50	Construction length values of SIs in P/G/S relation worldwide — 308
Table 51	Means comparison of SIs in P/G/S relation worldwide — 309
Table 52	Construction length values of African SIs in P/G/S relation — 311
Table 53	Means comparison of African SIs in P/G/S relation — 311
Table 54	Construction length values of American SIs in P/G/S relation — 313
Table 55	Means comparison of American SIs in P/G/S relation — 313
Table 56	Construction length values of Asian SIs in P/G/S relation — 315
Table 57	Means comparison of Asian SIs in P/G/S relation — 315
Table 58	Construction length values of European SIs in P/G/S relation — 316
Table 59	Means comparison of European SIs in P/G/S relation — 317
Table 60	Construction length values of Oceanian SIs in P/G/S relation — 318
Table 61	Means comparison of Oceanian SIs in P/G/S relation — 319
Table 62	Construction length values of SDDs in P/G/S relation worldwide — 320
Table 63	Means comparison of SIs in P/G/S relation worldwide — 321
Table 64	Construction length values of African SDDs in P/G/S relation — 322
Table 65	Means comparison of African SIs in P/G/S relation — 322
Table 66	Construction length values of American SDDs in P/G/S relation — 324
Table 67	Means comparison of American SIs in P/G/S relation — 324
Table 68	Construction length values of Asian SDDs in P/G/S relation — 326
Table 69	Means comparison of Asian SIs in P/G/S relation — 326
Table 70	Construction length values of European SDDs in P/G/S relation — 327
Table 71	Means comparison of European SIs in P/G/S relation — 328
Table 72	Construction length values of American SDDs in P/G/S relation — 329
Table 73	Means comparison of American SIs in P/G/S relation — 330
Table 74	Overview of the significances per macro area — 330
Table 75	Aivilingmiut Inuktitut (Denny 1982) — 335
Table 76	Bantawa full paradigm of SDDs (Doornenbal 2009; Winter 2003) — 336
Table 77	Limbu vertical level system (van Driem 1987) — 338
Table 78	Maale neutral deictic expressions — 339
Table 79	Maale vertical deictic expressions — 340
Table 80	“Locational words” from a demonstrative base with cliticisation in Menya (Whitehead 2004: 61, Table 19) — 345
Table 81	Mian bare directionals and demonstrative directionals (Fedden 2007: 139; 141) — 347

Table 82	Swahili demonstratives in the locational classes (Bloom Ström 2015: 120) — 349
Table 83	Ekoti demonstratives in the locational classes (Schadeberg and Mucanheia 2000: 68) — 350
Table 84	Khwarshi full paradigm including all inflections (Khalilova 2009) — 355
Table 85	Directional verbs and derived markers (Aikhenvald 2008: 380) — 356
Table 86	The four deictically anchored motion roots in Tzotzil (Haviland 1991: 43) — 379
Table 87	Japanese [AS-21] <i>ko-so-a-do</i> sets of demonstratives and interrogative — 390

1 Introduction

1.1 On the research topic

This book is dedicated to a formal comparison of two formally and semantically closely related universal categories, viz. spatial interrogatives (SIs) and their deictic declarative counterparts (in the following *spatial deictic declaratives* or *SDDs*¹). Spatial interrogatives form a subclass of content interrogatives and “trigger answers which provide new lexical information, i.e. they cannot be answered by (the translation equivalents of) *yes* or *no*” (Stolz et al. 2017: 1). As Stolz et al. (2017: 597, fn. 76) explain, “[t]he adverbial demonstratives can be understood as the nearest functional equivalent the spatial interrogatives have in the domain of declarative sentences”. They are a subset of deictic expressions and may serve as answers for the respective spatial interrogatives. Ultan (1978: 228–229) states that “[i]nterrogative words are characteristic of all languages” and that “all languages have interrogative substitutes for nouns and a number of adverb-like words or phrases expressive of locative, temporal, enumerative, manner, purpose and other functions”. He thus declares that spatial interrogatives, i.e. interrogatives with a locative function, and other interrogatives are universal categories, as “every language must provide its speakers with adequate means for posing questions as to the location and/or change of location of entities in space” (Stolz et al. 2017: 2). Reversely, every language must provide its speakers with adequate means for answering questions as to the location and/or the change of location of entities in space. We feel safe to assume that every language has the means to answer these questions not only with explicit nouns (e.g. *home*) or place names (e.g. *Berlin*) but also with expressions or constructions that fall under our definition of SDDs as discussed in Section 2.2.

“Place” and “Direction” are among Jackendoff’s (1983) semantic primitives, and SIs and SDDs can be used in these different spatial relations. Both are morphosyntactic constructions which either inquire about or give information about one of the three basic spatial relations considered in this study, viz.:

¹ In the course of our project, we found the term *adverbial demonstrative equivalents*, which forms part of the original project title, rather problematic due to the precise assignment to the word classes of adverbials, adverbs, and/or demonstratives. To allow for deviations thereof, the description *spatial deictic declaratives* (SDDs) was chosen instead. For a discussion on this matter, see Section 2.2.

- a) Place, i.e. the location of an entity in space,
- b) Goal, i.e. the endpoint of the movement of an entity in space, or
- c) Source, i.e. the starting point of the movement of an entity in space (cf. Stolz et al. 2017: 1).²

The constructions used to inquire about or give information about the three spatial relations form a paradigm, which may take a shape like the paradigm displayed in Table 1.

Table 1: Early Modern English paradigm of SIs and SDDs.

	Place	Goal	Source
Interrogative	<i>where?</i>	<i>whither?</i>	<i>whence?</i>
Proximal deictic	<i>here</i>	<i>hither</i>	<i>hence</i>
Distal deictic	<i>there</i>	<i>thither</i>	<i>thence</i>

Stolz et al. (2017) use WHERE, WHITHER, and WHENCE as functional labels for the constructions discussed in their study on spatial interrogatives. Although the terms *whither* and *whence* “are stylistically marked relics of an older stage of English” at best, “they are handy labels which can be used to identify the spatial interrogatives with Goal and Source function, respectively” (Stolz et al. 2017: 33). This reasoning can be extended to the deictic Goal expressions *hither* and *thither* and the Source expressions *hence* and *thence*, which we will similarly use as translation equivalents, glosses, and labels for the constructions to be discussed in the present study.

To make our research topic more tangible, we start with examples³ from our native language German. Diessel (2003: 644) refers to the German paradigm as consisting of “morphologically transparent” but “highly lexicalized” forms. In

² As this is a follow-up study to Stolz et al. (2017), we join them in their decision to not include Path as one of the relations under scrutiny “because the evidence of this category in interrogative clauses was too scarce to justify its inclusion in the project” (Stolz et al. 2017: 659–660).

³ As we tried to employ consistent glossing for the examples, the glosses are largely our own. When adopting an example from a source where glosses were already provided, we tried to stick as closely to the original glosses as possible. In some cases, however, we deemed it necessary to slightly change the glosses for reasons of homogeneity. Furthermore, original boldface, underlining etc. are omitted in our examples for practical reasons. The constructions relevant for our study are marked with boldface instead.

(1), three interrogative constructions serve to ask about the three spatial relations of interest. The answers to these questions are given in (2). For these examples, the distal deictic forms are used.

(1) Standard German spatial interrogative constructions

- a. **Wo** *ist* *er?*
 where be:3SG.PRES 3SG.M
 ‘Where is he?’
- b. **Wohin** *geht* *er?*
 whither go:3SG.PRES 3SG.M
 ‘Where does he go?’
- c. **Woher** *kommt* *er?*
 whence come:3SG.PRES 3SG.M
 ‘Where does he come from?’

(2) Standard German distal deictic answers

- a. *Er* *ist* **dort.**
 3SG.M be:3SG.PRES there
 ‘He is there.’
- b. *Er* *geht* **dorthin.**
 3SG.M go:3SG.PRES thither
 ‘He goes there.’
- c. *Er* *kommt* **dorthier.**
 3SG.M come:3SG.PRES thence
 ‘He comes from there.’

In (1a) and (2a), the spatial relation of Place is displayed, whereas (1b) and (2b) show examples of the Goal relation. Source is exemplified in (1c) and (2c). While the static Place expressions *wo?* ‘where’ and *dort* ‘there’ are zero-marked, the dynamic Goal and Source expressions *wohin?* ‘whither?’ and *woher* ‘whence?’ as well as *dorthin* ‘thither’ and *dorthier* ‘thence’ are overtly marked with the directional clitics =*hin* and =*her*, respectively. Thus, each expression can clearly be assigned to the respective category.⁴ Naturally, not all of the world’s languages behave this way. The isolate Bangime spoken in Southern Mali serves as a case in point, as it paints a completely different picture. Consider the following examples:

⁴ In fact, the case of German is not as clear as the above examples suggest. For further discussion on German, see Section 3.3.4.

code the respective spatial relation (Place, Goal, Source) morphologically by zero (Place) and the clitics *=hin* (Goal) and *=her* (Source), while interrogativity (SIs) and distance levels (SDDs) are expressed by the lexical bases for these constructions. Only the lexical parts qualify as universal categories, as Bangime shows. The examples in (3)–(4) demonstrate that the verb phrase determines the spatial relations via the verbal semantics as opposed to morphological coding in languages such as German, cf. (1)–(2). These two contrasting examples succinctly show that the world’s languages have different strategies when it comes to expressing spatial relations in SIs and SDDs. This study explores an approach to analyze languages according to their morphosyntactic strategies of expressing spatial interrogatives and spatial deictic declaratives. As a follow-up study to Stolz et al. (2017), we wish to expand their attempt “to provide a comprehensive typology of spatial interrogatives in the languages of the world” (Stolz et al. 2017: 6) and combine it with a global comparison of the functionally related paradigms of SDDs in a sample of 250 languages.

1.2 Previous literature

Various authors have addressed the topic of spatial systems in the world’s languages, e.g. Talmy (1978), Jackendoff (1972, 1983), or Langacker (1987). Most of the approaches, however, can be attributed to the realm of cognitive linguistics, as “[s]patial competence involves many different abilities, from shape recognition to a sense of where the parts of our body are with respect to one another, from navigation to control of the arm in reaching for something, and so on” (Levinson 2003: 1). Different aspects relevant to our study have been treated in previous works, while the core of our topic remains largely untouched until today.

In the following two sections, the two major subjects of our study shall be reviewed, viz. spatial deictic expressions and spatial relations.

1.2.1 Previous work on spatial deixis

In the literature, spatial deixis is most often treated in connection with demonstratives. Demonstratives generally share many characteristics with the elements that we define as SIs and SDDs in this study. However, some major distinctions must be emphasized as well, starting with a short summary of the literature on demonstratives. For instance, Diessel (2003) stresses the striking similarity between interrogatives and demonstratives despite the lack of evidence for a common origin. The author defines both parts of speech as “special”

in that they share traits of open-class lexical items but are usually closed-class items, therefore technically being grammatical markers.⁵ In terms of semantics, Diessel (2003: 636) calls both interrogatives and demonstratives “directives”, i.e. forms that “instruct the hearer to search for a specific piece of information outside the discourse”. We hypothesize that SDDs qualify for the same status, as they usually belong to a closed class (but cf. the discussion in Section 7.3), they are directives in the sense that they point to locations in a deictic (i.e. ‘outside discourse’) sense, and they share pragmatic functions as well as formal traits with the corresponding SIs.⁶

As a pioneer in space deixis studies, Himmelmann (1997) conducts research on the grammaticalization of demonstratives towards definite articles. For this purpose, he expands on Fillmore’s (1982) considerations on spatial deixis and discusses the related theoretical intricacies. He concludes in his study that spatial deictic elements which may be used either pronominally or adnominally are commonly called demonstratives. Furthermore, spatial deictic particles or adverbs (such as English *here* and *there*) are usually not subsumed under the notion of demonstratives as they usually undoubtedly differ from demonstratives – syntactically and often also lexically (cf. Himmelmann 1997: 3). Nevertheless, these adverbs usually go hand in hand with demonstratives given that they also belong to the group of spatial deictic elements and often even share the same root. Both Fillmore (1982) and Himmelmann (1997) discuss these so-called demonstrative adverbs alongside other types of demonstratives and Diessel (1999: 2) even explicitly states that his notion of demonstratives “subsumes not only demonstratives being used as pronouns or noun modifiers but also locational adverbs such as English *here* and *there*”. Fillmore (1982: 47–48) argues that “[a] Demonstrative Adverb can have any of several adverbial functions: Locative [...] as with English *here* and *there*; Directional, indicating either Source, as with the obsolescent forms *hence* and *thence* [...] or Goal, as with *hither* and *thither*”.⁷

5 Adding to the shared ontological categories (i.e. lexical meaning) encoded by both of these classes, Diessel (2003: 636) notes that “there is no evidence from any language that a new demonstrative or interrogative developed from a lexical source (unless the lexical source first functioned to reinforce a genuine demonstrative or interrogative)” (but cf. Heine et al. [2020] for a critical discussion).

6 As Diessel (2003: 644) also notes, “many [...] languages employ the same locational markers to form adverbial demonstratives and interrogatives”, which is reflected in many of our combined SDD and SI paradigms (cf. Chapter 3).

7 Fillmore (1982: 48) also adds *manner* to the list of functions that a demonstrative adverb can have, e.g. Japanese *koo* ‘in this way’ or *soo* ‘in that way’. However, such adverbs of manner are of no interest to our study.

Apart from demonstrative adverbs (= SDDs), Fillmore (1982: 47), Himmelmann (1997: 125–126), and Diessel (1999: 5) identify three other types of demonstratives: pronominal demonstratives (e.g. French *celui*, *celle*, *ceux*, and *celles*), adnominal demonstratives (e.g. French *ce*, *cette*, and *ces*), and sentential demonstratives (e.g. French *voilà*). Himmelmann (1997: 126) and Diessel (1999: 5) add another type of demonstratives which is used “to identify a referent in a speech situation”, as “many languages distinguish ordinary demonstrative pronouns from demonstratives in copular and nonverbal clauses” (Diessel 1999: 5). Himmelmann refers to them as predicative deictics (*prädikative Deiktika*), while they are called identificational demonstratives in Diessel’s terminology. All types of demonstratives serve not only specific syntactic functions but also specific pragmatic functions, the most basic of which is “to orient the hearer outside of discourse in the surrounding situation” (Diessel 1999: 2). Levinson (2018: 2) defines demonstratives by stating that “one of their most important functions [is the] focusing of joint attention on an object in the environment”.

The different types of demonstratives share a variety of features. In fact, especially the pronominal, adnominal, and identificational demonstratives are not always formally distinguished in the world’s languages, e.g. English *I saw this* (pronominal), *I saw this book* (adnominal), and *This is a book* (identificational). As stated above, the so-called demonstrative adverbs are usually treated separately from other demonstratives. Nevertheless, they still share a lot of features and are often also morphosyntactically related to each other. Diessel (1999: 5) gives an example of Ngiyambaa (Pama-Nyungan), where “it is possible to refer to location by a demonstrative pronoun in locative case”.⁸

- (5) Ngiyambaa THERE [Donaldson 1980: 317 as cited in Diessel 1999: 5]
*yaba=lugu **ŋa-ni-la:** guri-ŋja.*
 track=3SG.GEN that-LOC-EV lie-PRES
 ‘His tracks are there.’

As demonstrated in (5), the distal SDD here consists of a demonstrative pronoun *ŋa* ‘that’ with a locative case marker *-ni*. In this example, an evidential marker *la:* is additionally attached to the construction. Similar to the static relation in Ngiyambaa, “[m]ovement (or direction) is often expressed by bound morphemes that attach to a demonstrative stem” (Diessel 1999: 45).

Diessel (1999: 22–33) discusses a number of morphosyntactic features of demonstratives, such as case, gender, and number as well as the respective type of morpheme (free vs. bound). He observes that the different types of demon-

⁸ For a discussion of other Pama-Nyungan languages, see Section 3.1.5.2.

stratives sometimes behave differently under certain conditions, e.g. “[t]he occurrence of demonstrative clitics is largely restricted to adnominal demonstratives; pronominal, adverbial and identificational demonstratives are almost always free forms” (Diessel 1999: 32). He even goes as far as to assume that “[u]nlike adnominal, pronominal and identificational demonstratives, adverbial demonstratives are always unbound” (Diessel 1999: 24).⁹

Another of Diessel’s (1999: 32) observations is that

[t]he inflectional features of demonstratives vary with their syntactic function: pronominal demonstratives are more likely to inflect than adnominal and identificational demonstratives, which, in turn, are more often inflected than adverbial demonstratives. The latter are usually uninflected unless they occur with a set of locational case markers.

Similarly, Levinson (2018) contrasts pronominal and adnominal demonstratives, the former two being the main subject of Levinson et al.’s (2018) detailed comparative studies. Levinson (2018: 4) states that there is “a tendency for adverbial forms to be less bound and less inflected”, which stands in opposition to demonstratives. Apart from different locational case markers (e.g. allative, ablative, lative, essive, etc.), there are indeed some types of SDDs that also inflect according to gender and number. In the Nakh-Daghestanian language Khwarshi, for instance, *oyne* ‘there’ refers to the location of a male human entity, whereas *owne* ‘there’ refers to the location of a female human entity (Khalilova 2009: 42; 115).¹⁰

The differences in the various types of demonstratives are not restricted to morphosyntactic features. One of the universal characteristics of demonstrative systems is that all languages have “at least two demonstratives that are deictically contrastive: a proximal demonstrative referring to an entity near the deictic center and a distal demonstrative indicating a referent that is located in some distance to the speaker” (Diessel 1999: 50). Nonetheless, Diessel (1999: 50) also observes that “[i]n some languages, pronominal, adnominal and/or identifica-

9 According to our data, this holds for the great majority of languages, at least for static (= Place) spatial adverbs. For motion deixis, e.g. THITHER and THENCE functions, some languages make use of bound forms in the verbal complex. For instance, Cayuga uses prefixes to express proximal versus distal stages, cf. *d-asrá:təh* ‘climb over here’ and *h-a²srá:təh* ‘climb over there’ (Froman et al. 2002: 719) (cf. also Section 6.4.3 on preverbs and the discussion of Filomeno Mata Totonac in Section 3.5.2.2). However, the evidence for this is scarce and an analysis as adverbial demonstrative equivalents rather shaky. It is hoped that a detailed study of bound spatial adverbial forms is part of future research.

10 For a detailed discussion on Khwarshi and the inflection of SIs and SDDs in general, see Section 6.2.

tional demonstratives are distance-neutral, but adverbial demonstratives are always deictically contrastive”. We found that a distance-neutral SDD is indeed very rare, but not impossible. In the East-Timor language Bunaq, for example, there is a “specific and distance-neutral” expression *hoqe* ‘here/there’ which complements the two deictic expressions *huge* ‘here’ and *haqe* ‘there’ (Schapper 2009: 295). In other cases, the exact function of the SDD often remains unspecified in the respective written language descriptions, and it thus remains unclear to us whether we are dealing with dedicated anaphoric forms, hybrids, or genuine spatial deictics.

Distance is not the only feature that demonstratives may encode. Additionally, “demonstratives often encode a number of ‘special’ deictic features: they may indicate, for instance, whether the referent is visible or out of sight, at a higher or lower elevation, uphill or downhill, upriver or downriver, or moving toward or away from the deictic center” (Diessel 1999: 50). Levinson (2018) views specialized additional features such as accessibility and visibility as ‘non-deictic’ and ‘non-spatial’ components. The acknowledgements of specialized additional factors in deictics are important observations, as these features are essential in the spatial deictic systems of a large number of languages and are thus deemed potentially relevant to the SDD systems as well. As will become clear in Chapter 6, the differentiation between genuinely deictic forms and non-deictic environment-bound forms such as ‘downriver’ and ‘upriver’ is frequently of a semantic nature only, since both form types tend to co-occur in the same formally defined paradigms.

Fillmore (1982), Himmelmann (1997), Levinson (2018), and Diessel (1999) point to a lot of features that different types of demonstratives share and some in which they differ. Their works offer valuable insights into the nature of spatial deictic expressions that provide an excellent foundation for a comparative study on spatial interrogatives and their functional equivalents, viz. SDDs. Contrary to the foregoing studies, our project concerns itself only with what has been discussed under the notion of *adverbial demonstratives*. In our functionalist approach, however, we do not concentrate on expressions that are classified as demonstratives or adverbs in the grammatical descriptions of our sample languages. As will be argued in Section 2.2, we suggest a broader definition of the expressions that we call spatial deictic declaratives. Furthermore, we focus on a different aspect of these expressions, viz. the marking of the three basic relations Place, Goal, and Source. We hope to contribute to existing research on both spatial deictic expressions and spatial relations by bringing together both subjects. To which extent additional spatial information is shared in both demonstratives and adverbs will remain subject to further study. Our current investigation is a first approach towards gathering comprehensive comparative data on SDDs with the aim to create a starting point for future research.

1.2.2 Previous works on (a)syncretism of spatial relations

In his typological study on the encoding of the distinction between *Location* (= Place), *Source*, and *Destination* (= Goal), Creissels (2006: 19) introduces the topic as follows:

All languages must encode in some way or another the distinction between localization, the source of motion, and the destination of motion, but they differ in the way spatial adpositions or case affixes participate in the encoding of this distinction.

Similar to other authors who work in the same domain, his main approach is to analyze the languages according to their syncretism pattern, “i.e. the formal identity of the expressions employed for two or more categories” (Stolz et al. 2017: 11). Creissels (2006: 20) introduces the five logically possible syncretism patterns that were adopted by Stolz et al. (2017: 11) for the analysis of SI paradigms. In Table 2, the syncretic forms are marked by grey shading.

Table 2: Logically possible patterns of formal distinctions (Stolz et al. 2017: 11).

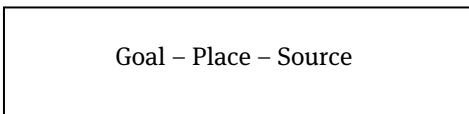
Option	PLACE	GOAL	SOURCE	Pattern	Word-forms
I	X	Y	Z	PLACE ≠ GOAL ≠ SOURCE	3
II	X	X	Z	(PLACE = GOAL) ≠ SOURCE	2
III	X	Y	Y	PLACE ≠ (GOAL = SOURCE)	2
IV	X	Y	X	GOAL ≠ (SOURCE = PLACE)	2
V	X	X	X	(PLACE = GOAL = SOURCE)	1

In Table 2, five different syncretism patterns ranging from zero syncretic forms (Option I) over different combinations of two syncretic forms (Options II–IV) to a completely syncretic paradigm (Option V) are displayed. As Stolz et al. (2017: 11) summarize, the authors of previous relevant studies (e.g. Creissels 2006, 2009; Pantcheva 2009, 2010, 2011; Lestrade 2010) “concur that the five logically possible patterns of syncretism are unevenly distributed over the languages of the world”. Creissels (2006: 20) finds that “[a]mong these five logically possible patterns, only two are commonly found in Europe”, i.e. Pattern I (P≠G≠S) and Pattern II (P=G≠S). Although Pattern V “is exceptional in the languages of Europe and of many other areas, [...] it is common and event [sic] predominant in some areas, particularly in Subsaharan Africa” (Creissels 2006: 23). As to the remaining two patterns, Creissels (2006: 22) states that Pattern IV “seems to be extremely rare” and he knows of no evidence for Pattern III.

Other studies come to similar conclusions. Pantcheva (2010: 1044) cites Andrews (1985: 97) who states that the Patterns I, II, and V can be found throughout the world's languages, whereas Patterns III and IV seem to be unattested. In her own analysis, Pantcheva (2010: 1073) comes to the same conclusion that “the lexicalization pattern Location=Source≠Goal is correctly predicted to be impossible”. She also explains that “in a sense, the Source path is the “opposite” (or the negation) of a Goal path”, which means that “a language with a Goal=Source syncretism has one spatial marker that expresses a certain meaning and its opposite” (Pantcheva 2010: 1073). For this reason, she, too, finds no attestation of the P≠G=S pattern. She also pays some attention to the P=G=S pattern and makes an attempt to explain how it works. In her opinion, languages with a P=G=S syncretism do not employ a spatial marker that expresses all three relations, but “a unique spatial marker, which has a *default locative* interpretation” (Pantcheva 2010: 1070). “The Source and Goal readings of this marker are triggered only in the presence of certain verbs that lexicalize the Source and Goal heads in the structure” (Pantcheva 2010: 1071).

In a later study, Pantcheva (2011: 230–232) summarizes earlier findings by Blake (1977) on Australian languages, Noonan (2008) on Tibeto-Burman languages, Rice and Kabata (2007), and herself (Pantcheva 2010). Although the numbers for certain syncretism patterns vary considerably in the different areas, all four studies come to the same conclusion with regard to the P=G≠S and P=S≠G patterns. These two patterns appear to occur either very marginally or are completely unattested in the sample languages of the four studies. As further elucidated in Section 1.3, Stolz et al. (2017: 506) agree in that the patterns P≠G=S and P=S≠G “can be termed peripheral phenomena not only in Europe but also in global perspective”. Nevertheless, Stolz et al. (2017: 487–496) present some instances of both patterns and show that they are indeed rare, but not impossible.

Lestrade (2010) also concerns himself with syncretism in the paradigms of spatial word forms. Similar to Pantcheva (2010, 2011), he does not expect the P≠G=S pattern to be an occurring type of syncretism. This is also in line with Nikitina's (2009) *semantic map of directionality*, which looks as follows:



Scheme 1: Semantic map of directionality (Nikitina 2009 as cited in Lestrade 2010: 94).

Lestrade (2010: 96) explains that

[a]ccording to Nikitina (2009), if a language covers two functions with the same form to the exclusion of the third function, this form will always cover a contiguous region on this map, i.e. taking together Goal and Place, or Place and Source, but never Goal and Source without Place.

Unlike Pantcheva (2010, 2011), however, Lestrade (2010: 103–104) finds that “there are also languages that do not specify the kind of spatial change locally, taking Source and Goal together to the exclusion of Place”. These cases are problematic for his argumentation because they present “an unnecessary violation of the principle of ECONOMY” (Lestrade 2010: 104). A way out of this might be to say “that the syncretism pattern between Goal and Source is a semantically unmotivated diachronic accident” (Lestrade 2010: 104). As we do not try to get to the bottom of how and why syncretism patterns came into being, neither of the five patterns is problematic for our study.

1.3 Our background and previous research

This study is part of our research project *Where – Whither – Whence: Spatial interrogatives and their adverbial demonstrative equivalents in Europe and far beyond*. The first phase of the project was completed with the publication of Stolz et al.’s (2017) *Where – Whither – Whence: Spatial interrogatives in Europe and beyond*. This section serves as a recapitulation of the findings by Stolz et al. (2017) who conducted the first large-scale typological study of spatial interrogatives with a sample of 537 languages, 437 of which were statistically evaluated. They conducted their study within the framework of functional typology and work with the canonical paradigm as outlined by Corbett (2005). In Stolz et al. (2017), spatial interrogatives are analyzed via the consideration of form-function mismatches as established in canonical typology. Furthermore, they also look at marking asymmetries and calculate the degree of markedness of the respective constructions by considering different aspects, viz. mono-word constructions vs. multi-word constructions, number of morphs and morphemes, zero-marking, number of syllables, and number of segments.¹¹ Their study confirms

¹¹ As *markedness* is a term that has been widely discussed and criticized for some time (cf. Haspelmath 2006), Stolz et al. (2017: 16) vindicate their use of the term by stating that “[t]his terminological choice of ours is motivated by convention” and that “[f]or heuristic purposes, our line of argument follows some of the guidelines formulated in the framework of Natural

the assumption of an increasing markedness and thus complexity of Place via Goal to Source constructions in the realm of spatial interrogatives (cf. Stolz et al. 2017: 595). A key notion of Stolz et al. (2017: 596) is that

[i]t makes no difference where a language is spoken. Wherever there are different degrees of complexity of the constructions of a given paradigm of spatial interrogatives, there is an overwhelming probability that the complexity increases from WHERE via WHITHER to WHENCE.

Furthermore, it is argued that their markedness hierarchy of spatial interrogatives is similar to the markedness hierarchies put forward by Stolz (1992: 76–90) and Lestrade (2010: 146–154) in that markedness increases from Place via Goal to Source. They assume that “it could be argued that the two hierarchies can be unified by way of cancelling the feature of interrogativity since it does not seem to make any difference whether we look at declarative clauses or at interrogative clauses” (Stolz et al. 2017: 596). As our focus lies on both spatial interrogatives and spatial deictic declaratives, we will also offer a word on this topic (cf. Chapter 5).

The topic of syncretism patterns of spatial interrogatives is also considered in-depth in Stolz et al. (2017). As elucidated in Section 1.2.2, several authors (cf. e.g. Creissels 2006; Andrews 1985; Pantcheva 2010) come to similar conclusions in that Pattern III (Place≠Goal=Source) and Pattern IV (Place=Source≠Goal) are impossible or occur only marginally. Although each of the five patterns is attested in Stolz et al.’s (2017) sample, their findings confirm the assumption that Pattern III and IV are minor phenomena in the world’s languages. Table 3 summarizes the statistical distribution of each pattern per macro area.

Table 3: Global distribution of syncretic patterns in SI paradigms.

Pattern	Europe	Africa	Americas	Asia	Oceania
I: P≠G≠S	55%	27%	33%	66%	55%
II: P=G≠S	42%	22%	19%	27%	21%
III: P≠G=S	1%	6%	7%	0%	4%
IV: P=S≠G	2%	2%	4%	1%	3%
V: P=G=S	0%	43%	37%	6%	17%

Morphology (e.g. Mayerthaler 1981)”. We follow the same principle by using the term *markedness* in a similar way.

As Table 3 illustrates, there is an infrequency of Patterns III–IV across the subsamples. Pattern III ranges from 0% in Asia to a maximum of 7% in the Americas, whereas Pattern IV shows even lower overall numbers that range between 1% in Asia and 4% in the Americas. In contrast, Patterns I–II are relatively common with Pattern I showing the lowest occurrence in Africa with 27% and the highest in Asia with 66%. Pattern II occurs least often in the Americas with 19% and most often in Europe with 42%. The greatest discrepancy in the subsamples may be observed for the P=G=S pattern as “[w]hat distinguishes Europe from the rest of the world is the absence of the syncretic Pattern V which in turn is a characteristic (but not a monopoly!) of Sub-Saharan Africa” (Stolz et al. 2017: 596).

In Stolz et al. (2017), declaratives are briefly touched upon in the form of an exploratory analysis of spatial marking on noun phrases. Among other things, it is found that interrogative forms can be fully neutralized in some languages while the declarative functional equivalents are sensitive to directionality and bear no syncretism (e.g. in Isthmus Zapotec, cf. Stolz et al. 2017: 611–612). Cases like this lead to the bigger question: Are we dealing with one or two grammars of space (cf. Stolz et al. 2017: 635–641)? That is, is parallel coding behavior of both paradigms, i.e. parallel mismatches and distribution of complexity of Place, Goal, and Source SI and SDD sets, the standard case? Stolz et al. (2017: 633) state that “there is a strong tendency of the paradigms of spatial categories to be organized according to identical principles across sentence-types independent of the degree of markedness of the syncretic patterns involved“. This may hold true in most and especially in European cases. However, on the same page it is also acknowledged that “what happens in declaratives and what happens in interrogatives is not necessarily the same“. The aim of the present study is, therefore, to analyze and compare the two sides of ‘spatial deixis’, i.e. to further investigate the question: Are we dealing with one grammar of space for both SIs and SDDs, or with two sentence type-dependent grammars of space?

1.4 Our research questions and hypotheses

As discussed in Section 1.3 above, Stolz et al. (2017) investigate whether there are one or two grammars of space by comparing the marking of spatial relations on noun phrases to their findings of spatial interrogatives. Also considering previous studies which were discussed in Section 1.2.2, they arrive at the conclusion that “there are no fundamental differences which would make it necessary to assume two different sentence type-dependent grammars of space in general” (Stolz et al. 2017: 635). Nevertheless, they found that “the paradigms of spatial categories are not automatically structured identically across the sen-

tence-types in individual languages” (Stolz et al. 2017: 635). As no large-scale comparison on the marking of spatial relations in interrogative vs. declarative constructions was conducted, the authors do not have any intuitions on how common differential marking across sentence types actually is. They can only assume that this is not “an absolutely marginal phenomenon” (Stolz et al. 2017: 635). As we draw a direct comparison between spatial relations in SIs and SDDs, we attempt to provide statistics on how often spatial relations in two different sentence types are marked differentially. The question shall be answered whether the differential marking of spatial relations across sentence types qualifies as a common phenomenon crosslinguistically. We therefore formulate the following working hypothesis in (6).

(6) Hypothesis I

More often than not, languages employ the same syncretism pattern on both the interrogative and deictic declarative side of the paradigm.

We have to bear in mind that SDDs must not necessarily constitute a formally uniform category and that the options for structural diversity increase also due to the size of their inventories alone, recalling that one of the characteristics of SDDs is that there is at least a binary distinction between proximal and distal forms. In many languages, further differentiations occur. We thus have to examine the possibility of differential marking of spatial relations also **within** the category of SDDs, i.e. SDD constructions of different degrees of distance may undergo differential marking. Similar to the above question about differential marking across sentence types, we have to ask ourselves if differential marking within the category of SDDs occurs and if so, how often. This leads us to our second working hypothesis (7).

(7) Hypothesis II

More often than not, languages employ the same syncretism pattern within the category of SDDs. Different patterns may be employed in different degrees of distance. This is, however, less common than the employment of one syncretism pattern in the SIs and another in the SDDs (of all distances).

The (differential) marking of spatial relations directly influences the distribution of the five syncretism patterns which were introduced in Section 1.2.2. Stolz et al. (2017: 636) conclude that

[t]he fact that the paradigms of the spatial categories do not always match across the sentence-types does not seriously impair the extant global picture we have of the system of

spatial relations because the spatial interrogatives favor the same syncretic patterns as their declarative counterparts.

We assume that this conclusion remains applicable when directly comparing SI and SDD systems, which results in our third working hypothesis (8).

(8) Hypothesis III

Both SIs and SDDs show the same tendencies when it comes to the distribution of syncretism patterns in the world's languages. This means that the same Patterns I, II, and V are preferred, while Patterns III–IV remain marginal phenomena, as was worked out by Stolz et al. (2017) for SIs. There are no significant differences in the distribution of patterns between SIs and SDDs in the five macro areas.

Even though our study is not based on the same language sample as that of Stolz et al. (2017), we expect to find a similar distribution of SDD syncretism patterns in the five macro areas as they did for spatial interrogative sets. And even if the actual numbers vary, we presume that the overall tendencies of coding patterns will be similar in both studies.

Another issue addressed in Stolz et al. (2017) which will be of our concern too is the structural complexity of Place vs. Goal vs. Source constructions. As discussed in Section 1.3, Stolz et al.'s study (2017) confirms the stipulated complexity hierarchy from Place via Goal to Source. As we cannot provide complexity counts in the same elaborate manner as Stolz et al. (2017) due to the comparably much bigger sets of word forms and constructions, we lack comparable results. As a replacement strategy, we will offer an evaluation of construction length in Place vs. Goal vs. Source constructions in Section 5. Consequently, we formulate our fourth working hypothesis in (9):

(9) Hypothesis IV

Similar to the complexity scale provided by Stolz et al. (2017: 595), there is a rise in construction length from Place via Goal to Source for both SIs and SDDs.

The four hypotheses shall serve as guidance for the evaluation of our sample languages and as a base where our conclusions are drawn from. They help us to assess the positions of SIs and SDDs in the grammar of space and draw a direct comparison between the two categories. In Chapter 7, we will come back to these propositions and discuss our evaluated data in the context of all four of them. The following Section 1.5 serves to discuss our approach in detail by elaborating on the theoretical background and methodology adopted to achieve the aforementioned goals.

1.5 Theory and methodology

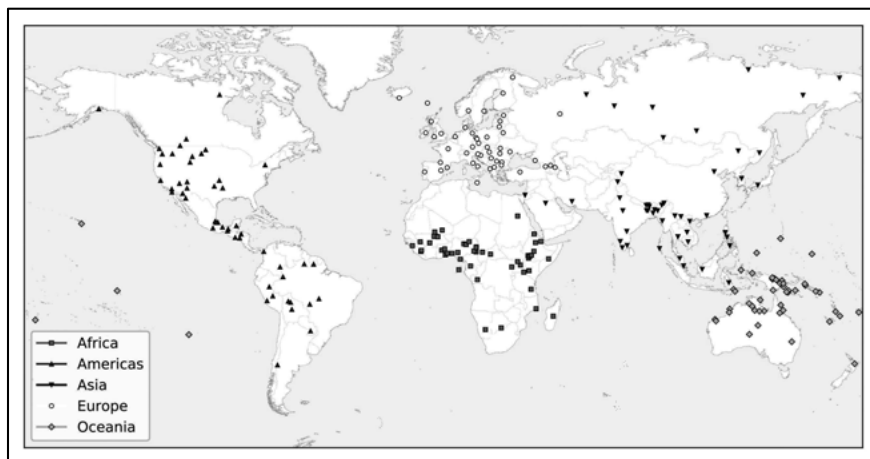
Following Stolz et al. (2017), this study is conducted within the framework of functional typology. We owe our insights into the topic of spatial deixis mainly to Fillmore (1982), Diessel (1999), Himmelmann (1997), and Levinson (2018) as elucidated in Section 1.2.1. Our approach for the treatment of spatial deictic expressions in different spatial relations is largely inspired by previous studies conducted by Creissels (2006, 2009), Lestrade (2010), and Pantcheva (2009, 2010, 2011), which we discussed in Section 1.2.2. Furthermore, we work with the canonical approach put forward by Corbett (2005) and the *Surrey Morphology Group* (cf. Section 2.3). As this is a follow-up study to Stolz et al. (2017) on spatial interrogatives in Europe and beyond, we largely orientate ourselves on the theory and methodology adopted from Stolz et al. (2017: 22–26). This implies that, compared to other approaches to space (and deixis) in grammar, “our approach is less formal by far and lacks the background in generative grammar” (Stolz et al. 2017: 22). Furthermore, we also “look at morphological constructions from the point of view of the word-based model of the *Surrey Morphology Group* (Haspelmath and Sims 2010: 46–53)” and “follow the practice of the proponents of Natural Morphology (Dressler et al. 1987)” (Stolz et al. 2017: 22) for the notion of markedness as we use it in this study.

The languages are surveyed rather synchronically, which means that data from the 20th and 21st century is considered. Although an excursion into the diachrony of a language proved to be beneficial at times, it is beyond the scope of this project to conduct an extensive diachronic typological study at this point. Stolz et al. (2017: 22) point out that they are not aware of a “diachronic account of systems of spatial interrogatives in general” and that “[e]ven for individual languages, diachronic studies of spatial interrogatives seem to be almost inexistent”. As far as we know, this can also be applied to diachronic surveys on spatial deictic expressions such as SDDs, both crosslinguistically and for individual languages. These tasks have to be left for future studies.

As this study is largely exploratory, we are mainly interested in the qualitative aspects of spatial interrogative and spatial deictic expressions. Although we do offer some simple statistics, which serve to grasp the complexity of the respective spatial relations in crosslinguistic comparison (Chapter 5) and the distribution of the patterns (Chapter 4), our focus remains on exploring the possibilities of qualitative comparisons of SIs and SDDs. An extensive quantitative survey of this subject matter including frequency measures has to remain a topic for future projects. Nevertheless, we wish to contribute to the debate about the distribution of syncretism patterns in spatial relations as discussed by, inter alia, Blake (1977), Noonan (2008), Rice and Kabata (2007), Pantcheva (2010,

2011), and Lestrade (2010) (cf. Section 1.2.2). Many of these studies are conducted with a rather small number of sample languages ranging from 44 languages in Rice and Kabata (2007) to 130 languages scrutinized by Lestrade (2010). Furthermore, some of these previous works are restricted to or at least focus strongly on specific genetic or areal groups. For example, Noonan's (2008) study focuses on Tibeto-Burman languages and Blake (1977) concerns himself with languages of Australia. The aforementioned previous works contribute greatly to research on spatial relations and the distribution of syncretism patterns. However, only Pantcheva's (2010) sample can be described as properly cross-linguistic (cf. Stolz et al. 2017: 24). With a small sample size of 53 languages, however, "it prevents us from taking notice of internal variation either across genetically affiliated languages or in regional neighborhoods of languages", and at the same time "[a] number of families and areas are clearly underrepresented" (Stolz et al. 2017: 24). With 537 sample languages, 437 of which are statistically evaluated, Stolz et al. (2017) conduct the first large-scale cross-linguistic typological study of spatial relations with spatial interrogatives as the main research subject. In this follow-up study, we focus on spatial deictic expressions and compare them to spatial interrogatives. As our research objects naturally increased in comparison to Stolz et al. (2017) by considering not only SIs but also SDDs with different degrees of distance, we had to content ourselves with a smaller number of sample languages. With 50 languages from five macro areas, we compiled a crosslinguistic sample of 250 languages. The five macro areas are Africa, the Americas (i.e. North and South America), Asia, Europe, and Oceania (i.e. the region covering Australasia, Melanesia, Micronesia, and Polynesia). Our sample is a convenience sample, i.e. we worked with those languages for which we had descriptive sources that allowed us to compile a paradigm of SI and SDD constructions. The distribution of our sample languages is displayed in Map 1.

Stolz et al. (2017) use "a short common reference text which has been translated into more than half of [their] samples languages" (Stolz et al. 2017: 26), i.e. Antoine de Saint-Exupéry's *Le Petit Prince*, which offers six direct questions involving spatial interrogatives. Within these six direct questions, all three spatial relations are represented twice, so that the reference text provides a sound basis for a comparative study of spatial interrogatives. Whenever necessary, Stolz et al. (2017) consult other primary and secondary sources. For our follow-up study on spatial deictic expressions, the reference text proved to be unsuitable as it does not feature all the constructions needed. We thus refrained from consulting a common reference text.



Map 1: Distribution of sample languages.

Instead, we make do with all grammatical descriptions which were accessible to us, above all grammars and dictionaries. Bible translations of the respective languages frequently served as supplements to often fragmentary descriptions. In some cases, the expressions as found in the Bible translations compile a full paradigm, especially if the respective grammatical descriptions showed an incomplete picture (or include no information on spatial deictic constructions at all). For some languages, we also conducted simple surveys, in which we asked experts of specific languages to express simple questions similar to English *Where is he?*, *Where is he going?*, and *Where does he come from?* and provide the respective answers similar to English *He is here/there*, *He is going there/He is coming here*, and *He comes from here/there*. As this method implies a high dependency on experts answering our request, we were not able to collect all of our data in this manner. Similar to the Bible translations, the expert surveys often served as bases or supplements to our descriptive sources. For the survey we created a questionnaire with which simple direct questions and their answers were retrieved to assess the desired expressions and construction types. In many cases, we additionally received help from the consulted experts by them answering specific questions on the constructions employed in the respective languages. With these methods, we compiled our paradigms to the best of our knowledge and judgment.¹²

¹² For a detailed discussion of the difficulties and potential errors resulting from our methodologies, cf. Section 2.4.

1.6 Internal structure of this book

After having elaborated on the research topic, previous work, our hypotheses, and the theory and methodology guiding this endeavor, the following chapters serve to enlarge upon the topic of spatial interrogatives and spatial deictic declaratives. Chapter 2 offers a more detailed account of our research topic and the methodological tools that we applied. This chapter includes definitions of SIs, SDDs, and the canon. Furthermore, some obstacles and difficulties are pointed to as well. Chapter 3 provides qualitative analyses of the syncretism patterns of spatial relations in our sample languages. For this, a subsection (3.1–3.5), in which selected languages of each of the five macro areas are discussed in depth, is dedicated to each of the five logically possible patterns (cf. Table 2 in Section 1.2.2). In Chapter 4, the quantitative aspects of syncretism are presented. Statistics are given for the distribution of the patterns in general and with regard to language families and their areal distribution for each macro area (4.1–4.5) in particular. Furthermore, the homo- or heterogeneity of paradigms is statistically evaluated. To conclude Chapter 4, a worldwide comparison is offered. In Chapter 5, we address the issue of complexity by calculating the mean construction length of both SI and SDD expressions in P/G/S relation for each macro area. Chapter 6 gives more insight into further qualitative aspects of SIs and SDDs which do not fall under the topic of syncretism. Conclusions are drawn in Chapter 7.

For space-saving reasons, all paradigms compiled for our 250 sample languages are displayed in the appendices. Appendices I–V show the paradigms sorted by macro area in alphabetical order. Each language has been assigned an abbreviation. The abbreviation indicates where the respective language can be found in the appendix. English, for example, is in Appendix IV on European languages and in eleventh position. Its abbreviation is thus [EU-11]. These abbreviations are mentioned each time a language occurs for the first time in a section.

2 Formal relations of SI and SDD paradigms

For the sake of comparability, and following Stolz et al.'s (2017) canonical approach inspired by the Surrey Morphology Group, we organized the SI and SDD expressions in paradigms. These paradigms are supposed to display the relationship between the three basic relations Place, Goal, and Source on the one hand, and the relationship between SIs and SDDs of different distance levels on the other. We start from, but go beyond, a conventional structuralist definition of paradigm by way of integrating a functionalist perspective into the definition. In our sense, a paradigm must not consist of forms “all derived from a single root or stem” (Crystal 1997: 347), and these forms must not assume the same syntactic roles either. Instead, our paradigms are primarily functionally motivated, i.e. expressions (or constructions) that assume related functions are assembled in one paradigm. Our concept of a paradigm is thus not determined by formal but rather semanto-pragmatical criteria. As SIs and SDDs form two sides of a coin, they are brought together in what we like to call sister paradigms.

However, it is important to establish definitions for SIs and SDDs that allow for different kinds of constructions in our paradigms without opening them to all kinds of other spatial constructions that go beyond the scope of our study. These definitions are given in the subsections below.

2.1 Definition of SIs

Our definition of spatial interrogatives is based on Stolz et al. (2017: 19–22), who state that “[t]he spatial interrogatives are integrated normally in the larger class of content interrogatives with which they form a mostly functionally-motivated macro-paradigm” (Stolz et al. 2017: 19). To further narrow down this part of our research topic, the SIs have to fulfill certain criteria, which we discuss in what follows.

First of all, only direct questions are considered. Many languages employ the same sets of spatial interrogatives for both direct and indirect questions, e.g. German *Wo ist er?* ‘Where is he?’ vs. *Sie will wissen, wo er ist* ‘She wants to know where he is’. Other languages, however, have different sets of SIs, e.g. Ancient Greek with *poŭ* ‘where’, *poi* ‘whither’, *póthen* ‘whence’ in direct questions and *hórou* ‘where’, *hópoi* ‘whither’, *hopóthen* ‘whence’ in indirect questions (Bornemann and Risch 1978: 68). For reasons of space and comparability, indirect questions will generally not be considered in this study.

Moreover, only the least complex and most grammaticalized constructions that are used to inquire about the Place, Goal, or Source of an entity in space are included. This excludes “purely stylistic ad hoc alternatives” (Stolz et al. 2017: 20). As we are entirely dependent on our primary and secondary sources, our analyses will certainly come with some errors. Nevertheless, we try to rule out constructions such as *at which place?*, *to which place?*, and *from which place?*, unless these are the least complex and most grammaticalized expressions. In Sango [AF-39], a creole language spoken in the Central African Republic, the construction for ‘where’ consists of a locative particle *na*, the noun *ndo* ‘place’, and the interrogative *wa* ‘what’ (Samarin 1967). Although *na ndo wa* (lit. ‘at place which’) is a complex construction similar to the English constructions above, it is still the grammaticalized and only form and will thus be included in this study.

It is also important to note that we concentrate only on the three relations Place, Goal, and Source. Other more specific expressions such as the Basque destinative *norantz* ‘in what direction’ or the terminative *noraino* ‘up until where’ (Bendel 2006: 112) are excluded from this study. Pure Place, Goal, and Source SIs which do not inquire about rather specific relations are considered *unmarked*¹³ SIs in this study.

2.2 Definition of SDDs

We define our SDDs functionally and remain aware that the constructions that enter our paradigms stem from various language-particular categories. The definition of spatial deictic declaratives in our sense proved to bear more complications than the definition of SIs. As stated in Section 1.3 above, the term *adverbial demonstratives* is part of the project title *Where – Whither – Whence: Spatial interrogatives and their adverbial demonstrative equivalents in Europe and far beyond*, the project that comprises both Stolz et al.’s (2017) and this study. We soon came to realize that the expressions we were seeking do neither necessarily belong to the class of *demonstratives* nor are they always *adverbial*.

¹³ As stated in Section 1.3, fn. 11, we acknowledge the criticism of the concept of *markedness* as an explanatory factor for language change and asymmetric paradigms or pairs (Haspelmath 2006). For the sake of drawing a clear picture of our research object, however, we employ the term for clarity and illustration. *Unmarked* SDDs thus refer to Place, Goal, and Source forms that merely encode the Ground along with locative, allative, and ablative function. Conversely, *marked* SDDs refer to forms that at the same time encode specialized features such as ‘up’/‘down’ distinctions or absolute traits of the spatial system (e.g. ‘seawards’/‘landwards’) (cf. Chapter 6).

During our research, we found that the constructions we were looking for are hardly assignable to one part of speech in all of the world's languages, according to traditional word class definitions. In different grammars of different languages, various parts of speech were identified for the respective constructions. From functional perspectives, the constructions are often labeled as demonstratives and/or adverbs. However, in some languages, we find nouns, verbs, preverbs, particles, adpositions, affixes, enclitics, or a mix of them to fulfill the functions relevant to our study. As we adopt a functionalist approach, we do not wish to mislead the reader by subsuming the relevant forms under the name *demonstratives* or *adverbs*, since given forms often do not correspond to these word classes, and these word classes are clearly delimited from their functions. We thus settle for a more general label, viz. *spatial deictic declaratives*, which is admittedly not unproblematic either.¹⁴ For the sake of a better understanding of this label, we define its three components *spatial*, *deictic*, and *declarative* individually in what follows.

Spatial: Similar to the spatial interrogatives, the constructions under scrutiny must express (at least) one of the three spatial categories Place, Goal, and Source.

Deictic: In contrast to the spatial interrogatives, the constructions under scrutiny must be in a paradigmatic relation to other elements which situate the location (Place), the endpoint of the movement (Goal), or the starting point of the movement (Source) of an entity in space referred to on a distance scale, i.e. proximal, distal, etc. (cf. Himmelmann 1996: 210). SDDs are sensitive or explicitly neutral to distance and encode functions such as Place, Goal, or Source anaphorically or deictically, i.e. in reference to a deictic center, unlike constructions that relate to explicit noun referents. Although the focus of our research does not lie on deixis per se, it is in the nature of the constructions of interest to be deictic and/or anaphoric.

Declarative: The term *declarative* is used in opposition to *interrogative* here, as our study focuses on the formal comparison of SIs and those declarative counterparts that qualify for showing the same marking pattern.

¹⁴ Alternatively, the concept of “demonstrative adverbs” could have been functionally defined, regardless of how the relevant forms are formally classified in their grammatical descriptions. Despite this alternative, we opted for a broader and more inclusive label for this comparative concept.

This does not mean that SDDs can or will only occur in declarative mood. While the constructions may very well appear in interrogative sentences and in any kind of realis or irrealis mood, the term *declarative* is only used to signify that SDDs do not contain any kind of interrogativity in their semantics.

Under the label of *spatial deictic declaratives*, a variety of expressions occurring in various forms is subsumed. As we found it impossible to limit our research objects to formally defined word classes or parts of speech, we added some additional obligatory criteria to establish clear boundaries for our research object. First, we consider only the morphologically least complex and most grammaticalized forms that provide answers to the three basic SIs, as defined above, as the corresponding declarative counterparts. This strategy rules out constructions such as English *at this/that place*, *to this/that place*, or *from this/that place*. Similar to SI constructions, however, it may differ considerably among the world's languages what counts as the morphologically least complex and most grammaticalized expression. The construction for 'here' in the Nigerian language Òṅìḅhà Igbo [AF-36] is *n'ebe à*, which is literally 'at place this' (Williamson 2006). As *n'ebe à* is the morphologically least complex and most grammaticalized form in Òṅìḅhà Igbo, it is included in our study.

Second, the expressions we include in our study are ideally used predicatively and do not co-occur with further lexical material referring to the Ground inquired about. This means that constructions containing place names or other nominal referents are excluded from this study. While constructions such as *to Berlin*, *to school*, or *to that park over there* are valid answers to the question *Where are you going?*, they are of no interest in this study, as they fail to meet the required criteria for SDDs.

Third, similar to the SIs, related expressions such as English directionals *in this/that direction* or limitatives such as *up until here/there* are ruled out. Pure Place, Goal, and Source SDDs which do not give information about more specific relations (e.g. *upwards/downwards*) or area-specific features (e.g. *upriver/downriver*) are considered *unmarked* SDDs in this study. Only the most *unmarked* constructions are considered for the statistical evaluation of SDDs, while some of the aforementioned features are qualitatively discussed in Chapter 6.

2.3 The canonical model

2.3.1 Definition

The canonical model as put forward by the Surrey Morphology Group is used as a linguistic instrument or yardstick to “fix a point from which occurring phenomena can be calibrated” (Corbett 2005: 25). It is important to distinguish it from a so-called prototype, as the canon must not necessarily reflect linguistic reality. Instead, “definitions [are taken] to their logical end point and build theoretical space of possibilities”, and “[o]nly then do we ask how this space is populated” (Corbett 2005: 26). For the realm of SIs and SDDs, Stolz (2018: 314–315) introduces a canonical paradigm in which the maximum of unambiguous and explicit constructions is generated, cf. Table 4.

Table 4: Canonical paradigm of SIs and SDDs (Stolz 2018: 315).¹⁵

Expression class	SR		
	Place	Goal	Source
SI	SI, X _{LOCATIVE}	SI, Y _{ALLATIVE}	SI, Z _{ABLATIVE}
SDD	SDD _{1/2/3} , X _{LOCATIVE}	SDD _{1/2/3} , Y _{ALLATIVE}	SDD _{1/2/3} , Z _{ABLATIVE}

The canonical paradigm in Table 4 considers two expression classes, viz. spatial interrogatives and spatial deictic declaratives of different degrees on a distance scale. Both expression classes entail forms in the three spatial relations (SRs) Place, Goal, and Source. Altogether, six distinct expressions are formed¹⁶ and no form occurs in two cells. Each cell hosts exactly one form consisting of one SI or SDD morpheme, which co-occurs with either a locative, an allative, or an ablative morpheme. Canonically, there is an internal (here: horizontal) relation between the expressions of one class in the different SRs, i.e. they share the same SI or SDD morpheme. Similarly, there is an external (here: vertical) relation between the constructions of different expression classes in the same SR,

¹⁵ In comparison to the table given in Stolz (2018: 315), the columns and rows are switched here as our real language paradigms had to be organized in this fashion for reasons of space.

¹⁶ Of course, six distinct expressions are formed if the SIs are compared to the SDDs of only one distance. For each additional distance, three further expressions have to be added.

i.e. they share the same locative, allative, or ablative morpheme.¹⁷ The canon does not determine the type of morpheme (bound vs. free), nor does it stipulate in which order they occur (e.g. prefix vs. suffix).

Canonical languages do in fact occur, albeit very rarely. The Austroasiatic language Mundari [AS-33] is one such rare case as Table 5 shows.

Table 5: Real case of canonical paradigm: Mundari (Austroasiatic) (Cook 1965).

Expression class	SR		
	Place	Goal	Source
SI	<i>oko</i> _{SI} - <i>re</i> _{LOCATIVE}	<i>oko</i> _{SI} - <i>te</i> _{ALLATIVE}	<i>oko</i> _{SI} - <i>ate</i> _{ABLATIVE}
D1	<i>ne</i> _{D1} - <i>re</i> _{LOCATIVE}	<i>ne</i> _{D1} - <i>te</i> _{ALLATIVE}	<i>ne</i> _{D1} - <i>ate</i> _{ABLATIVE}
D2	<i>en</i> _{D2} - <i>re</i> _{LOCATIVE}	<i>en</i> _{D2} - <i>te</i> _{ALLATIVE}	<i>en</i> _{D2} - <i>ate</i> _{ABLATIVE}
D3	<i>han</i> _{D3} - <i>re</i> _{LOCATIVE}	<i>han</i> _{D3} - <i>te</i> _{ALLATIVE}	<i>han</i> _{D3} - <i>ete</i> _{ABLATIVE}

Canonically, there is exactly one expression in each cell and no form occurs in two cells. The SDDs feature three deictic degrees (proximal, distal I, and distal II). Each cell hosts an SI morpheme *oko-* or one of the three SDD morphemes *ne-* (prox.), *en-* (dist. I), and *han-* (dist. II), and either a locative morpheme *-re*, an allative morpheme *-te*, or an ablative morpheme *-ate* (or *-ete*). Thus, there is an internal relation between the expressions of one expression class in the different SRs and an external relation between the constructions of different expression classes in the same SR.

Several so-called mismatches may occur. As a result, a paradigm may deviate from the canon. In the previous extensive study on spatial interrogatives (Stolz et al. 2017), the focus lay on the morphological mismatches syncretism, suppletion, overabundance, (anti-)periphrasis, and fused exponence. Other mismatches, such as defectiveness, deponency, inflectional classes, heteroclisis, or homonymy were disregarded for various reasons (cf. Stolz et al. 2017: 34). For several reasons (cf. Section 2.3.3), we largely limit ourselves to the particularly prominent mismatch syncretism as discussed in the subsequent section.

¹⁷ An even broader terminology could be adapted e.g. from Johansson and Carling (2015) who segment deictics into ‘binding segments’ (e.g. /ere/ in English *here* and *there*) and ‘deictic defining segments’ (e.g. English /h/ and /th/ in English *here* and *there*).

2.3.2 Syncretism

As mentioned in Section 1.2.2 above, syncretism is one of the most widely discussed topics in the literature on the grammar of space, predominately based on the analysis of non-deictic declarative sentences. It signifies the occurrence of an identical chain of phonemes in two or more cells of a paradigm (Baerman et al. 2005). As syncretism has already been discussed extensively before, we will turn to real language data here to illustrate the phenomenon. In analogy to Pantcheva (2010: 1063), we assign the variables A, B, and C to the spatial roles of Place, Goal, and Source, respectively. Instead of spatial markers, however, we will refer to full expressions, resulting in WHERE/HERE/THERE = A, WHITHER/HITHER/THITHER = B, and WHENCE/HENCE/THENCE = C. The Kiranti language Limbu [AS-28] serves as an example (Table 6).

Table 6: Limbu (Kiranti) syncretism (van Driem 1987).

Expression class	Syncretism pattern	Spatial relation	Variable	Realization
SI	P=G≠S	Place	A	<i>a-tto·</i>
		Goal	A	<i>a-tto·</i>
		Source	C	<i>a-tto·-nu</i> <i>a-tto·-lam</i>
D1	P=G≠S or P≠G≠S	Place	A	<i>kɔʔo·</i>
		Goal	A or B	<i>kɔʔo·</i> <i>kɔtna</i>
		Source	C	<i>kɔʔo·-nu</i> <i>*kɔʔo·-lam</i> ¹⁸
D2	P=G≠S or P≠G≠S	Place	A	<i>khεʔo·</i>
		Goal	A or B	<i>khεʔo·</i> <i>khεtna</i>
		Source	C	<i>khεʔo·-nu</i> <i>khεʔo·-lam</i>
D3	P=G≠S	Place	A	<i>na·</i>
		Goal	A	<i>na·</i>
		Source	C	<i>na·-nu</i>

18 Unless stated otherwise, the asterisk is used to mark reconstructed forms in this study.

Table 6 illustrates several aspects of Limbu's syncretism patterns. It is evident that the syncretism patterns may vary not only between the SIs and SDDs, but also among the different deictic stages of SDDs. The SIs and the D3 SDDs behave similarly in that they do not employ an explicit Goal construction. Thus, A is used not only for Place but also for Goal. Conversely, C is used for Source, so that there is an overall $P=G\neq S$ pattern. The D1 and D2 SDDs behave partly differently, as they may employ explicit Goal expressions. This goes hand in hand with another aspect illustrated in Table 6, i.e. one expression class may employ more than one syncretism pattern. This is the case for the D1 and D2 SDDs. Similar to the SIs and D3 SDDs, it is possible to use A for both Place and Goal so that there is a $P=G\neq S$ pattern. There is, however, an additional option, where the Goal is explicitly expressed (B). Hence, there is an alternative pattern $P\neq G\neq S$.

For the formal comparison of SIs and SDDs, syncretism turned out to be the most accessible and at the same time most reliable morphological mismatch. It is an easy tool to unveil asymmetries in the marking of P/G/S in the SIs of a language and its SDDs. Equally distributed patterns of both SIs and SDDs in the paradigm of one language point to the coherence of a system. However, non-parallel paradigms may occur for various reasons such as language change and contact which may cause formal or functional modifications. This study does not only serve to reassess the distribution of the five logically possible syncretism patterns in the world but also to check for (a)symmetries in SI and SDD paradigms.

2.3.3 Why we do not test for other mismatches

Stolz et al. (2017) went through an entire catalog of mismatches that may occur when analyzing paradigms according to canonical morphology. The mismatches under scrutiny included overabundance, zero-marking, (strong) suppletion, (anti-)periphrasis, and fused exponence. For this follow-up study, we decided to solely concentrate on syncretism as the most accessible and verifiable mismatch. In this section, we will shortly discuss each mismatch and explain why we decided against including it in this study.

OVERABUNDANCE, i.e. "cells which are occupied by more than one word-form" (Stolz et al. 2017: 7) is dismissed as a testable mismatch from our study for one simple reason. It is likely that descriptive sources cite the most common forms only (if at all) and that literary sources use the same forms continuously, so that our counts for overabundance would remain too vague. Also, "overabundance is not always easily told apart from overdifferentiation and instances

of regional variation if the descriptive grammars are not explicit about these issues” (Stolz et al. 2017: 446). Furthermore, the occurrence of slightly differing forms may be explained by phonologically conditioned allomorphy. However, possible accompanying deviations in meaning are not always translated adequately (or at all) and thus cannot always be recognized on the basis of the descriptive data.

Similarly, STRONG SUPPLETION, i.e. the occurrence of morphologically and/or lexically unrelated items in cells of the same paradigm is not always easily defiable from WEAK or PHONOLOGICAL SUPPLETION. It “applies if the word-forms of a paradigm are historically related to each other but cannot be derived from each other by synchronically productive rules” (Stolz et al. 2017: 42). This is due to writing alternations, lack of diachronic evidence, and opaque interactions in (morpho-)phonology, so that suppletion may in some cases be easily identified and remains obscure in others.

The concept of (ANTI-)PERIPHRAISIS (or rather its “simplified interpretation”, cf. Stolz et al. 2017: 44) is based on the distinction of mono- versus multi-word constructions for SRs. Since we aim to shift the focus from European languages to the world, many more agglutinative and polysynthetic languages come into play. For these alignment types, such a word-based concept of (anti-)periphrasis is not easily applicable. A statistical evaluation of (anti-)periphrasis would therefore mainly demarcate areally defined differences. In addition to differences in writing agglutinative and polysynthetic languages, also the writing of inflecting languages, in particular, often varies to such an extent that conclusions about word boundaries cannot be confidently drawn. We therefore also refrain from including (anti-)periphrasis as a mismatch to be tested for by statistical means.

So-called FUSED EXPONENCE refers to the existence of PORTMANTEAU morphs, i.e. forms in which “[s]everal categories are expressed by a string of segments which cannot be subdivided into further morphological units” (Stolz et al. 2017: 46). This is mostly opaque and by no means explained for all forms of a paradigm in the respective descriptive sources. Translations are often simplistic or otherwise misleading. Portmanteau morphs are an interesting aspect to discuss at various points. For the sake of clarity, however, we will not statistically document this mismatch.

Lastly, of all further mismatches discussed by Stolz et al. (2017), only distinctive ZERO-MARKING is deemed important to us in connection with syncretism. *Distinctive* here means that zero-marking is relevant only if at least one SR is overtly marked. Since we cannot clearly differentiate optional zero-marking from distinctive, perpetual zero-marking on the basis of most language descrip-

tions, zero-marking has equally been dismissed from our statistical evaluations. It is, nevertheless, a phenomenon that is frequently discussed in the qualitative analyses of our sample languages.

Complexity counts, as were carried out exhaustively for SI paradigms in Stolz et al. (2017), are reduced to a quantitative analysis of syncretic patterns and the evaluation of construction length. As discussed in Nintemann and Robbers (2019: 9), “the number of logically possible combinations of patterns consequently multiplies in accordance with the number of SDDs of different distance levels (D1, D2, D3, and so forth)”. This means that the five logically possible syncretism patterns as introduced in Section 1.2.2 result in 25 different combinations for the comparison of SIs and SDDs of one distance level. If another distance level is added, there already are 125 possible combinations, and so on. Due to the increasing number of cells and consequently increasing possible combinations of patterns, elaborate complexity counts in the same manner as conducted by Stolz et al. (2017) turned out to be too intricate and labor-intensive for this study.

2.4 Obstacles and difficulties

2.4.1 Gaps and variation in the descriptive sources

One of the everlasting problems of typology is the dependence on a wide variety of descriptive material which naturally includes different approaches to grammar. Our results based on our convenience sample are thus to be regarded as tendencies. Although we tried to sort out inconsistencies by consulting many different grammars, dictionaries, expert opinions, and Bible translations, we are aware that our data and therefore our results are not impeccable. An error margin must be expected since the comparison of a plethora of languages always entails inconsistencies due to our own imperfection as well as to conflicting or incomplete analyses of token word forms in the descriptive material. For instance, Goal may be disguised as Place in many language descriptions. Noonan (2008: 264) detects this source of error and therefore states in his paper on relational morphology in 76 Tibeto-Burman languages:

One difficulty one encounters in working with relational functions such as these in a large sample of languages is that most descriptions are relatively inexplicit about just what functions a given marker expresses. So, for example, a data source might note a relational marker X and label it ‘locative’, with perhaps an example or two illustrating its use. These examples and the accompanying description may be inadequate to determine whether or not the form has dynamic locative (i.e. allative) or only stative locative senses.

Applying this assessment to the research on SIs and SDDs, we found that the same holds true here. Whether an SI, SDD, or an associated marker is used only in Place relations or whether it may also denote Goal or Source is often not specified in the descriptive material. This is especially the case when there is no distinctive morphology for locative, allative, and ablative.¹⁹ In a Tadaksahak grammar (Christiansen-Bolli 2010), for example, ‘here’ and ‘there’ are introduced as *néda* and *(a)sénda*, respectively, without any specification of their usage in Place, Goal, or Source relations. As there is P=G=S syncretism in the case of the SI *mán ne* ‘where/whither/whence’, one may assume that the same syncretic pattern also applies to the SDDs. This can, however, not be proven by taking the grammar as the only source of evidence because it bears no examples of the SDDs used in a dynamic relation. Sometimes, knowledge gaps can be filled by examining other descriptive sources, the respective Bible translation, or consulting a language expert.²⁰ In the case of Tadaksahak, we decided to not include it in our sample as we were not able to confirm (or deny) a P=G=S syncretism in the SDDs.

Another point that ought to be mentioned is that our comparative study is based on so-called doculects, i.e. “a linguistic variety as it is documented in a given resource” (Cysouw and Good 2013: 342). This is problematic in more than one way. Apart from not always being able to capture all the necessary information about the de facto use of a certain construction or construction type in different spatial relations, extracting the meaning of an expression on the basis of a possibly random translation may lead to a number of errors. Firstly, there is the possibility of erroneous identification of a form as a genuine SDD. This problem can be eliminated by comparing several constructions, if available. Another prominent issue here is the difficulty of properly distinguishing different expressions according to their distance level. Dabbs’ (1962) Bengali dictionary, for example, provides both *šekhane* and *okhane* as ‘there’, as this is the closest translation for

19 We are aware that there is a plethora of spatial cases that denote not only basic horizontal AT/TO/FROM relations but also more fine-grained distinctions of spatial location and movement, such as superessives or delatives. Including those special case markers would be beyond the scope of our project. Nonetheless, in many cases we deem it necessary to include markers for basic horizontal relations in our studies, such as illatives and elatives, since they may encode bare P/G/S. Descriptive sources, however, often underspecify the exact functions and semantic features of SDDs.

20 Of course, Bible translations often do neither reflect actual language use nor the current state of a token language. Also, in many cases, Bible translations make use of only a few forms for relations which bear more formal options. Nevertheless, it is always productive to access texts in combination with grammatical descriptions.

both expressions. Whether there is a difference in meaning between *šekhane* and *okhane* is not specified. Thus, without any further information, this appears like a case of overabundance. Thompson's (2012: 94) table on the relationship of pronouns and adverbs of time, place, and manner, however, clarifies that although both expressions are translated as 'there', *sekhane*²¹ is rather neutral to distance, whereas *okhane* describes a far distance. As the two expressions do not connote the same distance, this is not a case of overabundance. In the case of Bengali, a mistake was prevented by having the opportunity to consult a second source. Still, there might be other cases where similar errors remain undetected due to scarce data or insufficient information on token forms.

The last issue we want to address here is that we are aware of the possibility that our sampling is biased towards overtly and distinctly coding languages, despite the pre-existing awareness that, amongst others, especially Mesoamerican and Sub-Saharan African languages tend to not employ morphological marking of directionality or use syncretic markers (cf. Wälchli and Zúñiga 2006; Creissels 2006). Our comparative study relies on grammars that de facto include information on deictic P/G/S encodings, or at least relevant linguistic examples that show the functional domains we investigate.²² Thus, we deem it possible that especially those systems that host overt and distinct marking for at least Goal and Source have more salient information in the respective grammars. In contrast, "zero-coding", i.e. verb-centric, languages may tendentially have less salient information on spatial deictic encoding since there is no material (such as affixation or adpositions) to discuss.

2.4.2 A word on dialectal variation

As we are largely working with doculects (cf. Section 2.4.1), we have to be aware of the fact that there is a lot of dialectal variation which is not always reflected in our paradigms.²³ A good example is Fijian. The manifold varieties of the lan-

²¹ Thompson (2012) uses a slightly different orthography than Dabbs (1962).

²² In fact, many or even most of the compiled paradigms that are the basis for our comparative study are drawn from linguistic examples in written grammatical descriptions, due to otherwise rather short discussions on SDD material.

²³ Shedding light on regional variation is subject to dedicated studies such as the *Atlas zur deutschen Alltagssprache* ('Atlas of colloquial German') (Elspaß and Möller 2003ff.), a comprehensive online atlas covering many topics relating to dialectal differences in contemporary German varieties based on surveys. The chapter *Dritte Runde* ('third round') inter alia includes

guage display a very mixed picture. According to Milner’s (1972: 50) grammatical description, which is compiled from several varieties, three deictic word forms referring to three distance levels are “particles [that] denote position or movement from the point of view of the speaker”. Together with the preposition-like elements that are called “nominal particles” in Milner (1972: 50), Place, Goal, and Source are transparently composed of the two aforementioned parts of speech. A highly canonical paradigm is the result (Table 7):

Table 7: Fijian [OC-11] SI and SDD paradigm (Milner 1972).

	Place	Goal	Source
SI	<i>evei</i>	<i>kivei</i>	<i>maivei</i>
D1	<i>e kē l</i>	<i>ki kē</i>	<i>mai kē</i>
D2	<i>e kerī</i>	<i>ki kerī</i>	<i>mai kerī</i>
D3	<i>e keā</i>	<i>ki keā</i>	<i>mai keā</i>

Dixon (1988: 58) identifies a set of demonstratives in Boumaa Fijian that meet the requirements for our SDDs. He describes that, as opposed to Standard Fijian, Boumaa Fijian uses only one set of demonstratives for both spatial deictic functions, demonstrative and adverbial. On the diverging language varieties, he states that “[d]ialect mixing is more marked with demonstratives than with any other grammatical category, speakers switch at a bewildering pace between B[oumaa] and C[a’audrove] systems (with odd intrusion of other dialects)” and concludes that “[o]ne has simply to make a guess” as to distance stage and deictic Ground or *anchorage* (Dixon 1988: 58–59). In the introductory parts of his grammar, he already declares that “demonstratives constitute a major point of dialectal difference; demonstratives from all of B[oumaa], [Standard Fijian], and C[a’audrove] may be heard mingled in a single utterance”, yet the speakers remain aware of the dialectal origins of the deictics used, as Dixon (1988: 5) further explains.

In many Oceanic languages, an ablative prepositional form *mai* ‘from’ is homophonous with a motion verb or particle (or a semi-grammaticalized marker) *mai* ‘hither’ that usually denotes motion to or towards the deictic center (cf. Section 3.1.5.1.1, fn. 45). In Boumaa Fijian, for instance, a bidirectional general

comparisons and maps showing the areally different use of deictic particles and deictic distance levels, such as *hier/da her* and *her/weg* (cf. www.atlas-alltagssprache.de).

'go' verb *la'o* combines with *mai* 'hither' to form a construction *la'o mai* 'come here' (but cf. *yai* 'here'). With *yane* 'thither', it combines to *la'o yane* 'go there' (but cf. *yaa* and *mayaa* 'there') (Dixon 1988: 84). Deictic Source constructions cannot be attested on the basis of Dixon (1988), although *mai* 'from' is found in non-deictic spatial ablative contexts. Despite the fragmentariness, a paradigm for Boumaa Fijian would thus display roughly the same syncretic type, i.e. $P \neq G \neq S$, yet it would be considerably less transparent and regular, as it consists of different base forms and involves more word classes, grammatical strategies, and strong overall variation. A peek into further grammatical descriptions and texts of other Fijian varieties leaves little doubt that SI and SDD paradigms are as diverse as other parts of their grammars. The strive to unify Fijian towards a standard on the basis of the Bau variety may play a role for the formally neatly set up paradigm of Fijian we compiled from Milner's (1972) description.

2.4.3 Restrictions and blind spots

As mentioned before, our sample is a convenience sample, which means that we did not balance our sample according to areas and language families. Instead, we included those languages for which we had access to descriptive material that allowed us to compile complete paradigms. This does not only mean that the descriptive material had to display a full picture of the SIs and SDDs employed in the respective language, but also that the material is accessible to us in terms of language and writing system. Asia serves as a case in point, as many regional languages have been described in Russian or Chinese which we regrettably do not have sufficient command of. Furthermore, there are a high number of different writing systems in Asia. Although we put some effort into including languages with different writing systems, it was not always possible for us, if corresponding transcriptions were not available. Naturally, this leads to some areas being overrepresented and others being underrepresented. By deciding on 50 languages per macro area, we had to accept the uneven distribution of languages per macro area on a percentage basis. According to ethnologue.com, there are 288 languages spoken in Europe, whereas Asia has the largest number with 2303 languages. We thus evaluate slightly more than 17% of Europe's languages, while we take account of only around 2% of the languages spoken in Asia. We nevertheless decided to have a balanced sample in the sense that the same number of languages per macro area is evaluated. This compromise allows us to shed light on macro-areal differences, so that a

variety of language families from different areas can be included, leading to a macro-areally roughly balanced sample.

Another restriction that we faced is completely self-made due to our methodology. During the research process, we came to the realization that not all languages work in a way that allows us to create clear-cut paradigms that sharply distinguish *unmarked* Place, Goal, and Source. There are languages that predominantly make use of an absolute Frame of Reference (FoR) (cf. Levinson 1996, 2003) and/or have a rich repertoire of landscape-oriented expressions which are mainly used in spatial descriptions. We cannot escape the impression that many of these languages do not (or very rarely) employ SDDs that fit our definition. For instance, the Dene language Tanacross makes extensive use of a river-oriented absolute FoR. There are several deictic prefixes expressing different degrees of distance, which attach to landscape-oriented directionals that can hardly be assigned to bare deictic Place, Goal, or Source (Gary Holton, p.c.). Another example is the Ethiopian language Konso. In Orkaydo's (2013) grammar, there is no evidence for an *unmarked* deictic horizontal Source construction. Instead, locative adverbs and directional adverbs combine to form constructions such as *ayexata* 'from up there to here; from here downwards' or *ayedela* 'from down up to here; from here downwards' (cf. Orkaydo 2013: 184). As these expressions do not correspond to bare *unmarked* Source constructions, Konso does not fit into the paradigmatic template we use to statistically evaluate spatial relations. It follows that both Tanacross and Konso had to be excluded from our sample, although they do give some interesting insights into the possibilities of spatial systems in the world's languages. These systems will hopefully be subject to future (comparative) studies.

As typologists who have no choice but rely on grammatical descriptions from different time periods and schools of thought, we have to accept that our sample is subject to some restrictions and blind spots. Nevertheless, we believe that these 250 languages are roughly representative of the world's languages and correctly reflect tendencies regarding these coding patterns.²⁴ Furthermore, as we do not wish to omit major facets of SDDs in the world's languages, we are devoting a whole chapter (cf. Chapter 6) to the qualitative analysis of some major topics that were ruled out of the statistical evaluations (cf. Chapters 4 and 5).

24 During our data collection, we became aware that a number of languages make pervasive use of absolute and landscape-based spatial orientation, showing little to zero evidence for constructions attesting to what is commonly defined as *deictic* spatial reference. Approaching a typology of general global and areal preferences in coding spatial relations is an enormous endeavor, which will hopefully be tackled with great care in the future.

3 The qualitative side of syncretism

As mentioned in Section 1.2.2, there are five logically possible syncretism patterns for the three basic spatial relations Place, Goal, and Source. In this chapter, all five patterns are discussed. The discussion starts with the maximally distinct Pattern I in Section 3.1 and ends with the maximally indistinct Pattern V in Section 3.5. For each pattern, the languages of the five macro areas are explored in alphabetical order from Africa to Oceania. Generally, a qualitative analysis is carried out, while some supporting statistics are offered at the beginning of each section. An overview of the languages that employ the respective patterns is given for each macro area in the form of a table. These tables display the concerned languages, their appendix number, affiliation²⁵, and the occurrence (✓) or non-occurrence (X) of the respective pattern in the SIs and two degrees of SDDs. As languages may theoretically employ an almost infinite number of SDDs with different degrees of distance, we focus only on the most *unmarked* near deictic (ND) and far deictic (FD) constructions for the statistical evaluation of syncretism patterns.²⁶ The respective evaluated constructions are presented with grey-shading in the paradigms displayed in Appendices I–V.

3.1 Pattern I: Place≠Goal≠Source

The pattern discussed in this section is the maximally distinct P≠G≠S pattern. It implies the absence of syncretism, i.e. there is a distinct construction for each relation. It is the only pattern with which it is possible to achieve a canonical paradigm. Different marking strategies can be used to form a P≠G≠S pattern. For the canonical case, each relation has to be overtly marked, i.e. X-P, X-G, and X-S with X being an SI or SDD morpheme and P, G, and S being a Place, Goal, or Source morpheme, respectively. Numerous other marking strategies, such as suppletivism, and combinations of strategies may be employed, as will become evident in the illustrative examples in the following subsections.

²⁵ The indicated affiliations are taken from Hammarström et al. (2019).

²⁶ The ideal case for the statistical evaluation is to consider an *unmarked* proximal SDD and an unmarked distal SDD. In some cases, however, we have to fall back on SDDs which cannot be considered the most *unmarked* proximal and distal forms. In Adamawa Fulfulde [AF-13], for example, the general distal constructions are largely unattested, so that we alternatively evaluate the distal anaphoric forms, as these are attested in our sources. In cases like this, we prefer attested constructions over unattested, reconstructed constructions.

3.1.1 P≠G≠S in Africa

With 27% in Stolz et al.'s (2017) sample of SIs and only between 15.2% and 19.1% in our present sample, the P≠G≠S pattern is only tenuously represented in Africa when compared to the pattern's world-wide significance. In fact, Africa is the macro area where Pattern I is the least prevalent. A total of 14 languages attest to the P≠G≠S pattern, many of which give evidence of alternative patterns. Table 8 provides an overview of the African languages which, at least optionally, employ the maximally distinct pattern.

Table 8: African languages that attest to P≠G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Amharic	AF-2	Afro-Asiatic, Semitic	✓	✓	✓
Gidar	AF-14	Afro-Asiatic, Chadic	✓	X	X
Hamar	AF-16	South Omotic	✓	✓	✓
Hausa	AF-17	Afro-Asiatic, Chadic	✓	✓	✓
Khoekhoe, Nama	AF-20	Khoe-Kwadi	✓	✓	✓
Maale	AF-27	Ta-Ne-Omotic	✓	✓	X
Ngizim	AF-33	Afro-Asiatic, Chadic	✓	✓	✓
Somali	AF-40	Afro-Asiatic, Cushitic	✓	X	X
Tamasheq	AF-44	Afro-Asiatic, Berber	✓	✓	✓
Tigrinya	AF-45	Afro-Asiatic, Semitic	✓	✓	✓
Wolaytta	AF-47	Ta-Ne-Omotic	✓	✓	✓
Yoruba	AF-48	Atlantic-Congo, Defoid	✓	✓	✓
Zay	AF-49	Afro-Asiatic, Semitic	✓	✓	✓

In our sample, the P≠G≠S pattern is slightly more prominent in SI constructions compared to SDD constructions. 13 languages allow for the pattern in SI constructions, whereas it occurs in only 11 languages in the near deictic declaratives and in 10 languages in the far deictic declaratives. It is noticeable that a great number of languages that attest to the maximally distinct pattern in Africa belong to the Afro-Asiatic macrophylum. Indeed, 80% of the Afro-Asiatic languages in our sample fall under this category. The other big macrophylum of our sample, viz. the Atlantic-Congo macrophylum, is represented only once in this section, which amounts to approximately 5.5% of the Atlantic-Congo languages in our sample. Apart from that, languages of various other phyla, i.e.

both Ta-Ne-Omotic and South Omotic as well as Khoe-Kwadi and Austronesian, also show traces of Pattern I. In the following subsections, some African languages with different marking strategies are discussed.

3.1.1.1 The canonical case in Africa

The Semitic language Zay [AF-49] displays a completely canonical SDD paradigm. There are two deictic demonstratives *-iǰǰi* (proximal) and *-āǰǰi* (distal). These demonstratives take prefixes that specify the relation, i.e. Place, Goal, or Source. To express the static relation Place, the prefix *b(ε)-* ‘at’ is attached, so that the expressions *bīǰǰi* ‘at this place, here’ and *bāǰǰi* ‘at that place, there’ are formed. Example (10) gives the use of *bīǰǰi*.

- (10) Zay HERE [Meyer 2005: 87]
bīǰǰi yəčīgurbiyāl gār
bε-iǰǰi y-čīgr.^w-b-y-āle gār
 at-this.place 3PL-sell.IMPf-PL-in-OPR.3SG.M-REL.3SG.M house
 ?ilo.
 ?il-ε-u
 not.exist.PFCTV-3SG.M.DECL
 ‘There is no house here, in which (something) is sold.’

Not only the static but also the two dynamic relations are overtly marked. In order to express Goal, the genitive marker *yε-* is used, whereas the prefix *le-* ‘from’ is used to express Source. Hence, the expressions *yīǰǰi* ‘hither’, *yāǰǰi* ‘thither’, *liǰǰi* ‘hence’, and *lāǰǰi* ‘thence’ are derived. The examples under (11) exemplify the use of *yāǰǰi* ‘thither’ and *lāǰǰi* ‘thence’.

- (11) Zay THITHER and THENCE [Meyer 2005: 88]
 a. *yāǰǰi hīd*
yε-āǰǰi hīd
 GEN-that.place go.PFCTV.3SG.M
 ‘He went there.’
 b. *lāǰǰi meṭ*
le-āǰǰi meṭ
 from-that.place come.PFCTV.3SG.M
 ‘He came from there.’

All three relations are overtly marked. The constructions consist of exactly two morphemes each. There is one SDD morpheme each to express the two distance levels. These SDD morphemes then host a morpheme to express Place, Goal, or Source. There is an internal relation as the SDD morphemes *-iǰǰi* (proximal) and

-āǵǵi (distal) do not change. Further, there is an external relation as the same prefixes *b(ε)*- ‘at’, *yε*- (GEN), or *lε*- ‘from’ are used. Thus, the SDD paradigm of Zay is completely in accordance with the canon. This does, however, not apply to the SI paradigm. Although the SIs also follow the same $P \neq G \neq S$ pattern, the WHITHER construction is not overtly marked. Meyer (2005: 89) explains that simple and compounded interrogative pronouns can be distinguished and that *ʔaɲi* ‘whither’ belongs to the category of simple interrogative pronouns, cf. (12).

- (12) Zay WHITHER [Meyer 2005: 359]
ʔaɲi hīdīš?
ʔaɲi hīd-še
 whither go.PFCTV-2SG.F
 ‘Where did you (F) go?’

The expression *ʔaɲi* ‘whither’ cannot be further divided into an SI morpheme and a Goal marking morpheme. Instead, it serves as a base for the WHERE and WHENCE expressions. The same Place and Source markers as employed for the SDDs are found here. The prefix *b(ε)*- ‘at’ is attached to *ʔaɲi* ‘whither’ to form the SI *bāɲi* ‘where’, whereas *lε*- ‘from’ is used to derive *lāɲi* ‘whence’. Owing to WHITHER not being overtly marked, the SI paradigm of Zay does not conform to the canon. Crosslinguistically, it is extremely rare that Goal appears as the only unmarked expression in a paradigm and serves as the base for the respective Place and Source constructions. In fact, this phenomenon surfaces in only two languages in our sample, viz. Zay and Burmese [AS-8] (cf. Section 3.1.3.1).

Although the SI paradigm is not canonical due to the zero-coding of WHITHER, Zay shows the highest accordance with the canon in our African sample languages. Within the category of SDDs, there is no mismatch that disrupts the canonicity of Zay.

3.1.1.2 Marker chaining in Africa

In some languages, some spatial markers may not be directly attached to a deictic or interrogative root. In these cases, it is often a locative marker that serves as a base for the dynamic relations, i.e. allative and ablative markers are used with constructions that already bear a locative morpheme. In the Nama variety of Khoekhoe [AF-20], Source constructions are formed in this way.

Generally, both SIs and SDDs may have either a $P \neq G \neq S$ or a $P = G \neq S$ pattern. The Place SDDs consist of the demonstratives *nē* ‘this’, *lɪna* ‘that1’, or *nau* ‘that2’ and a locative suffix *-pa*. WHERE similarly consists of *mâ* ‘what’ and the locative

suffix *-pa*. These forms may be used for both Place and Goal as the two constructions in (13) and (14) show.

- (13) Nama Khoekhoe THERE [Olpp 1977: 97]
lInā-pa ta ge hā i.
 that-LOC 1SG PTCPL be PAST
 ‘I was there.’²⁷

- (14) Nama Khoekhoe HITHER [Olpp 1977: 28]
Ne-pa kha ge gehā.
 this-LOC 3DL.M PTCL PTCPL come
 ‘The two of them came here.’²⁸

There are, however, other forms which are overtly marked for Goal, so that the maximally distinct P≠G≠S pattern is employed. In these cases, the locative suffix is replaced by an allative suffix *-hî*. The expressions *mâhî* ‘whither’, *nêhî* ‘hither’, *lInâhî* ‘thither1’, and *naulhî* ‘thither2’ are derived in this manner. (15) exemplifies the use of the distal SDD in a Goal relation.

- (15) Nama Khoekhoe overtly marked THITHER [Olpp 1977: 28]
lInā-hî ro ge nêtsē nî !gû.
 that-ALL 2DL.F PTCL today shall go
 ‘Go there today.’²⁹

Source is also overtly marked. Here, the expressions marked by the locative are used and succeeded by the postposition *xu*, which is used to indicate the origin, source, cause, or material (cf. Olpp 1977: 62). Source constructions are thus formed by adding a Source marker to an expression that already bears a Place marker. This is exemplified in (16).

- (16) Nama Khoekhoe THENCE [Olpp 1977: 32]
lIna-pa xu ta ge go mû kha.
 that-LOC S 1SG PTCPL RP see 3DL.M
 ‘From there I saw the two of them.’³⁰

In example (16), the Source marker *xu* follows the locative marked *lInapa* ‘there’. The multi-word construction *lIna-pa xu* is consequently formed. Nama Khoekhoe is not canonical for two reasons: Firstly, optional P=G syncretism

²⁷ Original: *Ek was daar, ek het daar gebly.*

²⁸ Original: *Hierheen het die twee gekom.*

²⁹ Original: *Darheen moet julle vandag gaan.*

³⁰ Original: *Daarvandaan af het ek die twee gesien.*

occurs as Place expressions may also be used in Goal contexts. Secondly, the Source constructions deviate from the canon in that they consist of three instead of only two morphemes, viz. the SI or SDD morpheme, a locative suffix, and a Source marking postposition.

3.1.1.3 Complex marking in Africa

The Berber language Tamasheq³¹ [AF-44] represents an interesting case of complex spatial constructions in both SIs and SDDs. Sudlow (2001: 333) introduces three SDDs, viz. *dīha* ‘here (by me)’, *dīhen* ‘there (close to me)’, and *siha* ‘there (away from me)’.³² These SDDs may express both Place and Goal.

- (17) Tamasheq T/HERE [Sudlow 2001: 250; 252]
- a. *i-llâ* ***dīha***
3SG.M-exist.STAT here
‘He is here.’³³
- b. *ă-zzubb-ăt* ***dīhen***
3SG.M-stay.PFCTV-3SG.M there
‘He stayed over there.’
- (18) Tamasheq T/HITHER [Sudlow 2001: 162; 21]
- a. *ăyăw* ***dīha***
come.IMP here
‘Come here!’
- b. *ăkkê-y* ***siha***
go.STAT-1SG there
‘I am going over there.’

³¹ We had two grammars at hand which both describe more than one dialect, viz. Sudlow’s (2001) grammar of the dialects spoken in Burkina Faso and Heath’s (2005) grammar of the dialects spoken in Mali. For our sample, we decided on the Tadraq dialect described by Sudlow (2001) as most relations were described for this dialect. Nevertheless, some gaps had to be filled by taking other dialects as well as Jeffrey Heath’s (p.c.) statements on Tamasheq in general into consideration. The paradigm we decided on may be lacking some forms and must not necessarily fully reflect Tadraq Tamasheq’s actual SIs and SDDs.

³² Sudlow (2001: 333) also introduces alternatives for all three forms, viz. *dāha* ‘here (by me)’, *dāhen* ‘there (close to me)’ and *sihen* ‘there (away from me)’. These forms, however, do not occur anywhere else in his grammar, so that we decided to leave them out at this point. We assume that they are used in a similar manner as the other forms.

³³ Sudlow (2001: 250) actually translates this sentence as ‘He is there’. As he defines *dīha* as a proximal SDD with the meaning ‘here (by me)’, we decided to alter the translation to ‘He is here’. It may alternatively also be interpreted as an existential ‘He is there’.

If the SDDs are used in combination with stative verbs, a Place relation is expressed, e.g. *ǎll(u)* ‘exist, be present’ in (17a) or *zubət* ‘go down, stay (with)’ in (17b). Conversely, if a dynamic verb is used, a Goal relation is expressed, e.g. *asu* ‘come’ in (18a) or *ǎkk* ‘go to’ in (18b). While it is possible to realize Goal with these SDDs, it seems to be more common to use directional particles. Sudlow (2001: 50) explains that these directional “particles attach to verbs and give a sense of direction/motion”. Heath (2005: 598) calls these particles *Centripetal* or *Centrifugal* clitics and specifies their meaning as follows:

The Centripetal specifies direction of movement (whether completed or not) towards the deictic center, usually the speaker’s ‘here’ but sometimes another deictic center within a narrative. With a motion verb [...] the clitic simply specifies the direction (or end point) using ‘here’ for reference. In the case of ‘sit’ (=‘stay’), the Centripetal denotes proximal location and denies motion away from it (‘sit here’ or ‘stay here’ rather than ‘sit here and go’). With non-motion verbs, the clitic suggests that the action was directed toward ‘here’ in some way, or that it was accompanied by motion toward here.

In contrast,

[t]he Centrifugal indicates direction toward a nonproximate location with motion verbs (‘run away’), fixed nonproximate location with statives (‘sit way over there’), and motion away from the deictic center in combination with activity verbs (‘go away chewing’). (Heath 2005: 601)

The following examples demonstrate the use of the centripetal clitic *-dd* or *-id* ‘towards here’ and the centrifugal clitic *-in* ‘towards there, away (from here)’.³⁴

- (19) Tamasheq T/HITHER with directional particles [Sudlow 2001: 42; 52]
- a. *enǎsselmǎd o-s-id*
 teacher 3SG-M-COME.PFCTV-CENTRIP
 ‘A teacher came here.’
- b. *o-s-in ǎndǎšel*
 3SG.M-COME.PFCTV-CENTRIF yesterday
 ‘He arrived (lit. came) there yesterday.’

Both examples contain the motion verb *asu* ‘come’. The centripetal clitic *-id* is used in (19a) so that a movement towards the deictic center (= towards here) is expressed. On the other hand, the centrifugal clitic *-in* in (19b) expresses a

³⁴ Sudlow (2001: 50) also explains that “the idea of physical direction is not always evident”. For example, the verb *ǎktu* ‘remember’ usually bears the centripetal clitic *-id*, while *taw* ‘forget’ usually carries the centrifugal clitic *-in*.

movement towards a place away from the deictic center. Sudlow (2001: 162) states “that the verb *as/asu*– ‘come’ is most commonly used with the directional particle ‘*dd*’”, which is probably due to the fact that ‘come’ commonly expresses a movement towards the deictic center.

As Heath (2005: 601) argues, the centrifugal “can sometimes be glossed ‘away’ (as in he rode away’, emphasizing the ablative ‘from here’ rather than the precise direction or goal)”. It can therefore also be used to express a HENCE relation, as shown in (20).

- (20) Tamasheq HENCE [Heath 2005: 601]
àjəj- \in
 go.far.IMP- \CENTRIF
 ‘Go far away (from here)!’

In the above example, the centrifugal clitic expresses a movement away from the deictic center. Rather than describing the Goal of the movement, the Source of the movement is expressed. Due to the lack of examples, we are unsure whether there are other strategies to express HENCE more explicitly. For the non-proximate expression *siha* ‘there (away from me)’, we found the following example:

- (21) Tamasheq THENCE constructions [Sudlow 2001: 248]
əfāl-ǎy-id *siha*
 leave.PFCTV-1SG-CENTRIP there
 ‘I’ve come from over there.’

Source is expressed with the centripetal clitic *-id* ‘towards here’ and the SDD *siha* ‘there (away from me)’. In this way, Source constructions imply a movement from a distant place towards the deictic center. Source constructions with an explicit Ground follow the same pattern, cf. (22).

- (22) Tamasheq Source with explicit Ground [Sudlow 2001: 13]
- a. *əfāl-ǎy-id* *ehān*
 leave.PFCTV-1SG-CENTRIP home
 ‘I’ve come from home.’
- b. *əfāl-ǎy-id* *Onlāter*
 leave.PFCTV-1SG-CENTRIP England
 ‘I’ve come from England.’

Source constructions generally involve the verb *əfāl* ‘leave, come from’ with the centripetal clitic *-id* and a Ground, which may be either a nominal referent or a deictic expression. We do not wish to speculate about a similar construction for the proximal SDD *diha* ‘here’. As the centripetal clitic implies a movement to-

wards the deictic center and is thus in conflict with a movement away from it, we assume that the same construction is not used for HENCE. Whether the centrifugal clitic *-in* presents the only option or some kind of combination with *diha* ‘here’ is possible cannot be answered at this stage.

The SI constructions behave slightly differently than the SIs. They are usually based on *əndek* ‘which, where’. To express WHERE, *-ki* may be suffixed to *əndek*. When using the complex element, speakers ask only about the location of an entity.

- (23) Tamasheq ‘where is’ [Sudlow 2001: 94]
əndek-ki *Adāmu?*
 where-is Adamu
 ‘Where is Adamu?’

As represented in (23), interrogative sentences featuring *əndek-ki* ‘where is’ take a nominal referent and no verb. For a general WHERE question, the proximal SDD *diha* ‘here’ follows *əndek* ‘which, where’. In some cases, the comitative suffix *-d* is attached to *diha*. Compare the following examples:

- (24) Tamasheq general WHERE [Sudlow 2001: 246; 64]
 a. ***əndek diha*** *t-əzzāy-ād*
 where here 2SG-live.STAT-2SG
 ‘Where do you live?’
 b. ***əndek diha-d*** *t-aššāyal-ād?*
 where here-COM 2SG-work.STAT-2SG
 ‘Where do you work?’

(24a) and (24b) display two similar sentences. The comitative suffix *-d* is attached to *diha* ‘here’ in (24b) but it is absent in (24a). We assume that the use of the comitative suffix is optional in constructions like these. For WHITHER and WHENCE, the interrogative pronoun *mi*, which can also mean ‘who’, is used. Sudlow (2001: 64) explains that *mi* ‘who?’ is used in the sense of ‘where?’ with two common verbs, which are displayed in (25).

- (25) Tamasheq WHITHER and WHENCE [Sudlow 2001: 64]
 a. ***mi*** *t-əkke-d?*
 where 2SG-go.RESULT-2SG
 ‘Where are you going?’
 b. ***mi dət-t-əfāl-ād?***
 where CENTRIP-2SG.PFCTV-leave.2SG
 ‘Where have you come from?’

The interrogative *mi* is combined with the motion verb *ǎkk* ‘go to’ in (25a) to express WHITHER. Similar to the THENCE construction given above, the WHENCE construction in (25b) takes the centripetal clitic in addition to *mi*. In contrast to the cases presented above, the clitic attaches to the left margin of the verb in (25b) and takes the form *dət-*. This may be for syntactic reasons as the verb precedes the SDDs (and any nominal referents that act as Ground) in declarative sentences but follows the SIs in interrogative sentences.

However, WHITHER can also be expressed by a construction with *ǎndek* ‘which, where’. Here, the distal SDD *siha* ‘there’ is used instead of *diha* ‘here’.

- (26) Tamasheq WHITHER [Sudlow 2001: 64]
ǎndek siha-s *ošǎl-ǎn?*
 where there-towards run.PFCTV-3PL.M
 ‘Where did they run to?’

The WHITHER construction consists of *ǎndek* ‘which, where’, *siha* ‘there’, and a variant of the preposition *s-* ‘towards, in, about, by means of’, which is encliticized to *siha*. While there is no evidence of a similar construction for Source in Sudlow (2001), Heath (2005: 425) shows that WHENCE can also be expressed with *ǎndek siha* in the dialect spoken in the Asongo area in Gourma (Mali).

- (27) Tamasheq (Asongo) WHENCE³⁵ [Heath 2005: 425]
 a. *ǎndǎk siha s-\dǎd* *t-ǎhe-d*
 where there that-\CENTRIP 2SG-be.in.PFCTV-2SG
 ‘Where are you (=have you come) from?’
 b. *ǎndǎk siha s-\hín* *i-ha*
 where there that-\CENTRIF 3SG.M-be.in.PFTCV
 ‘Where had he come from (while living there)?’

In contrast to the WHITHER construction in (26), the preposition *s-* ‘towards, in, about, by means of’ is not cliticized to *siha* ‘there’ in (27a) and (27b). Instead, the centripetal clitic *-dǎd* which expresses movement towards the deictic center or the centrifugal clitic *-hín* which expresses a movement away from the deictic center is attached to *s-*. Although there is no evidence for this kind of WHENCE construction in Tadraq Tamasheq, we assume that a similar kind of construction

³⁵ We might actually be dealing with interrogative sentences that ask about Origin rather than Source. Heath (2005: 425) explains that the verb *-vhu-* ‘be in’ “can also be used in [perfective positive] form *-ǎha-* with directional clitics in the sense ‘come (=originate) from (a place)’, i.e. while in a current location.” The corresponding noun *t-ìhi-t-t* means ‘origin, provenience, homeland’. We thus assume that the interrogative sentences in (27) inquire about Origin. However, this is expressed by the verb and not by the SI construction itself.

can also be used. It would be comparable to the THENCE constructions introduced above where the directional clitics are used. Our assumption is that a construction like this in Tdraq Tamasheq would look as follows:

- (28) Tdraq Tamasheq WHENCE construction (reconstructed)
**āndek siha-s dāt-t-āfāl-ād?*
 where there-towards CENTRIP-2SG.PFCTV-leave.2SG
 ‘Where have you come from?’

This is, however, purely speculative and we have no evidence for this kind of construction, which is why we did not include it in our paradigm of Tamasheq.

Overall, we can conclude that the Tamasheq SI and SDD system consists of a complex interplay of SI and SDD expressions and the centripetal and centrifugal clitics. Both SIs and SDDs display a P≠G≠S pattern, although there may be P=G syncretism in the case of the SDDs.

3.1.2 P≠G≠S in the Americas

In general, 35 of 50 languages of the Americas attest to P≠G≠S. However, a number of languages employ different marking strategies in SIs and SDDs. Overall, 29 American languages employ the maximally distinct pattern in the SIs, while 28 languages do so in the near deictic expressions and 31 languages in the far deictic expressions. Ranging between 45.3% for the SIs and between 49.1% and 50.0% for the near and far deictic SDD paradigms, respectively, Pattern I is the most prevalent pattern in the Americas. Compared to a share of 33% calculated on the basis of the sample in Stolz et al. (2017), the P≠G≠S pattern is represented more often in our sample languages. This is due to a different areal distribution of sample languages. In Stolz et al. (2017), the Pan-American subsample contains almost 50% Mesoamerican languages that tend to employ a P=G=S pattern with no overt marking of spatial relations. In our sample, 24 of 50 languages belong to North America where overt and explicit morphological marking is more common, which is also reflected in our quantitative findings (cf. Section 4.2). Table 9 gives an overview over the languages that attest to this pattern in our sample.

As our Pan-American sample of 50 languages consists of 24 different language families and two isolates, larger trends for macrophyla, as given in the previous section on Africa, cannot be observed here.

Table 9: American languages that attest to P≠G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Apache	AM-1	Athabaskan-Eyak-Tlingit, Athabaskan	✓	✓	✓
Arapaho	AM-2	Algic, Algonquian	✓	✓	✓
Blackfoot	AM-3	Algic, Algonquian	✓	✓	✓
Bora	AM-4	Boran	✓	✓	✓
Cahuilla	AM-5	Uto-Aztecan, Cupan	✓	✓	✓
Cavineña	AM-6	Pano-Tacanan, Tacanan	X	✓	✓
Choctaw	AM-8	Muskogean	X	NA	✓
Comanche	AM-10	Uto-Aztecan, Numic	✓	✓	✓
Cree	AM-11	Algic, Algonquian	✓	✓	✓
Crow	AM-12	Siouan, Core Siouan	✓	✓	✓
Dakota	AM-14	Siouan, Core Siouan	✓	✓	✓
Garifuna	AM-15	Arawakan, Caribbean Arawakan	✓	✓	✓
Guaraní, Paraguay	AM-16	Tupian, Tupi-Guarani	✓	X	X
Hualapai	AM-17	Cochimi-Yuman, Yuman	X	✓	✓
Inuktitut, W. Canadian	AM-18	Eskimo-Aleut, Eskimo	✓	✓	✓
Kamaiura	AM-19	Tupian, Tupi-Guarani	✓	✓	✓
Klamath	AM-20	Penutian, Klamath-Modoc	✓	✓	✓
Kodiak Alutiiq	AM-21	Eskimo-Aleut, Aleut	✓	✓	✓
Kumeyaay	AM-22	Cochimi-Yuman, Yuman	✓	✓	✓
Kuna, Border	AM-23	Chibchan, Core Chibchan	✓	X	X
Lakota	AM-24	Siouan, Core Siouan	✓	✓	✓
Mapudungun	AM-26	Araucanian	X	✓	✓
Musqueam	AM-28	Salishan, Central Salish	✓	✓	✓
Mutsun	AM-29	Penutian, Costanoan	X	X	✓
Navajo	AM-31	Athabaskan-Eyak-Tlingit, Athabaskan	✓	✓	✓
Nez Perce	AM-32	Penutian, Sahaptian	✓	✓	✓
Osage	AM-33	Siouan, Core Siouan	✓	X	✓
Quechua, Yauyos	AM-38	Quechuan, Central Quechua I	✓	✓	✓
Sahaptin, Yakima Ichishkīn	AM-39	Penutian	✓	✓	✓
Tohono O'odham	AM-41	Uto-Aztecan, Tepiman	✓	✓	X
Totonac, Upper Necaxa	AM-43	Totonacan , Totonac	X	NA	✓
Trio	AM-44	Cariban, Guianan	✓	✓	✓
Wapishana	AM-46	Arawakan, Northern Maipurean	✓	✓	✓
Yaqui	AM-47	Uto-Aztecan, Cahitan	✓	X	X
Yuracaré	AM-50	Yuracaré	✓	✓	✓

It is, however, noticeable that, for example, the three Algonquian and the four Siouan languages of our sample attest to this pattern. Similarly, all four Penutian languages employ the P≠G≠S pattern at least partly. The two Athabaskan languages of our sample both attest to the maximally distinct pattern in SIs and SDDs. Compared to other Athabaskan languages, both systems seem reduced and exhibit more unmarked SDDs than those of their relatives.³⁶ Some variation occurs in Uto-Aztecan languages, as only four out of six Uto-Aztecan languages are represented in Table 9 and two of these languages do not show Pattern I in any of the expression classes. The following subsections constitute a qualitative analysis of American languages with different marking strategies to employ the maximally distinct pattern.

3.1.2.1 The canonical case in the Americas

Completely canonical paradigms do not occur in our American subsample, as there is overabundance even in the paradigms that partly employ canonical patterns. As this section illustrates, the most canonical pattern consists of overt and dedicated marking of P/G/S without any instances of affix suppletion or zero-coding.

San Carlos Apache [AM-1] has overt and transparent marking on both SIs and SDDs via the postpositional enclitics *-gee* (P), *-yú* (G), and *-dí'* (S) which attach to the interrogative stem *ha-* and the SDD stems *dzaqq-* (PROX), *a-* (DIST1), and *láh-/láá-* (DIST2). The element *kū* can also serve to express the proximal deictic declarative. Yet, *kū* may not be followed by the Goal enclitic, just as *á-kū* for the distal cannot be followed by any of the above-mentioned spatial enclitics (De Reuse 2006). However, there is some diffusion of Place and Goal marking in the sister paradigms. The interrogative form *ha-yú* appears in Goal and Place contexts, while the form marked for Place *ha-gee*, in combination with a copular verb, is rather infrequent and specialized for inquiring about a precise location (cf. Stolz et al. 2017: 580–581). Likewise, the Goal marker is found in static declarative contexts, cf. examples (29a–b).

³⁶ Concerning the Athabaskan language Tanacross, Gary Holton (p.c.) points out that the complexity of the Tanacross riverine orientation system does not allow a neat differentiation of and assignment to P, G, and S. Similarly, Leer (1989: 599) suggests that “Hupa and Navajo provide nicely contrasting examples of reduction of the directional system. In Hupa, all the directionals are waterway-oriented whereas in Navajo, none are.” Apart from San Carlos Apache and Navajo, no Athabaskan language could be analyzed according to a basic P/G/S distinction.

- (29) San Carlos Apache Place constructions [De Reuse 2006: 85]
- a. *Ha-yú ni-gowq̄h?* *Ha-yú gońłĩĩ?*
 Q-P/G 2SG.POSS-home Q-P/G 2SG.PRES.live
 ‘Where is your home? Where do you live?’
- b. *Lāā-yú nohwi-gowq̄h. (...)*
 there-P/G 1DL.POSS-home
 ‘Over there is our home.’ (...)

San Carlos Apache thus attests to the patterns $P \neq G \neq S$ and $P = G \neq S$ in both SIs and SDDs. Its sister language Navajo [AM-31], on the other hand, draws a clearer picture and comes even closer to the canon, according to Reichard’s (1951) description. The enclitics *-di* (P), *-dji* (G), and *dó* (S) carry telic meanings and are assigned to the P/G/S parameters in the canonical paradigm. However, on the basis of the set of bound demonstrative stems, further spatial distinctions can be made. Among others, *-dǣ* co-encodes Goal and Source by signifying ‘thither from there near speaker/hearer/over there’. Therefore, both Athabascan languages represented in the sample encode P/G/S and other spatial relations in a distinct and consistent fashion via encliticization.

Another language that at least partly shows canonical forms is Crow [AM-12], a highly polysynthetic Siouan language with verb-final syntax and strong head-marking tendencies. Deictic locative adverbs are composed of stems (cf. Table 10) which may take “postpositional suffixes”, while the corresponding SI stem “patterns morphosyntactically with the deictics” (Graczyk 2007: 67).

Table 10: Crow locative-temporal deictic stems (Graczyk 2007: 67).

SI	discourse-referential deictic (ANAPH)	audible	PROX	MED/ near hearer	DIST I	DIST II	remote (out of sight)
<i>shóo</i>	<i>ku</i>	<i>áa</i>	<i>híł</i>	<i>éehku</i>	<i>íłakaa</i>	<i>íwahku</i>	<i>íahku</i>

These stems combine with postpositional suffixes that indicate not only P/G/S, but also Path, specific Location, and general Location (Graczyk 2007: 363). Complex SIs are formed by an adjacent combination of SI stem and marker, cf. (30).

- (30) Crow SIs [Graczyk 2007: 425]
- a. *dii-shóo?*
 2-where
 ‘where are you?’

- b. **shóo-ss-da-lee-wia-laa?**
 where-G-2-go-going.to-2
 ‘where are you going to?’
- c. **shóo-kaa-la-loo?**
 where-S-2-come
 ‘where did you come from?’
- d. **shóo-n-ni-lutchi-kaat-d-aa?**
 where-P-2-get-DIM-2-CAUS
 ‘where did you get it from?’

The morpheme *-n-* in (30d) is cited as indicating ‘location or source’ by Graczyk (2007: 363). It is, however, not found in genuinely ablatival spatial contexts, but indicates Place in SDD constructions where it attaches to the citation form of the deictic instead of the stem as in (31a). Proximal and distal static relations are also often expressed by a locative verb composed of a deictic element and the verb *la* ‘be at’, as shown in (31b).

- (31) Crow HERE [Graczyk 2007: 81; 84]
- a. **hilee-n dúusaa-h**
 here-P set.down-IMP
 ‘set it down here’
- b. **d-üilapxe hilee-lá**
 2POSS-father here-be.at
 ‘is your father here?’

Of the relevant spatial markers, only the Goal suffix *-ss(ee)/-ss(aa)*³⁷ combines with the deictic stem instead of the citation form. The ablatival *-kaa* attaches to stems.

- (32) Crow THENCE [Graczyk 2007: 365]
- [akú-kaa]-wah-chisshü-lak dii-iíwishdia-waa-w-ii-k**
 there-S-1-return-COND 2-pay-1-1-will-DECL
 ‘when I return from there I will pay you (Lk 10:35)’

The Source morpheme is the most unambiguous one among the P/G/S relations in terms of function. There is, however, some diversification of the functions fulfilled by the Place and Goal suffixes. Although most spatial and temporal Goal phrases, as described in Graczyk (2007), host *-ss(ee)/-ss(aa)*, deictic loca-

³⁷ For the suffixes, a similar distinction of citation form versus base form is made. The form *ss(aa)* may be incorporated by the subsequent verb, while *ss(ee)* surfaces as the non-incorporated citation form (Graczyk 2007: 363).

tive phrases generally host *-n*. Both are attested in Source contexts, too. As so often, verbal semantics are the key for decoding the overall spatial function. Graczyk (2007: 368–369) explains that:

The verb of the clause in which a postposition occurs disambiguates the semantics to a large extent: if a phrase with *n* is an adjunct to a motion verb, it has source reading, while if it occurs with a nonmotion verb it has a locative reading. Likewise, if a phrase with *ss(aa)* is an adjunct to a motion verb, it is interpreted as a goal, but if it occurs with a nonmotion verb, it is generally interpreted as source.

The Crow system has further morphological means to distinguish punctual location from more diffuse or distributed location as well as further fine-grained distance level distinctions. Graczyk's (2007) grammar does not cover all spatial relations with deictic example sentences, but it delivers detailed analyses and descriptions of the morphological processes involved. The affixation dedicated to building spatial deictic relations is found in temporal and figurative contexts as well. Despite the dependence on verb classes that separate static from dynamic movement, the P/G/S marking appears consistent and dedicated, which leads to the full paradigm [AM-12] in Appendix II.

Another American language with an almost perfectly canonical paradigm is Yauyos Quechua [AM-38]. In our sample, it is a unique example of transparent and overt morphological coding of the three relations in the Americas. The demonstratives employed for P/G/S functions appear in combination with the case endings *pi ~ pa* (LOC), *-man* (ALL), and *-paq* (ABL). Example (33b) shows the uniformity of marking spatial relations both on deictics and nominals.

- (33) Yauyos Quechua SDDs 1
- a. THERE [Shimelman 2017: 175]
Kwidadu! **Chay-pi-taq** *qalqali* *miku-lu-shunki-man.*
 be-careful DEM.DIST-LOC-SEQ zombie eat-URGT-3ST.2OBJ-COND
 'Be careful! A zombie could eat you there.'
- b. HENCE [Shimelman 2017: 158]
Pusu-man *hiqa-yku-ru-ni* **kay-paq** *uray-man.*
 reservoir-ALL go.down-EXCEP-URGT-1 DEM.PROX-ABL down.hill-ALL
 'I fell down the reservoir. From here downhill.'
- c. THITHER [Shimelman 2017: 286]
Chay-man *ri-sa* *Marleni Ayde* *Vilma* *Norma-kuna*
 DEM.DIST-ALL go-PERF Marleni Ayde Vilma Norma-PL
 'Marleni went there with Ayde, Vilma, and Norma.'

There are further options to form Goal SDDs by suffixation. The suffix *-ta* normally marks accusative case but may also "indicate the goal of movement of a person" (Shimelman 2017: 91) in spatial deictic as well as non-deictic phrases,

cf. (34a). Furthermore, the limitative suffix *-kama* carries temporal and spatial notions. Example (34b) shows a spatial deictic context where the limiting function entails a Goal reading.

- (34) Yauyos Quechua SDDs 2
- a. Goal via ACC [Shimelman 2017: 170]
Kanan chay-ta ri-n-man.
 now DEM.DIST-ACC go-3-COND
 ‘Now, he could go there.’
- b. Goal via LIM [Shimelman 2017: 75]
Qati-mu-shaq vaka-ta kay-kama.
 follow-CSLOC-1FUT COW-ACC DEM.PROX-LIM
 ‘I’m going to drive the cows over here.’

The limitative may co-occur with the borrowed Spanish preposition *asta* (Span. *hasta*) ‘up, to, until’. Shimelman (2017: 244) explains that “*asta* is usually employed redundantly, in combination with the indigenous case suffix *-kama*, apparently with the same semantics (*asta aka-kama* ‘until here’).” Example (35) shows such a redundant construction.

- (35) Yauyos Quechua double-marked HITHER 1 [Shimelman 2017: 76]
San Jerónimo-paq asta kay-kama
 San Jerónimo-ABL until DEM.PROX-ALL
 ‘From San Jerónimo to here.’

Additionally, inflectional suffixes that are derived from nouns are employed to fulfill general spatial as well as genuinely deictic functions, e.g. *-ma* ‘to ego’ and *-mu* ‘to any deictic center’ (CSLOC; TRLOC). While *-mu* is analyzed as belonging to the derivational class, it can also be regarded as inflectional (Shimelman 2017: 202; fn. 14). While these affixes often co-occur with SDDs in the same clause as in (36a), they may also appear only with an adequate motion verb as in (36b).

- (36) Yauyos Quechua deictic suffixes
- a. Double-marked HITHER 2 [Shimelman 2017: 211]
Qati-mu-shaq kay-man
 follow-CSLOC-1FUT DEM.DIST-ALL
 ‘I’m going to bring it over here.’
- b. HITHER via suffix [Shimelman 2017: 286]
Ni alpaka ni llama. Kanan mana-m traya-mu-n-chu.
 nor alpaca nor llama now no-EVD arrive-CSLOC-3-NEG
 ‘Neither alpacas nor llamas. They don’t come here now.’

The case of Yauyos Quechua illustrates that even a language with clearly and transparently coded SDDs may have many more (lexico-)morphological possibilities for expressing spatial deictic functions. Among these combinations of affix plus demonstrative, only those forms that qualify as genuinely spatial and are attested in all relevant functions enter the paradigm in [AM-38] in order to be compared crosslinguistically.

3.1.2.2 Zero-marking of Place in the Americas

This pattern is characterized by the zero-marking of Place, while Goal and Source are overtly coded. The Caribbean Arawakan language Garifuna [AM-15] shows “a strikingly parallel pattern between the demonstrative pronouns and the deictic adverbs” (Haurholm-Larsen 2016: 65). All SDDs are regularly derived, and Goal and Source are marked overtly, cf. (37).

- (37) Garifuna SDDs
- a. HERE [Haurholm-Larsen 2016: 303]
anyá-ha-gwa yára úh! áh!
 3PL-exist-still there INTERJ INTERJ
 ‘They’re still there, oh! ah!’
- b. THITHER [Haurholm-Larsen 2016: 95]
áye yagûr-on-be-y l-aw m-arúfudu-n
 yes over.there-ALL-FUT-3M 3M-with NEG-show-USPEC
l-ubé-y=ti b-ún
 3M-FUT-3.M=TOP 2SG-to
 ‘yes, he’s going over there with it, he’s not going to show it to you’
- c. HENCE [Haurholm-Larsen 2016: 223]
yá-giyen bürû ha-m-t-u há-bulugu
 here-ABL carry:SUP2 3PL-PAST-TI-3F 3PL-head
 ‘they would carry it from here on their head’

The levels of distance are encoded in the endings of Garifuna deictic adverbs, in analogy to demonstrative pronouns, cf. *líra* (intermediate [DEM]) and *yara* (intermediate [ADV]), *lígita* (long/distal [DEM]) and *yágüta* (distal [ADV]) (Haurholm-Larsen 2016: 65). Haurholm-Larsen (2016: 238) defines “(true) ‘adverbs’ as un-derived phonological words which function as adverbial adjuncts”, while adverbials are said to be “derived or otherwise complex phonological words or phrases with the same function as adverbs”. Both encode spatial, temporal, and manner notions. The basic SDDs, as depicted in Appendix II, belong to the true

adverb class.³⁸ Further spatial notions such as *ínyu* ‘up’ and *yaráfa* ‘close’ belong to the adverbial class since these inflect for person, number, gender, tense, and aspect. Adverbials thus “behave more like stative verbs” (Haurholm-Larsen 2016: 240). The allative marker *-un/-on/-n* and the ablative marker *-giyen* appear on true adverbs and on nominal adverbials, cf. (38)–(39). Note, however, that the nominal referent in (39) is additionally marked by the locative.

- (38) Garifuna ablative on SDD [Haurholm-Larsen 2016: 243]
m-amúfugi-du-wa nyén-giyen l-igíya w-adíbiragu
 NEG-move-DI-1PL there-ABL 3M-DEM 1PL-sink
 ‘we hadn’t moved from there when we sank (with our canoe)’
- (39) Garifuna ablative on nominal [Haurholm-Larsen 2016: 244]
furiha-di-na dúna-rugu-giyen
 exit-DI-1SG water-LOC-ABL
 ‘I came out of the water’

While Source is consistently marked by the ablative, Garifuna attests to optional zero-marking of deictic Goal relations. In (40), solely the ‘arrive’ verb encodes the telic allative meaning. We found that optional zero-marking of Goal is not uncommon crosslinguistically.

- (40) Garifuna zero-coded Goal [Haurholm-Larsen 2016: 95]
ságü t-achúlürü-n nyén t-ágawa-ha
 every.time 3F-arrive-USPEC there 3F.bathe-DISTR
 ‘every time she arrives there, she bathes’

The Garifuna system is thus characterized by overt coding of directionality with remarkable morphological similarity between spatial adverbs and demonstrative pronouns. Goal is likely to be optionally marked, while Place is zero-coded and Source is overtly and consistently derived.

3.1.2.3 Marker chaining in the Americas

In Bora [AM-4], the maximally distinct pattern is characterized by an increase of morphological complexity from static to dynamic SDDs. Static SDDs consist of two elements, such as *té-hulle* ‘that-yonder’. Dynamic SDDs must include the Place morpheme and are succeeded by a Goal or Source morpheme, e.g. *té-*

³⁸ Apart from the six deictic horizontal stages elected for the paradigm, *únabu* ‘down’ (*únabu-n* ‘down-ALL’; *únabu-giyen* ‘down-ABL’) is also included in the set of true spatial adverbs (Haurholm-Larsen 2016: 238).

hullé-vu ‘that-yonder-G’. In addition, the Bora orientation system bears deictic motion verbs such as *wajtsí-* ‘arrive here’. Furthermore, the usage of the paradigmatic spatial adverbs is not the sole option for responding to inquiries about the location of an entity in space. In (41b), for instance, the masculine demonstrative pronoun encodes the static location of the referent.

- (41) Bora
- a. WHERE [Thiesen and Weber 2012: 241]
Kiá díbye?
k^híá tí:p^è
 where that-SG.M.ANIM
 ‘Where is he?’ (lit. ‘where he?’)
- b. HERE [Thiesen and Weber 2012: 241]
Áánuú
á:nú:
 this.SG.M.ANIM
 ‘He is here.’
- c. THENCE [Thiesen and Weber 2012: 513]
Á-tsih-dyú-vá-a pé-h íjcyá-lle úúje-té-h móóá-vu.
 THM-P-S-RPT-REM go-SUBORD be-SG.F arrive-go.do-VTERM big.river-G
 ‘From there she going and going arrived at a big river.’

Example (41c) gives two insights into the Bora spatial system. First, Source is expressed via an adverb. The adverb is composed of a thematic connective (in lieu of the deictic bound stems which are found in all other Bora SDDs), and both a Place and a Source morpheme. The construction is further marked as a reported event in the remote past. The Source suffix requires prior marking of Place in all attested Source constructions. The same applies to deictic Goal contexts, i.e. a Place morpheme is always placed leftward to a Goal suffix. Moreover, (41c) also shows that nominal referents take the allative morphology without prior marking of Place.

Marker chaining in the Americas is also attested by Source construction types of P=G coding languages (cf. Section 3.2.2.3).

3.1.3 P≠G≠S in Asia

Similar to Stolz et al.’s (2017) sample, the maximally distinct pattern is also the most prevalent one in our Asian subsample. Overall, 38 languages exhibit this pattern at least partly. While the share of P≠G≠S paradigms in Stolz et al.’s

(2017) sample amounts to 66%, the number is slightly reduced in our study. 52.2% of SI paradigms and between 45.1% and 46.7% of the SDD paradigms attest to Pattern I in our sample. As will become clear in Section 3.2.3, this is primarily due to a higher number of P=G≠S paradigms compared to Stolz et al. (2017). Table 11 provides an overview of the Asian languages that employ paradigms without syncretism.

Table 11: Asian languages that attest to P≠G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Ainu	AS-1	Ainu	✓	✓	✓
Apatani	AS-2	Sino-Tibetan, Macro-Tani	✓	X	X
Arabic, Modern Standard	AS-3	Afro-Asiatic, Semitic	✓	✓	✓
Atong	AS-4	Sino-Tibetan, Brahmaputran	✓	✓	✓
Bantawa	AS-6	Sino-Tibetan, Kiranti	✓	✓	✓
Bengali	AS-7	Indo-European, Indo-Iranian	✓	✓	X
Burmese	AS-8	Tibeto-Burmese, Burmish	✓	✓	✓
Burushaski, Yasin	AS-9	Burushaski	✓	✓	✓
Cantonese	AS-10	Sino-Tibetan, Sinitic	X	✓	✓
Chinese, Mandarin	AS-11	Sino-Tibetan, Sinitic	✓	✓	✓
Chukchi	AS-12	Chukotko-Kamchatkan	✓	✓	✓
Evenki	AS-14	Tungusic	✓	✓	✓
Hebrew	AS-16	Afro-Asiatic, Semitic	✓	✓	✓
Hiligaynon	AS-17	Austronesian, Greater Central Philippine	X	✓	✓
Hindi	AS-18	Indo-European, Indo-Iranian	✓	✓	✓
Japanese	AS-21	Japonic	✓	✓	✓
Khasi	AS-22	Austroasiatic, Khasi-Palaung	✓	✓	✓
Koḍava	AS-24	Dravidian	✓	✓	✓
Korean	AS-25	Koreanic	✓	✓	✓
Lamut	AS-26	Tungusic	✓	✓	✓
Limbu	AS-28	Sino-Tibetan, Kiranti	X	✓	✓
Manchu	AS-30	Tungusic	✓	✓	✓
Mualang	AS-31	Austronesian, Malayo-Sumbawan	✓	✓	✓
Mundari	AS-33	Austroasiatic, Mundaic	✓	✓	✓
Nicobarese, Car	AS-34	Austroasiatic, Nicobaric	✓	X	X
Ostyak	AS-35	Uralic, Khantyic	✓	✓	✓

Languages	Appendix	Affiliation	SI	ND	FD
Panjabi	AS-36	Indo-European, Indo-Iranian	✓	✓	✓
Persian	AS-37	Indo-European, Indo-Iranian	✓	✓	✓
Santali	AS-38	Austroasiatic, Mundaic	✓	X	X
Tagalog	AS-39	Austronesian, Greater Central Philippine	✓	✓	✓
Telugu	AS-41	Dravidian	✓	✓	✓
Temiar	AS-42	Austroasiatic, Aslian	✓	✓	✓
Tuvinian	AS-44	Turkic	✓	✓	✓
Udihe	AS-45	Tungusic	✓	✓	✓
Vietnamese	AS-46	Austroasiatic, Vietic	✓	✓	✓
Vogul	AS-47	Uralic, Mansi	✓	✓	✓
Yugh	AS-49	Yeniseian	✓	✓	✓
Yukaghir, Kolyma	AS-50	Yukaghir	✓	✓	✓

Although it is difficult to make out trends in relation to language families in our Asian sample, it is noticeable that the two Semitic languages, all four Tungusic, all four Indo-Iranian, and the two Uralic languages of our sample employ the $P \neq G \neq S$ pattern. Based on our sample, Sino-Tibetan languages seem to have a tendency towards the maximally distinct pattern, as six out of eight Sino-Tibetan languages in our sample give evidence of this pattern. Three, i.e. half, of our Austronesian languages, five out of eight Austroasiatic, and two, i.e. half, of our Dravidian languages similarly attest to Pattern I. A qualitative analysis of Asian languages with different marking strategies to employ the $P \neq G \neq S$ pattern is carried out in the subsequent sections.

3.1.3.1 The canonical case in Asia

The one Asian language that shows a completely canonical paradigm of SIs and SDDs without any mismatches, i.e. Mundari [AS-33], has already been discussed in Section 2.3.1 as a real example for the canon. Nevertheless, several other languages also come close to the canon.

The isolate Ainu [AS-1] displays one of the most canonical paradigms in our sample. Apart from overabundance in the case of the SIs, the paradigm is in line with the canon. This means that the Ainu SIs and SDDs consist of an SI or SDD morpheme and a morpheme marking P/G/S. There are two alternative SI morphemes *hinak* and *hunak* ‘where’ and four different SDD morphemes representing four different distance levels, viz. *te* ‘same place’, *taaní* ‘nearby’, *toaní* ‘dis-

tant’, and *tooní* ‘very distant’. Both the SI and the SDD morphemes must be followed by a particle to express either Place, Goal, or Source, cf. (42).

- (42) Ainu
- a. HERE [Tamura 2000: 113]
te ta an aan kur ku-hunara
 here at to-be determined person 1SG.NOM-search
kor k-ómanan
 when/while 1SG.NOM-walk
 ‘The person I was walking around looking for turned out to be here.’
- b. HITHER [Tamura 2000: 174]
te un arki yan
 here towards come-PL CMND.PL/POL
 ‘Please come here.’
- c. HENCE [Bugaeva 2011: 519]
te wa paye=an kor suy hur an
 here from go.PL=INDEF.S when/if again small.hill exist.SG
ruwe an?
 INF.EV exist.SG
 ‘If one goes ahead [lit. from here], are there any more hills?’

The particle *ta* ‘at’ is used to express Place, so that *te ta* in (42a) means ‘here’ in a locative sense. In (42b), the particle *un* ‘to(wards)’ in *te un* ‘hither’ expresses a Goal relation, whereas *wa* ‘from’ in *te wa* ‘hence’ brings about a Source reading. Each expression in the Ainu paradigm is distinctly marked. Both the SIs and the SDDs take the same Place, Goal, and Source marking particles. There is an external relation between the expressions. Furthermore, the same SI or SDD morphemes are used in all three relations, the internal relation required for the canon is therefore also present.

Another language that comes close to the canon is Burmese [AS-8]. The SIs usually consist of the interrogative *be* ‘which’ and a postposition to mark Place, Goal, or Source. Similarly, the SDDs comprise a demonstrative *di* ‘this’ or *hou* ‘that’ and the same P/G/S marking postpositions. The examples in (43) demonstrate how the SI constructions are used in all three relations.

- (43) Burmese
- a. WHERE [Soe 1999: 128]
min: be hma ei’ ma-le:
 2SG which at sleep IRR-INTERR
 ‘Where will you sleep?’

- b. WHITHER [Soe 1999: 78]
be **kou** **le:**
 which to INTERR
 ‘Where are you off to?’
- c. WHENCE [Soe 1999: 77]
be **ka.** **la** **le:**
 which from come INTERR
 ‘Where did you come from?’

In (43a), Place is expressed through the addition of the locative postposition *hma* ‘at’. The allative postposition *kou* ‘to’ is used to express Goal in (43b), whereas the ablative postposition *ka.* ‘from’ is used in (43c) to express Source. Like this, the expressions encompass exactly one SI morpheme *be* ‘which’ and one morpheme each for Place, Goal, and Source. As the SDDs are formed in a similar way and the same postpositions are used, there is both a vertical and a horizontal relation. Hence, the Burmese paradigm would appear to be completely in line with the canon. However, the marking of Goal is not obligatory. It follows that an alternative marking strategy with overtly coded P and S but zero-marked G exists. Thus, while Place expressions obligatorily bear the locative postposition *hma* ‘at’ and Source expressions must take the ablative postposition *ka.* ‘from’, the allative postposition *kou* ‘to’ may be omitted. Compare the sentences in (44) and (45).

- (44) Burmese overtly marked Goal [Soe 1999: 44]
 a. **di** **kou** **la** **hke.**³⁹
 here to come DIST
 ‘Come here.’
- b. **hou** **kou** **thaw:** **ca.** **ya.-aun**
 there to go PL HORT
 ‘Let’s go there.’
- (45) Burmese zero-marked Goal [Soe 1999: 44]
 a. **di** **la** **hke.**
 here come DIST
 ‘Come here.’
- b. **hou** **thaw:** **ca.** **ya.-aun**
 there go PL HORT
 ‘Let’s go there.’

³⁹ The element *hke* is a post-head versatile verb that adds a distal aspect to the verb *la* ‘come’ in both (44a) and (45a) (cf. Soe 1999: 181–185). It is not part of the SDD construction, but specifies the semantics of the motion verb.

The sentences in (44a) and (45a) and in (44b) and (45b), respectively, resemble each other. The only difference is that the SDDs in (44) are overtly marked by the allative postposition *lou* ‘to’, whereas they are zero-marked in (45). There is, however, no apparent difference in meaning. The overtly marked and zero-marked constructions appear to occur in free variation. Even if Goal is zero-marked, the paradigms still attest to the P≠G≠S pattern as it is only the Goal expressions that may be used without a defining postposition. Due to the optional zero-marking of Goal, the Burmese paradigm deviates slightly from the canon. As already stated in Section 3.1.1.1, it is a rather rare occurrence that Goal is the only option for zero-marking.

The Austroasiatic language Khasi [AS-22] represents a former canonical language which in its contemporary usage allows for P=G syncretism. Thus, it is not completely in line with the canon anymore. In Khasi, there are four deictic elements to express different degrees of distance, viz. *-ne* ‘here (proximal)’, *-to* ‘there (visible)’, *-tai* ‘there (distal)’, and *-ta* ‘there (invisible)’. These deictic elements and the interrogative roots *-no* and *-ei* are marked with a case prefix to express P/G/S. In some cases, the feminine demonstrative *ka* has to be inserted between the case prefix and the deictic or interrogative root. According to Roberts’ (1891: 117–118) list of adverbs of place, the prefix *ha-* ‘in, at’ is used to express Place, *sha-* ‘to’ expresses Goal, and *na-* ‘from’ expresses Source. In this way, a coherent canonical paradigm is formed with expressions such as *hangne* ‘here’, *shangne* ‘hither’, and *nange* ‘hence’.⁴⁰ However, this clear and distinctive marking pattern as reflected in Roberts’ Khasi grammar from 1891 is not reflected in the Khasi translation of the Bible. In the case of the SIs, the supposed WHITHER expressions are regularly used for Place, cf. (46).

(46) Khasi WHERE constructions

a. WHERE 1

[KHASICL-BSI John 7:11]⁴¹

Hangno u don?

where 3SG.M be

‘Where is he?’

⁴⁰ The underlying forms of these expressions are *ha-ka-te* ‘here’, *sha-ka-te* ‘hither’, and *na-ka-te* ‘hence’. The feminine demonstratives thus form the base for these deictic expressions.

⁴¹ We display a number of example sentences from various Bible translations. The relevant version is indicated by the respective abbreviation (in this case *KHASICL-BSI* for *Khasi CL Bible*). The English translations given are taken from either *The Amplified Bible (AMP)* or the *Common English Bible (CEB)*, depending on which version is closer to the translation in the respective target language. In some cases, a literary translation is additionally given.

- b. WHERE 2 [KHASICL-BSI John 8:10]
Shano ki don?
 whither 3PL be
 ‘Where are they?’

(46a) and (46b) display two similar sentences. The locative form *hangno* ‘where’ and the allative form *shano* ‘whither’ can both be used in the same position. Thus, the WHITHER expressions may also be resorted to for Place. The WHERE expressions, however, may not be used in Goal contexts. The allative forms *shano* ‘whither’ and *shaei* ‘whither’ remain the only choice here, cf. (47).

- (47) Khasi WHITHER constructions
- a. WHITHER 1 [KHASICL-BSI John 13:36]
Ko Trai, shano men leit?
 Ah Lord, whither 2SG go
 ‘Lord, where are you going?’
- b. WHITHER 2 [KHASICL-BSI Zech 5:10]
Shaei ki rah ia ka?
 whither 3PL move OBJ 3SG.F
 ‘Where are they taking the basket?’

Both WHITHER expressions as introduced by Roberts (1891) also occur in Goal contexts in the Khasi Bible. They can additionally be used in Place contexts. Regarding the SDDs, it appears to be the other way around. While the Goal marked forms cannot be used in Place contexts, the Place marked forms are regularly used in Goal contexts.

- (48) Khasi HITHER [KHASICL-BSI Matt 14:18; 1 Sam 17:44]
- a. *Te wan-rah ia ki hangne ha nga*
 then come-move OBJ 3PL here to 1SG
 ‘Bring them here to me.’
- b. “*Wan shane,*” u kob ia u *David [...]*
 come hither 3SG.M say OBJ DEF.M David
 ‘“Come here,” he said to David [...].’

The locative marked expression *hangne* ‘here’ is used in a Goal context in (48a), whereas the regular allative marked expression *shane* ‘hither’ is used in (48b). Thus, both locative and allative marked expressions may be used as HITHER expressions. The same applies to THITHER expressions of different distances. The completely coherent, canonical paradigm as described by Roberts (1891) is not reflected in the Khasi Bible. Instead there is P=G syncretism to some extent, so that two syncretism patterns, viz. P≠G≠S and P=G≠S, exist.

3.1.3.2 Differentiated marking in Asia

Ainu's areally closest neighbor language Japanese [AS-21] has similar marking strategies as the almost canonical isolate. The SI *doko* 'where' and the three SDDs *koko* 'here (near speaker)', *soko* 'there (near hearer)', and *asoko* 'there (away from both)' are usually followed by a case marking particle.⁴² Consider the following examples:

- (49) Japanese [JCB Job 35:4; Ps 72:20]
 a. HERE
ima anata bakari ka, koko ni iru mina no
 now 2SG not.only TOP here at exist everyone GEN
mae de kotae-you.
 before at answer-VOL
 'I'll answer you, and your friends along with you.' (lit. 'Now, let's answer not only to you but in front of everyone [who is] here.')
- b. *Essai no ko dabide no sanka wa, koko de owari-masu.*
 Jesse GEN child David GEN anthem TOP here at end-POL.NPAST
 'The prayers of David, Jesse's son, are ended (lit. end here).'
- (50) Japanese HITHER [JCB Gen 27:8]
Saa koko e ki-te, watashi ni kuchidzuke shite kure.
 well here to come-TE 1SG DAT kiss do-TE give
 'Come here and kiss me, my son.'
- (51) Japanese HENCE [JCB Luke 4:9]
Saa, hontou ni kami no ko da to iu-nara, koko kara
 well really PTCL god GEN child COP PTCL say-if here from
tobi-ori-te mi nasai.
 jump-descend-TE ATT do.HON.IMP
 'If You are the Son of God, throw Yourself down from here'

In all four example sentences, the near speaker SDD *koko* 'here' is followed by a case marking particle. In (49a), the locative particle *ni* 'at' is used, whereas in (49b) a different locative particle *de* 'at' is employed. This distinction is not arbitrary, as the two locative particles surface in contrasting contexts. While *ni*

⁴² Japanese also has another set of SIs and SDDs, which usually denote direction, viz. *dochira* 'which side', *kochira* 'this side (near speaker)', *sochira* 'that side (near hearer)', and *achira* 'that side (away from both)'. In polite speech, these expressions can also be used instead of *doko* 'where', *koko* 'here (near speaker)', *soko* 'there (near hearer)', and *asoko* 'there (away from both)'. Both sets of SIs and SDDs behave completely parallelly and make use of the same particles, cf. Appendix III [AS-21].

is the default locative particle, *de* marks a location where some kind of action takes place. Thus, if a situation involves no activity properly speaking, e.g. being, living, or seeing, the default particle *ni* is used. If a situation involves an active action, e.g. eating, playing, or buying, *de* has to be used. To mark Goal, the allative particle *e* ‘to’ is used in (50), whereas the ablative particle *kara* ‘from’ is employed to express Source in (51). Like this, the expressions consist of two morphemes each, viz. one SI or SDD morpheme and one case marking morpheme, which is in accordance with the canon. This is, however, not the only possible marking strategy in Japanese, as the overt Place marking may be dropped under certain circumstances as example (52) demonstrates.

- (52) Japanese zero-marked Place [JCB Matt 24:23]
Sono toki “kirisuto ga koko ni o-rareru-zo” toka
 that time Christ NOM here at be-PASS-PTCL etc.
“asoko da” “iya, koko da” nado to uwasa ga midareton
 there COP no here COP etc. PTCL rumor nom disarray
demo, son’na dema o shinji-te wa ikemasen.
 although such hoax ACC believe-TE TOP must.not.POL
 ‘Then if somebody says to you, ‘Look, here’s the Christ,’ or ‘He’s over here,’ don’t believe it.’ (lit. “Christ is here”, or “over there”, “no, here”)

While the locative particle *ni* ‘at’ is used in the first part of direct speech, it is dropped in the second part *asoko da* ‘it is there’ and the third part *koko da* ‘it is here’. When a location occurs in combination with the copula *da* (or the polite form *desu*) instead of a verb, *ni* does not occur. Depending on the degree of politeness, even the copula may be dropped. Compare the examples in (53).

- (53) Japanese [Hitomi Otsuka, p.c.]
- a. Zero-marked Place (polite)
Toshokan wa koko desu.
 library TOP here COP.POL
 ‘The library is here.’
 - b. Zero-marked Place (informal)
Toshokan wa koko.
 library TOP here
 ‘The library is here.’

In verbless sentences like these, the SDDs and the SIs must not occur with a case marking particle to express Place. Depending on their syntactic position, there are even more possibilities for particles to accompany the SDDs and SIs, cf. (54).

- (54) Japanese non-spatial particles
- a. Genitive particle *no* [Hitomi Otsuka, p.c.]
Koko no tenki wa ii desu.
 here GEN wather TOP good COP
 ‘The weather [of] here is good.’
- b. Nominative particle *ga* [Hasegawa 2015: 332–333]
 “*Okaasan, itai yo.*” – “*Doko ga?*”
 mother painful SFP where NOM
 “‘Mom, it hurts!’ – ‘Where?’”
- c. Topic particle *wa* [Hasegawa 2015: 214]
Koko wa umi ni chikai kara, kuruma ga sugi ni sabiru.
 here TOP ocean to near because car NOM quickly rust
 ‘Because it’s close to the ocean here, cars rust quickly.’

The examples in (54) show different cases of non-spatial particles in combination with the near hearer SDD *koko* ‘here’ and the SI *doko* ‘where’. In (54a), the genitive particle *no* links the constituents *koko* ‘here’ and *tenki* ‘weather’ to express ‘the weather of here’. The nominative particle *ga* is used in (54b) in combination with *doko* ‘where’. The topic particle *wa* marks *koko* ‘here’ as the topic of the sentence in (54c). As these particles are not strictly spatial, we decided to exclude them from our paradigm. It should, however, be noted that these possibilities exist.

The Japanese SDD and SI paradigm attests to the P≠G≠S pattern. However, as the particle *ni* can also be used in Goal constructions, there is also the possibility to have a P=G≠S pattern. Compare the two sentences in (55).

- (55) Japanese Goal constructions [Hitomi Otsuka, p.c.]
- a. *Watashi wa koko e ki-mashita.*
 1SG TOP here to come-POL.PAST
 ‘I came here.’
- b. *Watashi wa koko ni ki-mashita.*
 1SG TOP here to come-POL.PAST
 ‘I came here.’

The two sentences in (55) differ only in the allative particle used in the two Goal constructions. The particle *e* as introduced above is used in (55a), whereas the particle *ni*, which is also used in Place constructions, is employed in (55b). There is no semantic difference between the two sentences. The elements *e* and *ni* are thus completely interchangeable in Goal constructions.

Although the Japanese SI and SDD paradigms are completely consistent, they appear to be quite complex. Two syncretism patterns are attested and dif-

ferent particles may or must be used depending on the syntax and semantics of the sentence in which they occur.

3.1.3.3 Zero-marking of Place in Asia

The Kolyma dialect of Yukaghir [AS-50] has three demonstrative stems, viz. (i) *tī-* which “refers to most proximate entities and/or locations which are directly available to the speaker” (Maslova 2003: 244), (ii) *adā-* which “refers to entities and/or locations which are not taken to be remote (in particular, they can be visible for the speaker), but are not directly available and/or not under the speaker’s control” (Maslova 2003: 244), and (iii) *tā-* which “refers to entities and/or locations which are considered remote and invisible to the speaker” (Maslova 2003: 245). These three demonstrative stems are used without any further marking to express Place, while they take allative and ablative suffixes to express Goal and Source, respectively, cf. (56).

- (56) Kolyma Yukaghir
- a. HERE [Maslova 2003: 579]
“met tī l’e-je”
 1SG here be-INTR:1SG
 ‘I am here.’
- b. HITHER [Maslova 2003: 244]
tī-ŋide ejre-s’
 here-ALL walk-PFCTV:INTR:3SG
 ‘He has come here (=to me).’
- c. HENCE [Maslova 2003: 408]
tī-t qol-le iŋi-m tahane tit
 here-ABL go-ANR:INST be.afraid-TRANS:3SG CA CONC
 ‘However, he was still afraid of going far from here.’

The demonstrative *tī* ‘here’ is used without any markers to express Place in (56a). To express Goal, the allative suffix *-ŋide* is employed in (56b), whereas the ablative suffix *-t* is used to express Source in (56c). The other SDDs take the same suffixes for Goal and Source and the expressions remain unmarked for Place. It follows that the zero-marked Place expressions serve as the base for the other constructions that are overtly marked.

The SIs, however, differ from the SDDs. There are two allomorphic interrogative stems *qo-* and *qa-* ‘which?’. Although the same markers are used for Goal and Source constructions, contrary to the SDDs, the Place constructions may not be zero-marked. Instead, a locative suffix *-n* has to be attached, cf. (57).

- (57) Kolyma Yukaghir WHERE [Maslova 2003: 238]
tet qo-n num-mek tuøn?
 2SG which-LOC find-TRANS:2SG this
 ‘Where have you found it?’

Apart from the expression for Place, the SIs behave similarly to the SDDs. The allative suffix *-ŋide* and the ablative suffix *-t* are attached to the interrogative stem to form *qaŋide* ‘whither’ and *qat* ‘whence’, respectively. Furthermore, there is an additional WHENCE expression based on the nominal interrogative stem *qadōn-* ‘what?’, cf. (58).

- (58) Kolyma Yukaghir WHENCE [Maslova 2003: 241]
qādon-get kie-s’ek?
 what-ABL come-INTR:2SG
 ‘Where have you come from?’

The expression in (58) consists of the nominal interrogative stem *qadōn-* ‘what?’ and the full form of the ablative suffix *-get*. Although this form has a different base than the other expressions, it is still overtly marked. Consequently, the SDDs and the SIs both attest to the P≠G≠S pattern, although they employ different marking strategies. While there is zero-marking in the Place expressions of the SDDs, all three relations are overtly marked in the SIs.

3.1.4 P≠G≠S in Europe

With a share of 55%, the maximally distinct pattern is definitely the most prominent pattern in Stolz et al.’s (2017) sample of European spatial interrogatives. Our own data looks very similar, as 56.1% of all SI paradigms and 57.4% (ND) or 56.9% (FD) of all SDD paradigms in our European sample employ Pattern I. As displayed in Table 12, a total of 40 languages attest to this pattern in at least one expression class.

Table 12: European languages that attest to P≠G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Basque	EU-3	Basque	✓	✓	✓
Belarusian	EU-4	Indo-European, Slavic	✓	✓	✓
Bulgarian	EU-5	Indo-European, Slavic	✓	✓	✓
Catalan	EU-6	Indo-European, Romance	X	✓	✓
Croatian	EU-7	Indo-European, Slavic	✓	✓	✓
Czech	EU-8	Indo-European, Slavic	✓	✓	X

Languages	Appendix	Affiliation	SI	ND	FD
Danish	EU-9	Indo-European, Germanic	✓	✓	✓
Dutch	EU-10	Indo-European, Germanic	✓	✓	✓
Estonian	EU-12	Uralic	✓	✓	✓
Faroese	EU-13	Indo-European, Germanic	✓	✓	✓
Finnish	EU-14	Uralic	✓	✓	✓
Georgian	EU-16	Kartvelian	✓	✓	✓
German	EU-17	Indo-European, Germanic	✓	✓	✓
Greek, Modern	EU-18	Indo-European, Graeco-Phrygian	X	✓	X
Hungarian	EU-19	Uralic	✓	✓	✓
Icelandic	EU-20	Indo-European, Germanic	✓	✓	✓
Khwarshi	EU-23	Nakh-Daghestanian, Tsezic	✓	✓	✓
Latvian	EU-24	Indo-European, Baltic	✓	✓	✓
Lezgian	EU-25	Nakh-Daghestanian, Daghestanian	✓	✓	✓
Lithuanian	EU-26	Indo-European, Baltic	✓	✓	✓
Low German	EU-27	Indo-European, Germanic	✓	✓	✓
Macedonian	EU-28	Indo-European, Slavic	✓	✓	✓
Norwegian	EU-30	Indo-European, Germanic	✓	✓	✓
Old Church Slavonic	EU-31	Indo-European, Slavic	✓	✓	✓
Polish	EU-32	Indo-European, Slavic	✓	X	X
Portuguese	EU-33	Indo-European, Romance	✓	✓	✓
Romani, Moldovan	EU-34	Indo-European, Indo-Iranian	✓	✓	✓
Romanian	EU-35	Indo-European, Romance	✓	✓	✓
Rumantsch	EU-36	Indo-European, Romance	X	✓	✓
Russian	EU-37	Indo-European, Slavic	✓	✓	✓
Serbian	EU-40	Indo-European, Slavic	✓	✓	✓
Slavomolisano	EU-41	Indo-European, Slavic	✓	✓	✓
Slovak	EU-42	Indo-European, Slavic	✓	✓	✓
Slovenian	EU-43	Indo-European, Slavic	✓	✓	✓
Sorbian, Lower	EU-44	Indo-European, Slavic	✓	✓	✓
Sorbian, Upper	EU-45	Indo-European, Slavic	X	✓	✓
Spanish	EU-46	Indo-European, Romance	✓	✓	✓
Swedish	EU-47	Indo-European, Germanic	✓	✓	✓
Turkish	EU-48	Turkic	✓	✓	✓
Ukrainian	EU-49	Indo-European, Slavic	✓	✓	✓
Welsh	EU-50	Indo-European, Celtic	✓	X	X

Indo-European languages in general seem to have a strong tendency towards the maximally distinct pattern. Some differences can, however, be observed in the various branches. All 15 Slavic languages in our sample employ Pattern I at least partly and in at least one expression class. Apart from English, all other Germanic languages of our sample are also represented in Table 12 and the P≠G≠S pattern is employed in each expression class. Although Romance languages showed to have a strong tendency towards WHERE=WHITHER syncretism as this pattern “constitute[s] a solid majority of 72% of the forty-seven Romance LPP varieties” and “[o]nly a minority of eight languages opts exclusively for the pattern with three formally distinct constructions” (Stolz et al. 2017: 97), five out of seven Romance languages from our sample are present in Table 12. A closer look at these languages, however, reveals that all of them also employ P=G syncretism at least partly. Other Indo-European branches can also be found in Table 12. The two Baltic and the only Indo-Iranian language in our European sample coherently employ the P≠G≠S pattern. Only one out of three Celtic languages optionally employs three distinct forms only in the SIs. Various non-Indo-European languages also attest to Pattern I, i.e. all three Uralic and the two Nakh-Daghestanian languages, the only representatives of the Turkic and Kartvelian phyla, and the isolate Basque also employ three distinct expressions in both SIs and SDDs. In the following subsections, the three major branches of Indo-European languages are discussed, viz. Romance languages with Spanish as representative (Section 3.1.4.1), Germanic languages with the Scandinavian languages as representatives (Section 3.1.4.2), and Slavic languages (Section 3.1.4.3).

3.1.4.1 P≠G≠S in Romance languages

The paradigm for European Spanish [EU-46] attests to different syncretic patterns. Constructions vary especially in the Goal column. Concerning World Spanishes, we even have the impression that the paradigms are highly flexible, depending on the respective variety and the distance levels. Source constructions of both SIs and SDDs are characterized by the co-occurrence of the spatial deictic adverbs and the preposition *de* ‘of, about, from’. Spanish SIs are maximally distinct with a Goal form *adónde*, combined of the preposition *a* ‘to, in, until, at, on, by’, and *dónde* ‘where’. The Source relation is transparently and regularly coded by the preposition *de* ‘from’. Place forms are never marked by any additional material. However, as indicated above, the Goal relation raises some questions.

For Spanish Goal SDDs, there are three options. The first option is (i) zero-marking, the second is (ii) marking of directionality by the preposition *para* ‘for, to’, and the third is (iii) marking of directionality by the preposition *hasta* ‘up, until, to’. The *Nueva gramática de la lengua española* (2010: 360) cites six deictic stages. The far deictic *acullá* ‘yonder’ is said to have fallen out of usage. The adverbs *acá* ‘here’ and *allá* ‘there’ are associated with American Spanish rather than European Spanish. As to the combinatory possibilities with prepositions, we find the constructions *hacia allí*, *para acá*, *hacia allá*, and *para allá*. Alcina Franch and Bleca (1975: 630) cite the five abovementioned adverbs without *acullá* and also refer to *acullá* as outdated. They add two similarly obsolete forms to the set, viz. *aquende* ‘hither, here’ which they define as signifying *del lado de acá* ‘on the side of here, this side, here’, and *allende* ‘beyond, on the other side’. The authors cite some examples that attest to zero-coding of Goal of all SDDs except for *allá*. The phrase *de acá para allá* ‘from here to there’ is almost lexicalized according to Alcina Franch and Bleca (1975: 635).

Both sources do not provide enough data to attest all spatial deictic relations for all SDD stages. The paradigm of European Spanish [EU-46] is thus adapted from Lüdtke (2015: 555), who cites only one allative form as zero-coded, viz. *allí* ‘there (MED)’. Relating to that, the proximal Goal construction (*hacia*) *aquí* ‘(to) here, hither’ may appear with a preposition or in isolation. The preposition *hacia* ‘towards’ surfaces again in combination with *ahí* ‘there (PROX)’ to form a Goal meaning, whereas the medial form *acá* and the distal form *allá* are preceded by the preposition *para* ‘for’. We deem further combinations of adverbs and prepositions or zero possible, however, the paradigm [EU-46] displayed in Appendix IV is strictly adapted from Lüdtke (2015). We also deem it plausible that there are subtle differences in the meaning of these allative prepositions, depending on the context; even within the same variety of Spanish. Technically, both *para* and *hacia* could apply to all forms in order to achieve a Goal meaning. *Hacia* may occur with all spatial adverbs but may involve a different meaning than unmarked Goal, i.e. Path with emphasis on the notion of ‘until, up to X’. The example in (59) from the BTI Bible translation supports Lüdtke’s (2015: 555) indication that *allí* ‘there’ appears zero-coded in Goal function. It further shows the transparent Source marking by *de* ‘from’.

- (59) Spanish HENCE and THITHER [BTI Matt 17: 20]
Quítate de ahí y ponte allí!
 go.away.IMP from there.PROX and put.yourself.IMP there
 ‘Move from here to there!’

We want to add, however, that the accompanying motion verb(s) are likely to play an important role for the choice of Goal marking. Goal SDDs behave differently in isolation, as opposed to being in the company of certain verbs. Since

many Spanish motion verbs have a clearly unidirectional and telic meaning, e.g. *llegar* ‘arrive’ or *volver* ‘return’, no marking is required. Conversely, verbs without explicit spatial meaning will tendentially require overt marking on the accompanying adverb. Mood is another influencing factor. Imperative phrases such as *ven aquí* (come.2SG.IMP here) ‘come here’ are common with SDDs, except for *allá*. Further factors such as tense possibly influence the marking strategy as well, but we cannot state anything about it here. A second look at any literary source reveals that the options in European Spanish are more than those displayed in the paradigm [EU-46]. Especially zero-coding seems to be grammatical with all SDDs in combination with adequate verbs. (60) shows the zero-coding of THITHER with *ir* ‘go’.

- (60) Spanish zero-coded Goal [BTI Matt 2:22]
Pero al enterarse de que Arquelao, hijo de Herodes,
 but at.the finding.out of that Archelaus son of Herod
reinaba en Judea en lugar de su padre, tuvo
 reign.3SG.PAST in Judea in place of his father have.3SG.PAST
miedo de ir allá.
 fear of go there
 ‘But when he heard that Archelaus was reigning in Judea in place of his father Herod, he was afraid to go there.’

A comprehensive study of SDDs in Spanish varieties including further factors would constitute an interesting study. So far, we can only summarize that while there seem to be some remarkable differences of Goal encodings in the several varieties and idiolects, there are basically three potential options for Goal. Goal SDDs may be zero-coded or preceded by *hasta*, *hacia*, or *para*. In general, the dominant syncretic pattern is clearly P≠G≠S. Source is always transparently and overtly marked by *de* or *desde*. Place is not overtly marked on the adverbs. Goal forms most often take a Goal preposition. The Spanish SIs, as discussed above, are genuinely P≠G≠S.

3.1.4.2 P≠G≠S in Germanic languages

The Swedish [EU-47] paradigm of SIs and SDDs is quite close to the canon. Each cell hosts exactly one expression and each expression has exactly one function. The morphological make-up of these expressions, however, is not as straightforward as the canonical forms. Stolz et al. (2017: 32) argue that “the exact linear order and the morphological status of the component parts of the construction are largely irrelevant” for the canon. To explain how close a paradigm can be to the canonical paradigm without fulfilling all the necessary requirements, they introduce the Early Modern English set of SIs and related expressions, cf. Table 13.

Table 13: (Early Modern) English spatial interrogatives and sundry items (Stolz et al. 2017: 32).

	A	B	C
I	<i>wh-ere</i>	<i>th-ere</i>	<i>h-ere</i>
II	<i>wh-ither</i>	<i>th-ither</i>	<i>h-ither</i>
III	<i>wh-ence</i>	<i>th-ence</i>	<i>h-ence</i>
IV	<i>wh-at</i>	<i>th-at</i>	<i>[this]</i>
V	<i>wh-en</i>	<i>th-en</i>	

As the expressions in Table 13 suggest, there is great consistency in that there is a Q-stem *wh-* (column A), a D2-stem *th-* (column B), and a D1-stem *h-* (column C). Furthermore, Place, Goal, and Source are consistently associated with *-ere*, *-ither*, and *-ence*, respectively. As Stolz et al. (2017: 32) explain, “it would be too daring to assign full-blown morpheme status (in the sense of spatial cases, for instance) to the non-initial parts of the segmental chain of spatial interrogatives synchronically”. They suggest that “all parts of the word-forms under scrutiny can be considered to be submorphemic” (Stolz et al. 2017: 32–33). We agree with this analysis and observe that a similar pattern can be found in the Goal column of the Swedish SDD paradigm, cf. Table 14.

Table 14: Swedish SIs and SDDs.

	Place	Goal	Source
SI	<i>v+ar</i>	<i>v+ar+t</i>	<i>v+ar+ifrån</i>
D1	<i>h+är</i>	<i>h+it</i>	<i>h+är+ifrån</i>
D2	<i>d+är</i>	<i>d+it</i>	<i>d+är+ifrån</i>

The Swedish SDDs *hit* and *dit* are related to the Early Modern English expressions *hither* and *thither*, and unlike the latter, they are still preserved in the language. Although the WHITHER expression in Swedish is not completely parallel to the SDDs, it still makes use of the final consonant *-t* to mark Goal. Similar to Stolz et al.’s (2017) analysis of the Early Modern English expressions, we analyze the initial consonants *v-*, *h-*, and *d-* as Q-stem⁴³, D1-stem, and D2-stem,

⁴³ Similar to the English *wh-* Q-stem, *v-* in Swedish is used for a number of other interrogative pronouns, e.g. *vad* ‘what’ or *vem* ‘who’. Contrary to English *when* as displayed in row V of Table 13, however, the Swedish interrogative of time *när* ‘when’ does not belong to the *v-* group.

respectively, and hence as submorphemic. Although not as consistent as in the Early Modern English case, *-ar* or *-är* are associated with Place, while *-t* or *-it* are associated with Goal. While all of the Place expressions are undoubtedly monomorphemic, it is arguable that the WHITHER construction can be divided into *var* ‘where’ + *-t* (ALL), similar to the WHENCE expression, which can be divided into *var* ‘where’ + *ifrån* ‘from’. In a section on Germanic spatial interrogatives in diachronic perspective, Stolz et al. (2017: 239) assume “that there were originally three distinct mono-word constructions which were formally distinct because of the different inflexions they displayed”. They furthermore state that “remnants of the erstwhile inflexions on the spatial interrogatives can be found in Swedish *vart* ‘whither’” (Stolz et al. 2017: 240).

The Norwegian [EU-30] paradigm looks quite similar to that of Swedish. The same SDD Goal expressions *hit* ‘hither’ and *dit* ‘thither’ are used and a similar submorphemic analysis can be carried out for the Norwegian expressions. However, this applies only to the SDDs. In comparison to the Swedish WHITHER expression *vart*, the Norwegian expression *hvorhen* ‘whither’ can much more easily be divided into two components, viz. *hvor* ‘where’ and the Goal marking suffix *-hen*. The Source expressions are similar to the Swedish ones, as they consist of the Place expressions suffixed with *fra* ‘from’.

In Danish [EU-9], the monomorphemic Goal elements, as preserved in Swedish and Norwegian, do not exist. Instead, similar to the Norwegian WHITHER form, the expressions consist of two components, viz. the Place expressions *hvor* ‘where’, *her* ‘here’, or *der* ‘there’ and the Goal marking suffix *-hen*, while *her* ‘here’ can alternatively also be suffixed together with *-hid*. The Source expressions are the same as in Norwegian, i.e. consisting of the Place expressions and *fra* ‘from’. There is, however, also the possibility to have overtly marked Place expressions. In this case, the Place expressions as introduced above are suffixed with the Place marker *-henne*, so that the forms *hvorhenne* ‘where’, *herhenne* ‘here’, and *derhenne* ‘there’ are derived.

Comparing the Goal expressions of the three mainland Scandinavian languages, one can observe that the suppletive expressions related to Early Modern English *whither*, *hither*, and *thither* are preserved in Swedish, while Norwegian preserved them only in the case of the SDDs. Danish has completely replaced them with compositional expressions consisting of an SI or SDD morpheme and a Goal marking morpheme. Examples (61)–(63) show the use of the THITHER expressions of the three languages.

- (61) Swedish THITHER [SFB15 Gen 19:20]
Låt mig fly dit, så att jag får leva.
 let:IMP 1SG.ACC flee thither so that 1SG can:PRES live
 ‘Let me escape there, and my life will be saved.’

- (62) Norwegian THITHER [N11BM Gen 19:20]

La meg få rømme dit, så jeg kan berge

let.IMP 1SG.ACC may escape thither so 1SG can:PRES save

liv-et!

live-DEF.UTR

‘Let me escape there, and my life will be saved.’

- (63) Danish THITHER [BPH Gen 19:20]

Kan vi ikke flygte derhen?

can:PRES 1PL not flee thither

‘Let me escape there, and my life will be saved.’ (lit. ‘Can we not escape there?’)

The Danish example in (63) does not only deviate the most from the others because of the difference in the translation of one and the same verse, but also because it is the only language in which there is no suppletive THITHER expression. Both Swedish in (61) and Norwegian in (62) make use of the suppletive expression *dit* ‘thither’. This is different in the SIs as examples (64)–(66) demonstrate.

- (64) Swedish WHITHER [SFB15 John 13:36]

Simon Petrus sade till honom: “Herre, vart går du?”

Simon Peter say:PAST to 3SG.M.DAT Lord whither go:PRES 2SG

‘Simon Peter said to Jesus, “Lord, where are you going?”’

- (65) Norwegian WHITHER [N11BM John 13:36]

Simon Peter sier til ham: “Herre, hvor går du hen?”

Simon Peter say:PAST to 3SG.M.DAT Lord where go:PRES 2SG to

‘Simon Peter said to Jesus, “Lord, where are you going?”’

- (66) Danish WHITHER [BPH John 13:36]

“Men Herre,” sagde Peter, “hvor går du hen?”

but lord say:PAST Peter where go:PRES 2SG to

‘Simon Peter said to Jesus, “Lord, where are you going?”’

In these examples, the Swedish WHITHER expression *valt* in (64) deviates the most from the others. Both Norwegian and Danish employ the same compositional expression *hvorhen* ‘whither’ in (65) and (66), respectively. Yet another issue that concerns both the SIs and the SDDs is that in many languages of the Germanic phylum, polymorphic SIs and SDDs allow for a directional marker, in this case *-hen*, to be detached from its host, in this case *hvor* ‘where’, and to wind up in clause-final position. This detachment of the directional marker is

optional, so that in both Norwegian and Danish an alternative sentence *Hvorhen går du?* ‘Where do you go?’ would be possible.

The two island Scandinavian languages of our sample, Faroese [EU-13] and Icelandic [EU-20], behave differently from the three mainland Scandinavian varieties, at least to some extent. The Icelandic paradigm reveals a similar WHITHER expression as Swedish. While the Q-stem remains unchanged in the Swedish paradigm, there is a change in Icelandic from *hvar* ‘where’ to *hvert* ‘whither’. Similar to the Swedish WHITHER expression, Goal is expressed by the attachment of *-t*. In this case, however, the Q-stem’s vowel is changed from *a* to *e*. The HITHER and THITHER expressions are different from the WHITHER expressions and they also differ from the constructions introduced for the mainland Scandinavian languages. The relatedness of *hér* ‘here’ and *hingað* ‘hither’ and *þar* ‘there’ and *þangað* ‘thither’ is not obvious. Especially the HITHER expression appears to be suppletive in that the only part that remains unchanged is the initial consonant /h/. The voiceless glottal fricative also seems to be associated with proximity in Icelandic. Apart from the short forms of the Place SDDs, there is also the possibility to have extended Place expressions marked by *-na*, so that *hérna* ‘here’ and *þarna* ‘there’ are derived. The Source expressions are again completely regular. The Place expressions *hvar* ‘where’, *hér* ‘here’, and *þar* ‘there’ drop the final *-r* and are suffixed together with *-ðan* to express Source. Something that is really different from the mainland Scandinavian languages is the possibility to use the Place expressions *hér* ‘here’ and *þar* ‘there’ also in Goal contexts, so that there is optional P=G syncretism.

Faroese shows some resemblance to the Icelandic paradigm, but it is much more regular. The Place expressions *hvar* ‘where’, *her* ‘here’, and *har* ‘there’ can be used for both Place and Goal. The regular Goal expressions, however, are marked by *-gar*, which is suffixed to the stem without the final consonant *-r*. Similar to the Icelandic HITHER expression, the stem is changed even further and the stem’s vowel changes from *e* to *i*. With these rules, the expressions *hvagar* ‘whither’, *higar* ‘hither’, and *hagar* ‘thither’ are formed. Similarly, *-ðan* or *-ðani* are suffixed to the same changed stems to form Source expressions. As a result, *hvaðan* and *hvaðani* ‘whence’, *hiðan* and *hiðani* ‘hence’, and *haðan* and *haðani* ‘thence’ are formed. It is also possible to make use of the Source marker *frá* ‘from’ similarly to the mainland Scandinavian languages. It can be used as a postposition after the WHERE expression *hvar* ‘where’ to form *hvar frá* ‘whence’. In the case of the SDDs, it must be suffixed to the long Source forms, resulting in the forms *hiðanífrá* ‘hence’ and *haðanífrá* ‘thence’. This appears to be similar to the Early Modern English Source expressions *hence* and *thence* which may be used by themselves or in a multi-word construction *from hence* and *from thence*.

From what has been discussed, it becomes apparent that the most diverse and inconsistent relation in the Scandinavian languages is the Goal relation. Table 15 gives an overview of the Goal expressions in all five Scandinavian languages of this sample. The different shades of grey mark similar strategies.

Table 15: Scandinavian Goal expressions.

	Danish	Norwegian	Swedish	Faroese	Icelandic
S1	<i>hvorhen</i>	<i>hvorhen</i>	<i>vart</i>	<i>hvar</i> <i>hvagar</i>	<i>hvert</i>
D1	<i>herhen</i> <i>herhid</i>	<i>hit</i>	<i>hit</i>	<i>her</i> <i>higar</i>	<i>hér</i> <i>hingað</i>
D2	<i>derhen</i>	<i>dit</i>	<i>dit</i>	<i>*har</i> <i>hagar</i>	<i>þar</i> <i>þangað</i>

The white cells display the zero-marked Place forms in Faroese and Icelandic, which can also be used for Goal due to possible P=G syncretism. The lightest grey shading is used for the suppletive expressions that make use of the final *-t*. The medium grey shaded cells host the compositional expressions consisting of the stem and a Goal marker *-her* (or *-hid*). The dark grey marks the expressions characterized by the stem changing Goal suffixes *-gar* or *-gað* used in the island Scandinavian varieties.

All five Scandinavian languages attest to the maximally distinct P≠G≠S pattern, although the two island Scandinavian languages also show traces of P=G syncretism. The Danish paradigm comes closest to the canon with the overtly marked Place expressions. Due to the zero-marked Place expressions (and the preference for them) and an alternative option to express HITHER, however, there are still some mismatches that restrain the Danish paradigm from being canonical.

3.1.4.3 P≠G≠S in Slavic languages

The majority of Slavic languages employs the P≠G≠S pattern, while (optional) P=G syncretism is not uncommon. Russian [EU-37] shows a paradigm where each cell is filled by a distinct form to indicate each relation, naturally resulting in a P≠G≠S pattern. The SIs *gde* ‘where’, *kuda* ‘whither’, and *otkuda* ‘whence’ are given in (67). The Goal and Source question words are morphologically re-

lated. The latter is derived by adding the ablative prefix *ot-* to the dynamic (allative) SI *kuda*. The bound ablative morpheme *ot-* has probably grammaticalized from the preposition *ot* ‘from’ which is still used and which requires any following noun phrases to occur in the genitive case. A parallel derivation pattern featuring *ot-* may be observed for the SDDs.

- (67) Russian
- a. WHERE [Wade 2010: 401]
Gde vy rabot-ayete?
 where 2PL.NOM work-2PL.PRES
 ‘Where do you work?’
- b. WHITHER [Wade 2010: 402]
Kuda vy id-ote?
 whither 2PL.NOM come-2PL.PRES
 ‘Where are you going?’
- c. WHENCE [Wade 2010: 402]
Otkuda on pri-shol?
 hence 3SG.M.NOM come.from-3SG.M.PAST
 ‘Where has he come from?’

Stolz et al. (2017: 283) state for interrogative spatial deictics that Russian has

abolished overabundance for good. The reduction of the number of options in the cells of the spatial interrogatives of Goal and Source goes hand in hand with the phonological reduction of the WHERE-construction. In this way, the diachronic processes of reduction and selection conspire to yield a ternary paradigm which reflects the assumed markedness hierarchy of WHERE, WHITHER, and WHENCE almost perfectly.

The overall Russian paradigm can still not be described as canonical. For instance, the proximal SDD cell may be filled by two forms *zdes*’ and *tut* both denoting ‘here’. The latter is primarily used in colloquial context and is generally employed in a temporal or situational sense (cf. Wade 2010: 402). Therefore, we did not include it in the paradigm and presume that overabundance is not a (predominant) feature of the overall Russian spatial deictic system. The assumed markedness hierarchy between Place, Goal, and Source (cf. Section 1.3) is reflected in both the proximal and distal stages of the SDDs. The HERE and THERE cells are the least marked and filled by monosyllabic forms, i.e. *zdes*’ ‘here’ and *tam* ‘there, while the disyllabic forms *sjuda* ‘hither’ and *tuda* ‘thither’ surface in HITHER and THITHER constructions. For HENCE and THENCE renderings, the trisyllabic *otsjuda* ‘from here’ and *ottude* ‘from there’ are used. The zero-marking of the Place expressions and their different phonological shapes in comparison to the Goal and Source expressions make the Russian paradigm

additionally deviate from the canon. The employment of the P≠G≠S pattern is exemplified in (68) with the proximal spatial declaratives in all three relations.

- (68) Russian proximal SDDs
- a. HERE [Wade 2010: 401]
Ya rabotayo zdes'.
 1NOM work-1SG.PRES here
 'I work here.'
- b. HITHER [Wade 2010: 402]
id-ite sjuda!
 go-2PL.IMP hither
 'Come here.'
- c. HENCE [NRT Luke 4:9]
 (...) *to bros-'sja otsjuda vniz.*
 that throw-2SG.REFL.IMP from.here down
 '(...), throw Yourself down from here.'

As shown in (68a), *zdes'*, 'here' is employed to render a static reading. The form is cognate with the Old Church Slavonic [EU-37] *svde* which encodes the most proximal of the four distal stages. The root of the proximal Goal SDD *sjuda* 'hither' is unrelated to its counterpart *semo* 'thither' in Old Church Slavonic. Yet, the initial voiceless alveolar fricative /s/ marking the proximal distance relation is retained. It appears that the root *-(j)uda* is a reflex of the allative SI *kuda* 'whither' which in turn is cognate with the Old Church Slavonic *qodê* 'whither'. In (68b), it is exemplified how the dynamic deictic element renders an allative reading together with the motion verb *idti* 'go'. Identical to the derivation pattern for the ablative SI, the Source SDD of the proximal relation is formed by adding the prefix *ot-* to the Goal SDD producing the form *otsjuda* 'from here', see example (68c). The distal relation displays a similar pattern. The deictic element *tam* is employed in THERE-constructions. In (69a), it co-occurs with the intransitive verb *rabotat'* 'work' to encode a static meaning. In THITHER-readings, the form *tuda* is used, giving evidence of the same root (*-uda*) found in the proximal Goal SDD and the Goal SI. Together with the motion verb *idte* 'go' it encodes allative motion in (69b). The distal Source SDD is transparently derived by adding *ot-* to the Goal SDD yielding the form *ottuda* which, in (69c), is used to specify the direction of the 'throwing'-motion, i.e. *brosat* 'throw'. Notice that analogous to the initial voiceless velar plosive /k/ shared by all SIs' bases and the initial voiceless alveolar fricative /s/ present in the bases of proximal SDDs, the distal SDDs share the initial voiceless alveolar plosive /t/.

- (69) Russian distal SDDs
- a. THERE [Wade 2010: 401]
On rabot-ayet tam.
 3SG.M.NOM work-3SG.PRES there
 ‘He works there.’
- b. THITHER [Wade 2010: 402]
Tuda id-ot avtobus nomer pyat.
 thither go-3SG.PRES autobus.NOM number.NOM five
 ‘The number 5 bus goes there.’
- c. THENCE [NRT Luk 16:26]
 (...) *i nikto ottuda ne mo-zhet perejti*
 and no.one.NOM from.there NEG can-3SG.PL cross.over
k nam.
 to 1PL.DAT
 ‘(...), and none may cross over from there to us.’

All in all, Stolz et al.’s (2017: 283) proposal that “Russian may be understood as optimization because many of the deviations from the canonical paradigm have been lost in the course of time” may be (re)affirmed for the declarative side of the language’s system. While there were three forms indiscriminately employed in SDD Source-constructions in Old Church Slavonic, *sǫdu*, *sǫdê*, and *sotb kǫdu* ‘hence’ and *tǫdu*, *tǫdê*, and *otb kǫdu* ‘thence’, the Russian paradigm is filled by one form only. The overall P≠G≠S pattern comes much closer to the canonical paradigm.

Another case to be discussed is the Slavic language Czech [EU-10] that displays a P≠G≠S pattern on the interrogative side. The SIs are shown in (70). The Place and Goal SIs are simple and mono-morphemic, *kde* ‘where’ and *kam* ‘whither’. It ought to be noted that the varieties spoken in central and eastern Moravia have been found to employ *kde* also in the Goal relation (cf. Bělič 1972: 213). However, in contemporary standard Czech this syncretism is generally not observed. The Source SI is complex and derived from the ablative prefix *od-* and the root *kud*, reminiscent of Old Church Slavonic *kǫdê* ‘whither = whence’. The element also occurs in conjunctions (e.g. *dokud* ‘for as long as’) and other interrogatives (e.g. *kudy* ‘by what path’).

- (70) Czech SIs
- a. WHERE [Janda and Townsend 2000: 6]
Kde se nachází letišť-ě?
 where REFL.ACC be.located.IMPV.3SG.PRES airport-NOM
 ‘Where is the airport located?’

- b. WHITHER [CESKMS John 13:36]
Pan-e, kam jdeš?
 lord-VOC whither go.2SG.PRES
 ‘Lord, where are You going?’
- c. WHENCE [CESKMS Matt 21:25]
Odkud byl křest Jan-ův?
 whence be.3SG.M.PAST baptism John-POSS.ADJ
 ‘The baptism of John – from where did it come?’

In all three examples, the respective SI occurs clause-initially and adjacent to the verb to inquire about Place, Goal, and Source, respectively.

The SDDs exhibit non-parallel patterns. The proximal stage is, as is the case for SIs, of the shape $P \neq G \neq S$. As shown in (71), the proximal Place SDD may be realized by either of three forms, viz. *tady*, *tu*, or *zde*, to render the notion of ‘here’, constituting a case of overabundance. Looking at the Czech National Corpus (CNC), it can be established that *tu* is the most frequently chosen option (100,960 tokens), followed by *tady* (55,329 tokens). *Zde* appears the least often (36,111 tokens). Speculatively, the distribution can be explained by register. It appears that *tu* can be used in most contexts, whereas *tady* and *zde* are generally employed in formal contexts.

- (71) Czech proximal Place SDDs
- a. HERE 1 [Janda and Townsend 2000: 81]
Tady to smrdí rybin-ou.
 here that.NOM.SG stink.IMPF.3SG.PRES fish-INST
 ‘It stinks of fish here.’
- b. HERE 2 [Janda and Townsend 2000: 75]
Co jste nám tu kradli?
 what be.2PL.PRES 1PL.DAT here steal.IMPF.2PL.PAST
 ‘What did you steal here?’
- c. HERE 3 [CESKMS Acts 9:10]
Zde jsem, Pan-e.
 here be.1SG.PRES lord-VOC
 ‘Here I am, Lord.’

The SDD indicating Goal in the proximal stage takes the form *sem* ‘hither’ (72) and might be morphologically related to the Place form *zde*, which is speculation and not stated in any of the descriptive resources. In Old Church Slavonic, all deictic elements in the respective relations share the initial consonant or initial syllable, i.e. the SIs share the Q-stem *k-*, the D1 SDDs employ *s-*, while D2, D3, and D4 resort to *t-*, *on-*, and *ov-*, respectively (Lunt 2001: 97). It is therefore

the D1 cells that are cognate with these two Czech proximal deictics. In Old Church Slavonic, the relationship between the elements becomes clearer as they had not yet undergone phonological changes. The deictics include *sъde* ‘here’, *sěmo* ‘hither’, and *sъdu/sъdê/sotъ kъdu* ‘hence’. In Czech, the stative proximal deictic has lost a word medial vowel -y- (syncope), whereas the allative counterpart has lost the final -o (apocope). The latter is shown in context in (72).

- (72) Czech HITHER [CESKMS Matt 14:18]
Přineste mi je sem!
 bring.PFCTV.2PL.IMP 1SG.DAT 3PL.ACC hither
 ‘Bring them here to Me.’

As for Source, one may find two overabundant forms, *odtud* (73a) and *odsud* (73b) ‘hence’. Both forms are derived by prefixing the ablative *od-* to the adverbial root, i.e. displaying a paralleling derivation process found for the ablative SI. Short (1993: 574) lists both elements in his compilation of indefinite pronouns and pronoun adverbs. Yet, he assigns the meaning of ‘thence’ to *odtud*, whereas *odsud* is attributed the notion of ‘hence’. In our data (CESKMS and CNC), however, there is a plethora of examples where *odtud* is also used to encode the proximal allative (e.g. [73a]). Still, *odtud* is also frequently featured as indicator for the distal counterpart, compare (75b) below. When consulting the distribution of the elements in the CNC, including the complex deictic *odtamtud* for the distal Source, the picture becomes clearer. It appears that while *odsud* (2,481 tokens) is exclusively employed to encode proximal Source and *odtamtud* (1,550 tokens) to mark distal Source, respectively, *odtud* (5,182 tokens) can be employed for both degrees of distance explaining its high overall frequency.

- (73) Czech proximal Source SDDs [CESKMS Luke 4:9]
 HENCE 1
 a. *Jsi-li Syn Boží, vrhni se*
 be.2SG.PRES-if son.NOM god.GEN throw.IMP.F.2SG.IMP REFL.ACC
odtud dolů;
 hence down
 ‘If You are the Son of God, throw Yourself down from here;’
 b. HENCE 2 [CNC]
Zasloužil bych si, aby mě
 deserve.PFCTV.PTCPL be.1SG.M.AUX REFL that 1SG.ACC
někdo vy-kopl odsud až na Charring Cross
 someone.NOM out-kick.PFCTV.PTCPL hence to Charring Cross
 ‘I deserve to be kicked from here to Charing Cross.’

In contrast to the prevailing $P \neq G \neq S$ pattern in the SIs and proximal SDDs, the distal SDDs show the pattern $P = G \neq S$ and, as hinted at above, only give evidence of overabundance in the Source relation. The syncretic coding of distal Place and Goal is exemplified in (74) where the deictic *tam* surfaces in both relations rendering the stative or dynamic reading of the construction dependent on the co-occurring verb or verbal complex, i.e. *být* ‘be’ + *tam* ‘be there’ (74a) vs. *nemoci přijít* ‘cannot come’ + *tam* ‘cannot come thither’ (74b).

- (74) Czech distal SDDs
- a. THERE [CESKMS Matt 2:15]
A byl tam až do Herod-ovy smrt-i
 and be.3SG.M.PAST there until Herod-GEN.SG death-GEN.SG
 ‘He remained there until the death of Herod.’
- b. THITHER [CESKMS John 7:34]
A kde jsem já, tam vy
 and where be.1SG.PRES 1SG.NOM there 2PL.NOM
ne-můžete přijít.
 NEG-can.IMPF.2PL.PRES come.PFCTV
 ‘[...] and where I am you can’t come.’ (lit. ‘and where I am, you cannot come there’)

As previously mentioned, *odtud* may also be used in distal ablative constructions, see example (75b). The other form exclusively encoding distal Source is the complex *odtamtud* derived from ablative *od-*, the distal deictic *tam*, and *tud*.

- (75) Czech distal Source SDDs
- THENCE 1 [CESKM Matt 9:27]
 a. *Když Ježíš odtamtud odcházel ...*
 when Jesus thence leave.IMPF.3SG.M.PAST
 ‘As Jesus went on from there ...’
- b. THENCE 2 [CNC]
Odtud přešla do divadl-a Rokoko v
 thence CROSS.PFCTV.3SG.F.PAST to theater-GEN Rokoko in
Pra-ze a od rok-u 1961 do divadla Semafor, ...
 Prague-LOC and since year-GEN 1961 to theater-GEN Semafor
 ‘From there she moved to the Rokoko theater in Prague and in 1961 to the Semafor theater, ...’

After examining an East and a West Slavic language, we now move on to discuss two closely related languages from the South Slavic branch. Alexander and Elias-Bursać (2010: xi) explain that “when Yugoslavia broke up into smaller successor states, the language called Serbo-Croatian was replaced by Bosnian,

Croatian, and Serbian”. The languages are said to be mutually intelligible and to have largely maintained the same basic system even after the political breakup in 1991 (Alexander 2006: xvii–xviii). In the following, we will demonstrate that while the spatial deictic systems of Croatian [EU-8] and Serbian [EU-40] are comparable and generally employ the same lexical input, one may still observe subtle differences between the systems. Indeed, Alexander (2006: 69 and 120) already declared that Bosnian and Serbian encode spatial deixis in an identical manner while Croatian has developed a distinct behavior.

In Croatian, the question word *gdje* ‘where’ may be used to inquire about both Place and Goal. This constitutes a case of syncretism (see Section 3.2.4.2 on Polish where the phonological change of the Old Church Slavonic *kъde* element is discussed). Yet, *kamo* and *kud(a)* ‘where to’ may also be used in allative interrogative constructions. The former is the preferred choice (cf. Alexander and Elias-Bursać 2010: 64). According to Alexander and Elias-Bursać (2010: 105), *kud(a)* was originally employed to refer to the path of a movement ‘which way/path’. This distinction is lost in modern Croatian, and both interrogatives are used in free variation with no change in meaning. Today, the notion of path is expressed by the phrase *kojim putem* ‘which path’. Ablative interrogative constructions feature *odakle* ‘where from’. Native informant Petra Novina also uses the form *otkud(a)*, a complex form of the prefix *od-* and the stem from the Goal question word. This expression, however, is unattested in the grammars and the Croatian Bible translation [HR]. The examples in (76) illustrate all three relations and give alternative constructions where necessary. It follows that the interrogative paradigm is maximally distinct with syncretism in the Goal and Place relation as well as overabundance in Goal and possibly Source.

- (76) Croatian SIs
- a. WHERE [Petra Novina, p.c.]
Gdje je on?
 where be.3SG.PRES 3SG.M
 ‘Where is he?’
- b. WHITHER [Petra Novina, p.c.]
Gdje/Kamo/Kuda on ide?
 whither 3SG.M go.3SG.PRES
 ‘Where is he going?’
- c. WHENCE [Petra Novina, p.c.]
Odakle/(Otkud) on dolazi?
 whence 3SG.M come. IMPF.3SG.PRES
 ‘Where is he coming from?’

The declarative side of the Croatian spatial deictic system behaves very similar to its interrogative side. There is syncretism between Place and Goal in both stages of distance and the overall paradigm exhibits $P \neq G \neq S$. Overabundance, on the other hand, may be found in SDD's Place and Goal relations, in contrast to the SIs where overabundant forms are found in the Goal and Source relation. Alexander (2006: 209) describes the derivation of locational and directional adverbs as a uniform system where the prefix *ov-* is used for the proximal stage, *on-* for distal, and *k-* for the interrogative side. The examples in (77) illustrate all three relations for the proximal stage.

- (77) Croatian proximal SDDs
- a. HERE [Petra Novina, p.c.]
On je tu/ovdje.
 3SG.M be.3SG.PRES here
 'He is here.'
- b. HITHER [Petra Novina, p.c.]
On dolazi ovdje. / On ide ovamo.
 3SG.M come.IMPF.3SG.PRES here 3SG.M go.3SG.PRES hither
 'He is coming here./He goes hither.'
- c. HENCE [Petra Novina, p.c.]
On dolazi odavde.
 3SG.M come.IMPF.3SG.PRES hence
 'He comes from here.'

In (77a), the options of expressing proximal location include *tu* and *ovdje*. The latter is transparently derived from the proximal prefix and the stem *dje* which is also featured in the SIs. *Ovdje* may also be used to express Goal paralleling the distribution of *gdje* 'where/where to' (77b). The other option to express proximal Goal is *ovamo* (77b). *Ovuda* 'this way, by this path', reminiscent of *kuda*, has not gone down the same path as its interrogative sister. Alexander and Elias-Bursać (2010: 105) assert that the distinction between *ovamo* meaning 'over here, to here' and *ovuda* 'this way' is still intact, our data (i.e. Petra Novina, p.c.; Bible translation [HR]) point to the same. As for proximal Source, *odavde* 'hence' is attested throughout the data (77c). The distal stage of Croatian deictic declaratives exhibits the same pattern as its proximal counterparts. The relations for the distal stages are exemplified in (78).

- (78) Croatian distal SDDs
- a. THERE [Petra Novina, p.c.]
On je tamo/ondje.
 3SG.M be.3SG.PRES there
 'He is there.'

- b. THITHER [Petra Novina, p.c.]
On ide tamo/onamo.
 3SG.M go.3SG.PRES thither
 ‘He is going there.’/‘He goes thither.’
- c. THENCE [Petra Novina, p.c.]
On dolazi odande.
 3SG.M come.IMPF.3SG.PRES thence
 ‘He comes from there.’/‘He goes thence.’

In static constructions, speakers of Croatian may choose between *tamo* and *ondje* to express ‘there’ (78a). The former deictic element may also occur in the Goal relations where it alternates with *onamo* (78b) to denote ‘thither’. As for the distal Source readings, *odande* ‘thence’ always occurs together with the verb to encode motion away from the deictic center (78c).

The closely related language Serbian [EU-40] gives evidence of a similar system. The interrogative side is almost identical. In the same way as in Croatian, speakers of Serbian may resort to either *otkud(a)* or *odakle* to inquire about Source. Further, the element *gd(j)e* is also used in both ‘where’ and ‘whither’ renderings. The only difference lies in the Goal relation. *Kamo* is frequently employed in Croatian to express WHITHER. Although the element is cited for Serbian (cf. Hammond 2005: 228), it is rarely found in our data, e.g. the Bible translation [SB-ERV] gives no evidence of the form. Moreover, Alexander and Elias-Bursać (2010: 64) explicitly state that “to ask ‘where in the sense of ‘whither’ (= where to), Croatian uses *kamo*. Bosnian and Serbian use either *kuda* or *gde/gdje* to ask this question; there is no difference in meaning.” This indicates that contemporary Serbian ‘merely’ alternates between *gd(j)e* and *kud(a)* to inquire about Goal. The declarative side of the Serbian spatial deictic system also slightly deviates from that of its Serbo-Croatian sister language. While one may observe overabundance in the proximal stages for Place and Goal in Croatian, there are overabundant forms only in both distal stages for the Place cells in Serbian, i.e. *tu* and *ovde* ‘here’ as well as *tamo* and *onde* ‘there’, and in the distal Goal relation, i.e. *tamo* and *onamo* ‘thither’. The proximal Goal relation is exclusively expressed by one form – *ovamo* ‘hither’. It follows that it is within the Goal relation on both the interrogative and declarative side of the paradigms where one may find differences.

Overall, it can be concluded that although the vast majority of Slavic languages definitely employs the maximally distinct paradigm, a detailed analysis reveals that there is some variation between the systems with frequent occurrences of overabundant forms.

3.1.5 P≠G≠S in Oceania

In Stolz et al.'s (2017) sample, the maximally distinct pattern is with 55% of all patterns the most frequent one in Oceania. This is also reflected in our sample. Almost all of our Oceanian⁴⁴ sample languages, i.e. 44 languages, attest to Pattern I in at least one of the expression classes. As there is a lot of variation and alternative patterns in the Oceanian languages, the share of the P≠G≠S pattern is still similar to the share calculated by Stolz et al. (2017). 52.1% of the SIs in our sample are formed with three distinct expressions, while the share of Pattern I is a bit higher in the SDDs, viz. 60.0% of the near deictics and 57.4% of the far deictics. The distribution of the P≠G≠S pattern across the Oceanian languages is displayed in Table 16.

Table 16: Oceanian languages that attest to P≠G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Abau	OC-1	Sepik, Upper	✓	X	X
Abui	OC-2	Timor-Alor-Pantar, Alor	X	✓	✓
Arrernte, Eastern	OC-3	Pama-Nyungan, Aranda	✓	✓	✓
Awtuw	OC-4	Sepik, Ram	X	✓	✓
Bardi	OC-5	Nyulnyulan, Western	✓	✓	✓
Chamorro	OC-7	Austronesian, Malayo-Polynesian	✓	X	X
Djapu	OC-8	Pama-Nyungan, Yuulngu	✓	✓	✓
Doromu-Koki	OC-9	Trans-New Guinea, Manubaran	✓	X	✓
Dyirbal	OC-10	Pama-Nyungan	✓	✓	✓
Fijian	OC-11	Austronesian, Oceanic	✓	✓	✓
Futuna-Aniwa	OC-12	Austronesian, Oceanic	✓	X	X
Garrwa, Western	OC-13	Garrwan	✓	✓	✓
Guugu Yimidhirr	OC-14	Pama-Nyungan, Yimidhirr-Yalanji-Yidinic	✓	X	X
Hawaiian	OC-15	Austronesian, Oceanic	✓	✓	✓
Imonda	OC-16	Border, Waris	✓	✓	✓
Jingulu	OC-17	Mirndi	✓	✓	✓
Kilivila	OC-18	Austronesian, Oceanic	X	✓	✓

⁴⁴ Note that we use *Oceanian* as an adjective describing anything that has to do with the macro-area Oceania. It is not to be confused with *Oceanic* which describes a branch of the Austronesian phylum.

Languages	Appendix	Affiliation	SI	ND	FD
Komnzo	OC-19	Morehead-Wasur, Eastern Tonda	✓	✓	✓
Manambu	OC-20	Sepik, Ndu	✓	✓	✓
Maori, Southern Cook Islands	OC-21	Austronesian, Oceanic	✓	✓	✓
Marquesan	OC-22	Austronesian, Oceanic	✓	✓	NA
Martuthunira	OC-23	Pama-Nyungan, Pilbara	✓	✓	✓
Maybrat	OC-25	Maybrat-Karon	X	✓	✓
Menya	OC-26	Trans-New Guinea, Angan	✓	✓	✓
Motuna	OC-27	South Bougainville	X	✓	✓
Ngan'gityemmerri	OC-28	Southern Daly	✓	✓	✓
Nii	OC-29	Trans-New Guinea, Wahgic	X	✓	✓
Orokaiva	OC-30	Trans-New Guinea, Binanderean	✓	✓	✓
Pitjantjatjara	OC-32	Pama-Nyungan, Wati	✓	✓	✓
Rapanui	OC-34	Austronesian, Oceanic	✓	✓	✓
Rawa, Karo	OC-35	Trans-New Guinea, Finisterre-Huon	✓	✓	✓
Rotokas	OC-36	North Bougainville	✓	✓	✓
Sa'a	OC-37	Austronesian, Oceanic	✓	✓	✓
Savosavo	OC-38	Solomon Islands	✓	✓	✓
South Efate	OC-39	Austronesian, Oceanic	✓	✓	✓
Tinrin	OC-41	Austronesian, Oceanic	✓	✓	✓
Tongan	OC-43	Austronesian, Oceanic	✓	✓	✓
Wambaya	OC-44	Mirndi, Ngurlun	X	✓	✓
Wardaman	OC-45	Yangmanic	✓	✓	✓
Warrongo	OC-46	Pama-Nyungan, Maric	✓	✓	✓
Yawuru	OC-47	Nyulnyulan, Eastern	✓	✓	✓
Yidjn	OC-48	Pama-Nyungan, Yimidhirr-Yalanji-Yidinic	✓	✓	✓
Yindjibarndi	OC-49	Pama-Nyungan, Pilbara	✓	✓	✓
Yuwaalaraay	OC-50	Pama-Nyungan, Wiradhuric	✓	✓	✓

As almost all of our Oceanian sample languages employ the P≠G≠S pattern at least partly, no meaningful statements can be made about the distribution of this pattern across language families. It occurs in all language families except for the West Papuan and Indo-European phyla, which are represented by Tidore [OC-40] and the English-based creole Tok Pisin [OC-42], respectively. A qualitative analysis of a number of Oceanian P≠G≠S languages is provided in the following sections, for which we deemed it sensible to discuss Australian languages (cf. Section 3.1.5.2) separately from other Oceanian languages (cf. Section 3.1.5.1).

3.1.5.1 P≠G≠S in Oceanian languages

3.1.5.1.1 The canonical case in Oceania

The paradigm of Modern Rapanui [OC-34] shows completely canonical forms, in which there is exactly one SI or SDD morpheme and one spatial morpheme corresponding to P/G/S. However, the optional use of the directionals *mai* ‘hither’ and *atu* ‘thither’ in spatial deictic contexts leads to a certain degree of deviation from the canon.⁴⁵ Rapanui attests to three stages of distance which are expressed by the free forms *nei* (PROX), *nā* (MED), and *rā* (DIST) (Kieviet 2017: 194).⁴⁶ Kieviet (2017: 193) refers to the SDD bases as a genuinely deictic subclass of demonstratives and further as “a subclass of the locationals (...)”.

According to our questionnaires, all three distance-sensitive spatial deictic forms undergo modification by preceding markers for Place, Goal, and Source. Place is marked by ‘i, although it can be omitted at least in the interrogative Place construction which is indicated with brackets in (79a). A peek into different text samples of Rapanui reveals that marker and base are alternately written as one word or two.

45 In many of the Oceanic sample languages, this pair of particles parallels or substitutes certain cells, e.g. the proximal allative and sometimes the distal allative or proximal ablative SDD. This pair of deictic forms originating from Proto-Oceanic **maRi* ‘to come, hither’ or ‘indicating motion toward the speaker’ and **atu* ‘movement away from the speaker’ (Blust 1973: 33, 35) is mostly of allative nature. Clark (1976: 34) lists altogether five directionals in Proto-Polynesian, the forms **mai* and **atu* among them. In modern Oceanic languages, many distinct reflexes of these two forms, mostly for andative and venitive functions, are attested, pointing to the various grammaticalization channels of the Proto-Oceanic directional verbs (Ross 2004: 194). The exact functions or meaning components such as telicity vary in the modern reflexes depending on language and even variety. Forms related to Proto-Polynesian **mai* usually match all criteria to encode HITHER, but forms based on Proto-Polynesian **atu* very often encode a non-telic meaning such as ‘away’. Telicity may be given, e.g. when *atu* refers to the hearer. Especially in older grammars and dictionaries, the distal form is often translated or glossed as ‘thither’ despite the presumed absence of a genuine Goal meaning. Kieviet (2017 §7.5) (similar to Malau 2016: 383 on Vurës) points out that modern reflexes of Proto-Polynesian **mai* tend to have more functions than just encoding motion towards a proximal Goal. It often refers to the deictic center which does not need to coincide with the speaker, and it further may encode directionality in figurative and temporal senses. Both directionals potentially bear even more meanings, e.g. extension (cf. Kieviet 2017: §75 for Rapanui), which we cannot discuss at this point.

46 More precisely, Kieviet (2017: 194) identifies four deictic locationals, i.e. *nei* ‘here, nearby’ or in deictic reading ‘close to speaker’, *nā* ‘near you’, *rā* (DIST), plus the neutral form *ira*.

- (79) Rapanui Place [Steve Pagel, p.c.; Steven R. Fischer, p.c.]
- a. WHERE
 (*i*) **hē** *ia?*
 at Q 3SG
 ‘where is he?’
- b. OVER THERE
i **rā** *ia*
 at DIST 3SG
 ‘he is over there’

The Goal marking is consistent in both SI and SDD constructions. A preceding *ki* modifies the base and encodes the telic deictic allative component. However, Goal SDD constructions may be enriched by optional, yet frequent insertion of the deictic directionals *mai* ‘hither’ for proximal and *atu* ‘thither’ for distal relations especially in colloquial Rapanui (Steve Pagel, p.c. and Steven R. Fischer, p.c.), cf. (80b) and (80c). Note that the construction in (80d) lacks the SDD but includes *atu*, which results in an ambiguous reading due to the lack of explicit coding of telicity and Ground.

- (80) Rapanui Goal [Steve Pagel, p.c.; Steven R. Fischer, p.c.]
- a. WHITHER
ki **hē** *ia?*
 to Q 3SG
 ‘where is he going?’
- b. HITHER
he oho (mai) ia ki nei
 ACT go hither 3SG to PROX
 ‘he goes hither’
- c. THITHER
he oho (atu) ia ki nā
 ACT go away 3SG to MED
 ‘he goes thither’
- d. *he oho atu ia*
 ACT go away 3SG
 ‘he goes thither’ or ‘he goes away’

The analysis of *atu* as atelic and hence the altered meaning in (80d) is further supported by Kieviet (2017: 347) who specifies that “[*a*]*tu* indicates movement

away from the deictic center, hence the gloss ‘away’”, whereas “[*m*]*ai* indicates movement towards the deictic center, hence the gloss ‘hither’”.⁴⁷

Steven R. Fischer (p.c.) reveals that the deictic directionals are usually omitted in formal Rapanui but appear frequently in temporal and spatial constructions and add inclusiveness in colloquial speech. In Source constructions, the insertion of *mai* ‘hither’ is optional and often appears in colloquial Rapanui, cf. (81c). (81b) and (81c) contrast two constructions of which (81c) is spatial and contains the meaning of ‘arriving’, whereas (81b) is likely interpreted as expressing Origin. Source constructions are generally marked by a prepositional form *mai* ‘from’.

- (81) Rapanui Source [Steve Pagel, p.c.; Steven R. Fischer, p.c.]
- a. whence
mai hē ia?
 from Q 3SG
 ‘where does he come from?’
- b. HENCE (Origin)
mai (te kona) nei
 from (ART place) PROX
 ‘[he comes] from here’
- c. HENCE
he tu’u (mai) ia mai nei
 ACT come hither 3SG from PROX
 ‘he comes from here’

Not only does the meaning of *mai* and *atu* vary depending on the verb with which and context in which they appear, but their degrees of obligatoriness may also increase accordingly (Steven R. Fischer, p.c.; Kieviet 2017: §7.5). The complexity of the functionality of both forms expands even more outside the realm of spatial functions, e.g. in temporal or social-psychologically directional contexts. Steven R. Fischer (p.c.) emphasizes the strong superstrate influence of Tahitian on today’s Rapanui and the concomitant influence of the Tahitian-typical use of the two directionals.

The case of Rapanui with its three canonical construction types involving the locationals *nei*, *nā*, and *rā*, and the markers ‘i (P), *ki* (G), and *mai* (S) plus the

⁴⁷ Concerning extended spatial and non-spatial functions of *mai* and *atu* in Rapanui, the interested reader is referred to Kieviet (2017: 347–362) who gives a very detailed analysis of the Rapanui deictics and provides counts of the co-occurrences with spatial and non-spatial verb classes.

largely optional particles *mai* and *atu* shows that paradigms can be flexible not only according to variety or register of a given language but also depending on what is allowed to enter the paradigm. We include the directional markers in the paradigm [OC-34] and indicate the optional use by brackets. However, an alternative to this analysis is to reduce the paradigm to the locationals with the prepositional markers.

3.1.5.1.2 Marker chaining in Oceania

The Karo dialect of the Finisterre-Huon language Rawa [OC-35] attests to two patterns and three different marking strategies, viz. (i) P=G syncretism in SDDs via Place marking on Goal forms, (iia) the maximally distinct pattern with zero-coded Place and overt Goal, and (iib) the maximally distinct pattern with the Source marker attached to a Place or Goal marked form. The static SI *nda* ‘where’ is attested in unsuffixed form, following a demonstrative to inquire the location of an object (82a). The same SI also appears with the ‘to/at/in’ suffix *-no* (Toland and Toland 1991: 18), cf. (82b). The suffix *-no* also reappears in SDD Goal constructions (cf. [83e] and [83f] below). There is, however, one locational suffix that appears in Goal and Source interrogations, i.e. *-sina*, which is glossed as either ‘location’, ‘toward(s) (this/that direction)’, or ‘side’ in Toland and Toland (1991). Although they predominantly gloss *-sina* simply as ‘towards’, Toland and Toland (1991: 30) refer to the item as signifying ‘location’ and gloss it as such in some instances. The analysis for the combined form *nda-sina* for WHITHER remains shaky since it is attested only in the Bible translation and only as an indirect question (cf. 82d).

However, in combination with a semantically adequate telic motion verb, Goal does not need to be coded overtly (82c). There is, however, only one such example found in Toland and Toland (1991). For the Source SI, two options are available. Either the Goal suffix *-no* appears between the Q-stem and the ablative marker *-nggo* to form *nda-no-nggo* as in (82e) or else the syncretic Goal marker *-sina* occupies the middle slot to form *nda-sina-nggo* (82d). There is no attested instance of the ablative marker attaching directly to the Q-stem.

- (82) Rawa SIs
- a. Zero-coded WHERE [Toland and Toland 1991: 25]
Ngu nda?
 that where
 ‘Where is that?’
 - b. Overtly coded WHERE [Toland and Toland 1991: 26]
Ene nda-no?
 3SG where-P/G
 ‘Where is he?’

- c. Zero-coded WHITHER [Toland and Toland 1991: 52]
Ge nda-ru-te?
 you where-go.down-PRES.2SG
 ‘Where are you going?’
- d. Indirect WHENCE and WHITHER [RWORNT John 3:8]
Ene nda-sina-nggo ombu-ro, nda-sina oorowu-te-ku ngu,
 3SG where-LOC-ABL come-SS where-LOC go-PRES3SG-REL 3SG
ge ma ingo o-te.
 2SG NEG know-PRES.2SG
 ‘(...) you cannot tell where it comes from or where it is going.’
- e. WHENCE [RWORNT Matt 13: 54]
Nga oni-ngga nga ingondudu-ni, ko, oo muri songo
 this man-DEF this smart-3.POSS CONJ SPEC custom other
oorengo gura oni-ndo ma te-weroyi-mu, ngu yanggango-ngga
 very a man-AG not do-NMZ-POSS this strong-DEF
ngu nda-no-nggo yo-ro te-te?
 this where-P/G-ABL get-SS do-PRES.3
 ‘Where did this man get this wisdom and these miraculous powers [from]?’

Roughly, the same patterns apply to the declarative side of Rawa basic spatial deictics. Yet, the second, longer pattern for HENCE remains unattested in both Toland and Toland (1991) and the RWORNT Bible. Furthermore, *-no* is not attested in Goal SIs but for Goal SDDs only (cf. [83d] and [83f] below), so that Rawa is P=G syncretic in the SIs due to zero-coding and not due to default locative coding, the latter being present in the SDDs.

The unsuffixed proximal deictic *nga* appears predominantly in demonstrative function (83a) in static spatial deictic contexts with adverbial function connotation. There are some instances, however, in which unsuffixed *nga* indicates genuine Goal, cf. (83b). This is likely to correlate with the semantics of the preceding motion verb which renders overt marking dispensable. The P=G marker *-no* is found in both static and allative SDD constructions, as shown in (83c–d). Unsuffixed *ngu* ‘there’ in spatial deictic sense is found predominantly in demonstrative use in verbless constructions, paralleling the use of *nga* ‘here’ as in (83a). It seems that for genuine spatial deictic constructions involving verbs, affixation is obligatory. According to that, far distance Goals are indicated with the forms prefixed to P=G syncretic *-no* (83e). Also, both far and distal deictic SDD bases can combine with *-sina*. HITHER can thus be expressed as *nga-sina* (Toland and Toland 1991: 43), and far distance direction as *ngu-sina* (Toland and

Toland 1991: 173). Source is coded overtly, as shown in (83b) and (83g). The latter, however, is likely not a genuine spatial construction.

- (83) Rawa SDDs
- a. HERE/'this' [Toland and Toland 1991: 95]
oore-ga nga
 road-DEF.SG here
 'the road here'
- b. HENCE and zero-coded HITHER [Toland and Toland 1991: 148]
 "No *ngu-ya ye-ndo nga-no-nggo meno sambi te-roo-to-yiro*,
 1SG that-INCL 2PL-AG here-P/G-ABL cry.out loud do-CTS-DS-PL.EXC
ngo-ro ino Sonomburu mera-no awu-no-nggo ingo-ro,
 hear-SS 1SG Sonomburu ground-P/G up.far-P/G-ABL hear-SS
ombu-te-no-ku nga", *e-ro e-wo-ro*.
 come-PRES-1SG-CLI here say-SS say-PAST.3SG-REM
 "I too heard you all from here loudly cry out and I heard you from all
 the way up at Sonomburu ground and so I came here!" he said.'
- c. HERE [Toland and Toland 1991: 172]
Adaga u-wa-ro, ngungi nga-no oru-wa-ro, bine?
 now go.down.FUT.1DL or here-P/G be-FUT-1DL perhaps
 'Will we go down now or perhaps stay here?'
- d. HITHER [Toland and Toland 1991: 151]
Nga-no maye-to-ni ngu, ...
 here-P/G come-DS-SG.EXC when
 'When he came here, ...'
- e. THERE [Toland and Toland 1991: 151]
Ngundi-ro ngu-ro, komo ngu-no ori-yingo.
 same DEM-POSS must there-P/G remain-CPL
 'Because of that, I had to remain there.'
- f. THITHER [Toland and Toland 1991: 178]
Ngu-no gudo yo-wero sa-wa-ro[.]
 that/there-P/G pandanus get-DESID walk-FUT-1DL
 'We will walk there and get pandanus (nuts).'
- g. THENCE [Toland and Toland 1991: 30]
Te-to-ni, awa namo era-ga suwo-no-nggo
 do-DS.SG.EXC papa mother two-DEF.SG night-P/G-ABL
ko-no sa-ying-mu, ko suwo-te-to-ni
 garden-P/G leave-CPL-POSS again night-do-DS-SG.EXC
ngu-sina-nggo gobiri se-ro siriyo-ro ko
 that/there-LOC-ABL taro dig-SS fill.string.bag-SS and

mbako se-ro siriyo-ro, de imboo-ro maye-yingo.
 sweet.potato dig-SS fill-SS wood chop-SS arrive-CPL
 ‘He did that and in the morning my parents, the two of them, left for
 the garden and in the afternoon return again and from that location
 they dug Chinese taro and put them in the string bag and dug sweet
 potatoes and put them into their string bag and returned home.’

Apart from few individual exceptions, the Rawa (Karo) paradigm is largely transparent. We refrain from reconstructing **nga-sina-nggo* for HENCE since other marker-chained constructions in the paradigm [OC-35] stand on shaky ground already. Zero-coded forms occur only in the static relation. In the declarative realm, they encode demonstrative meanings rather than genuine spatial HERE and THERE. For the declarative Goal function, two suffixes may be applied, one of which is syncretic with both declarative Place SDDs. The suffix *-sina*, however, applies to dynamic spatial deictic constructions only. Source on both sides of the paradigm is constructed by suffixing one of the two spatial markers found in Place and Goal constructions followed by the ablative. Source is thus a tripartite construction in Rawa (Karo). A handful of zero-coded instances of Place and Goal indicate that (at least certain) motion verbs in this language include direction. The language is mildly verb-framing for which the Bible verse Matthew 17:20 serves as a testing ground. The English translation is a clause with two Grounds connected by a preposition. In a tendentially verb-framing language, each Ground needs a motion verb of its own (cf. Wälchli and Zúñiga 2006; Bohnemeyer 2003; Robbers and Hober 2018), cf. (84).

- (84) Clause-linkage [RWORNT Matt 17:20]
 [...] *nga musiyongga yoko-ya, musiyongga e-to-yi-ga,*
 this/here place-DEF.SG leave-IMP place another say-DS-3SG-DEF
ene ngu-no ooro-ro oru-wa [...]
 3SG there-P/G go-SS be-FUT
 ‘Move from here to there.’ (lit. ‘“leave this place”, he said, “go there”’)

The isolated *nga* in (84) provides some evidence for zero-coded Source, granted that the semantics of the accompanying motion verb involve a spatial ablative notion. However, as the nominal *musiyongga* ‘this place’ follows the demonstrative, it is deemed a non-deictic construction and therefore does not form part of the canonical paradigm for SDDs in Rawa (Karo).

3.1.5.1.3 Complex P≠G≠S in Oceania

The maximally distinct type is often realized by quite sophisticated or complex systems in Oceania. Recurrently, several word forms are involved and SDD constructions which are not only characterized by morphological operations but also by syntactical ones.

The Oceanic language Tinrin [OC-41], spoken in New Caledonia, offers a wide range of word forms that qualify to enter the canonical paradigm. Deictic demonstratives are often accompanied by gestures (Osumi 1995: 90), and spatial reference is additionally made explicit by accompanying (absolute) location nouns. Some elements of the paradigm are prepositional (Osumi 1995: 31). These occur as options for all three SI functions as well as in many SDD constructions. They surface considerably more often for the dynamic relations than for HERE and THERE forms. The Place preposition *ruu* ‘at, in’ accompanies only a few static declarative forms, while (*p*)*were* ‘to, towards’ forms part of five attested Goal SDD constructions. Osumi (1995: 31) cites the relative *ghe* ‘from’ along with the two aforementioned forms. According to the examples in Osumi (1995), *ghe* fulfills ablative functions and also marks Origin. All three, but especially the latter, appear recurrently in deictic and anaphoric constructions and precede overt nominal referents.

There are two Place SIs in Tinrin. The paradigmatic one is described in detail by Osumi (1995: 55):

[T]he interrogative (*â*)*e* ‘where’ is marked for the locative case with or without a preposition. When it occurs after the verb *truu*, or after prepositions *ruu* ‘at’, *ghe* ‘from’, or *pwere* ‘to’, the initial vowel *â* is dropped, and it becomes enclitic (...).

There is, however, another SI *hae* ‘where, which, how’ which may inquire location in combination with some nouns (Osumi 1995: 230). Osumi (1995: 96) further states that *hae* signifies ‘how’ if it is followed by a human NP. Typically, the construction is used to inquire about Place if *hae* is followed by a nonhuman NP, as in (85c). One example, however, includes Place interrogation for a human, combining *hae* with a female first name (85d).⁴⁸

- (85) Tinrin static SIs
- a. WHERE I [Osumi 1995: 232]
- âe*** *nrâ* *fwi* *mwâ*
where 3SG do hut?
 ‘Where did he build a hut?’

⁴⁸ It is likely that the distinction between a conditional versus a spatial reading of *hae* depends on contextual information. Alternatively, proper names function as non-human NPs in these constructions.

- b. WHERE via SI stem cliticized to static verb [Osumi 1995: 232]
mwâ rrê nrü nrâ truu-e
 house POSS 2SG 3SG stay-where
 ‘Where is your house?’
- c. WHERE (nonhuman referent) [Osumi 1995: 96]
hae erre nrâ nrü?
 where place POSS 2SG
 ‘Where is your place (house)?’
- d. WHERE (proper name) [Osumi 1995: 234]
hae sonya?
 where Sonya
 ‘Where is Sonya?’

Similar to (85b) above, a motion verb ending in a vowel such as *fî* ‘to go’ may take an enclitic version of the SI stem (86b). Another solution to ask about Goal is via the preposition (*p*)*were* ‘to, towards’ as introduced above (86a). The Source (and Origin) marker *ghe* likewise appears with encliticized *âe* (86c). As frequently observed crosslinguistically, Source needs to be coded overtly, as opposed to optional or verb-dependent overt marking of Goal by a preposition (cf. [86a–b]). A comparison between the constructions in (86) reveals that the verb *fî* ‘to go’ is bidirectional, i.e. it has no exclusive allative or ablative reading. The default reading, however, is allative. Therefore, the coding of Source must be made explicit by *ghe*.

- (86) Tinrin dynamic SIs
- a. WHITHER via preposition [Osumi 1995: 232]
ri fî were âe
 1PL go to where
 ‘Where are we going?’
- b. WHITHER via SI stem cliticized to dynamic verb [Osumi 1995: 32]
ke f-ae?
 2SG go-where?
 ‘where are you going?’
- c. WHENCE/ORIGIN via preposition [Osumi 1995: 177]
ke nrâ fî ghe-e?
 2SG IMPF go from-where
 ‘Where are you from?’

Turning to the SDDs, there are manifold options to encode the static relations according to roughly three basic distance levels (cf. [OC-41]). Osumi (1995: 55) identifies three corresponding deictic demonstratives, *ha* (PROX), *mwâ* (MED), and *rra* (DIST). The deictic demonstratives “either precede or follow the location

nouns, to which they are cliticized” (Osumi 1995: 55). They have anaphoric force and “modify the meaning of location nouns by defining how the speaker perceives the distance between the object and the speaker or the addressee” (Osumi 1995: 55). In VPs, these deictic distance markers appear as enclitics, e.g. in (87). In this example, a term referring to a far deictic Ground is accompanied by the proximal deictic marker to indicate ablative motion.

- (87) Tinrin Source [Osumi 1995: 55]
nrâ fi ghe mē ârijù-ha
 3SG go from come down.there-PROX
 ‘He came from down there’

Canonical P/G/S deictic forms can be enriched by the bound form *ânrâ-*, to which the demonstratives are cliticized. These complex forms are discussed in detail in Osumi (1995: 56). A morphologically complex form *ânrâ-ha* can thus be referred to as indicating ‘here’, e.g. (88a). The same form may express HITHER if it is accompanied by an adequate motion verb (88b). In this case, no additional morphology is needed to indicate the allative, thereby proving the option of P=G syncretism in the realm of SDDs. In (88c), the proximal relation co-occurs with the locative preposition. Similar to (88b), the verbal semantics support the appropriate allative or directional reading.

The Goal preposition (*p*)*were* is not attested for the proximal declarative relation. However, it is found in combination with the longer deictic forms as well as the preposition *nrâ* (3SG) which refers to ‘there’ in a deictic or anaphorical manner (cf. [88d]). In (88e), HENCE is expressed by a co-occurrence of the bidirectional motion verb *mê* ‘come’, the combined deictic form *ânrâha* ‘here’, and the Source preposition *ghe* ‘from’. As opposed to the attested instances of marking Origin, spatial deictic ablative relations may also be expressed via the 3SG pronoun preceded by both the Source marker *ghe* and the locative marker *ru*, cf. (88f).

- (88) Tinrin SDDs
- a. HERE [Osumi 1995: 95]
anera wiri nrâ truu ânrâha
 how.is.it 2PL IMPF stay here
 ‘How is it that you are still here?’
- b. Zero-coded HITHER [Osumi 1995: 89]
trea nrü rri mē ânrâhâ nrâûra samdi
 people 3PL come here except Saturday
 ‘People come here except on Saturday.’

- c. HITHER with locative preposition [Osumi 1995: 179]
ua hava tròa moo ru ânràha
 1SG.DEF 1PAST arrive first time at here
 ‘I have just come here for the first time.’
- d. THITHER [Osumi 1995: 96]
nrâ go hidro nrâ mwâ nera wei fi pwere nrî
 3SG then say PAST that what.about 1SG.FUT go to 3SG
 ‘He then said “Why am I not going there?”’
- e. HENCE [Osumi 1995: 290]
rri fi ghe mê ânràhâ rri fi ghe mê tre
 3PL go from come here 3PL go from come another
nroorre parrù
 place also
 ‘They come from here; they also come from another place.’
- f. THENCE [Osumi 1995: 284]
nrâ see tramwâ nrâ mwâ nrâ fi ghe ru nrî
 3SG NEG know PAST that 3SG go from at 3SG
 ‘He did not know how he came up from there.’

From the examples above, it becomes also evident that motion verbs, such as *fi* ‘to go’ and *mê* ‘to come’, cannot be the pivot of directional encoding, since they are not assigned to one direction only. However, the default meaning is Goal, as Source needs overt coding. Further, they “often play a role as directionals in verbal serialization” (Osumi 1995: 218). Tinrin makes considerable use of overt and distinct marking and is classified as P≠G≠S language in both SI and SDD domains. The declarative side, however, leaves an option for P=G syncretism (cf. [88a–b] above).

3.1.5.1.4 Mixed systems in Oceania

The Papuan language Doromu-Koki [OC-9] is predominantly yet semi-transparently P≠G≠S coding; with a Goal=Source syncretic option. The SIs for Place, Goal, and Source are formally distinct with a common Q-stem. Both WHERE and WHITHER consist of a stem *go(i)=* with different endings, whereas WHENCE is periphrastic. However, there is no synchronically transparent locative or allative marking on the respective SIs. The KQC Bible translation offers a second option for WHITHER, i.e. the non-spatial interrogative *goina* ‘which one’ com-

binning with the postpositional clitic =*ri* ‘at’ to indicate “which place?”.⁴⁹ This construction also provides the base for the attested instances of WHENCE constructions in Bradshaw (2012) and the Doromu-Koki Bible KQC. In the data taken from Bradshaw’s (2012) grammar, the locative clitic =*ri* attaches to *gutuna* which follows the Q-word *goina*, cf. (89c). In the Bible translation, the general Q-word *goina* takes the locative clitic and combines with *gutuna* ‘distant place’ in the same order.

- (89) Doromu-Koki SIs
- a. WHERE [Bradshaw 2012: 135]
 [...] *mamoe di mida bi goini?*
 sheep GEN child TOP where
 ‘[...] where is the lamb?’
- b. WHITHER I [Bradshaw 2012: 35]
Ya goidu di-sa?
 2 where go-2SG.PRES
 ‘Where are you going?’
- c. WHENCE I [Bradshaw 2012: 135]
Ya bi goina gutuna=ri bai-yo?
 2 TOP which.one distant.place=at come-2/3SG.PAST
 ‘From which place did you come?’
- d. WHENCE II [KQC Matt 21:25]
John di babatiso rena di vava bi goina=ri
 John GEN baptism doing GEN hot TOP which.one=
gutuna bae-yo?
 distant.place come-PAST.SG
 ‘The baptism of John – from where did it come?’

As for the declarative deictic domain, Doromu-Koki has a set of locative adverbs that express, inter alia, vertical or river-oriented relations. SDDs, however, are provided by adverbial demonstratives and some demonstrative pronouns that take locational marking. All adverbial demonstratives combine with a prefix or clitic *yo-* to indicate ‘specific’ P/G/S, e.g. *yomini* ‘right here’ or *yomirodu* ‘right over there’ (Bradshaw 2012: 131).

⁴⁹ In the Bible translation, many spatial deictic contexts are expressed on the basis of a ‘place’ noun in combination with a demonstrative and an adequate static or motion verb. These constructions are tentatively omitted from the paradigm [OC-9] in light of the more canonical SDDs.

Infrequent instances of morphological marking occur via the postpositional =*ri* which attaches “to the demonstrative pronouns to form locatives” (Bradshaw 2012: 129). For Place, mostly the bare forms are attested (e.g. in [90a] and [90d]). Among the exemplary SDD constructions in (90), (90b) shows a Goal SDD consisting of a demonstrative pronoun and marker =*ri*. The proximal Source function is realized by the same demonstrative pronoun as in HITHER (90b), followed by *sana* ‘place’ with the clitic =*ri* ‘at’.

- (90) Doromu-Koki SDDs
- a. HERE [Bradshaw 2012: 131]
Ina gua bi mini.
 3 now TOP here
 ‘He is here now.’
- b. HITHER [Bradshaw 2012: 214]
Mina=ri ga di.
 this=at PRHB come
 ‘Don’t come here.’
- c. HENCE [KQC Luke 13:31]
Ya mina sana=ri fere-si sana be yokoi=ri di,
 2 this place=at leave-SEQ.SS place some one=at GEN
adina bi Herod yaku ya umuye-gedi moke-na moi-do.
 because TOP Herod DM 2 kill-2/3.FUT think-NMZ get-3S.PRES
 ‘Leave and go away from here, because Herod [Antipas] wants to kill You.’
- d. THERE [Bradshaw 2012: 184]
Sisifura.sasifura mironi ve.
 itsy.bitsy.trees there see
 ‘Look at the itsy bitsy trees over there.’
- e. THITHER [KQC Matt 2:22]
[...] ye mirona=ri di-na ori re-yo.
 so that=at go-NMZ fear do-2/3S.PAST
 ‘[...] he was afraid to go there.’
- f. THENCE [Bradshaw 2012: 211]
Mina=ri bi ida yokoi vana enana rofu di
 this=at TOP road one hand left PURP GEN
ne-yo mini.
 go.down-2/3S.PAST here
 ‘From there one road goes down on the left hand side.’

The construction in (90c) involving the noun *sana* ‘place’ and a bare proximal demonstrative is not genuinely encoding a Source relation. Instead, proximal deictic Ground (‘this place’) is combined with an ablatival verb. This type of construction is therefore tentatively excluded from the paradigm. Still, the occurrence of the locative clitic on the place noun in the same fashion as on SDDs is noteworthy. Apart from verb-framed G=S constructions in which =*ri* functions as a G=S marker, we found one instance of the ablative postposition *ro(fu)* in a spatial deictic function, accompanying the far distal *isefu*.

- (91) Doromu-Koki Source/Origin [Bradshaw 2012: 132]
Mirona isefu ro moi-vo.
 that there.further.away ABL get-2S.HORT
 ‘You should get that one there from further away.’

Due to differing SDD bases, i.e. demonstrative pronouns versus adverbial demonstratives, the Doromu-Koki spatial deictic system appears as mixed in terms of syncretic patterns. While the SI paradigm is maximally distinct with two attested constructions for WHITHER and WHENCE each, there are syncretic options for the first two SDD stages. For the proximal relation, the locative clitic =*ri* appears as the G=S marker. For the medial or near distal, P=G syncretism as a second option is attested, the first option being the respective SDD combined with =*ri*. The other two distal stages are attested only scarcely. Nonetheless, the ablative coding of *isefu* in (91) provides further evidence for a dominant P≠G≠S pattern. Since two syncretic options are attested, verb-framedness is deemed to exist in Doromu-Koki.

Lacking further evidence, we cannot rule out the possibility that the paradigm [OC-9] is in fact a verb-framing one at least in the realm of SDDs, with optional or verb-dependent marking of dynamic relations. On the basis of the data presented above, however, Doromu-Koki qualifies for the P≠G≠S group. Details of this analysis may change in the light of new data, as several combinations of both demonstrative subsets with either zero, locative marking, or the ablative postpositions are attested and open up ground for more possibilities.

3.1.5.2 P≠G≠S in Australia

Of altogether 17 Australian sample languages, 15 pervasively code their SI and SDD paradigms in maximally distinct fashion, along with many options for P=G syncretism. Solely Guugu Yimidhirr [OC-14] seems to prefer the P=G pattern (cf.

Section 3.2.5, Table 25).⁵⁰ Morphological marking is consistent in SI and SDD sister paradigms in Australia. In 14 out of 17 Australian sample languages, the same Source marker attaches to SI and SDD forms to derive a regular column of the paradigm. For Goal, ten languages were found to employ the same marker consistently, others applying this strategy partially, i.e. in some cells of the paradigm. For five languages, a highly consistent Place marker could be identified. All of the respective markers are suffixal or enclitical.

Regarding the number of deictic distance stages, modern systems appear as reduced. Contemporary Bardi [OC-5], for instance, preserved only two distance levels, while there are traces of a formerly third far distance deictic stage (Bowern 2012: 326). As an illustrative example for the overt, distinct coding of all three spatial relations in deictic reading serves the Pama-Nyungan language Warrongo [OC-46]. The THITHER function inferred from the translation in (92a) appears to be expressed by a bare SDD without allative marking, cf. (92b). There is thus some evidence for P=G syncretism in SDDs. Note, however, that the allative is marked on the adjacent adverb *gonggarri* 'north'. Generally, the overt marking on spatial adverbs is analyzed as infrequent and optional (Tsunoda 2011: 179), but Goal SDDs are mostly found to co-occur with the dative suffix *-wo* or the allative adverb-stem-forming suffix *-ngal* 'to', cf. (92b).⁵¹

(92) Warrongo SDDs

- a. Overt PLACE and SOURCE versus covert GOAL [Tsunoda 2011: 383]
- | | | | |
|-------------------------|-----------------|-----------------------|-----------------|
| yarro-ngomay-Ø | <i>jana-Ø</i> , | yarro-n-da | <i>jana-Ø</i> |
| here-ABL-NOM | 3PL-NOM(S) | here-LK-LOC | 3PL-NOM(S) |
| <i>nyamba-garra-n</i> , | <i>yani-Ø</i> | yarro-ngomay-Ø | ngoni=wa |
| dance-ITER-NFUT | go-NFUT | here-ABL-NOM | there=FOC |
- gonggarri-ngal*.
north-to
'They danced here. They went from here to there, to the north.'
- b. Overt GOAL [Tsunoda 2011: 301]
- | | | |
|-----------------|---------------|--------------------|
| ngoni-wo | <i>jana-O</i> | <i>yani-ya-n</i> . |
| there-DAT | 3PL-NOM | go-all-NFUT |
- 'They all went there.'

⁵⁰ As in many of the world's languages, the identical coding of Place and Goal naturally results from zero-coding of both. Indeed, zero-coded Place forms often optionally express Goal depending on the accompanying verb. P=G syncretism in Australia is discussed in Section 3.2.5.2.

⁵¹ Optional P=G syncretism applies to Warrongo SIs as well (for a discussion cf. Nintemann and Robbers 2019: 27–28).

SDDs in Australian languages are often provided by demonstrative pronoun classes which take nominal morphology. Apart from locative, allative, and ablative case, further cases may be relevant for spatial deictic encodings, e.g. elative, perlative, lative, and non-telic directional markers (cf. Bowers 2012 on Bardi). Dative case may encode Goal, as in Warrongo (cf. [92b] above). Yet, Goal is optionally coded in SIs, and only Source is marked obligatorily (Tsunoda 2011: 182–183). Case markers are usually suffixed, while case combinations are typical and often include locative with subsequent allative or ablative marking, cf. the example from Western Garrwa [OC-13].

(93) Western Garrwa THENCE and THITHER

[Furby and Furby 1977: 5.1.2.17 as cited in Mushin 2012: 122]

nangi-nbu-nanyi ngay=i jila kingkarri-ji dingki-yudi
 this-LOC-ABL 1SG.NOM=PAST walk up-all dinghy-with
nana-nkurri-wa
 that-ALL-DIR

‘From here, I went up to that place (=there) in the dinghy.’

Furthermore, to each spatial function several cases may apply, attesting not only to overabundance but also to overdifferentiation. Arrernte [OC-3], for instance, employs an ablative suffix *-ntyele* when the Source movement occurred recently. A final *+nge*, on the other hand, indicates several types of ablational motion in a more general spatial sense (Green 1994: 38).

(94) Arrernte

a. WHENCE [Green 1994: 39]

Nthenhe+nge
 where+from
 ‘Where from?’

b. THENCE [Green 1994: 80]

Arne nhenhe arne nhakwe+nge arlpentye-ulkere
 tree here tree over.there+from long-more
 ‘This tree is taller than that one over there.’

Apart from these transparent constructions, some Australian paradigms host forms that are less transparent. For instance, the Nyulnyulan language Yawuru [OC-47] has many SDDs that co-encode two explicit spatial deictic functions. Both (95a) and (96) show such an item, (95b) expresses a similar notion in a paraphrased sentence including the distal deictic *karda* ‘there, yonder’ and the allative case suffix *-ngarn*. *Ka-gap* in (95a), however, consists of the distal stem *ka-* and the ablative suffix *-gap*.

- (95) Yawuru THITHER [Hosokawa 1991: 330]
- a. ***Ka-gap***⁵² *mluk+wal-a-ka*.
 DIST-ABL move+2FUT-TRANS-AUX(carry)
 ‘You shift it over there (from here).’
- b. *Muluk+wal-a-ma* ***karda-ngarn***.
 move+2FUT-TRANS-AUX(put) yonder-ALL
 ‘You’ve got to shift it over there.’
- (96) Yuwaalaraay HERE and suppletive HERE [Giacon 2014: 186]
- dhaay*** *yanaa-ya* *maa*, *milaan* ***nhalay***.
 to.here go-IMP Mum, yam here
 ‘Come here mum, there’s a yam here.’

Following this overview of Australia, more Australian sample languages are exemplarily discussed according to their dominant syncretic pattern types. It has to be kept in mind that this study focusses on morphological marking of SDDs and the relationship between SI and SDD constructions. These constitute only parts of generally broader, more complex, and multifaceted spatial orientation systems, such as the well-known system of absolute cardinal directions in Guugu Yimidhirr [OC-14] (Haviland 1998).

3.1.5.2.1 Overt marking of Place, Goal, and Source in Australia

To provide exemplary data for the overt marking of P/G/S, the Mirndi language Jingulu [OC-17] is introduced as it constitutes a typical example of an Australian SDD paradigm. However, some traits differ. The usage of temporal markers, for example, is extended to general spatial contexts, and not the other way around which is more common for Australian languages (Pensalfini 2014).

In the Jingulu SI domain, Place and Goal are syncretic due to the suffix *-wa(ra)* which is “probably derived from the core verb ‘will go’” (Pensalfini 1997: 238) (cf. [97a] and [97c]). The resulting P=G syncretic form is (*w*)*aju-wa(ra)*. The Source SI takes the ablative suffix *-ngkami*, which is also regularly found on Source SDDs (97d). The parallel marking of SIs and SDDs extends to the Place relation as well, since the locative suffix *-mbili*, which forms part of most of the attested Place constructions, is also found in combination with

⁵² In the original source, *kagap* is glossed as ‘away’ in this example.

nyamba ‘what’ to form a Place SI (97b).⁵³ The second syncretic option for Jingulu SIs is P=G≠S, which parallels the dominant pattern for SDDs.⁵⁴

- (97) Jingulu SIs
- a. WHERE I [Pensalfini 1997: 200]
Ajuwa *ngaja-mina-ka ngaanku? Aja nina-ka*
 where see-3S.2OBJ-PAST.HAB 2SG.ACC who 3S.2OBJ-PAST.HAB
ngaanku?
 2SG.ACC
 ‘Where were you being seen? Who was seeing you?’ or ‘Who was seeing you where?’
- b. WHERE II [Pensalfini 1997: 237]
Nyamba-mbili-kaji *mankiyi-mindi-ju?*
 what-LOC-through sit-1DL.INC-do
 ‘Where [which place] are we sitting?’
- c. WHITHER [Pensalfini 1997: 238]
Ajuwa *ngurru-wa?*
 whither 1PL.INC-will.go
 ‘Where shall we go?’
- d. WHENCE [Pensalfini 1997: 238]
Bininja-ala, ajuwaru-ngkami *wurra-miki?*
 man-PL where-ABL 3PL-came
 ‘The men, where did they come from?’

The declarative side is characterized by regular and transparent marking of Place by *-mbili* (LOC), of Goal by *-ngka* (ALL), and of Source by *-ngkami* (ABL). This is exemplarily shown with the distal SDDs in (98a–c). The bases for SDDs are provided by the demonstrative set, the members of which potentially inflect for gender. In genuine spatial deictic settings, neuter forms are combined with the

⁵³ In combination with a locative suffix, *nyamba* ‘what’ may additionally encode ‘how; by what means’ (Pensalfini 1997: 237).

⁵⁴ Some instances of *ajuwa* ‘where, whither’ lead to interesting questions, such as the following example in which *ajuwa* might express a Place interrogation or a Goal interrogation.

- (i) Jingulu WHERE or WHITHER?
Ajuwa *ila-nga-nu ngara bundurru-nu?*
 where put-1SG-did 1SG.GEN food-did
 ‘Where did I put my food?’

One possible analysis for the above sentence is that *ajuwa* signifies WHITHER due to the change of location indicated by *ila* ‘put’. Another possible analysis is that it means static interrogation in the sense of ‘where is it (that I put it)’.

forementioned case suffixes to indicate Place, Goal, or Source. Furthermore, lexicalized items that originate from neuter and masculine demonstrative forms encode spatial deictic functions, such as *dakani* ‘right there’ and *ngarlarli* ‘hither’ (Pensalfini 1997: 235), cf. (98d). The latter is primarily found in imperative mood phrases in Pensalfini (1997).

(98) Jingulu SDDs

- a. THERE [Pensalfini 1997: 194]
Ngunu-mbili *ya-ju.*
 DEM(NEUT)-LOC 3SG-do
 ‘There he is.’
- b. THITHER [Pensalfini 1997: 348]
Ya-marri nguna-ngka jimi-nama Warumunga
 3SG-did(DIST) DEM(NEUT)-ALL that(NEUT)-time Warumungu
junungku wajima-marri Barnkubarnku-ngka.
 straight-ahead watch-did(DIST) Banka-Banka-ALL
 ‘Recently the Waramungu came straight up here by Banka-Banka way and the people watched them coming.’
- c. THENCE [Pensalfini 1997: 235]
Ngina-niki-na-mi ya-miki nginuwa-ngkami ngaja-nga-nu
 this(F)-FOC-IRR 3SG-came this.way-ABL see-1SG-did
ngunu-ngkami *ngawu-ngkami.*
 DEM(NEUT)-ABL home-ABL
 ‘I saw them come here from their home over there.’ (lit. ‘I saw them come here from over there, from their home over there.’)
- d. HITHER [Pensalfini 1997: 194]
Ngarlarli *wangku!*
 hither come(IMP.SG)
 ‘Come over here!’

In addition to the three deictic stages, the spatial case affixes are also found in a fourth deictic stage with the anaphoric demonstrative base *kuyu-* (cf. [OC-17]). Jingulu thus commands a regularly and transparently derived set of SDDs, along with the suppletive, overabundant *ngarlarli* ‘hither’. Beyond the SDDs, Pensalfini (2014) sheds some light on the richness of spatial marking in Jingulu, discussing the development of some more specialized spatial deictic markers which developed from light verbs. The verbal origins are mostly associated with static location and may involve further parameters such as visibility.

The Pama-Nyungan language Yuwaalaraay [OC-50] is less regular and transparent, yet a typical P≠G≠S candidate. Marking on SDDs and SIs is overt on all Source forms and most Goal forms, Place is coded by a locative, ostensive, or

a zero morpheme. The morphological marking of SDDs is distinct from the marking of the SI set. This analysis is based on Giacon's (2014) grammatical description. In Stolz et al. (2017: 491), Yuwaalaraay is classified as G=S syncretic in the interrogative domain on the basis of Co. Williams (1980: 56). According to the older source, the SI *mijna:ru* is employed in Goal and Source contexts and therefore seems generally marked for directionality or dynamic motion, as opposed to the static *mijna:ya* 'where'. The ending of the G=S form is again found in Giacon's (2014) Goal SI *minyarru* 'where, somewhere' but not elsewhere.⁵⁵ The form *minyayi* is identified as Source SI by Giacon (2014: 247–249). Examples (99a–b) demonstrate the transparent marking pattern of contemporary Yuwaalaraay.

- (99) Yuwaalaraay SIs
- a. WHERE [Giacon 2014: 248]
minyaa-ya=*bala* *nginu* *walaay* *gi-gi.la-nha*
 where-LOC=CTR 2SG.DAT camp be-CTS-PRES
 'Where is your camp?'
- b. WHITHER [Giacon 2014: 248]
minyaa-rru *nhama* *yuruun* *gi-yaa-nha*
 where-ALL 3.DEF road be-MOV-PRES
 'Where does this road go to?'
- c. WHENCE [Giacon 2014: 249]
minyaa-yi *nginda* *dhaay* *'naa-waa-nhi*
 where-ABL 2SG to.here come-MOV-PAST
 'Where have you come from?'

Goal forms are marked by the suffixal *-dhaay* 'to here, to me', which can also stand in isolation to indicate 'hither', cf. (100)

- (100) Yuwaalaraay HITHER [Giacon 2014: 104]
dhaay *yanaa-ya*, *dhayn-duul*
 to.here go-IMP man-DIM
 'Come here little dark fellow.'

The freestanding *dhaay* is also found in ablative constructions, e.g. the combination with a locational SI fulfills a WHENCE function in (101). Similarly, "*dhaay* often occurs with a nominal in Locative or Ablative case indicating the origin of

⁵⁵ The exclusive marking of Goal by *-(:r)ru* may be an innovation, since Giacon (2014: 216) discusses older descriptions of Yuwaalaraay and cites "*minyarru-ngi??*" as indicating 'where from' according to the data collected on tape by Wurm (1955: 64).

motion” (Giacon 2014: 573). Note that in (99c) above *dhaay* appears disjoint from the core SI.

- (101) Yuwaalaraay WHENCE [Giacon 2014: 248]
minyaa-ya dhaay nginda 'naa-waa-nhi
 where-LOC to.here 2SG go-MOV-PAST
 ‘Where do you come from?’

The deictically anchored form thus plays an important role in the encoding of directional relations. In SDDs, the static relation is met by unmodified demonstratives which spread over four distance levels along with a specialized anaphoric form *ngiyarrma* ‘there’ (102a). Goal SDDs have two options. First, they can be composed of certain demonstrative forms that combine with the allative suffix *-gu*, such as *ngaarri-gu* ‘over there/far-ALL’. Second, *-dhaay* may be attached (102b). Here, the motion verb’s semantics and the context are crucial for the encoding of proximal versus distal deictic relation, since *-dhaay* is found in the same syntactic position also in HITHER contexts.⁵⁶

- (102) Yuwaalaraay SDDs
- a. THERE (anaphoric) [Giacon 2014: 207]
gumbugan-di dhaay nhama baa-waa-nhi ngiyarrma ganunga
 sandhill-ABL to.here 3.DEF hop-MOV-PAST there(ANAPH) 3PL
dhanduwi-y.la-nha
 sleep-CTS-PRES
 ‘The kangaroos come here from the sandhills, but they sleep there.’
- b. THITHER [Giacon 2014: 521]
yea, ngaa, ngaama-dhaay=nga? ganunga buurrngan
 yea yes there-to.here=then 3PL meat.ant
yanaa-nhi
 go-PAST
 ‘Yeah, ngaa, then the meat ants went there.’

Source SDDs are also coded distinctly, i.e. either by the demonstrative suffix *-lay*, which may denote ostensivity or visibility (Giacon 2014: 174), or by the definite suffix *-ma*. However, as (103) shows, *-lay* may also form part of static SDDs, which

⁵⁶ An example of proximal allative movement by the same construction type is provided by Giacon (2014: 292):

- (ii) Yuwaalaraay coexpression of THENCE and HITHER
Bamba mayrraa nhama-dhaay gi-yaa-nha
 with.energy wind there-to.here be-MOV-PRES
 ‘A strong wind is coming here./The wind is getting strong here.’

opens up the possibility that Place, Goal, and Source functions are indicated in some of the base SDD forms rather than being encoded morphologically.

- (103) Yuwaalaraay HENCE and HERE [Giacon 2014: 217]
yanaa-ya ngiilay, yanaa-ya garriya=bala nguwalay wila-y.la-ya,
 go-IMP from.OST go-IMP don't=CTR here sit-CTS-IMP
yanaa-ya
 go-IMP
 'Go away from here, go. Don't stay here. Go.'

It can therefore be concluded that Yuwaalaraay employs distinct forms for all three relations investigated. However, the choice of demonstrative (and accompanying verb) may constitute the true pivot of the irregular, maximally distinct coding pattern in Yuwaalaraay, despite the evidence for some morphological marking patterns.

3.1.5.2.2 Zero-marking of Place in Australia

The maximally distinct type with zero-coded Place is exemplified here by the Pama-Nyungan language Yidjɪn [OC-48]. The pattern neatly applies to both sister paradigms. The Place SI *wanɟa* 'where' appears exclusively without overt marker in Dixon's (1977) grammar. The form *wanɟa:gu* 'whither' is suffixed by an allative marker, and also an instance of final *-l* on the base *wanɟa* is attested and glossed as allative in Dixon (1977), cf. (104).

- (104) Yidjɪn WHITHER II [Dixon 1977: 515]
nundu:ba wanɟa:l galɪn
 you.ALL-S/ST where-ALL go-PRES
 'Where are you all going?'

The Source SDD *wanɟam* is suffixed by ablative *-m* which is also regularly found on Source SDDs. As for SDDs in general, the dominant pattern in Yidjɪn is P≠G≠S. Case marking applies to Goal SDDs in the form of the suffixes *-gu* or *-ruɲ*. Note that the Goal SDD in (105b) is followed by a Place SDD.⁵⁷ A bare root form is encountered in Place contexts (105a), while an ablative suffix *-mu* is attested on all Source SDDs, such as in (105c).

⁵⁷ There are some traces of P=G syncretism. In one example in Dixon's (1977) grammar, *ɪɲgu* is glossed as 'here-ALL' but the phrase reads as an instance of Place rather than Goal (cf. Dixon 1977: 199, example 201).

(105) Yidij SDDs

- a. HERE [Dixon 1977: 518]
jundu:ba *ɖambu:l* *wuna-ɲada-n* *yɪngu* *ɲaŋɖi* *ɲina:na*
 you.all.S/ST two.ABS lie-coming-IMP here we.S/ST sit.PURP
guma:n-da
 one-LOC
 ‘You two come and sleep here! Then we can all settle down together
 (i.e. all in one group).’
- b. HITHER [Dixon 1977: 201]
jundu:ba *waŋɖirimay* *yɪngu:-ruŋ* *yɪngu* *gada:ɲ*
 you.all.S/ST when here-ALL here come.PAST
 ‘When did you (PL) come this way here?’
- c. THENCE [Dixon 1977: 18]
garu *ɲuŋgu-m* *gali:ɲ*
 by.and.by there-ABL go.past
 ‘By-and-by [Guyala and Damari] went on from there.’

The three deictic stages in Yidij involve the usual minimal differentiation between proximal and distal, while the third level refers to “‘invisible’ in the tablelands dialect, but ‘far and visible’ in the coastal dialect” (Dixon 1977: 1). Origin is coded distinctly from Source, i.e. by suffixing *-bara* to a locative case deictic (Dixon 1977: 144). The Yidij paradigm is thus highly canonical, without overt Place marking but with transparent and regular marking of Goal and Source in both sister paradigms.

3.2 Pattern II: Place=Goal≠Source

In this section, the P=G≠S pattern characterized by the syncretism of Place and Goal constructions is discussed. Like the maximally distinct pattern reviewed in Section 3.1, various marking strategies may be involved. Both zero-marking and overt but indistinct marking of P and G with a general spatial marker are a frequent occurrence. The analyses given in the following subsections will illustrate the manifold examples of languages with P=G syncretism.

3.2.1 P=G≠S in Africa

The P=G≠S pattern is the second most common pattern among our African sample languages. 26.5% of all SI paradigms, 29.9% of the ND paradigms, and

30.3% of the FD paradigms attest to this pattern. The distribution deviates slightly from Stolz et al.'s (2017) results for SIs. The number of paradigms in the shape of Pattern II amounts to only 22% in their sample of 72 African languages, so that it is only the third most common after Pattern V and Pattern I. In our African subsample, a total of 21 languages show the P=G≠S pattern as displayed in Table 17.

Table 17: African languages that attest to P=G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Afar	AF-1	Afro-Asiatic, Cushitic	✓	✓	✓
Amharic	AF-2	Afro-Asiatic, Semitic	✓	✓	✓
Dime	AF-9	South Omotic	✓	✓	✓
Fulfulde, Adamawa	AF-13	Atlantic-Congo, North Atlantic	✓	✓	✓
Gidar	AF-14	Afro-Asiatic, Chadic	✓	✓	✓
Hamar	AF-16	South Omotic	X	X	✓
Hausa	AF-17	Afro-Asiatic, Chadic	✓	✓	✓
Khoekhoe, Nama	AF-20	Khoe-Kwadi	✓	✓	✓
Kikuyu	AF-21	Atlantic-Congo, Bantu	✓	✓	✓
Lango	AF-24	Nilotic	✓	✓	✓
Maale	AF-27	Ta-Ne-Omotiic	✓	✓	✓
Ma'di	AF-28	Central Sudanic, Moru-Madi	✓	✓	✓
Miya	AF-31	Afro-Asiatic, Chadic	✓	✓	✓
Munukutuba	AF-32	Atlantic-Congo, Bantu	X	✓	✓
Nobiin	AF-34	Nubian	✓	✓	✓
Òkọ	AF-35	Atlantic-Congo, Oko-Eni-Osayan	✓	✓	✓
Somali	AF-40	Afro-Asiatic, Cushitic	✓	✓	✓
Swahili	AF-43	Atlantic-Congo, Bantu	✓	✓	✓
Tamasheq	AF-44	Afro-Asiatic, Berber	X	✓	✓
Wolaytta	AF-47	Ta-Ne-Omotiic	✓	✓	X
Yoruba	AF-48	Atlantic-Congo, Defoid	✓	✓	✓

Pattern II seems to occur in a variety of African language families, so that no clear tendencies can be identified. However, all the languages that belong to the Atlantic-Congo macrophylum have at least one other option, viz. the neutralized P=G=S pattern. The following subsections will give a qualitative account of the different occurrences of Pattern II in Africa.

3.2.1.1 Obligatory P=G syncretism in Africa

The Central-Sudanic language Ma'di [AF-28] is one of the languages that clearly show the P=G≠S pattern in both SIs and SDDs. The SDDs consist of a demonstrative determiner and a spatial marker, e.g. *nà* 'that (away from both)' + *ʔā* (SPAT) = *náʔā* 'there (away from both)'. The expressions are not further marked for Place or Goal.

(106) Ma'di THERE [Mairi Blackings, p.c.]

āní náʔā

3SG there

'He is there.'

(107) Ma'di THITHER [Mairi Blackings, p.c.]

kó-` mū náʔā

3-NPAST-go there

'He goes there.'

Examples (106)–(107) show how the deictic adverb *náʔā* 'there (away from both)' is used in both Place and Goal relations. Goal is not overtly marked, but the directional verb *mū* 'go' bestows an allative reading upon the entire construction. A Source relation, however, has to be overtly marked with the Source postposition *sì* as exemplified in (108).

(108) Ma'di THENCE [Mairi Blackings, p.c.]

a. *k-ē-mú náʔa sì*

3DIR-VEN-go there S

'He comes from there (towards speaker).'

b. *kó-` mū náʔā sì*

3-NPAST-go there S

'He is going from there (elsewhere).'

Both examples make use of the same verb *mū* 'go'. In (108a), it is prefixed together with the third person directive pronoun and the venitive prefix *e-* which "expresses a ventive meaning, indicating that the action described took place somewhere and that one of the participants, usually the agent, is now at or nearer the location of the speaker, usually by having come towards the speaker subsequent to the action" (Blackings and Fabb 2003: 73). According to Blackings and Fabb (2003: 75), the venitive prefix can attach to numerous verb stems. In the case of *e- + mū* 'go', the lexicalized verb *ēmú* 'come' emerges (cf. [108a]). *Ēmú* would also be used in combination with *dīʔā* 'here' in a Goal construction, e.g. *kēmú dīʔā* 'He comes here.' (Mairi Blackings, p.c.). The use of *ēmú* 'come' in (108a) implies that the movement is directed towards the speaker. In contrast,

the use of *mū* ‘go’ without the venitive prefix in (108b) suggests that the journey starts and ends away from the speaker (Mairi Blackings, p.c.).

The P=G≠S pattern is the only option in Ma’di. A general spatial marker is employed in connection with a demonstrative determiner to form SDDs. The SI *ĩngɔ̄* ‘where/whither’, however, is not separable into two morphemes. Blackings and Fabb (2003: 607) explain that there are three basic morphological types for wh-words, viz. (i) *àdɔ̄/àdĩ*, which are used for expressions like ‘who’, ‘what’, or ‘why’, (ii) *ĩngɔ̄* and tonal variations used mainly for the spatial interrogatives, and (iii) *sĩ* which expresses ‘how much, how many’. The WHERE=WHITHER expression is thus of the second type *ĩngɔ̄* with a high tone on the initial syllable and a mid tone on the second syllable. The SIs similarly employ the P=G≠S pattern obligatorily, i.e. they are unmarked for both Place and Goal but occur with the postposition *sĩ* in Source constructions.

3.2.1.2 P=G≠S reflected in only one expression class

Not every language provides as clear a picture as Ma’di. Table 17 above suggests that in Hamar [AF-16] only the FD SDDs show P=G syncretism. Petrollino (2016: 114–120) introduces Hamar’s spatial deictic and interrogative systems and describes the elaborate system for the SIs and the proximate SDDs. Both SIs and ND SDDs distinguish a specific form, which “is characterized by the vowel *-a* which could be analyzed as the masculine inflection”, and an unspecific form, which “is characterized by the vowel *o*, which resembles the nominal feminine inflection *-no*” (Petrollino 2016: 114). The specific form “refer[s] to identified places which are usually delimited, restricted in size, and which can be easily seen or individuated by the speakers” (Petrollino 2016: 114). The unspecific form, on the other hand, “point[s] out general, wide, and non-restricted spaces”, and the described location “is not necessarily identifiable by the speakers” (Petrollino 2016: 114). Furthermore, the question words *hamá-/hamó-* ‘where’ and the proximal deictics *ka-/ko-* ‘here’ may take all kinds of case markers. In contrast, the distal deictic *óo* ‘there’ may only occur with the adessive case suffix *-bar* and the ablative case suffix *-rra*. The allative case suffix *-shet* is only attached to the SIs and the proximal SDDs.

(109) Hamar use of *óo* ‘there’

a. THERE

[Petrollino 2016: 115]

óo *wodí* *beré* *shidó-da* *shid-é*
 there 1PL later stay.1PL-IMPF stay-PRES
 ‘later we will stay there’

- b. THITHER [Petrollino 2016: 115]
háile selá-sa kaisí-na óo yiʔá-ise boráana da-uxá
 Haile Selassie-GEN servant-PL there go-CNV1 Boraana IMPF-fight
 ‘the vassals of Haile Selassie used to go there and raid the Boraana’
- (110) Hamar use of *kó-* ‘here (unspecific)’
- a. HERE [Petrollino 2016: 115]
 [...] *kó-te banqí-be fálde-be bish dáa-ne*
 here.UNSPEC-LOC spear-COM arrow-COM only exist-COP
 ‘[...] here there are only spears and poisoned arrows’
- b. HITHER [Petrollino 2016: 117]
kó-shet gobá!
 here.UNSPEC-ALL run.IMP-2SG
 ‘run towards here!’

By comparing (109) to (110), the differences between the marking of the SDDs of the two distance levels become clear. The distal deictic *óo* ‘there’ does not take any suffixes, i.e. to mark neither Place nor Goal. Yet, the proximate deictic *kó-* ‘here (unspecific)’ takes the general locative suffix *-te* to mark Place and the general allative suffix *-shet* to mark Goal. According to Petrollino (2016: 115) “[t]he proximal bases *ka-* and *ko-* are always suffixed with case markers, whereas the deictics *óo* (distal from the speaker) [...] can also be used as bare forms”. The author also explains that “[w]hen there is no case marking on these deictics, the values they express in terms of static location or motion depends on whether they modify stative verbs or motion verbs” (Petrollino 2016: 115), as in example (109). We are unsure about the extent to which this also concerns the SIs, as there is only one example in which the unmarked SI *hamó* ‘where (unspecific)’ is used in a Goal construction, cf. (111).

- (111) Hamar unmarked WHITHER [Petrollino 2016: 247]
hamó ki=yiʔ-á?
 where.UNSPEC 3=go-PAST.INTERR
 ‘where did he/they go?’

As *hamá* ‘where (specific)’ and *hamó* ‘where (unspecific)’ usually behave completely parallelly, we assume that *hamá* can also be used without any case markers. We are, however, uncertain as to whether the unmarked forms can also be used to express Place. This would be in line with Petrollino’s (2016: 115) statement on stative and motion verbs when there is no case marking. We deem it highly possible that the unmarked forms may also be used to express Place. Still, as there are no examples of unmarked SIs employed for Place, we decided not to include these forms for Place. If *hamá* and *hamó* can indeed be used for

Place, resulting in P=G syncretism in the Hamar SIs, then the general picture, including the overall statistical evaluation, would still be very similar; a small change like this seems negligible.

Source expressions are always overtly coded with the ablative suffix *-rra*, which leads to a shortening of the long vowel of *óo* ‘there’.

- (112) Hamar THENCE [Petrullino 2016: 118]
yáa-ne ó-rra t’álian baʔá-ise niʔ-â
 2SG-COP DIST-ABL Italians bring-CNV1 come-REL.PAST.M
 ‘It’s you who came and brought the Italians from there.’

As the example in (112) shows, the FD expression *orra* ‘thence’ is used to express Source. As the marking of Source is obligatory in all expression classes, a P≠G≠S pattern is employed in the SIs and ND SDDs, while the FD SDDs show the P=G≠S pattern.

3.2.1.3 Complex system with various options in Africa

The Defoid language Yoruba [AF-48] offers a variety of expressions in all three relations. An unmarked basis can be found in the Place expressions, viz. *ibo* ‘where’, *ihín* ‘here’, *ibí* ‘here’, *ibè* ‘there’, and *òhún* ‘yonder’. Rowlands (1969: 142) points out “that there are two words for ‘here’ – **ibí**, which pairs with **ibè** ‘there’, and **ihín**, which pairs with **òhún** ‘yonder’” and that “[s]ome Yorubas use one and some the other”. These zero-marked expressions can be used for Place.

- (113) Yoruba zero-marked Place constructions
- a. WHERE [Rowlands 1969: 141]
ará ilú ibo ni é?
 member.of.a.community town where it.is 2SG
 ‘person of town of where are you?’ = ‘what is your home town?’
- b. THERE [Rowlands 1969: 112]
èèméjì péré ni mo dé ibè
 twice only it.is 1SG arrive there
 ‘I have only been there twice’
- c. HERE [Rowlands 1969: 142]
ibí dára púpọ̀
 here to.be.good much
 ‘here is very nice’

The zero-marked forms in (113) only occur in Place readings. Usually, however, these expressions are marked. As Rowlands (1969: 139) explains, “Yoruba has a whole series of pairs of words [...] which are made up of **sí** and **ní** combined with

names of parts of the body, indications of position and so on”. The spatial interrogative and deictic expressions also belong to these pairs. “In such pairs **sí** generally corresponds with ‘to, towards’ while **ní** corresponds with ‘in, at” (Rowlands 1969: 139).

In this way, the expressions displayed in Table 18 are formed.

Table 18: Yoruba expression pairs with *ní* and *sí* (cf. Rowlands 1969: 139).⁵⁸

<i>ní</i>	<i>sí</i>	Basis	Meaning
<i>níbo</i>	<i>s’íbo</i>	<i>ibo</i>	‘where’
<i>níhìn</i>	<i>síhìn</i>	<i>ihín</i>	‘here’
<i>níbí</i>	<i>síbí</i>	<i>ibí</i>	‘here’
<i>níbẹ̀</i>	<i>síbẹ̀</i>	<i>ibẹ̀</i>	‘there’
<i>l’òhùn</i> ⁵⁹	<i>s’òhùn</i>	<i>òhùn</i>	‘yonder’

According to Rowlands’ explanation, one may assume that the expressions with *ní* correspond to Place constructions, while *sí* forms are used for Goal. In fact, the expressions featuring *sí* are actually employed in Goal constructions. The expressions with *ní*, by contrast, seem to constitute general spatial forms which may be used in all three relations.

(114) Yoruba Goal constructions with *sí*

a. WHITHER [Rowlands 1969: 141]

lát’íbo s’íbo?

from.where to.where

‘From where to where (are you going)?’

b. HITHER [BM Matt 17:17]

È mú ọmọ náà wá síhìn-ín.

2PL cause child ANAPH come to.here-RED

‘Bring the boy here to me.’

⁵⁸ The list of pairs in Rowlands (1969: 139) does not contain the SI expressions. For the sake of completeness, however, we decided to add them here, as the same pair exists here (cf. Rowlands 1969: 141).

⁵⁹ Although Rowlands (1969: 139) states that the expressions contain *ni*, there are a lot of expressions which have /l/ as their first consonant, e.g. *lóri* ‘top, head’, *l’ábẹ̀* ‘underneath’, or *lódé* ‘outside’. It seems there is a complementary distribution of /n/ and /l/, where /n/ appears before /i/ and /l/ before all other vowels.

As stated above, expressions with *sí* are used in Goal constructions. WHITHER is expressed in (114a) by *s'ibo*, a form composed of the Goal marking *sí* and the spatial interrogative basis *ibo*. In (114b), the HITHER construction consists of the Goal marking *sí*, the proximal deictic *ihín* 'here', and a suffix that we presume to be a partial reduplication of the SDD's last VC sequence. This type of structure is not mentioned in Rowlands (1969) but occurs frequently in the Yoruba Bible BM with constructions based on *ihín* 'here' and *òhún* 'yonder', e.g. *nihìn-in* 'here' or *sòhùn-ún* 'thither'. As the vowel's quality changes according to the basis' last vowel, we assume that this is a kind of reduplication, which only surfaces in constructions based on these two SDDs. The reduplication of these expressions is not exclusive to Goal constructions. It can therefore not be viewed as some kind of (additional) Goal marker. Thus, like other expressions with *ní*, *nihìn-in* may be used in different relations. Examples (115)–(118) display different occurrences of expressions with *ní* in all three relations.

- (115) Yoruba SIs
- a. WHERE [Rowlands 1969: 118]
níbo l'ó gbé wà?
 at.where 3SG be.at be
 'Where is it?'
- b. WHITHER [Rowlands 1969: 66]
níbo l'ò ñ-lò?
 at.where 2SG FUT-go
 'Where are you going?'
- c. WHENCE [BM John 1:8]
Níbo ní o ti wá?
 at.where it.is 2SG come.from come
 'Where do you come from?'
- (116) Yoruba THERE [Rowlands 1969: 27]
kíl'ò rá níbè?
 what.3SG buy at.there
 'What did you buy there?'
- (117) Yoruba HITHER [Rowlands 1969: 56]
wá níbí
 come at.here
 'Come here.'
- (118) Yoruba THENCE [Rowlands 1969: 141]
ẹ kúrò níbè
 2PL leave at.there
 'get away from there!'

As the examples suggest, the expressions marked with *ní* can be used for Place as in (115a) and (116), Goal as in (115b) and (117), and Source as in (115c) and (118). Depending on the relation to be expressed, stative or dynamic verbs are used. Motion verbs like *lọ* ‘go’ or *wá* ‘come’ are used to express Goal, while verbs like *tí* ‘come from’ or *kúrò* ‘leave’ appear in Source constructions. In this manner, expressions marked with *ní* are general locative forms which may be used in all three relations without any additional marker. It solely depends on the verb which relation is expressed. There is, however, a preposition *àtí* or *látí* ‘from’ which is used in connection with the zero-marked forms in order to express Source. This preposition “is formed by adding the prefix *à-* to the verb *tí* ‘come from’” (Rowlands 1969: 189).

(119) Yoruba overtly marked Source

- a. WHENCE [BM Isa 39:3]
látí ibo ní wọ̀n sì tí wá sọ̀dọ̀ rẹ̀?
 from where PTCL 3PL and PFCTV come towards 2SG
 ‘From where have they come to you?’
- b. HENCE [BM Luke 4:9]
Bí ó bá jẹ̀ pé Ọ̀mọ Ọ̀lorun ní ọ̀ nítòótò,
 if 3SG AUX be CONJ child God it.is 2SG really
bẹ̀ sílẹ̀ látí ìhìn.
 leap down from here
 ‘If You are the Son of God, throw Yourself down from here.’

In contrast to the Source constructions in (115c) and (118) above, the expressions in (119) are overtly marked by the preposition *látí* ‘from’. In (119a) the same verb *wá* ‘come’ is used to express a motion from one place to another. As there is no Source-inducing verb, the Source expression has to be overtly marked. In (119b), the dynamic verb *bẹ̀* ‘leap’ is employed. As this verb alone does not express Source, the preposition *látí* ‘from’ has to be used again to mark Source overtly. We expect that all of the unmarked forms may combine with *látí* ‘from’. We did not, however, find evidence for all constructions.

Theoretically, all five patterns are possible in Yoruba. The general spatial expressions may be used for all three relations, whereas each relation also employs exclusive expressions. Both the maximally indistinct $P=G=S$ pattern and the maximally distinct pattern $P\neq G\neq S$ are present in Yoruba. It is our impression that the dominant pattern in Yoruba is a $P=G\neq S$ pattern with general spatial forms for Place and Goal and overtly marked forms for Source. Still, the latter marking depends on the kind of movement involved in a Source construction. Some verbs such as *kúrò* ‘leave’ or *tí* ‘come from’ express Source without an

overt marker, whereas other verbs need an overt marker. Unfortunately, measuring the frequencies of Yoruba SI and SDD constructions goes beyond the scope of this study. Conclusive statements as to the actual use of possible patterns can therefore not be made.

3.2.2 P=G≠S in the Americas

With 19%, Pattern II is the third most common of all patterns in the spatial interrogatives in the Pan-American sample in Stolz et al. (2017). As explained in Section 3.1.2 above, our own sample is of a slightly different areal distribution, so that especially the proportions of Pattern I and Pattern V have shifted to a certain degree. Pattern II is also affected by the different make-up of sample languages. About 26.6% of the SIs employ this pattern, while it is attested in 24.6% of the near deictic and 24.2% of the far deictic declarative paradigms. This makes Pattern II the second most prevalent pattern in the Americas by a narrow margin compared to the P=G=S pattern. The 23 languages that show the P=G syncretic option in at least one of the expression classes are displayed in Table 19.

As explained in Section 3.1.2, it is difficult to identify tendencies among the Pan-American language families, as the language families represented in this sample are too diverse to be grouped together. It can be noted that two of the four Siouan languages attest to Pattern II at least partly, while the maximally distinct pattern is attested for all four of them. Furthermore, both Pano-Tanacan, both Tupian languages, and two of the four Penutian languages of our sample are listed in Table 19. Overall, it is noticeable that the P=G≠S pattern occurs quite irregularly in the paradigms of American languages. It is often attested for only the SIs or for only one of the SDDs. A qualitative account of the P=G syncretic pattern in the Americas will be given in the subsequent subsections.

Table 19: American languages that attest to P=G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Apache, San Carlos	AM-1	Athabaskan-Eyak-Tlingit, Athabaskan	✓	X	X
Arapaho	AM-2	Algic, Algonquian	✓	X	✓
Cavineña	AM-6	Pano-Tacanan, Tacanan	✓	✓	✓
Comanche	AM-10	Uto-Aztecan, Numic	X	✓	✓
Cree	AM-11	Algic, Algonquian	✓	X	X
Dakota	AM-14	Siouan, Core Siouan	✓	X	X

Languages	Appendix	Affiliation	SI	ND	FD
Guaraní, Paraguay	AM-16	Tupian, Tupi-Guarani	✓	✓	✓
Hualapai	AM-17	Cochimi-Yuman, Yuman	✓	X	X
Kamaiura	AM-19	Tupian, Tupi-Guarani	✓	✓	X
Klamath	AM-20	Penutian, Klamath-Modoc	✓	X	X
Kuna, Border	AM-23	Chibchan, Core Chibchan	✓	✓	✓
Lenca, Honduran	AM-25	Lencan	✓	✓	✓
Mapudungun	AM-26	Araucanian	X	✓	✓
Musqueam	AM-28	Salishan, Central Salish	✓	X	X
Mutsun	AM-29	Penutian, Costanoan	✓	✓	✓
Osage	AM-33	Siouan, Core Siouan	✓	✓	✓
Parecís	AM-35	Arawakan, Central Maipuran	✓	✓	✓
Popoluca, Highland	AM-37	Mixe-Zoque	X	✓	✓
Shipibo-Konibo	AM-40	Pano-Tacanan, Panoan	✓	✓	✓
Tohono O'odham	AM-41	Uto-Aztecan, Tepiman	✓	X	✓
Totonac, Upper Necaxa	AM-43	Totonacan, Totonac	X	NA	✓
Trio	AM-44	Cariban, Guianan	X	✓	X
Yuracaré	AM-50	Yuracaré	X	✓	X

3.2.2.1 Zero-marked P=G in the Americas

The pattern discussed here is a P=G syncretic pattern with no overt marking of Place and Goal, while Source is overtly marked by e.g. affixation, adpositions, or suppletive forms. The Arawakan language Parecís [AM-35] is a typical P=G syncretic language, according to the PABNT Bible translation. The adverbial demonstratives employed for spatial deixis cited by Brandão (2014: 90) are *ali* (PROX), *owene* ~ *ita* (MED), and *nali* ~ *ĩta* (DIST). In the PABNT Bible, however, only *ali* and *nali* are found in the example phrases we consulted. The adverbials combine with a Source marker. Place and Goal, on the other hand, are indicated by the employment of zero-coded adverbials.

(120) Parecís dynamic relations

- a. HITHER [PABNT Matt 14:18]
Xame-hene-ne ali.
 give.IMP-TRS-3OBJ here
 ‘Bring them here to me.’

- b. HENCE [PABNT Luke 13:31]
Maika hi-yane-hete-hena ali-ta.
 IMP 2SG-go-PFCTV-TRS here-S
 ‘Leave and go away from here.’

There are two Place SIs, viz. *aliyo* ‘where is?’ and *alyako* ‘where, at what location?’ (Brandão 2014: 331). In Burgess and Rowan (2008: 47), the Goal SI is indicated as *aliyo-tya* and contrasted against the unsuffixed form for Place, while *-ta* is suffixed to the Source SI. In the PABNT variety, primarily zero-coded Goal SIs are found.⁶⁰

- (121) Parecís WITHER [PABNT John 13: 36]
Alyako-ite hi=yane-hena, Xekohaseti?
 where-IMPF 2SG=GO-TRS Lord
 ‘Lord, where are you going?’

For the allative relations there is a second option, viz. a construction involving an adnominal demonstrative (122a) or an adverbial which is employed in demonstrative fashion. According to Brandão (2014: 89–90), the form *eze* (appearing as *exe* in the PABNT) belongs to the adnominal demonstrative class, the members of which act pronominally or modify nouns. Conversely, adverbial demonstratives modify verbs. This is reflected in the optional Goal marking strategy in Parecís with a ‘side’ noun *maniya* with a genuine demonstrative (cf. [122a]) and with an adverbial (cf. [122b]).

- (122) Parecís Goal via ‘side’
 a. THITHER [PABNT Matt 17:20]
Ha-kikisoa-hena ali-ta, hi-yane exe maniya
 2SG-move.out-TRS here-from 2SG-go yonder side
 ‘Move from here to there.’

⁶⁰ The final *-ta* is analyzed as an emphasis marker by Brandão (2014), e.g. in

- (iii) Parecís emphasis [Brandão 2014: 99]
owene-ta Ø=ehoko-tyoa-ita
 right.here-EMPH 3SG=lay.down-MID-IMPF
 ‘She is lying down right here.’

However, according to Burgess and Rowan (2008), it is an ‘identifier’. Within their data, it is also glossed as Portuguese *de* ‘from’, i.e. as ablative marker, so that *aliyo-ta* where-ABL indicates ‘where from?’, and so forth. The Bible data support this functional extension of the bound form.

- b. HITHER [Brandão 2014: 127]
eye *Marinho* *neye* \emptyset =*aitsa-ha* *hoka* *hatyaotseta* *eye* *Cirila*
 DEM *Marinho* *father* 3SG=kill-PL CN then DEM *Cirila*
hare *ali* *maniya* *e=haliya-ha*
 also here side 3SG=near-PL
 ‘Later, after Marinho’s father was killed, Cirila came here to be near them.’

Morphologically, Parecís is a clear case of P=G≠S. The co-occurrence with a form denoting ‘side’ is not an isolated case in our sample (cf. Yaqui interrogatives in Section 3.5.2.2). Since the meaning-carrying and freestanding form *maniya* ‘side’ is infrequently employed, only the adverbial demonstrative forms enter the paradigm as genuine SDDs in this case.

P=G syncretism is also an attested option in North America. In comparison to geographically southern Uto-Aztecan sample languages (cf. Guerrero Nahuatl [AM-30] and Yaqui [AM-47] in Section 3.5.2.2; Pipil [AM-36] in Section 3.4.2), the geographically northern Uto-Aztecan sample languages appear to have morphologically more complex paradigms in which the spatial relations are distinctly and overtly coded. Tohono O’odham [AM-41] belongs to the Piman branch of the Southern Uto-Aztecan subgroup but shares more commonalities with the Northern Uto-Aztecan language Comanche [AM-10] (cf. below).

According to Mason (1950: 42), “[t]he common, short, locative-temporal adverbs [...] often stand as members of the verbal complex and may be considered among the prefixes.” In Saxton and Saxton’s (1969) dictionary, a transparent strategy to indicate ablative movement is evident in the entries, cf. *iaa* ‘here, to be here’ versus *i’ajeD* ‘from here, from now on’. Static SDDs are always indicated as short forms and as longer forms via *-ai*, such as *am* and *amai* ‘there (facing away)’. The ending *-ai* is also found in *hebai* ‘where, whither’. Mason (1950: 65) delivers some information about allative functions and describes *gama’i* as ‘hence, from place where you are to some other place, or time from present to some other time’. Up to this point it remains unclear whether both short and long SDDs indicate Place and Goal or whether final *-ai* indicates allative telic movement. Sentential examples in Saxton and Saxton (1969) and Saxton et al. (1983) show pervasive zero-coding of allative deictic movement. Due to the absence of glosses in the aforementioned sources, an illustrative example is taken from Saxton’s (1982) grammatical description.⁶¹

⁶¹ Note that Saxton (1982) omits the vowel in his writing of Tohono O’odham locative forms.

- (123) Tohono O’odham zero-coding of Goal [Saxton 1982: 123, 193]
- a. **am** *a-t* *či ipia* *g* *ki-ki-l*
 LOC MD-TNS move ART (old) men
 ‘The old men moved there.’
- b. **gm** *a-t-t* *hu* *wo-o-p-X* *aañ'i* *kč* *iida'a*
 LOC MD-we-TNS REM run-RED-RED-PFCTV I and this
 ‘We drove there, I and this one.’

Zero-coding of Goal is also found in the geographically close Uto-Aztec sister language from the Northern branch Comanche [AM-10]. According to Wistrand-Robinson and Armagost’s (1990) data, there is G=S syncretism in the SI paradigm due to the shared form *hakaapu* ‘whither, whence’ as opposed to *hakt* ‘where’ (cf. Section 3.3.2). Charney (1993), however, offers a form *hakanai* ‘whence’. The ending *-nai* is also found in the ablative SDD examples from Charney (1993). Wistrand-Robinson and Armagost (1990), on the other hand, cite *-tɬ* as an ablative morpheme. A pervasive P=G syncretism is, however, found in the declarative deictic realm in their Comanche grammar. Example (124a) shows allative marking in a static context while the allative context in (124b) involves merely the obligatory general locative postposition which is found on all demonstrative roots that form bases for Comanche SDDs.

- (124) Comanche SDD
- a. THERE with allative marking [Wistrand-Robinson and Armagost 1990: 323]
- su-kɬ-hu** *sitɬ* *tamarɬmoa-ku* *urii* *kɬhtá-nɛ-nɛ*
 D4-LOC-ALL D1NOM.SG much-ACC D4ACC.PL hard-blow-PSTN
 ‘The wind blew hard on them there.’
- b. THERE/THITHER with locative marking [Wistrand-Robinson and Armagost 1990: 324]
- pɬɬ** *omo-mɬ-stɬ* *surɬɬ* **u-ku** *bitɬ-nɛ*
 COG.PL leg-on-INTS D4NOM.PL D4-LOC arrive-PSTN
 ‘They arrived there on foot.’
- c. THENCE [Wistrand-Robinson and Armagost 1990: 325]
- surɬɬ** *wihnu* **su-hku-tɬ** *miʔa-nɛ* *sunih-ku* *uhri* *buni-htsɨ*
 D4NOM.PL then D4-LOC-ABL go-PSTN D4MAN-ACC D4A.DL see-SS
 ‘They then went from there, having seen them like that.’

As so often, Source is derived transparently and consistently, while there is some diffusion between Place and Goal. Of course, there are further grammatical options to encode spatial deixis in Comanche. Some relevant adverbial motion suffixes are derived from motion verbs, such as *-miʔa* ‘unspecified motion’ from *miʔa* ‘to go’ and *-ki* ‘motion toward’ from *kima* ‘to come’ (Wistrand-

Robinson and Armagost 1990: 313). P=G syncretism is so far supported as the primary or at least an optional strategy in the northern Uto-Aztecan sample languages.

In one of our Mesoamerican sample languages, contact phenomena in the realm of overt marking lead to a formation of the P=G syncretic pattern. The Mixe-Zoque language Highland Popoluca [AM-37] borrows an overt Source marker from Spanish. Presumably, the language started out from a typical Mesoamerican situation, i.e. the zero-coding of P/G/S with the spatial deictic function normally encoded in a single static or motion verb. Locational adverbs are composed of deictic demonstrative roots and can take suffixes. Of these suffixes, however, none is dedicated to distinguishing location or direction.⁶² The three basic SIs already seem fully syncretic according to a comparison of the data in Elson and Gutiérrez (1999), who provide the form *juʔ*, with the data in De Jong Boudreault (2009), who cites the form as *juuty*. The POINT Bible translation also attests to the indistinct zero-coding of Goal and Place SIs in genuine interrogative contexts in (125) and in phrases where the form is employed as a dynamic relational adverb (126).

- (125) Sierra Popoluca SIs
- a. WHERE [POINT Luke 17:17]
Juʔ *it* *jém* *nueve?*
 where be ART nine
 ‘Where are the [other] nine?’
- b. WHITHER [POINT John 16:5]
Juʔ *mi-ñic-pa?*
 where 2ABS-go-INCL
 ‘Where are you going?’
- c. WHENCE [POINT Rev 7:13]
Juʔ *miñ-ñe-yaj?*
 where come-PFCTV-PL
 ‘(...) from whence have they come?’
- (126) Sierra Popoluca WHENCE (relational) [POINT John 3:8]
 [...] *pero* *da* *tan-jodon* *juʔ* *miñ-pa* *ni* *juʔ* *nic-pa*.
 but NEG IPSR-knowledge where come-INCL nor where go-INCL
 ‘[...] but you do not know where it is coming from and where it is going;’

⁶² There is, for instance, a general locational postposition *-mi* ‘at, in, on, with’ whose “sense of ‘to’ (allative) or ‘from’ (ablative) [is] provided by the verb” (De Jong Boudreault 2009: 283).

The Place and Goal functions of Highland Popoluca SDDs are likewise coded indistinctly and covertly in the Bible text (127a–b). Yet, Source appears frequently with the Spanish preposition *de* ‘from’, cf. (127c–127e).

- (127) Highland Popoluca SDDs
- a. HERE [POINT Acts 9:19]
Yiim *aif*, *mánQmi*
 here be.1SG my.lord
 ‘Here I am, Lord.’
- b. HITHER [POINT Matt 14:18]
A-na-miñaay-i **yiim**
 1SG-CAUS-COME-IMP here
 ‘Bring them here to me.’
- c. HENCE [POINT Luke 13:31]
Nicsim, *put-i* **de** **yiim** *porque* *jém* *Herodes*
 go.away exit-IMP from here because ART Herod
m-iccaa-too-ba.
 ERG2-kill-DESID-INCL
 ‘Leave and go away from here, because Herod wants to kill you.’
- d. THENCE [De Jong Boudreault 2009: 503]
de.jemim *ʔoy* *ʔi+tzoʔyiʔ+tyaa*
 de.jemum *ʔoy-W* *ʔi+tzoy.ʔyiʔ-taH-W*
 from.there go.AUX-CPL 3ERG+cure-PASS-DEP.TRANS
 ‘From there he went to be cured.’
- e. HENCE and THITHER [POINT Matt 17:20]
Caay-i **de** **yiim**, *nic-i* **jeexic**
 remove-IMP from here go-IMP there
 ‘Move from here to there.’

Other overt marking strategies were discovered in neither the POINT Bible nor in De Jong Boudreault (2009). Also, further contact phenomena in the realm of spatial deixis were not detected.⁶³ The clause containing two spatial deictic relations which are linked via prepositions in the English translation is split into two independent clauses, or motion events, in Highland Popoluca in (127e). This occurs in all P=G=S languages, be it zero-coding languages or those with default marking, since every Ground needs a verb of its own to encode location or direc-

⁶³ The Spanish preposition *hasta* ‘to, until’ is attested only once in a deictic setting with a Goal-like reading (cf. Robbers and Hober 2019: 417; fn. 22).

tion lexically (cf. Robbers and Hober 2018: 402).⁶⁴ Highland Popoluca is thus a good example of the results of language contact in Mesoamerica, where zero-coding languages are under the persisting influence of a language that uses prepositions for spatial relations, i.e. Spanish (cf. Section 3.1.4.1).

3.2.2.2 Overtly marked P=G in the Americas

The Chibchan language Kuna (Border variety) [AM-23] is P=G syncretic with overt marking of Place and Goal. The SI *pia* inquires about both syncretic relations (cf. [128]). There is a special Goal-marked option *pia-je* ‘where-ALL’ which in isolation already expresses ‘(going) where?’ (Forster 2011: 139). However, (128) clearly displays zero-coding of the Goal SI.

- (128) Border Kuna WHITHER [Forster 2011: 218]
Pia pe ne?
 where 2.SG go
 ‘Where are you going?’

Border Kuna SDDs consist of the demonstrative bases *iti-* (PROX), *we-* (MED), *a-* (DIST), or *te-* (ANAPH) which take either *-gin* (SPEC) or *-bal* (UNSPEC), according to the data from Forster’s (2011) grammar. These locative suffixes similarly attach to nouns and SDDs.⁶⁵ In allative contexts, demonstratives are used along with appropriate motion verbs to indicate Goal, cf. (129a) and (129b). The ablative marker is exemplified here with a landscape-oriented form that belongs to the same morphosyntactic class as the unmarked SDDs (129c).

- (129) Border Kuna SDDs [Forster 2011: 212]
 a. Place
Pe koe a-gin ebes?
 you deer there-SPEC leave
 ‘Did you leave it [the deer] there?’

⁶⁴ Bohnemeyer (2003) identifies this phenomenon for Yucatec and refers to it as Argument Uniqueness Constraint (AUC). Similarly, Wälchli and Zúñiga (2006: 289) discuss the clause linking strategy in Mapudungun [AM-26] (cf. Section 3.5.2.1) and state that “[t]he explicit expression of both Source and Goal – which is admittedly unnatural from a non-Eurasian perspective – can only be accomplished by means of a clause linkage strategy that combines a non-finite and a finite predicate (...)”.

⁶⁵ This does not apply to the allative morphemes *-che-*, *-zhe-*, and *-je* which seem to be specific Goal suffixes that attach to nouns but not to SDDs.

- b. Goal [Forster 2011: 218]
Inkwa pe iti-gin tag=bal-o?
 when you here-SPEC come=again-FUT
 ‘When are you going to come here again?’
- c. Source [Forster 2011: 234]
Wag teal akar tani; teal akar.
 outsider downriver from came downriver from
 ‘The outsider has come from downriver.’

The ablative word form *akar* ‘from’ is also found in the Source SI *pia akar*. The river-oriented forms are salient in spoken Border Kuna. A well-formed answer to a Place interrogation such as *¿Pia pakcha?* ‘Where did he buy it?’ is *Teal*. ‘Downriver’ (Forster 2011: 33). The *unmarked* static spatial relation is also often expressed by positional verbs. As Forster (2011: 60) puts it:

The general location of a person/object is always viewed in light of his/its position. There are five basic potential positions—lying, sitting, hanging (suspended), standing, and “on all fours”—each of which is indicated by one of five positional verbs. When a Kuna speaks of the location of a person/object, he must choose the positional verb which, in his point of view, reflects the position of the person/object.

Of the five static positional verbs, two include a gender distinction. Place, deictically or non-deictically expressed, is realized in Border Kuna by *mai* when referring to a man and by *chi* when referring to a woman, e.g. *an chi* ‘I (a lady) am (here).’ (Forster 2011: 9).⁶⁶

Dynamic deictic motion can also be encoded only by motion verbs. However, it has to be kept in mind that “[i]n certain circumstances, the Kuna view of the reference point is different from the English view”, since “[t]he Kuna viewpoint varies from being used in conversation to being used in narration” (Forster 2011: 214). The deictic center can be the speaker but also a third party. Some important motion verbs are *ne* ‘to go’, which implies Source, and *tag* ‘to come’, which includes allative movement, i.e. “that a location is being approached” (Forster 2011: 214). Naturally, as in all languages, an imperative mood form *tage!* ‘come!’ implies a HITHER function. Further motion verbs are *al* ‘to come away from’, *omo* ‘to arrive’, and *noni* ‘to arrive (from somewhere else)’. Forster (2011: 221) refers to these dynamic motion verbs as “uni-directional” as opposed to “bi-directional” verbs such as *arpi* ‘to go and return’, cf. (130).

⁶⁶ For objects, *mai* is usually associated with ‘lying down’, whereas *chi* refers to ‘sitting’ objects (Forster 2011: 60).

- (130) Border Kuna bi-directional motion verb [Forster 2011: 222]
Sagla Pukurbal arpi.
 chief Pucuru go.and.return
 ‘The chief went to Pucuru (from here) and returned (here). The chief has been to Pucuru.’

The gender distinction of positional verbs discussed above is absent from the near relative San Blas Kuna (Forster 2011: 8), which does not belong to our sample. Further, Smith (2014: 65–66) states that spatial demonstratives combine with case enclitics to express [+/- visibility] and form past tense expressions of the SDDs (cf. Table 20).

Table 20: San Blas Kuna SDDs (Smith 2014: 66).

Spatial relation	Stem	Case enclitic
HERE		= <i>gi(ne)</i>
THERE [+visible]	<i>we</i>	= <i>ba(li)</i>
THERE [+non-visible]		= <i>sik(i)</i>
HERE [+past]		= <i>gi(ne)</i>
THERE [+past]	<i>a</i>	= <i>ba(li)</i>

Static spatial deictic relations are, similarly to Border Kuna, often encoded intrinsically in positional verbs (closed class). Motion is expressed through motion verbs (Smith 2014: 195). Other than that, San Blas Kuna equally attests to P=G syncretism, cf. the usage of =*ba* in (131).

- (131) San Blas Kuna SDDs
- a. Place [Smith 2014: 66]
an a=ba mai-na
 1SG DEM=P/G located-IMPF
 ‘I was there’
- b. Goal [Smith 2014: 230]⁶⁷
we=ba dak-nadap-gu ome di abar=gi
 DEM:DIST=P/G see-go.do-TEMP woman water between=LOC

⁶⁷ Smith (2014: 230) states that this example is taken from Sherzer (2003). Nevertheless, it remains unclear whether it is taken from Sherzer (2003a) or Sherzer (2003b) as listed in Smith’s (2014) bibliography. Unfortunately, we were unable to discover the respective example in either of the two publications, so that we were not able to confirm its origin.

ganare *si*
 straight POS:sitting
 ‘When he went there to go see, there was a woman in the middle of
 the water sitting up’

Smith (2014) refers to =*gi* as a locative case marker but also glosses it as a directional marker. The bound form =*ba*, as seen in (131) above, is referred to as an allative marker but applies to P contexts as well. These postpositions resemble the suffixes *-gin* and *-bal* in Border Kuna which differentiate a specific from an unspecific area and apply to Place and Goal contexts. It is thus conceivable that =*gi* and =*ba* share their origin with *-gin* and *-bal* and apply to both spatial deictic functions as well.

3.2.2.3 Marker chaining in Source constructions in the Americas

The Amazonas language Shipibo-Konibo [AM-40] is characterized by a river-oriented spatial deictic system. Spatial deictic relations are realized via SDDs that are composed of demonstratives and locative adjuncts and via serial verb constructions. Example (132) shows both an *unmarked* deictic relation with the far deictic SDD and a river-based relation including the deictic-directive marker *-ina(t)* ‘up (the river)’ from the independent verb *ina(t)*- ‘go up (the river)’ which appears in secondary verb position.

(132) Shipibo-Konibo deictic and river-oriented spatial relations

[Loriot et al. 1993: 197]

Jai-no-a-xa *no-a* *jo* *jó-ina-ke*, *jawé-bi*
 there-LOC-ABL-S:EVD 1PL-ABS come come-going.up-CPL thing:ABS-EMPH
wino-t-a-ma.
 pass-MID-PP2-NEG
 ‘From there we came up the river without any problem.’

Similar to Cavineña [AM-6], the other Pano-Tacanan language in our sample, Shipibo-Konibo is fully P=G syncretic. This is also displayed in non-deictic word forms, e.g. *kachio* which signifies ‘in/to the forest’ or ‘in/to the center (i.e. far from the river)’ (Valenzuela 2003: 169). The ablative is overtly marked by a suffixal element, e.g. in *kachio-kea* ‘from the forest’ (Valenzuela 2003: 966). In the deictic SDDs, the ablative always follows the locative=allative adjunct *-(n)o* which fulfills the functions of expressing ‘in, at, to’ and is thus part of all Place and Goal SDDs. Conceivably, Shipibo-Konibo SIs include the locative=allative adjunct as well. The ablative marker follows the locative=allative suffix. Before the marking of interrogativity by the final *-ki*, various agreement markers may

follow the locative=allative or the ablative, respectively. In (133b), the SI incorporates the marker *-xon* for the agent-oriented transitive subject, whereas (133a) and (133c) are intransitive and both components of the P=G SI are adjacent. The Source marker in (133d) is preceded by the subject-oriented marker for the intransitive subject. Lastly, (133e) shows object agreement.

(133) Shipibo-Konibo SIs [Valenzuela 2003: 196]

a. WHERE

Jawerano-ki *Inka-bo* *ja-a?*
 where-INTERR Inka-PL:ABS exist-PP2
 ‘Where do the Inkas live?’

b. WHERE (agent-orientation)

Jawerano-xon-ki *epa-n* *pi-ai?*
 where-ST-INTERR paternal.uncle-ERG eat-PP1
 ‘Where is paternal uncle eating?’

c. WHITHER

Jawerano-ki *mi-a* *ka-[a]i?*
 where-INTERR 2-ABS go-PP1
 ‘Where are you going?’

d. WHENCE (subject-orientation)

Jawerano-a-x-ki *mi-a* *jo-a?*
 where-ABL-S-INTERR 2-ABS come-PP2
 ‘From where did you come?’

e. ***Jawerano-a-ki*** *mi-n* *paranta* *be-a?*
 where-ABL:OBJ-INTERR 2-ERG banana:ABS bring-PP2
 ‘From where did you bring banana?’

Due to the intrusion of semantic role markers, the SI constructions are non-adjacent in (133b) and (133d). This peculiar feature of Shipibo-Konibo SIs is quite unique in the sample. Apart from the intruding morphemes, the functions of which are unrelated to spatial meaning, Goal and Place SIs behave identically, whereas Source takes the additional morpheme *-a*. We are therefore dealing with a P=G≠S pattern, with potentially nonadjacent constructions in the SI paradigm.

3.2.2.4 Further cases of P=G syncretism in the Americas

In Osage [AM-33] we find a prevalent preverb-based strategy to code Goal relations (see the discussion in Section 6.4.3). The Siouan language “has an extensive deictic-positional system which assigns position or shape to nouns and pronouns” (Quintero 2004: 5). The spatial (deictic) system is primarily based on motion verb sets, preverbal adverbial modifiers, and postpositions. HITHER and

THITHER relations are frequently expressed by employing one of four basic allative motion verbs in monoverbal (134) or in biverbal constructions (135).

- (134) Osage THITHER [Quintero 2004: 185]
ahípe
a-∅-hí-api-ðe
 PREV-AG3SG-arrive.there-PL-DECL
 ‘he got there’
- (135) Osage HITHER [Quintero 2004: 192]
tooská áðalqošči ðalie
 tóoska áa-Ya-lq-Ya-ðį **a-Ya-li-ðe**
 potato PREV-AG2S-PREV-AG2S-forget PREV-AG2SG-return.here-DECL
 ‘you forgot to bring back potatoes’

Basic motion verbs can be separated into four groups. Quintero (2004: 178) summarizes that

[t]he motion verb matrix represents a crosscutting of the variables of direction (here vs. there), motion (accomplished vs. underway), and vertitivity (simple vs. returning). The intransitive motion verbs (e.g. ‘go’) are paralleled by transitive ones, the portatives (‘go carrying, having’).

Members of these verb sets thus also encode (a)telicity of motion along with a Ground.

Stative spatial deictic relations are often expressed via posture auxiliaries (which Quintero [2004] specifies as continuative aspect markers) that mark the subject as ‘sitting’, ‘standing’, or ‘lying’ (Quintero 2004: 6). The inanimate static deictic position, or abstract Place, is thus realized in the respective manner according to context, e.g. ‘here’ as ‘lying’ in (136a). Positions or postures also serve as bases for further derivation of locative expressions, such as *e(e)ci* which is roughly translatable as ‘there’. The element is composed of the third person pronoun *ée* plus the postposition *ci*, of which the latter “is likely derived from *che* ‘standing’ plus *i* ‘in, to” (Quintero 2004: 383), as exemplified in (136b).

- (136) Osage HERE [Quintero 2004: 391, 383]
- a. *ðekáaha kši, waaspé aha, ðáali ha akxái*
 ðe-kaa-ha **kše-ci**, wáaspe aha, ðáali hta akxa-ðe
 this-here-toward ‘lie’-to wait when good FUT 3.CONT-DECL
 ‘it would be good if you stayed here’
- b. *ecíke*
ee-cí-ke
 3.PRO-at-DISP
 ‘the things that are there, these here (things)’

Place in reference to animate subjects is often expressed by the verb *achí* ‘(arrive) here’, cf. the conjugations of *achíe* ‘I’m here’ vs. *đachíe* ‘you’re here’ vs. *qkáchí* ‘we’re here (DL/PL)’ (Quintero 1997: 139). Some allatival notions can be encoded by demonstratives as well, although the example in (137) may not directly bring about a THITHER-like reading but adds a Path notion without necessarily including telicity of movement.

- (137) Osage spatial demonstrative [Quintero 2004: 362]
šé đq brée
šée đq Wa-đeé
 there next.to AG1SG-go
 ‘I’m coming over there thataway [where you are]’

The Place and Goal relations are thus primarily encoded verb-internally in modern Osage, while other options are available. The Source relation, however, is underdescribed in Quintero (2004), so that other sources must be consulted. As a starting point, the spatial interrogative *howáiki* is found in Place and Goal contexts alike in Quintero (2004), cf. the allatival example in (138) combining the interrogative with a motion verb.

- (138) Osage WHITHER [Quintero 2004: 182]
ilóqhpá howáiki đée?
 ilóqhpá **howáiki** (a)-đ-đeé
 firstborn.son where (PREV)-AG3SG-go.there
 ‘Where did Sonny go?’

In older sources we find evidence of overt marking of Source relations in both the interrogative and declarative domains. In Montgomery’s “Osage first book” (1834: 14) the form *hoakithv̄h* is attested. Similarly, La Flesche’s dictionary (1932) provides *ho’ -wa-gi ʔon* for WHENCE and *ho’ -wa-in-ge* for WHERE. The latter source delivers the fullest paradigm which at the same time consists of evenly derived forms (cf. Appendix II [AM-33]). It therefore constitutes the basis for our analysis, although it refers to an older stage of the language and does not reflect the newer variety presented in Quintero (2004).

P=G syncretism is attested in both La Flesche (1932) and Quintero (2004). The former, older source cites the same forms for Place and Goal notions which express Ground overtly as well. The allatival component must then be encoded by motion verbs, which can also be observed in modern Osage. Quintero’s (2004) data suggest that Ground does not need be overtly expressed since it lies within the meaning of telic motion verbs, e.g. *ahú* ‘coming there’, *achí* ‘arrive here’, or *ahí* ‘arrive there (motion underway)’. Formerly, Source in Osage seems to have been overtly marked by suffixes *-toⁿ* (La Flesche 1932) or *-thv̄h* (Mont-

gomery 1834), respectively. The paradigm presented in Appendix II [AM-33] is based on La Flesche's (1932) dictionary and does not reflect the complex and rich data on Place and Goal functions in Osage as presented by Quintero's (2004) grammar. Another factor that we cannot provide details on is the different time stages, given that only Quintero (2004) covers today's Osage. A diachronic analysis would be necessary to achieve a comprehensive understanding of the modern Osage paradigm.

3.2.3 P=G≠S in Asia

With a share of 27% of all SI paradigms, the P=G≠S pattern is the second most prominent pattern in Asia in Stolz et al. (2017). It is also the second most prominent pattern in our sample for both the SIs and the SDDs. With shares between 35.8% in the SIs and 40.0% in the near deictic and 40.8% in the far deictic declaratives, it is even more strongly represented than in Stolz et al.'s (2017) sample. Table 21 displays the languages for which the P=G≠S pattern is attested.

Table 21: Asian languages that attest to P=G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Apatani	AS-2	Sino-Tibetan, Macro-Tani	✓	✓	✓
Baba Malay	AS-5	Austronesian, Malayo-Sumbawan	✓	✓	✓
Bengali	AS-7	Indo-European, Indo-Iranian	✓	✓	✓
Burushaski, Yasin	AS-9	Burushaski	X	✓	X
Cantonese	AS-10	Sino-Tibetan, Sinitic	✓	✓	✓
Chinese, Mandarin	AS-11	Sino-Tibetan, Sinitic	✓	✓	✓
Dhimal	AS-13	Sino-Tibetan, Dhimalish	✓	✓	✓
Evenki	AS-14	Tungusic	X	✓	✓
Galo	AS-15	Sino-Tibetan, Tani	✓	✓	✓
Hiligaynon	AS-17	Austronesian, Greater Central Philippine	✓	✓	✓
Hindi	AS-18	Indo-European, Indo-Iranian	✓	✓	✓
Iloko	AS-20	Austronesian, Northern Luzon	X	✓	✓
Japanese	AS-21	Japonic	✓	✓	✓
Khasi	AS-22	Austroasiatic, Khasi-Palaung	✓	✓	✓
Khmer	AS-23	Austroasiatic, Khmeric	✓	✓	✓
Korean	AS-25	Koreanic	✓	✓	✓

Languages	Appendix	Affiliation	SI	ND	FD
Lao	AS-27	Tai-Kadai, Daic	✓	✓	✓
Limbu	AS-28	Sino-Tibetan, Kiranti	✓	✓	✓
Malayalam	AS-29	Dravidian	✓	✓	✓
Manchu	AS-30	Tungusic	✓	✓	✓
Nicobarese, Car	AS-34	Austroasiatic, Nicobaric	X	✓	✓
Panjabi	AS-36	Indo-European, Indo-Iranian	✓	✓	✓
Persian	AS-37	Indo-European, Indo-Iranian	✓	✓	✓
Santali	AS-38	Austroasiatic, Mundaic	X	✓	✓
Tagalog	AS-39	Austronesian, Greater Central Philippine	✓	✓	✓
Tamil	AS-40	Dravidian	✓	✓	✓
Thai	AS-43	Tai-Kadai, Daic	✓	✓	✓
Tuvinian	AS-44	Turkic	X	✓	X
Vietnamese	AS-46	Austroasiatic, Vietic	✓	✓	✓
Wa	AS-48	Austroasiatic, Palaungic	✓	✓	✓

Overall, 24 languages give evidence of Pattern II in the SIs, while 27 languages show P=G syncretism in the SDDs. All four Indo-Iranian languages in our sample attest to this pattern as well as both Tai-Kadai languages. A large portion of the Austroasiatic languages, i.e. six out of eight sample languages, also show P=G syncretism. Other phyla, viz. Sino-Tibetan, Dravidian, Austronesian, and Tungusic, appear to be less homogeneous. Lastly, the isolate Korean and the main representative of the Japonic family Japanese also show this pattern, at least to some extent.

3.2.3.1 Zero-marked P=G in Asia

The Austroasiatic language Wa [AS-48]⁶⁸ is one of the Asian P=G≠S languages. SDDs fall under the category of demonstratives in Wa. The locative demonstrative “*tin* refers to a place which is near to the speaker and *tan* show [sic] the location which is far from the speaker” (Ma 2012: 51). Furthermore, “*tio* or *te* is used if the place is very far from the speaker” (Ma 2012: 51). The interrogative pronoun *dee mawx* ‘where’ consists of *dee* ‘place’ and *mawx*, which also combines with other nouns to form interrogative pronouns such as *pui mawx* ‘who’,

⁶⁸ Note that we use the orthography used in the Wa Bible version WCL rather than the phonological transcription found in Ma (2012) for our paradigm.

with *pui* meaning ‘person’ (cf. Ma 2012: 46). Both the SDDs and SIs are unmarked for Place and Goal. Source, on the other hand, is always overtly marked by the preposition *khaing* ‘from’. The sentence in (139) exemplifies the use of the distal deictic *tan* in the Place relation.

- (139) Wa THERE with copular verb *ot* [WCL Matt 2:15]
Kix ot tan tom hoik yum simiang Herut heue.
 3SG stay there until CPL die king Herod PTCL
 ‘He stayed there until Herod died.’

Ot in (139) is one of the copulative verbs in Wa which are used for locative clauses. Ma (2012: 33) explains that the copula *ot* (ʔot) ‘be.at’ is related to the verb *ot* (ʔot) ‘stay’. Similarly, there is “[t]he copula *koe* ‘be.at’ which is related to the verb *koe* ‘have’” (Ma 2012: 33). Both are used to express the location in a locative clause. They are, however, not necessary for expressing Place, as other stative verbs may similarly induce a Place reading, cf. (140).

- (140) Wa THERE with other stative verb [Ma 2012: 180]⁶⁹
ʔəuʔ tom ηəm tan leiŋ laŋ səŋqiʔ
 1SG PTCL.purpose sit there whole CL.day
 ‘I was sitting there the whole day.’

As the example suggests, the stative verb *ηəm* ‘sit’ is used in combination with *tan* ‘there’, so that a Place reading is induced. If dynamic verbs are used, Goal or Source may be expressed.

- (141) Wa dynamic relations
- a. THITHER [WCL Matt 2:22]
[...] nawh lhat hu tan heue.
 3SG fear go there PTCL
 ‘[...] he was afraid to go there.’
- b. THENCE [WCL Matt 9:27]
Yam kaoh hu Yesux khaing tan [...]
 time get.up go Jesus from there
 ‘As Jesus went on from there [...].’

If the SDDs or SIs in combination with a dynamic verb are unmarked, a Goal relation is expressed. This is exemplified in (141a), where the dynamic verb *hu* ‘go’ is used with *tan* ‘there’ without any additional coding. In (141b), the combination of *kaoh* ‘get up’ and *hu* ‘go’ also describes a dynamic relation. As

⁶⁹ The example is given in the original orthography provided by Ma (2012).

Source constructions are always overtly marked with the preposition *khaing* ‘from’, Goal and Source can unambiguously be distinguished.

The Sino-Tibetan language Dhimal [AS-13] also displays a typical P=G≠S pattern. King (2009: 67–68) introduces the SDDs alongside other expressions as one of the primary demonstrative pronouns which “mark a three-way distinction in the perceptual distance of referents: proximal, distal and remote” (King 2009: 67). The SDDs *ita* ‘here’, *inta* ‘there’, and *ota* ‘yonder’ may be used for both locative and allative constructions. Similarly, the interrogative pronoun *heta* ‘where’ is used for both Place and Goal. Consider the following examples in (142):

- (142) Dhimal P=G
- a. THERE [King 2009: 153]
ka inta hi-gha-gha
 1SG there be-PIMPF-PAST.1SG
 ‘I used to live there.’
- b. THITHER [King 2009: 170]
anca-ŋ inta hane-ka mantu-gha-kha
 before-EMPH there go-NMZ NEG.EXI-PIMPF-IMPF.1SG
 ‘I hadn’t gone there before.’

(142a) shows the use of the distal demonstrative *inta* ‘there’ in the static Place relation. In combination with the dynamic verb *hane* ‘go’, a Goal reading is induced in (142b). It is possible to mark a Goal construction overtly with the allative postposition *thekapa*, cf. (143).

- (143) Dhimal WHITHER [King 2009: 95]
wa-heŋ heta thekapa sir-pu-nha?
 3SG-DAT where ALL accompany-PAST.2
 ‘Where did you (SG) accompany him to?’

In (143), the postposition *thekapa* is combined with the interrogative pronoun *heta* ‘where’ to ask about the Goal of an action. King (2009: 94) explains that “[t]he allative marks inanimate goals and is used to indicate a situation or action occurring up to a certain location”. He translates *thekapa* as ‘up to, until’. We thus assume that *thekapa* actually expresses a terminative case rather than an allative. Therefore, we did not include it in our paradigm. These cases may be interchangeable to a certain extent and we cannot exclude the possibility of *thekapa* being used for Goal. Thus, one should bear in mind the possibility of an alternative (minor) P≠G≠S pattern.

Source is always expressed overtly by the adding of the elative suffix *-so*. As King (2009: 82) states, “[t]he elative suffix <-so> is primarily used to indicate the source of an event”. This is not restricted to spatial expressions but concerns

also temporal, figurative, or logical source constructions. All of the SI and SDD expressions mentioned above can combine with this suffix to express Source. This is exemplified with the distal SDD *inta-so* ‘from there’ in (144).

- (144) Dhimal THENCE [King 2009: 297]
kalua inta-so han-a wa la.
 so there-EL go.FUT DED MIR
 ‘So from there they may go.’

There is another set of SIs and SDDs that may alternatively be used. They correspond to the other demonstrative forms and display the same distinction of distances: *iso* ‘this way’, *inso* ‘that way’, and *oso* ‘that way’. Additionally, there is also the corresponding SI expression *hiso* that King (2009: 69) translates as ‘where to’. We suspect, however, that these expressions are not clearly directional, as they may be used in all three relations and behave like the expressions discussed above.

- (145) Dhimal use of *hiso*⁷⁰
- a. WHERE [King 2009: 162]
kalua hiso hi-hi la.
 so whither be-PAST MIR
 ‘And so where was he then?’
- b. WHITHER [King 2009: 133]
nya hiso hane-khe-nya?
 2SG.H whither go-IMPF-2SG.H
 ‘Where are you going?’
- c. WHENCE [King 2009: 82]
na hiso-so lo-kge-na a dada?
 2SG whither-EL come-IMPF-2 VOC older brother
 ‘Where are you coming from older brother?’

In the above examples, the SI expression *hiso* is used to denote Place (145a), Goal (145b), and in combination with the elative suffix *-so* also Source (145c). It shows no difference to the SI *heta* ‘where’. The corresponding SDD expressions are usually glossed as ‘hither’/‘thither’ or ‘over here’/‘over there’. *Iso* is also sometimes translated as ‘around here’. We suppose that this set of SDDs can be used in a similar manner as the set discussed above, but for referring to a wider, rather vague area, cf. (146).

⁷⁰ The SDD *hiso* is glossed as ‘whither’ in all three sentences in the original, although ‘where’ and ‘whence’ are expressed in (145a) and (145c), respectively.

- (146) Dhimal vague SDDs [King 2009: 107, 175]
- a. *ma-ko ka iso hi-gha-kha*
 NEG-COP 1SG hither be-PIMPF-IMPF.1SG
 ‘No, I was around here.’
- b. *iso curŋ-khe na oso curŋ-khe?*
 over.here be.cold-IMPF or over.there be.cold-IMPF
 ‘Is it colder over here or over there?’
- c. *oso dha?-pu-hi.*
 there run-DIST-PAST
 ‘[He] ran off in that direction.’

The examples show how *iso* ‘this way’ and *oso* ‘that way’ are used as SDDs. They may be employed in all three relations. Except for denoting a wider and more vague area, there seems to be no difference to the SDDs discussed above.

After examining the different examples of the demonstratives given by King (2009), we concluded that they can be used as SDDs according to our definition. We thus decided to include them in the Dhimal paradigm, although they may also describe a direction rather than a location (146c). Independent of whether these demonstratives are included or not, Dhimal clearly shows a P=G≠S pattern with zero-marked Place and Goal expressions and overtly marked Source expressions.

The P=G≠S pattern is the only option in both Wa and Dhimal and the overt marking of a Source construction is obligatory in both cases. More than half of the languages listed in Table 21, however, have more than one syncretism pattern.

3.2.3.2 Optional overt marking of Place in Asia

According to our analysis, Vietnamese [AS-46] shows Pattern I and Pattern II. Both Place and Goal constructions may be zero-marked. There is, however, the possibility to mark Place constructions with the locative prepositions *ở* or *tại* ‘in, at’. While the status of *tại* as a locative preposition is relatively clear, *ở* appears to be more problematic. Huffman and Hai (1980: 23) explain that “*ở* as a main verb means ‘to live, be located (at)’”. But it can also be used as a preposition with the meaning ‘in, at’. The examples in (147) demonstrate how *ở* can be used as a main verb or in combination with a different verb.

- (147) Vietnamese WHERE [Thompson 1965: 316]
- a. *ở* as main verb
Anh ở đâu?
 PRO be where
 ‘Where are you?’

- b. *ở* as preposition [Vũ 1983: 68]
Chị học ở đâu?
 PRO study at where
 ‘Where do you study?’

While *ở* constitutes the main verb in (147a), it is used in combination with a different main verb in (147b). It is, however, not obligatory to use *ở* in combination with *đâu* ‘where’, cf. (148).

- (148) Vietnamese WHERE without *ở* [Nguyen-Dinh-Hoa 1966: 46]
Ông Nam đâu?
 PRO Nam where
 ‘Where is Mr. Nam?’

In (148), the sentence completely forgoes a verb and *ở* is neither used as a verb nor as a preposition. We assume that *ở* once had the status of a verb and became more like a preposition through grammaticalization. Its usage is close to that of the preposition *tại* ‘in, at’. The two elements are to some extent interchangeable, e.g. (147b) can also be expressed as *Chị học tại đâu?* with the same meaning ‘Where do you study?’ (Vũ 1983: 68). We decided to list *đâu* ‘where’ as well as *đây* ‘here’ and *đấy, đó*, and *kia* ‘there’ as single forms and as constructions that may comprise either *ở* or *tại*.

We made a different decision for the Goal constructions. Vietnamese has a set of “[d]irectional expressions [that] make use of verbs which indicate motion and their descriptive complements specify the goals involved” (Thompson 1965: 317). Contrary to Stolz et al. (2017), we decided to analyze them as verbs that are not directly part of the Goal construction. The most common of these verbs *đi* ‘go’ was indicated as being part of the WHITHER construction in Stolz et al. (2017: 483). As there are a number of other directional verbs that may be used instead (cf. Thompson 1965: 317; Vũ 1983: 104), we understand that they are not part of the construction, but are used similarly to English *go there* or *come here*, cf. (149).

- (149) Vietnamese Goal constructions [Thompson 1965: 143; Nguyen-Dinh-Hoa 1966: 149]
- a. *Ông ấy đi đâu?*
 PRO DEM go where
 ‘Where did he go?’
- b. *Xìng ông lại đây!*
 please PRO come here
 ‘Please come here!’
- c. *Xìnn ông ra chỗ kia.*
 please PRO go.out place there
 ‘Please go over there.’

The examples in (149) show how different directional verbs can be used with SIs and SDDs in order to indicate a Goal meaning. As they are interchangeable, none of these verbs is part of the construction itself. Thus, the Goal relation appears to be the simplest one as the expressions occur as mono-word constructions without any additional markers. In the relation of Place, the expressions may optionally take a preposition *ở* ‘in, at’ or *tại* ‘in at’, whereas the preposition *từ* ‘from, since’ is an integral part of Source expressions. Through the optional zero-marking of Place in all expression classes, there is P=G syncretism in Vietnamese.

3.2.3.3 Optional zero-marking of Place and Goal in Asia

Mandarin Chinese [AS-11] is one of the languages that have more than one syncretism pattern. The SDDs are related to the demonstratives *zhè* ‘this’ and *nà* ‘that’. To indicate location, *zhèr* (or *zhèlǐ*) ‘here’ and *nàr* (or *nàlǐ*) ‘there’ are used. There is no functional but a dialectal difference between *zhèr* and *zhèlǐ* and *nàr* and *nàlǐ*. Ross and Sheng Ma (2006: 40) explain that “**zhèr** ‘here’ and [...] **nàr** ‘there’ are used in the north of China, including Beijing”, whereas “**zhèlǐ** and **nàlǐ** are used in the south of China, including Taiwan”.⁷¹ The SI *nǎr* (or *nǎlǐ*) ‘where’ “is the question word that corresponds to the location words [...] **zhèr** ‘here’ and [...] **nàr** ‘there’”.

Overt marking of both Place and Goal is optional in the SIs and SDDs of Mandarin Chinese. Both location and direction can be marked with *coverbs*, which may function as either verbs or prepositions (Li and Thompson 1989: 360). Li and Thompson (1989: 360) explain that “the traditional term *coverb* was coined to avoid labeling them either verbs or preposition” and that “most of these present-day coverbs used to be verbs at earlier stages of the language, and many of them still have characteristics of verbs and can be used as verbs that have similar meanings”. Overall, three groups of coverbs can be distinguished: (i) coverbs that have the same meaning when used as a verb, (ii) coverbs that have a different meaning when used as a verb, and (iii) coverbs that have no verbal use. To mark Place overtly, the coverb *zài* ‘at’ is employed. In locational phrases, it may be used as a verb with the meaning ‘to be located at’. It may, however, also occur as a preposition. Ross and Sheng Ma (2006: 68) explain: “As a preposition, it indicates the location where an action occurs. Depending

⁷¹ For reasons of convenience, we list both forms in our Mandarin Chinese paradigm. According to Ross and Sheng Ma (2006: 40–41), their meaning and usage is the same and they are interchangeable in their examples. We assume that this is true with any kind of example even outside their grammar.

upon the sentence, it may be translated into English as ‘at’, or ‘in’, or ‘on.’. Compare the two example sentences with explicit Ground in (150).

- (150) Mandarin Chinese use of *zài*
- a. *zài* as main verb [Ross and Sheng Ma 2006: 67]
Tā zài jiā.
 3SG.M be.at home
 ‘He is at home.’
- b. *zài* as coverb [Ross and Sheng Ma 2006: 68]
Tā zài jiā chī fàn.
 3SG.M at home eat rice
 ‘He eats at home.’

Both sentences in (150) express Place. In (150a), *zài* is used as a location verb, so that the subject *tā* ‘he’ is at the indicated location *jiā* ‘home’. Yet, in (150b), *zài* is employed as a preposition indicating that an action *chī* ‘eat’ takes place at the indicated location *jiā* ‘home’. As already mentioned, the use of *zài* in Place constructions is not always obligatory, as the examples under (151) suggest.

- (151) Chinese (Mandarin) HERE
- a. Zero-marked HERE [Li and Thompson 1989: 516]
zhèlǐ yǒu mén
 here exist gate
 ‘Here’s a gate.’
- b. Overtly marked HERE [Ross and Sheng Ma 2006: 41]
Wǒ zài zhèr gōngzuò
 1SG at here work
 ‘I work here’

(151a) shows that *zhèlǐ* (or *zhèr*) ‘here’ may be used without *zài* as either a location verb or a preposition. The existential verb *yǒu* ‘exist’ is resorted to and induces a Place reading. The sentence in (151b) looks similar to the one in (150b) above. *Zài* is used as a preposition with *zhèr* ‘here’ to indicate the location where an action takes place. Li and Thompson (1989: 396) state: “The coverb *zài* ‘at’ introduces the locative phrase [...]. It is obligatory except in those presentative constructions [...] where a locative phrase is in sentence-initial position; in presentative sentences, *zài* ‘at’ is in general optional.”

This is comparable to the use of the Goal inducing coverb *dào* ‘to’ which indicates the “movement to a location that is the destination” (Ross and Sheng Ma

2006: 86).⁷² It can be used with both SDDs and SIs. Consider the following examples:

- (152) Chinese (Mandarin) HITHER [Li and Thompson 1989: 583; Ross and Sheng Ma 2006: 289]
- a. *wǒ lái zhèr de yuángù*
 1SG come here NOM reason
 ‘the reason why I came here’
- b. *Wǒ gāng dào zhèr lái.*
 1SG just to here come
 ‘I’ve just come here.’

The expression *zhèr* ‘here’ is unmarked in (152a), where the Goal reading is induced by the verb *lái* ‘come’. It can, however, also be overtly marked by the preposition *dào* ‘to’ as in (152b), where the same verb *lái* ‘come’ is used. Li and Thompson (1989: 411) explain that “both directional and locative phrases, if postverbal, must immediately follow the verb”. There are instances of a postverbal directional phrase with *dào* not immediately following the verb. But, in these cases, *dào* appears as a verb ‘arrive’ in a serial verb construction rather than as the coverb with a prepositional function (cf. Li and Thompson 1989: 411). Furthermore, “[t]here are two motion verbs that behave in a special way with respect to directional phrases” (Li and Thompson 1989: 412). The motion verbs *lái* ‘come’ and *qù* ‘go’ include the notion of reaching a destination point. Independent of their position to the verb (preverbal vs. postverbal), directional phrases occurring with *lái* or *qù* are always to be understood as referring to the destination (cf. Li and Thompson 1989: 413).

The ablative coverb *cóng* ‘from’ is one of the coverbs that have no verbal use. In contrast to Place and Goal constructions, Source has to be overtly marked.

- (153) Chinese (Mandarin) HENCE [Yip and Rimmington 2006: 154]
- Nǐ cóng zhèr xiàng běi zǒu.*
 2SG from here towards north walk
 ‘You go north from here.’

⁷² There are a number of coverbs meaning ‘to, towards, in the direction of’, which, however, do not seem to include the notion of reaching a destination. We do not include constructions with these coverbs in our paradigm. Nevertheless, it should be mentioned that these coverbs exist and certain constructions may be interpreted as instances of a Goal relation. These coverbs are *cháo* ‘towards, facing’, *xiàng* ‘towards’, *wàng* ‘towards, to’, *wǎng/wàng* ‘in the direction of’, *bèn* ‘heading for’, *yú* ‘to’, and *wèi* ‘to’ (cf. Yip and Rimmington 2004: 164–165).

In (153), the coverb *cóng* ‘from’ is used to mark Source overtly. There are other coverbs which may similarly be used to express Source that are not included in our paradigm. Yip and Rimmington (2004: 166–167) introduce a total of five coverbs meaning ‘from’. It seems that they mainly differ in terms of register and can be used in similar Source contexts, cf. (154)

- (154) Chinese (Mandarin) HENCE with coverb *dǎ* [Yip and Rimmington 2004: 166]
zánmen dǎ zhèr zǒu ba
 1PL from here go PTCL
 ‘Let’s go from here.’

Example (154) suggests that *dǎ zhèr* ‘from here’ is used similarly to *cóng zhèr* ‘from here’ in (153) above. Yip and Rimmington (2004: 167) provide an overview of the different coverbs that express a starting point and display their different features. Table 22 below reproduces Yip and Rimmington’s (2004) table, leaving out two columns that are left empty in the original table.

Table 22: Coverbs expressing ‘from (a starting point)’ (cf. Yip and Rimmington 2004: 167).

Coverb	Usage	Register	Governmental	Sequential
<i>cóng</i>	dynamic	neutral	N, PRO	preverbal
<i>yóu</i>	dynamic	formal	N	preverbal
<i>dǎ</i>	dynamic	colloquial	N	preverbal
<i>qǐ</i>	dynamic	dialect	N, PRO	preverbal
<i>yú</i>	dynamic	classical	N, PRO	postverbal

As Table 22 suggests, different coverbs can be used depending on register. We decided to list only the register neutral coverb *cóng* in our paradigm. It should, however, be noted that other coverbs may also be used in different situations.⁷³

⁷³ There is another preposition *lí* ‘from’ in Mandarin Chinese, which is also used in locational contexts but is not associated with Source. Yip and Rimmington (2006: 154) explain that “[*lǐ*] ‘from’ simply indicates *distance* between two fixed objects, while [...] *cóng* ‘from’ is always associated with *movement* from one place or another”, cf. (iv).

- (iv) Chinese (Mandarin) use of *lí* ‘from’ [Li and Thompson 1989: 101]
xīn de dìfang lí zhèlǐ yuǎn bu yuǎn?
 new NOM place from here far not far
 ‘Is the new place far from here?’

As elucidated above, two syncretism patterns are possible in Mandarin Chinese. Either the same zero-marked constructions are used for both Place and Goal or each relation uses a distinct construction, in which case Place and Goal are both overtly marked. These two options correspond to the $P=G\neq S$ pattern or the $P\neq G\neq S$ pattern, respectively.

3.2.3.4 Optional overt marking of Source in Asia

Another language that has different options is the Austronesian language Hiligaynon [AS-17]. In Hiligaynon, all three relations may be expressed by the unmarked forms *diin* ‘where’, *diri* ‘near speaker’, *dira* ‘near hearer’, or *didto* ‘away from both’. Yet, it is also possible to mark the SIs and SDDs for Source with *taga-* ‘from’, e.g. *taga-diri* ‘from here’. Furthermore, in the case of the SDDs, there are additional forms used exclusively for Place, viz. *ari* ‘near speaker’, *ara* ‘near hearer’, and *ato* ‘away from both’. The following examples display the different options Hiligaynon has for the proximal SDDs.

(155) Hiligaynon HERE [Peace Corps 1990: 306; 307]

- a. **Diri** *si Jane matulog.*
 here P.ART Jane sleep
 ‘Jane will sleep here.’
- b. **Ari** *si Nanay.*
 here P.ART Mother
 ‘Mother is here.’

(156) Hiligaynon HITHER [HLGN Luke 9:41]

- Dal-a diri ang imo bata.*
 bring here DEF 2SG.POSS son
 ‘Bring your son here.’

(157) Hiligaynon HENCE [HLGN Gen 26:16]

- a. zero-marked HENCE
Halin ka na diri [...]
 leave 2SG already here
 ‘Go away from here [...]

Although *li zhèlǐ* is also translated as ‘from here’, it does not describe a Source relation. Instead, the distance between *xīn de dìfang* ‘new place’ and *zhèlǐ* ‘here’ is described.

- b. overtly marked HENCE [HLGN John 8:23]
Kamo taga-diri sa kalibutan, pero ako taga-langit.
 2PL from-here LOC world but 1SG from-heaven
 ‘You are from this world; I’m not from this world’ (lit. ‘You are from here in the world, but I am from heaven.’)

The two sentences in (155) show the use of the two options Hiligaynon has to express HERE. In the Hiligaynon Bible only the D3 expression *ato* ‘there (away from both)’ is regularly used, while *ari* ‘here (near speaker)’ and *ara* ‘there (near hearer)’ do not occur. In contrast, *diri* ‘here (near speaker)’, *dira* ‘there (near hearer)’, and *didto* ‘there (away from both)’ are all frequently found. Example (156) displays the only option for a HITHER construction. The proximal SDD *diri* ‘here (near speaker)’ is used without any overt Goal marker. Motion is expressed by the verb *dal-a* ‘bring’. In (157a), Source is not overtly marked. The verb, in this case *halin* ‘leave’, is used to induce a Source reading. This is different in (157b), where *diri* ‘here’ is accompanied by the preposition *taga* ‘from’. In this case, there is no Source inducing verb, so that there has to be overt marking. While it is not easy to find non-overtly marked Source constructions in the Hiligaynon Bible, the constructions marked with *taga-* ‘from’ occur frequently. Without having conducted a corpus study, these search results still clearly hint at the P=G≠S pattern as being the most common for both SIs and SDDs alike.

3.2.4 P=G≠S in Europe

Both in Stolz et al.’s (2017) and our own sample, the P=G≠S pattern is the second most prevalent option in Europe. While 42% of the SI paradigms in Stolz et al.’s (2017) sample attest to this pattern, the numbers amount to 38.5% for the FD SDDs, 35.8% for the ND SDDs, and 37.9% for the SIs in our sample. Table 23 gives an overview of the 30 languages that attest to this pattern in Europe in at least one of the expression classes.

Pattern II is a common pattern among Romance and Slavic languages. A number of Germanic languages also have this option. Other Indo-European languages, such as Greek (Graeco-Phrygian), Albanian, both Baltic, and all three Celtic languages also appear in Table 23. Furthermore, two non-Indo-European languages, viz. Maltese (Afro-Asiatic) and Georgian (Kartvelian), also show P=G syncretism. In the following subsections, we concentrate on qualitative analyses of Romance, Slavic, and Celtic P=G≠S languages.

Table 23: European languages that attest to P=G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Albanian	EU-2	Indo-European, Albanian	✓	✓	✓
Bulgarian	EU-5	Indo-European, Slavic	✓	✓	✓
Catalan	EU-6	Indo-European, Romance	✓	✓	✓
Croatian	EU-7	Indo-European, Slavic	✓	✓	✓
Czech	EU-8	Indo-European, Slavic	X	X	✓
English	EU-11	Indo-European, Germanic	✓	✓	✓
Faroese	EU-13	Indo-European, Germanic	✓	✓	✓
French	EU-15	Indo-European, Romance	✓	✓	✓
Georgian	EU-16	Kartvelian	✓	✓	✓
Greek, Modern	EU-18	Indo-European, Graeco-Phrygian	✓	✓	✓
Icelandic	EU-20	Indo-European, Germanic	X	✓	✓
Irish	EU-21	Indo-European, Celtic	✓	✓	✓
Italian	EU-22	Indo-European, Romance	✓	✓	✓
Latvian	EU-24	Indo-European, Baltic	✓	X	✓
Lithuanian	EU-26	Indo-European, Baltic	✓	✓	✓
Macedonian	EU-28	Indo-European, Slavic	✓	✓	✓
Maltese	EU-29	Afro-Asiatic, Semitic	✓	✓	✓
Polish	EU-32	Indo-European, Slavic	✓	✓	✓
Portuguese	EU-33	Indo-European, Romance	X	✓	✓
Romani, Moldovan	EU-34	Indo-European, Indo-Iranian	✓	X	X
Romanian	EU-35	Indo-European, Romance	✓	✓	✓
Rumantsch	EU-36	Indo-European, Romance	✓	✓	✓
Scots-Gaelic	EU-39	Indo-European, Celtic	✓	✓	✓
Serbian	EU-40	Indo-European, Slavic	✓	X	✓
Slavomolisano	EU-41	Indo-European, Slavic	✓	X	X
Slovak	EU-42	Indo-European, Slavic	✓	X	✓
Slovenian	EU-43	Indo-European, Slavic	X	✓	X
Sorbian, Lower	EU-44	Indo-European, Slavic	X	✓	X
Sorbian, Upper	EU-45	Indo-European, Slavic	✓	✓	X
Spanish	EU-46	Indo-European, Romance	X	✓	X
Welsh	EU-50	Indo-European, Celtic	✓	✓	✓

3.2.4.1 P=G≠S in Romance languages

French [EU-15] perfectly exemplifies the P=G≠S pattern in Romance languages. The SDDs *ici* ‘here’, *là* ‘there’, and *là-bas* ‘yonder’ as well as the SI *où* ‘where’ are used for Place and Goal without any additional markers. Whether Place or Goal is encoded depends on the verb. If a stative verb is used, Place is expressed. If a dynamic verb is used, Goal is expressed. In a Source relation, all of the expressions are preceded by the preposition *de* ‘from’. In the cases of *ici* ‘here’ and *où* ‘where’, the preposition’s vowel is elided, so that *de* + *ici* becomes *d’ici* ‘from here’ and *de* + *où* becomes *d’où* ‘where from’. The examples under (158) show how *ici* is used in all three relations.

- (158) French
- a. HERE [PDV2017 1 Sam 26:22]
Mon roi, ta lance est ici.
 1SG.POSS king 2SG.POSS spear be.3SG here
 ‘Here is the king’s spear’ (lit. ‘My king, here is your spear.’)
- b. HITHER [PDV2017 Prov 9:16]
Vous, les ignorant-s, venez ici!
 2PL DEF.ART.PL ignorant-PL come:2PL here
 ‘Whoever is naïve, come in here!’ (lit. ‘You, the ignorants, come here!’)
- c. HENCE [PDV2017 Deut 9:12]
Vite, descends tout de suite d’ici.
 fast go.down:2SG immediately from.here
 ‘Get down from here quickly.’

Similar to other languages with a P=G≠S pattern, Place and Goal are distinguished only through the verb. Stative verbs like *être* ‘be’ in (158a) are used for Place relations, while dynamic verbs like *venir* ‘come’ in (158b) in combination with a zero-marked SI or SDD express a Goal relation. Source constructions like in (158c) are always overtly marked. Pattern II can be found in the majority of Romance languages. In fact, all seven Romance varieties of our sample employ this pattern at least to some extent (cf. Table 23 above).

Another Romance language that shows the P=G≠S pattern quite clearly is Italian [EU-22]. The SI *dove* is used for both WHERE and WHITHER, whereas WHENCE has to be overtly marked by the preposition *da* ‘from’.

- (159) Italian SIs
- a. WHERE [NR06 Luke 17:17]
Dove sono gli altri nove?
 where be:3PL.PRES DEF.M.PL other.PL nine
 ‘Where are the other nine?’
- b. WHITHER [NR06 John 13:36]
Signore, dove vai?
 Lord where go:2SG.PRES
 ‘Lord, where are You going?’
- c. WHENCE [NR06 Matt 21:25]
Il battesimo di Giovanni **da dove** veniva?
 DEF.M.SG baptism of John from where come:3SG.IMPERF
 ‘The baptism of John – from where did it come?’

The examples in (159) show how the non-overtly marked expression *dove* ‘where = whither’ appears for both Place (159a) and Goal (159b). The Source construction in (159c) is expressed by the overtly marked *da dove* ‘whence’. Another construction *di dove* ‘whence’ also exists. However, it is usually used with *essere* ‘be’ and asks about Origin rather than Source, cf. (160).

- (160) Italian Origin [NR06 John 19:9]
Di dove sei tu?
 from where be:2SG.PRES 2SG
 ‘Where are you from?’

The SDDs prove to be more complex than the SIs in several aspects. For instance, there are two proximal and distal expressions each, viz. the proximal expressions *qui* and *qua* and the distal expressions *lì* and *là*. In both cases, the expressions ending in the vowel /i/ denote a more punctual location, whereas the expressions ending with /a/ may refer to a wider area (Dardano and Trifone 1995: 386). The other difficulty lies in the use of the prepositions *di* and *da*. Generally, Italian employs a P=G≠S pattern in the SDDs as well, cf. (161).

- (161) Italian distal SDDs
- a. THERE [NR06 Matt 2:15]
Là rimase fino alla morte di Erode [...]
 there remain:3SG.REM until to.ART.F death of Herod
 ‘He remained there until the death of Herod.’
- b. THITHER [NR06 Matt 2:22]
 [...] ebbe paura di andare là;
 have:3SG.REM fear of go there
 ‘[...] he was afraid to go there.’

- c. THENCE [NRO6 Matt 9:27]
Come Gesù partiva di là, due ciechi
 as Jesus leave:2SG.IMPERF from there two blind.PL
lo seguirono [...]
 3SG.DAT follow:3PL.REM
 ‘As Jesus went on from there, two blind men followed Him [...]

The stative verb *rimanere* ‘to stay’ in (161a) induces a Place reading. Conversely, Goal is expressed with the dynamic *andare* ‘to go’ in (161b). In (161c), the Source construction is overtly marked by the preposition *di* ‘of, from’. In other constructions, the preposition *da* ‘from’ is used.

- (162) Italian THENCE with *da* ‘from’ [Bosisio et al. 2005: 96]
[...] non mi piace la gente che viene
 NEG me like DEF.SG.F people REL come:3SG.PRES
da là a qui [...]
 from there to here
 ‘[...] I do not like the people who come from there to here [...]

As example (162) shows, a Source construction can also be expressed with the preposition *da* ‘from’. Yet, in contrast to SI Source constructions, *da* ‘from’ is not the preferred preposition. While *di dove* ‘whence’ asks about Origin, *di* ‘of, from’ is the preferred preposition to express Source with SDDs. However, not all constructions with *di* express Source as the following examples suggest:

- (163) Italian Place and Goal constructions with *di* [Dardano and Trifone 1995: 402]
- a. *dormo di là*
 sleep:1SG.PRES PREP there
 ‘I sleep there’
- b. *vado di qua*
 go:1SG.PRES PREP here
 ‘I go here’

The construction *di là* is used in (163a) in combination with the stative verb *dormire* ‘to sleep’. A Place construction is expressed. In (163b), the construction *di qua* is combined with the dynamic verb *andare* ‘to go’, which induces a Goal reading. In these constructions, the usually Source-inducing preposition *di* is used for Place and Goal, respectively. Like this, an alternative P=G=S paradigm emerges, as displayed in Table 24, in which the grey shading marks the syncretic forms of each row.

As Table 24 shows, the P=G=S pattern marked by the preposition *di* concerns only the two SDDs that denote a wider area, i.e. *qua* and *là*. It seems that the same constructions with *di qui* or *di lì* are not possible. Compare the following examples (164a–b):

Table 24: Extended Italian paradigm.

	Place	Goal	Source
SI	<i>dove</i>	<i>dove</i>	<i>da dove</i>
D1 A	<i>qui</i>	<i>qui</i>	<i>da qui</i> <i>di qui</i>
D1 B	<i>qua</i>	<i>qua</i>	<i>da qua</i>
	<i>di qua</i>	<i>di qua</i>	<i>di qua</i>
D2 A	<i>lì</i>	<i>lì</i>	<i>da lì</i> <i>di lì</i>
D2 B	<i>là</i>	<i>là</i>	<i>da là</i>
	<i>di là</i>	<i>di là</i>	<i>di là</i>

- (164) Italian *di qua* vs. *di qui* [Valeria Perchio, p.c.]
- a. *Vieni di qua!*
 come:IMP.SG PREP here
 ‘Come here!’
- b. *Vieni di qui.*
 come:2SG.PRES PREP here
 ‘You come from here.’

The two sentences displayed in (164) differ only in the use of *qua* or *qui*, respectively. Nevertheless, Goal is expressed in (164a), while the sentence in (164b) denotes Source. In both sentences, the verb *vieni* is used, which is either the imperative singular form of *venire* ‘to come’ or the second person singular present tense form of the same verb. According to native speaker Valeria Perchio (p.c.), the construction in (164a) would be interpreted as an imperative construction, in which the listener is asked to come here/hither. In contrast, the construction in (164b) would be interpreted as a statement about a second person who comes from here/hence. It seems that the use of *di qua* and *di là* is quite restricted. Similar sentences to the ones in (164) with the same verb in first person singular present tense, i.e. *vengo* ‘I come’, both mean ‘I come from here’ (Valeria Perchio, p.c.). This limitation does not seem to apply to Place constructions, as all kinds of stative verbs may be used with *di qua* or *di là*, e.g. *mangio*

di qua ‘I eat here’ or *leggo di là* ‘I read there’ (Valeria Perchio, p.c.). Yet, these constructions seem to be quite formal and are not as commonly used as the zero-marked alternative, e.g. *dormo là* ‘I sleep there’ or *vado qua* ‘I go here’ (Valeria Perchio, p.c.). In conclusion, it ought to be noted that there is a possibility for a P=G=S pattern in Italian. To claim that this maximally indistinct pattern is a full-fledged option besides the P=G≠S pattern would be misleading, as the syncretic forms seem to be restricted both grammatically and socio-linguistically.

3.2.4.2 P=G≠S in Slavic languages

Slavic languages on the whole employ either the maximally distinct P≠G≠S pattern or P=G≠S, with no attestation of any other pattern. The former is the far more frequent option. In this section, we zoom in on the paradigms of two Slavic languages Polish [EU-33] and Macedonian [EU-28] which predominantly exhibit the P=G≠S pattern. Still, both spatial deictic systems entail alternative patterns and high degrees of overabundance.

Polish [EU-33] SIs give evidence of both P=G≠S and P≠G≠S pattern, as Goal may be realized by either *gdzie* ‘where’, which is also used to inquire about Place (165), or *dokąd* ‘whither’ (cf. Swan 2002: 184). Diachronically, given the *k-*Q-stem observed in Old Church Slavonic [EU-31], Stolz et al. (2017: 281) argue that in some languages of the Slavic group the /d/ in the Place SI underwent palatalization. The authors thus postulate that “this process resulted in the creation of a voiced affricate /dʒ/ sometimes with additional palatalization (cf. Kashubian *gdze* ‘where’ and Polish *gdzie* ‘where = whither’)” (Stolz et al. 2017: 281). The two alternating allative SIs appear to occur in free variation as exemplified by (166a) and (166b). Employing the same lexical root as *dokąd*, Source is realized by *skąd* (167).

(165) Polish WHERE [Swan 2002: 15]

gdzie tu się kup-uje mydło?
 where here one buy.IMPV-3SG.PRES soap.ACC
 ‘Where does one buy soap around here?’

(166) Polish WHITHER [Swan 2002: 184, 167]

- a. **gdzie** idziesz?
 where go.2SG.PRES2
 ‘Where are you going?’
- b. **dokąd** idziesz?
 whither go.2SG.PRES
 ‘Where are you going?’

- (167) Polish WHENCE [POL Gen 16:18]
skąd idziesz?
 whence go.2SG.PRES
 ‘Where did you come from?’ (lit. ‘Where are you going from?’)

Adopting a diachronic perspective, Stolz et al. (2017: 287) assert that “*dokąd* ‘whither’ and *skąd* ‘whence’ contain a reflex of Old Church Slavonic *kǫdě* ‘whither = whence’. The apocopated **kǫd* coalesced with the prepositions *do* ‘to’ and *z* (→ *s/___* K_[–voice]) ‘from’ to yield dimorphic and dimorphemic spatial interrogatives of Goal and Source, respectively.” Polish has thus changed its system from WHITHER=WHENCE syncretism as found in Old Church Slavonic [EU-31] to WHERE=WHITHER syncretism.

The declarative side of the Polish spatial deictic system exhibits the P=G≠S pattern which again stands in contrast to the prevailing P≠G≠S identified in Old Church Slavonic. In the proximal stage, one may observe overabundance in the two syncretic Place and Goal cells. The deictic adverbs *tutaj* and *tu*, the latter appearing to be a clipped form of the former, are both used to denote ‘here’ in (168a) and (168b) as well as ‘hither’ in (169a) and (169b), respectively.

- (168) Polish HERE [Swan 2002: 420]
- a. *oh, ty tutaj!*
 oh 2SG.NOM here.EMPH
 ‘oh, you are here!’
- b. *phi, jak tu cuchn-ie!*
 ugh how here stink-3SG.PRES
 ‘ugh, how it stinks here!’
- (169) Polish HITHER [PSZ Matt 14:18; Matt 22:12]
- a. *Przyni-eście mi je tutaj*
 bring.PFCTV-2PL.IMP 1SG.DAT 3PL.ACC here.EMPH
 ‘Bring them here to Me.’
- b. *Jak tu wszed-leś, przyjaci-elu zapyta-ł*
 how here enter.PFCTV-2SG.PAST friend-VOC ask-3SG.M.PAST
nie mając weselnej szat-y?
 NEG have.PTCPL nuptial clothes-PL
 ‘Friend, how did you come in here without wearing the wedding clothes [that were provided for you]?’

While *tu* appears to be the default and most frequently employed choice, *tutaj* seems to be resorted to for emphasis, i.e. stressing the proximity of a location or action – ‘right here’ as opposed to ‘somewhere else’. Looking at *The National Corpus of Polish* (NKJP), it can be asserted that *tu* (177,975 hits) surfaces approx-

imately three times as often as *tutaj* (63,277 hits) lending support to the hypothesis. The proximal Source SDD is unrelated in form to the adverbs in the Place and Goal relation and appears as *stąd* exhibiting the same lexical root as found in the allative and ablative SIs. Example (170) illustrates its usage where the perfective motion verb *skoczyć* ‘jump’ is followed by the proximal deictic element to render ablative motion.

- (170) Polish HENCE [PSZ Luke 4:9]
Skoro jesteś Syn-em Bog-a, skocz
 if be.2SG.PRES son-INST god-GEN jump.PFCTV.2SG.IMP
stąd w dół.
 from here PREP down
 ‘If You are the Son of God, throw Yourself down from here.’

The distal stage displays the same pattern as the proximal but does not show overabundance in the Place and Goal cells. *Tam* is employed in both stative and allative constructions with the accompanying verb imbuing the adverb with either static or dynamic qualities.

- (171) Polish *tam*
 a. THERE [PSZ Matt 2:15]
Przebywa-ł tam aż do śmierc-i Herod-a.
 remain-3SG.M.PAST there until death-GEN Herod-GEN
 ‘He remained there until the death of Herod.’
 b. Polish THITHER [Swan 2002: 389]
Wolę tam nie iść.
 prefer:1SG.PRES there NEG go
 ‘I prefer not to go there.’

In (171a), *tam* co-occurs with the stative verb *przebywać* ‘remain’ which results in the adverb’s denotation of ‘there’. Conversely, the same deictic element appears with *iść* ‘go’ in (171b) to encode allative motion. To express motion away from the speaker in the distal relation, the complex deictic element *stamtąd* ‘thence’ is used, see (172) where the element appears with the imperfective form of the motion verb *odchodzić* ‘go away’.

- (172) Polish THENCE [PSZ Matt 9:27]
Gdy Jezus stamtąd odcho-dził, ...
 as Jesus thence go away.IMPV-3SG.M.PAST
 ‘As Jesus went on from there, ...’

Overall, the pattern of the Polish spatial deictic system can be described as predominantly P=G≠S. The coding behavior on the declarative and the interroga-

tive side of the paradigm is parallel. In the following, we discuss Macedonian [EU-28] which shows a similar overall coding behavior as Polish. However, the Macedonian paradigm shows a higher degree of overabundance and the distribution of the overabundant forms is not as clear-cut as in Polish, at least from what we can deduce from our data.

Macedonian is one of the Slavic languages in our sample that generally exhibit the P=G≠S pattern on the interrogative side of its paradigm. The Place and Goal cells are filled by two overabundant forms, i.e. *kaj* ([173] and [174a]) and *kade* ([173b] and [174b]), which are generally used synonymously to encode either ‘where’ or ‘whither’. However, as will be discussed later on, there is a third non-syncretic option for the encoding of ‘whither’.

(173) Macedonian WHERE

a. WHERE 1 [Friedman 2002: 52]

Kaj se najde tolku skakulec?

where INTR find.3SG.AOR so many grasshopper

‘Where did all these grasshoppers come from?’ (lit. ‘Where does one find so many grasshoppers?’)

b. WHERE2 [Elena Lüke, p.c.]

Kade e toj?

where be.3SG.PRES 3SG.M

‘Where is he?’

(174) Macedonian WHITHER

a. Zero-marked WHITHER 1 [LPP Macedonian: 11]

ej **kaj** trča-te?

hey where run-2PL.IMP

‘Hey, where are you going?’

b. Zero-marked WHITHER 2 [HPI Macedonian, 225]

Kade saka-š da ja odnes-eš mojata

where want-2SG.PRES SUBORD EMPH take.away-2SG.PRES my.DEF.F
ovca?

sheep.PL

‘Where do you want to take my sheep then?’

c. Overtly marked WHITHER [Elena Lüke, p.c.]

Na kade odi taa?

to where go.3SG.PRES 3SG.F

‘Where is she going?’

It should be noted, however, that, as native speaker Elena Lüke (p.c.) points out, for most speakers of Standard Macedonian *kade* would be the preferred choice, especially in allatival interrogative constructions. Notice further that the

question word *kaj* is also found in other Slavic languages. In the Silesian variety of Polish, it is generally employed in informal contexts to encode Place and Goal. The same register-related motivation might govern the distribution of the elements in Macedonian. Yet, our informant, a speaker of Standard Macedonian spoken in the area around Skopje the capital of North Macedonia, could not provide further insight into the matter.⁷⁴ In addition to *kaj* and *kade*, Elena Lüke (p.c.) asserts that a third option for Goal SIs is possible which, in her speech community, is also the most viable choice. As shown in (174c) above, *kade* can be preceded by the preposition *na* meaning ‘to’ to derive *na kade* ‘to where/whither’, thus explicitly marking the allative. The Source SI is derived in a similar manner, namely by adding the preposition *od* meaning ‘from’ (175) to *kade* resulting in the form *od kade* ‘from where’.⁷⁵

- (175) Macedonian WHENCE [LPP Macedonian: 11]
Od kade *doága-š*, *malečok?*
 whence come.IMPf-2SG.PRES little.DIM
 ‘Where do you come from, little one?’

In our data, we find variants of the Source SI ranging from instances where the preposition *od* and *kade* are written separately, over those where the elements are presented as one word *odkade*, to cases where it surfaces as *otkade*. The latter representation reflects the process of voice assimilation triggered by the question word’s initial voiceless velar plosive, i.e. *d* → *t/_k*. It appears that all three variants occur in free variation (Elena Lüke p.c), although they represent different stages of grammaticalization of the complex interrogative.

Moving to the declarative side of the paradigm, it becomes evident that there is even more variation and greater overabundance, despite a general adherence to the P=G≠S pattern in proximal (D1) and distal (D2) stages. As for the proximal Place relation, speakers of Macedonian normally choose between *ovde* and *tuka* to render the meaning of ‘here’. The forms are used in free variation, compare (176a) and (176b), with no apparent change in meaning.

- (176) Macedonian HERE
 a. HERE 1 [Friedman 2002: 53]
Ljubov-ta na star-iot Sokole Kipro se zarodi
 love-DEF to old-M.DEF Skole Kipro INTR born.3SG.AOR

⁷⁴ Conversely, in other Slavic languages, the same element is used to encode ‘what’, e.g. in the Kajkavian dialect of Croatian (cf. Alexander and Elias-Bursać 2010: 355) and Slovenian (Priestly 1993: 410).

⁷⁵ Potentially, this might indicate a shift from the P=G≠S to the maximally distinct the P≠G≠S pattern.

- tomku* **ovde**, (...)
 precisely here
 ‘Old Sokole Kipro’s love was born precisely here, (...)’
- b. HERE 2 [Elena Lüke, p.c.]
- toj* *e* **tuka**.
 3SG.M be.3SG.PRES here
 ‘He is here.’

A possible third option *odevka*, which is derived by adding the suffix *-ka* to the adverbial stem *ovde*, was found in Groen’s (1977) description of the Macedonian Dialect of Dihovo. Yet, upon confronting our native speaker informant with the respective example sentence *Pélistar je ovdeka*, which can be translated as ‘Pelister is here’ (Groen 1977: 223), it transpired that the construction exhibits a high degree of Serbian influence, e.g. *je* is used instead of Macedonian *e* to encode the present tense form of the verb ‘be’ in the third person. Yet, *ovdeka* as a possible realisation of ‘here’ and even ‘hither’ in colloquial contexts is still acceptable to our informant who, nevertheless, states that the form is somehow tinged, and she would not use it. Speculatively, the *-ka* suffix adds an emphatic dimension, i.e. ‘(to) right here’ vs. ‘(to) here’ (Elena Lüke p.c.).

The SDDs *tuka* and *ovde* are also resorted to in Goal constructions, see examples (177a) and (177b). In this relation, two more options are available. Speakers may either use a third SDD *vamu* to render the notion of ‘hither’ or make use of the complex form *na vamú* where *vamu* is preceded by the preposition *na* ‘to’. The employment of the preposition is optional, as illustrated in (177c).

- (177) Macedonian HITHER
- a. Zero-marked HITHER 1 [Friedman 2002: 53]
- No drug-o nešto go vodi olku*
 but other-N something 3SG.M.ACC lead.3SG.PRES so
rano ovde: (...)
 early here
 ‘But something else brings him here so early in the morning: (...)’
- b. Zero-marked HITHER 2 [Elena Lüke, p.c.]
- Dojd-i tuka*
 come-2SG.IMP here
 ‘Come here.’
- c. Optionally overtly marked HITHER [Elena Lüke, p.c.]
- Taa doagja (na) vamú*.
 3SG.F come.PFCTV.3SG.PRES (to) here
 ‘She comes here.’

The two Source SDDs are derived by adding the ablative preposition *od* ‘from’ to either of the Place SDDs giving rise to the form *odovde* (178a) and *od tuka* (178b).

- (178) Macedonian HENCE
- a. HENCE 1 [MNT Matt 17:20]
Preme-sti se odovde tamu!
 move-2PL.IMP INTR hence thither
 ‘(...) Move from here to there (...)’
- b. HENCE 2 [Elena Lüke, p.c.]
Ti si od tuka.
 2SG be.2SG.PRES hence
 ‘You are from here.’

Yet again, we stumbled upon a third coding possibility featuring the recurring element *-ka*. Friedman (2002: 36) lists *odovdeka* as a realization for ‘from here’, but he does neither comment on nor provide examples of the form. Therefore, this form was excluded from the paradigm. Elena Lüke (p.c.) acknowledges that *odovde* is a possible option as a Source SDD but concedes that the same reservations, which were outlined for *ovdeka* ‘here’, apply, i.e. the expression is tinged and would only surface in colloquial contexts.

The picture for the distal SDDs is clearer. Place is encoded by *tamu* ‘there’, as shown in (179). The same form may be used to encode Goal (180a). Apart from employing the bare distal SDD in a Goal construction, speakers of Macedonian may also choose to make the allative reading more explicit by adding the preposition *na* ‘to’ which is then prefixed to *tamu* (180b). *Natamu* ‘to there’ is not registered in any of the descriptive resources we consulted, but Elena Lüke (p.c.) states that the form is the preferred choice among speakers of contemporary Standard Macedonian.

- (179) Macedonian THERE [Friedman 2002: 44]
Naš-ata i vaš-ata ekipa be-a tamu.
 1PL.POSS-F.DEF and 2PL.POSS-F.PL.DEF team be.PAST-3PL there
 ‘Your team and our team were there.’
- (180) Macedonian THITHER
- a. THITHER 1 [MNT Matt 17:20]
Preme-sti se odovde tamu!
 move.2PL.IMP INTR hence thither
 ‘(...) Move from here to there (...)’
- b. THITHER 2 [Elena Lüke, p.c.]
Taa odi na-tamu
 3SG.F go.3SG.PRES to-there
 ‘She goes there.’

As for the distal Source SDD, there are two alternatives, namely *ottamu* (181a) and *otade* (181b), to render the meaning of ‘thence’. However, the first option where the preposition *od* is prefixed to the Place SDD *tamu* is preferable, because *otade* carries an archaic connotation and would only seldomly be employed in contemporary speech (Elena Lüke, p.c.). Note again that, as found for the Source SI, the process of voice assimilation was prompted by the Place SDD’s initial voiceless alveolar plosive, i.e. $d \rightarrow t/_t$.

(181) Macedonian THENCE

a. THENCE 1 [Friedman 2002: 31]

Rabotnički igra-še prvoliga-ški vo Kosovska
 worker.ADJ.SG.M play-3SG.IMPERF first.league-ADV in Kosovska
Mitrovic i ottamu se vrati so dva bod-a
 Mitrovic and thence INTR return.3SG.AOR with two points-PL
 ‘The ‘Workers’ (a soccer team) played big league ball in Kosovska
 Mitrovica and returned from there with two points.’

b. THENCE 2 [Friedman 2002: 54]

Otade me zed-oa, me klad-oa vo
 thence 1SG.ACC take.PAST-3PL.AOR 1SG.ACC put.PAST-3PL.AOR in
edn-a bakalnica, vo čaršij-ata.
 one-F grocery.F in bazaar-F.DEF
 ‘They took me from there, they put me in a grocery store in the bazaar.’

In Macedonian, we identified a third stage of distance, i.e. the far distal, which can be roughly translated as ‘over there’ (D3). In contrast to the patterns observed for D1 and D2, D3 gives evidence of the maximally distinct pattern $P \neq G \neq S$ only. To encode Place in the far distal, *onamu* is used (182).

(182) Macedonian OVER THERE

[Elena Lüke, p.c.]

Toj e onamu.
 3SG.M be.3SG.PRES over.there
 ‘He is over there.’

The *onamu* element also surfaces in other Slavic languages but with other functions/in different cells. In Serbian and Croatian, *onamu* is employed as a distal Goal SDD, whereas it appears as *onama* in Slavomolisano in the same functional position. In Old Church Slavonic, it was used as the far distal Goal SDD (D4). The far distal Goal SDD in Macedonian, on the other hand, is realized as *natamu* which is the same form found for the distal Goal SDD, i.e. the forms for allatival distal SDD and allatival far distal SDD are syncretic. Compare (183) below and (180b) above.

- (183) Macedonian TO OVER THERE [Elena Lüke, p.c.]
Taa odi na-tamu
 3SG.M go.3SG.PRES to-over.there
 ‘She goes over there.’

As for the far distal Source SDD, Elena Lüke (p.c.) gives two options, both of which are equally viable and probably occur in free variation. In (184a), the already encountered *ottamu* is used, i.e. the forms for ablative distal SDD and ablative far distal SDD are syncretic. Alternatively, speakers may make use of the Place D3 SDD and add the preposition *od* giving rise to *od onamu*, as illustrated in (184b).

- (184) Macedonian FROM OVER THERE [Elena Lüke, p.c.]
- a. *Ti doagja-s ot-tamu.*
 2SG come.PFCTV-2SG.PRES from-over.there
 ‘You are coming from over there.’
- b. *Ti doagja-s od onamu.*
 2SG 2SG come.PFCTV-2SG.PRES from over.there
 ‘You are coming from over there.’

The pattern where P and G are syncretic is prevailing in Macedonian, except for the far distal (D3). However, it should be noted that constructions where the allative preposition *na* ‘to’ is used have been found to increasingly surface in contemporary Macedonian which might indicate a potential shift of the system to the maximally distinct pattern, a hypothesis that needs to be validated in future research.

The two languages discussed above illustrate how some of the Slavic languages in our sample encode spatial deixis by expressing Place and Goal in a syncretic way. The complex Source deictics are marked distinctly but generally morphologically related and derived from the stative and allative counterparts, as has been shown for Polish and Macedonian. The same holds true for Bulgarian [EU-5], the third of the Slavic languages displaying the P=G≠S pattern. As for the morphology of the Source SIs and SDDs, we found that ablative prepositions are combined with the elements from the Place cells in Macedonian, as is the case for Bulgarian, whereas Polish Source SDDs are not derived in this manner. Indeed, the derivation of the dynamic SDDs is much less transparent in Polish. Thus, while these Slavic languages display the same pattern, upon further inspection fine-grained differences not only on a morphological but also functional level were uncovered.

3.2.4.3 P=G≠S in Celtic languages

All three Celtic languages of our sample generally employ the P=G≠S pattern. In Irish [EU-21], the SI expression *cá* is used to denote both WHERE and WHITHER. There are two possibilities to express WHENCE, viz. *cá has*, a combination of *cá* ‘where’ and the adposition *has* ‘from’, or *cad as*, which literally means ‘what from’. The SDDs consist of the demonstratives *seo* ‘this’, *sin* ‘that’, or *siúd* ‘that over there’ and an adverbial prefix *an-*. “*Seo* refers to proximity to the speaker, *sin* to an area removed from the speaker but within sight and *siúd/úd* to a third position removed from both *seo* and *sin*” (Ó Baoill 2010: 188). The expressions *anseo* ‘here’, *ansin* (or *ann*) ‘there’, and *ansiúd* ‘over there’ are used in both Place and Goal constructions. For Source, the bare demonstrative forms *seo*, *sin*, and *siúd* are preceded by the adposition *as* ‘from’.

- (185) Irish
- a. THERE [Ó Siadhail 1988: 19]
Tá an pota ansin.
 exist.PRES DEF pot there.
 ‘The pot is there.’
- b. THITHER [Ó Siadhail 1988: 74]
Tá sé go deas ag Cáit a ghoil ansin.
 exist:PRES 3SG PTCL nice of Cáit to go.VN there
 ‘It is nice of Cáit to go there.’
- c. THENCE [ABN Judg 18:13]
Chuadar as sin go hardáin Eafraim
 go:PAST.IMPERS from that PTCL hill.PL Ephraim
agus thángadar go teach Mhíceá.
 and come:PAST.3PL PTCL house Micah:GEN
 ‘They went on from there to the hill country of Ephraim and came to Micah’s house.’

The zero-marked expression *ansin* ‘there’ in combination with the existential verb *bí* ‘to be’ in (185a) expresses Place, whereas the same expression in combination with the motion verb *dul* ‘to go’ induces a Goal reading in (185b). In contrast, the Source construction in (185c) is overtly marked by the adposition *as* ‘from’.

The Scots-Gaelic [EU-39] paradigm is similar to that of Irish. Gillies (2010: 267) explains that “Scottish Gaelic has two interrogative pronouns: *cia/cò* ‘who?, whom?, which?’ (any person and number) and (*gu*) *dè* ‘what?’”. The SI expression for both WHERE and WHITHER is *càit(e)*, a univerbation of the interrogative pronoun *cò* and *àite* ‘place’. The WHENCE expressions *cò as* or *cia as* are

combinations of one of the two forms *cia* or *cò* ‘who?, whom?, which?’ and the adposition *as* ‘from, of, off, out of’. Gillies (2010: 267) states that “[o]f *cia* and *cò*, the latter is the prevailing form”, which also seems to be true for the WHENCE constructions. Similar to Irish, there are three demonstrative pronouns in Scots-Gaelic which combine with the preposition *an* to form SDDs: *an seo* ‘here’, *an sin* ‘there’, and *an siod* ‘yonder’. Mark (2004: 512) describes that *an seo* ‘here’ originally was *ann an seo* with the preposition *ann* ‘in, into’. We assume that *ann an seo* may be a kind of ad hoc reduplication of the preposition *ann*, just like in front of indefinite nouns, e.g. *ann an bogsa* ‘in a box’ (Mark 2004: 683). This may have been reduced to *ann a seo* or *an seo*, perhaps depending on the region where it is spoken. Mark (2004: 527), for example, states that *an sin* ‘there’ is often found as *ann a shin* in the Hebrides. We are, however, unsure about the exact processes involved in these constructions. These expressions are used to express both Place and Goal. The adposition *à* or *as*⁷⁶ ‘from, of, off, out of’ is used to mark Source. The expressions come in two shapes: *à seo* ‘hence’ and *as a seo* ‘hence’, *à sin* ‘thence’ and *as a sin* ‘thence’, and presumably also **à siud* ‘thence2’ and **as a siud* ‘thence2’. We did not find evidence for the expressions marked with an asterisk. In the case of *an seo*, the preposition *à* replaces *an*, so that *à seo* ‘hence’ is formed. In the case of *ann a seo*, the phonologically longer form *as* replaces *ann* to form *as a seo* ‘from here’. Still, we are not sure as to its distribution, given that both forms occur in the ABIG Bible.

(186) Scots-Gaelic constructions

- a. THENCE 1 [ABIG 2 Kings 2:25]
Agus chaidh e as a sin gu sliabh Charmeil
 and go:PAST 3SG from in that to mountain Carmel
 ‘Elisha went from there to Mount Carmel’
- b. THENCE 2 [ABIG Judg 18:11]
Agus chaidh à sin de theaghlach nan Danach [...]
 and go:PAST from that of family DEF.GEN.PL Danites
 ‘And there went from thence of the family of the Danites [...]’⁷⁷

⁷⁶ Mark (2004: 2) lists this preposition as *à* or *às*, depending on the morphophonological shape of the following word, as *às* is used before a definite noun and often occurs before a vowel. It is stated that “you may also encounter the spellings *á/ás*, or even *a/as*, but the form given here is recommended” (Mark 2004: 2). As we use the orthography used in the Bible ABIG as the basis for our paradigm, we decided to stick with *à* and *as*.

⁷⁷ This translation is taken from the King James Version of the Bible, as the Source construction is not represented in either AMP or CEB.

The examples in (186) demonstrate the two kinds of SDD Source constructions with the D2 demonstrative *sin* ‘that, there’. The constructions as described above form a clear P=G≠S paradigm. There is, however, another set of “adverbs of motion and rest” (Mark 2004: 668). Next to expressions denoting a place below, above, inside, or outside, there are the expressions *a-bhos* ‘over (here), on this side’ and *thall* ‘over (there), on the other side’. The associated expressions *a-nall* and *a-null* are sometimes translated as ‘hither’ and ‘thither’, respectively.⁷⁸ Other times, *a-null* is described as a ‘motion away from here’, whereas *a-nall* is described as a ‘motion away from there’ (cf. Gillies 2010: 275). We presume that these expressions describe atelic movement away from the deictic center (*a-nall*) or movement towards the deictic center (*a-null*). As these expressions, in contrast to the demonstrative based expressions, do not meet our requirements for SDDs, we decided to exclude them from the paradigm. It ought, nonetheless, be noted that these expressions may alternatively be used to express similar concepts as the demonstrative based expressions.

The third Celtic language of our sample Welsh [EU-50] generally employs a P=G≠S pattern as well. The interrogative pronoun *ble* ‘where’ can be used for both Place and Goal, whereas Source has to be overtly marked by the preposition *o* ‘from, out of’, i.e. *o ble* ‘whence’. There is, however, also the possibility to mark WHITHER overtly by using the preposition *i* ‘to’, i.e. *i ble* ‘whither’. The following examples found in the Welsh Grammar by the Uned Iaith Genedlaethol Cymru (UIGC) show the use of Welsh SIs.

- (187) Welsh SIs
- a. WHERE [UIGC 1998: 97]
- | | | | | |
|------------|---------------|------------|-----------|-------------|
| Ble | <i>rydych</i> | <i>chi</i> | <i>'n</i> | <i>byw?</i> |
| where | be:PRES.2PL | 2PL | V.PTCL | live.VN |
- ‘Where do you live?’
- b. zero-marked WHITHER [UIGC 1998: 59]
- | | | | | |
|------------|---------------|------------|-----------|--------------|
| Ble | <i>rydych</i> | <i>chi</i> | <i>'n</i> | <i>mynd?</i> |
| where | be:PRES.2PL | 2PL | V.PTCL | go.VN |
- ‘Where are you going?’
- c. overtly marked WHITHER [UIGC 1998: 102]
- | | | | | |
|--------------|-------------|------------|-----------|--------------|
| I ble | <i>maen</i> | <i>nhw</i> | <i>'n</i> | <i>mynd?</i> |
| to where | be:PRES.3PL | 3PL | V.PTCL | go.VN |
- ‘Where are they going to?’

⁷⁸ This is, for example, the case in the Scots-Gaelic online dictionary <https://learngaelic.scot/dictionary>.

- d. WHENCE [UIGC 1998: 102]
O ble mae 'r bachgen yn dod?
 from where be:PRES.3SG DEF boy V.PTCL come.VN
 'Where does the boy come from?'

The examples in (187) illustrate the implementation of the SI constructions in all three relations. The interrogative *ble* 'where' in combination with the stative verb *byw* 'live' expresses Place in (187a), whereas it denotes Goal in combination with the dynamic verb *mynd* 'go' in (187b). A similar sentence featuring the same dynamic verb *mynd* 'go' is displayed in (187c). But, in this case, the SI construction is overtly marked by the preposition *i* 'to'. Finally, Source is expressed in (187d) by the overtly marked SI construction *o ble* 'whence'. Stolz et al. (2017: 362–363) shed light on the etymology of *ble* 'where'. It has its origins in the combination of the general interrogative adjective *pa* 'what, which' and a lenited form of the noun *lle* 'place'. They explain that "we are facing the diachronic process of univerbation from original *pa + lle* → *pa le* 'which place' via apocope and cliticization *p'le* and coalescence *ple* to *ble* 'where'" (Stolz et al. 2017: 363). In fact, several of these forms can be used to express 'where'. Williams (1980), for example, lists both *pa le* and *ple* as alternatives of *ble*. Similarly, Wiliam (1960) "specifies that *p'le* 'where' is a literary form whereas *ble* 'where' is common across registers in Modern Welsh" (Stolz et al. 2017: 362). Furthermore, the noun *lle* 'place' can be used in informal spoken Welsh instead of an SI construction (Thorne 1996: 264). Thus, a number of expressions can be used for 'where' in Welsh. For our paradigm, we decided to settle for *ble* 'where' as it is also the form found in the BCND Bible.

As for the SDDs, there are the demonstratives *yma* 'this' and *yna* 'that' (or *yno* in North Wales). They "are used to convey the meanings 'here', 'there' when the precise location is not indicated" (UIGC 1998: 60). To indicate a precise location, *fan* 'place' in combination with the demonstratives is employed, i.e. *fan yma* 'here, this place' and *fan yna* 'there, that place'. For our paradigm, we chose to concentrate on the general expressions *yma* and *yna*. Similar to the SI paradigm, the two SDD expressions may be used for both Place and Goal, so that there is a P=G≠S pattern. The Source construction has to be overtly marked by *oddi* 'from, out of'.

- (188) Welsh distal SDDs
 a. THERE [UIGC 1998: 60]
Mae 'r bechgyn yna.
 be:3SG DEF boy.PL there
 'The boys are there'

- b. THITHER [UIGC 1998: 28]
Ewch yna gyda 'ch gilydd.
 go:IMP.PL there with 2PL each.other
 'Go there together.'
- c. THENCE [BCND Luke 16:26]
 [...] *neu gyrraedd oddi yna atom ni.*
 or arrive from there at 1PL
 'Neither can anyone cross from there to us.'

As examples (188a–b) suggest, the zero-marked expression *yna* 'there' can be used to express both THERE and THITHER. Unlike the SIs, we did not come across any examples of *yna* 'here' or *yna* 'there' with the preposition *i* 'to', so that there is no alternative P=G≠S pattern in the SDDs. Source constructions are always marked by the preposition *oddi* 'from, out of', unlike SI Source constructions which are marked by *o* 'from, out of'. Both prepositions carry the same meaning. *Oddi*, however, is usually employed in compound prepositions and with adverbs (GPC Online 2019: *oddi*). It consists of the preposition *o* 'from, out of' and another component *di*, which evolved out of the Indo-European **dē* 'from' (GPC Online 2019: *di*). There is thus a difference in the marking of Source constructions in the Welsh SIs and SDDs.

3.2.5 P=G≠S in Oceania

With a share of 21%, Stolz et al. (2017) found Pattern II to be the second most common pattern in Oceanian SIs. Our own numbers are quite similar, as P=G syncretism was found in 28.2% of all SI paradigms, in 20.0% of the near deictic, and in 19.1% of the far deictic declaratives. Overall, 26 Oceanian sample languages show Pattern II at least partly. It is noticeable, that it occurs more often in the SIs (21 languages) than in the SDDs (13 [ND] and 14 [FD] languages, respectively). Furthermore, its distribution over the SIs and SDDs of the 26 languages that employ this pattern is quite irregular as Table 25 shows.

Table 25: Oceanian languages that attest to P=G≠S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Abui	OC-2	Timor-Alor-Pantar, Alor	X	✓	X
Bardi	OC-5	Nyulnyulan, Western	✓	✓	✓
Doromu-Koki	OC-9	Trans-New Guinea, Manubaran	X	X	✓

Languages	Appendix	Affiliation	SI	ND	FD
Garrwa, Western	OC-13	Garwan	✓	X	X
Guugu Yimidhirr	OC-14	Pama-Nyungan, Yimidhirr-Yalanji-Yidinic	✓	✓	✓
Hawaiian	OC-15	Austronesian, Oceanic	✓	X	✓
Jingulu	OC-17	Mirndi	✓	X	X
Maori, Southern Cook Islands	OC-21	Austronesian, Oceanic	✓	X	X
Marquesan	OC-22	Austronesian, Oceanic	✓	X	NA
Martuthunira	OC-23	Pama-Nyungan, Pilbara	X	✓	✓
Maybrat	OC-25	Maybrat-Karon	✓	✓	✓
Motuna	OC-27	South Bougainville	✓	✓	✓
Ngan'gityemerri	OC-28	Southern Daly	X	✓	X
Nii	OC-29	Trans-New Guinea, Wahgic	✓	✓	X
Orokaiva	OC-30	Trans-New Guinea, Binanderean	✓	✓	✓
Rawa, Karo	OC-35	Trans-New Guinea, Finisterre-Huon	✓	✓	✓
Rotokas	OC-36	North Bougainville	✓	✓	X
Sa'a	OC-37	Austronesian, Oceanic	✓	X	✓
Savosavo	OC-38	Solomon Islands	✓	✓	✓
South Efate	OC-39	Austronesian, Oceanic	✓	X	X
Tinrin	OC-41	Austronesian, Oceanic	X	✓	X
Tok Pisin	OC-42	Indo-European, Pacific Creole English	✓	X	✓
Wambaya	OC-44	Mirndi, Ngurlun	✓	X	✓
Wardaman	OC-45	Yangmanic	✓	X	X
Warrongo	OC-46	Pama-Nyungan, Maric	✓	X	X
Yindjibarndi	OC-49	Pama-Nyungan, Pilbara	✓	X	X

As P=G syncretism appears as quite irregular in Oceanian languages, it is difficult to find meaningful correlations within the languages families. Only seven out of 26 languages employ Pattern II throughout the expression classes and none of these languages can be assigned to one language family. It can be noted that both Mirndi languages of our sample appear in Table 25. Furthermore, four out of ten Pama-Nyungan languages, six out of 14 Austronesian, and four out of six Trans-New Guinea languages also employ Pattern II at least partly. For some of these languages, a qualitative analysis is given in the following subsections.

3.2.5.1 Zero-marked Place and Goal in Oceania

The South Bougainville language Motuna [OC-27] is a typical P=G language where only Source is overtly and distinctly marked. The P=G syncretic forms

generally appear as unsuffixed, apart from being marked for ergative in spatial contexts. Source forms always take an ablative suffix. This applies to both SDDs and SIs, for the latter cf. (189).

- (189) Motuna SIs
- a. WHITHER [Onishi 1994: 74]
muumaa-naa, ree woo pi-ʔ=tuiee?
 lord-PC you.NONSG where go.2S=PC/PL.PRES.PROG.DL/PC
 ‘My lord, where are you going?’
- b. WHENCE [Onishi 1994: 134]
ih! ong moi woo-kitee haarok-u-i=to-ng?
 oh.dear DEM.M almond where-ABL fall-3S-PRES.PROG-M
 ‘Oh dear! Where is this almond falling from?’

Demonstratives in the local case have both a spatial and an anaphorical function. They constitute proper SDDs which may appear alone but also often occur as determiners accompanying nominal Grounds (cf. 190b).

- (190) Motuna SDDs
- a. HERE [Onishi 1994: 148]
roo ongi toku tu-i tu-heeto-ng.
 you.SG DEM.L.ERG not be.2S-CTS.SS be.2S-FUT-M
 ‘You will not stay here.’
- b. THITHER I [Onishi 1994: 147]
owo hausik honna-ngori uko-i-to
 DEM-L [hospital big]-L carry-3OBJ.2ST-DL.PERF.SS
pi-ti-hee.
 go.2S-DL-DEF.FUT
 ‘... you will definitely take her and go there to the big hospital’
- c. THERE and THENCE [Onishi 1994: 243]
tiko ti-ki uni-i ti-kitee
 then there-ERG be.1PC/PL.EXC.S-CTS.SS there-ABL
turu-woo-ro pooʔki oi pee-mongu
 return-MID.3S-PERF.SS children DEM.DL/PC three-CL:human.PC/DL
muuko-orur-upi-ʔ-ni.
 give.birth.to-3PC/DL.TO-1ST-DL.REM-DL/PC
 ‘Then while we were living there, he [my husband] returned from there, and we [I and my husband] gave birth to these three children.’

As can also be inferred from (190c), the article *ti(i)* which is referred to as local article by Onishi (1994) may replace the demonstrative SDDs. The relevant

contexts in which that may occur likely involve anaphora and semantic extension, cf. (191).

- (191) THITHER II [Onishi 1994: 515]
tiko tii turu-moro-ku na-m-a-ku: "tii
 and there return-MID.1S-TAM.DS say.to-1OBJ-3PC/PL.ST-TAM.DS there
pi-heeta-na," noh-ut-u-ng: "..."
 go.2S-FUT-F say.to-3O.1ST-REM-M
 'And I returned there [in that situation], and they said to me, "You will go there," and I said to them: "..."'

Deictic and anaphoric location and direction are mostly expressed with the article *ti(i)* and members of the demonstrative set, both of which combine with variants of the ablative suffix. Locational and directional adverbs may be derived from nouns by suffixation, e.g. by *-(no)ning* 'towards' (Onishi 1994: 159). These adverbs, however, refer to cardinal directions in an absolute system or vertical relations in all attested relevant spatial phrases.⁷⁹ Motuna is a P=G syncretic language with no dedicated syncretic marking of P=G. However, demonstratives inflect for gender, in spatial deictic contexts usually for local gender (cf. the SDDs in [190a] and [190b]), and may take case marking, such as ablative. Only case marking is considered a dedicated spatial marking strategy here, resulting in a P=G≠S analysis.

3.2.5.2 P=G≠S in Australia

A handful of Australian sample languages attest to P=G syncretism, yet to different degrees. As always, the possibility remains that dedicated markers have not been detected, as marking of Place and/or Goal may not be obligatory. This applies especially to the case of Martuthunira [OC-23]. It has to be stressed that Dench (1994) retrieved data mainly from one Martuthunira speaker only, due to the overall status and decreased vitality of the language at the time of documentation.⁸⁰

The available data is discussed in the following. To start with, we observe that the now extinct Pama-Nyungan language Martuthunira shows strategies to mark the allative. Yet, concerning constructions that involve SDDs, it holds true

⁷⁹ The sets of SDDs and partly landscape-oriented absolute forms are also formally kept distinct. Motuna has two sets of locational ~ directional nouns, i.e. one that includes horizontal forms and another that includes vertical relations (cf. Onishi 1994: 78 for a detailed discussion). Members of these sets appear with another ablative suffix which is *-pito*.

⁸⁰ Dench (1994: 21) states that in 1981 only three speakers were left.

that motion verb semantics fulfill the function of encoding deictic Goal. Overt morphological marking is thus omitted. The Goal SI, however, is marked for accusative, cf. (192b). The Martuthunira SI base has a short form *wantha* and an ‘unspecific’ longer form *wanthala*, of which the latter is often found as base for Source SIs (192c).

- (192) Martuthunira SIs
- a. WHERE [Dench 1994: 172]
Wantha *ngunhu pawu paju ngurnu-ngara-a?*
 where that.NOM father RLY that.OBL-PL-ACC
 ‘Where’s the one who is really father to that lot?’
- b. WHITHER [Dench 1994: 86]
*Nhulaa kanyara wajirr-marta-warnu. **wantha-a** puni-nguru?*
 near.you man spear-PROP-ASS where-ACC go-PRES
 ‘This man has a fishing spear. Where is he going?’
- c. WHENCE [Dench 1994: 78]
Wanthala-nguru-lu?
 where-ABL-EFF
 ‘Where from?’

In the proximal deictic stage, P=G syncretism due to zero-marking can be attested. Source is transparently marked by the ablatival *-nguru* (193c). It is deemed plausible that *+ngu* marks locative opposed to *+(r)la* in unspecific forms and *+(r)ni* in non-visible forms (cf. Appendix V [OC-23]).

- (193) Martuthunira proximal SDDs
- a. HERE [Dench 1994: 69]
*Nhuwana nhuura nganaju **yilangu** karri-nyila-a.*
 2PL.NOM knowing 1SG.ACC here stand-PRES.REL-ACC
 ‘You know I’m standing here.’
- b. HITHER [Dench 1994: 77]
Nhiyu kalyaran-ngara-wanti-nguru ngulawuyu-la parla-ngka-nguru
 this stick-PL-lie-PRES that.side-LOC hill-LOC-ABL
*ngathu kangku-yangu **yilangu.***
 1SG.EFF carry-PASS.PFCTV here
 ‘These sticks lying on that side were brought here from the hills by me.’
- c. HENCE [Dench 1994: 125]
*Ngunhu-ngara puni-lha, nhuunuwarnti. **Yilangu-nguru-lwa***
 that.NOM-PL go-PAST spouses here-ABL-ID
puni-lha.
 go-PAST
 ‘They went, those husbands and wives. [They] went away from here.’

Similarly, the far deictic *ngulangu* is attested in Place and Goal phrases. However, two instances in Dench's (1994) grammar host the form in combination with the allative suffix *-mulyarra*. Example (194) shows both the optional or context-dependent marking of Goal and the regular overt Source marking by the suffix *-nguru*. It further includes zero-coded 'there' and zero-coded 'hither' via the non-specific proximal SDD. It is conceivable that the choice of motion verb in a spatial deictic construction is relevant in terms of overt morphological marking of Goal. In (192b) above, *puni* 'go' may require further indication of Goal, whereas *kangku* 'carry' in (193b) and *karlwa* 'go up' include an allative meaning.

(194) Martuthunira overt Source and Goal [Dench 1994: 312]

Ngunhaa-nu ngula-nguru piyuwa-mpa-nguru. Ngurra-rru
 that.NOM-QUOT there-ABL finish-INCH-PRES ground-NOW
wanti-nguru. Kuyil parru, kuyil, warruwa. Ngurra yirla wanti-nguru
 lie-PRES bad devil bad devil ground only lie-PRES
ngulangu. Yilarla-rru karlwa-nyila. Nhawu-layi ngurnu
 there here.UNSPEC-NOW go.up-PRES.REL see-FUT that.ACC
warrirti-i kanyara-lu thawu-rnu-u ngulangu-mulyarra,
 spear-ACC man-EFF send-PASS.REL-ACC there-ALL
puni-nyila-a ngarrawurlu.
 go-PRES.REL-ACC away

'But apparently he was gone from there. Only the ground was hit. He was really bad that devil. Only the ground was lying there and he came up here alongside and watched that spear sent by that man heading straight for the place he had been standing.'

Nevertheless, Source can apparently also be zero-coded. Both instances occur with the motion verb *kanarri* 'come' and the far deictic SDD which refers to non-visible entities in space. The choice of overt coding may therefore depend on the particular motion verb in the respective constructions, on the choice of SDD, or on both. This also applies to Source constructions. Possibly, deictic constructions underlie different conditions, as "[f]or *kanarri-Ø*, the goal of motion is typically marked with the allative suffix" (Dench 1994: 67).

(195) Martuthunira zero-coded Source [Dench 1994: 125]

Ngularni-wa, ngayu mir.ta nhuura wantharni-i ngurnu
 there.NV-YK 1SG.NOM not knowing how-ACC that.ACC
kanyara-a kanarri-lha-a. Ngayu wangka-yangu yartapalyu-lu
 man-ACC come-PAST-ACC 1SG.NOM tell-PASS.PFCTV others-EFF
ngurnu kanarri-lha-a. Ngularni kanarri-lha.
 that.ACC come-PAST-ACC there.NV come-PAST

‘From over there, I didn’t know how that man came. I was told by the others that he came. He came from over there.’ (Sentence elicited by translation)

We can therefore only conclude that there are coding devices in Martuthunira whose employment is dependent upon opaque factors. Especially the non-visible demonstratives count as “extremely rare and are poorly understood” (Dench 1994: 124). There is some evidence that spatial marking is irregular, e.g. the far distance SDD takes the ablative marker but not the proximal SDD (Dench 1994: 126).⁸¹ A final word on the issue is prevented by the disappearance of the language. A careful analysis of motion verbs that co-occur with demonstratives in the available data could shed light on general spatial expressions and morphological marking patterns. This has to be postponed to future studies. As to this study, it can be stated that Martuthunira shows a maximally distinct pattern in the SIs, and P=G syncretism in the SDDs.

In the Mirndi language Wambaya [OC-44], which is also critically endangered, the use of locational nominals is more frequent than the use of SDD-like demonstratives according to Nordlinger (1998: 107). Wambaya attests to P=G syncretism in the distal deictic stage and in the interrogatives. The locative suffix *-ni* is attached to the Place and Goal SI *inja-ni*, whereas *inja-nnga* ‘whence’ hosts the ablative suffix *-nnga*. The ablative suffix is also found on both proximal and distal Source SDDs.

- (196) Wambaya SIs
- a. WHERE [Nordlinger 1998: 115]
Ninagarna gujinganjarra injani?
 this.1SG.POSS.F(NOM) mother.F(NOM) where
 ‘Where is this (boy’s) mother?’
- b. WHITHER [Nordlinger 1998: 123]
Injani g-a yarru alaji?
 where 3SG.S-PAST go boy(NOM)
 ‘Where did the boy go?’
- c. WHENCE [Nordlinger 1998: 123]
Inja-nnga ini julaji gi-n ngarra
 where-ABL this.M.SG.NOM bird.M(NOM) 3SG.S(PRES)-PROG 1SG.OBL

⁸¹ The construction *ngularni-nguru*, roughly translated as ‘from the other side, can’t see it’ (Dench 1994: 126), is not included in the paradigm [OC-23] due to divergent and unclear meaning and function.

bardbi?

run

‘Where is this bird coming (to me) from?’

In the realm of SDDs, the dedicated forms *bangarni(ga)* and *ginmanji* are exclusively employed for Goal in Nordlinger’s (1998) grammar. The latter form is probably composed of a stem *gi-* and an allative marker *-nmanji*, while *bangarni(ga)* may host the locative suffix *-ni*. HENCE is expressed with an overtly marked form *gi-nngana*. The proximal stage therefore attests to the maximally distinct pattern.

The distal SDD *ginki*, on the other hand, is analyzed as an adverb signifying ‘there’ by Nordlinger (1998: 278). It is similarly likely to host a stem *gi-* and can also be found in Goal contexts such as (197).

- (197) Wambaya THITHER [Nordlinger 1998: 227]
Yarru ngurlu-n ginki. Ngangaba ngurl-a ngajbi.
 go 1DL.EXC.S(NP)-PROG there fire(NEUT)(ACC) 1DU.EXC.ST-PAST see
 ‘We’re going over there. We saw a fire.’

Apart from the spatial adverbs, directional suffixes encode spatial deictic relations, with the deictic center normally being the speaker. The directionals are sensitive to tense and have different realizations according to past versus non-past (Nordlinger 1998: 151). Furthermore, Wambaya employs number-sensitive imperative directional suffixes that encode ‘towards’ and ‘away’ according to singular, dual, or plural participant number (Nordlinger 1998: 152). In Jingulu [OC-17], likewise from the Mirndi family, P=G syncretism is only licensed in the SI paradigm due to the suffix *-wa(ra)* which probably developed from a tensed form of a light ‘go’ verb (Pensalfini 1997: 238).

For the Guugu Yimidhirr [OC-14] SI paradigm there are two options. A genuine Place SI is realized by *wanhdhaa* ‘when, where’, while “the underlying stem *wanhdhaal-* combines with *:-ga* or *-bi* for the allative sense” (Haviland 1979: 71). Haviland (1979: 72) refers to the demonstrative system in comparison to Australian languages in general as “extremely simple”. There are two deictic stages, although a third stage may be added. The third stage would include the far deictic items *yarra* ‘yonder’ and *yarrba* ‘there, that way, that’s the way’ which, however, require an accompanying hand gesture. The P=G syncretic SDDs are morphologically distinct from the Source SDDs, which take the same ablative/causative marker as the Source SI. Haviland (1979) mentions the P=G syncretism of all relevant spatial demonstrative forms in several parts of his grammar.

Generally, our Australian sample languages demonstrate the crosslinguistic tendency according to which Source is most often consistently, overtly, and transparently marked, whereas in the domains of Place and Goal marking is

reduced and often optional (cf. also the discussion of Warrongo in Nintemann and Robbers 2019: 27–28). However, the vast majority of Australian languages have been analyzed as coding $P \neq G \neq S$ (cf. Section 3.1.5.2).

3.3 Pattern III: Place \neq Goal=Source

The $P \neq G = S$ pattern is one of the two “peripheral phenomena not only in Europe but also in global perspective” when it comes to spatial interrogatives (Stolz et al. 2017: 506). Stolz et al. (2017) found Pattern III to be absent from Asia, while it was attested in 1% of the European and in 4% of the Oceanian SI paradigms. The highest shares were found in Africa with 6% and the Americas with 7%. Our own numbers support the claim that the occurrence of $G = S$ syncretism is a peripheral phenomenon, as Table 26 shows.

Table 26: Shares of Pattern III per expression class in each macro area.

	Africa	Americas	Asia	Europe	Oceania
SI	5.9%	3.1%	4.5%	3.0%	4.2%
ND	6.0%	1.8%	4.0%	2.9%	6.2%
FD	6.1%	3.2%	4.2%	1.5%	4.4%

Unlike Stolz et al. (2017), we were able to attest the $P \neq G = S$ pattern in each macro area. Still, the shares are similarly low, which is why we decided not to discuss this pattern separately for each macro area. Overall, $G = S$ syncretism is attested in 27 languages out of our 250 languages sample, cf. Table 27 below. Only three of these languages, however, show Pattern III in the SIs and throughout the near deictic and far deictic SDDs. Of all the languages, $G = S$ syncretism is obligatory only in the Central Sudanic language Balese [AF-4]. In all other languages, it appears to be a minor option caused by overabundance. We would not be surprised if some of the languages displayed in Table 27 disappeared from there if we consulted a different source of data or adopted a different analysis approach.

Table 27: Languages that attest to $P \neq G = S$ syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Angolar	AF-3	Indo-European, Lower Guinea Portuguese	✓	✓	X
Balese	AF-4	Central Sudanic	✓	✓	✓

Languages	Appendix	Affiliation	SI	ND	FD
Bunoge Dogon	AF-7	Dogon	X	✓	✓
Dii	AF-8	Atlantic-Congo, Central Adamawa	✓	X	X
Malagasy	AF-29	Austronesian, Greater Barito	X	X	✓
Yoruba	AF-48	Atlantic-Congo, Defoid	✓	✓	✓
Cayuga	AM-7	Iroquoian	X	✓	✓
Comanche	AM-10	Uto-Aztecan, Numic	✓	X	X
Cubeo	AM-13	Tucanoan, Western Tucanoan	✓	X	X
Totonac, Upper Necaxa	AM-43	Totonacan, Totonac	X	NA	✓
Atong	AS-4	Sino-Tibetan, Brahmaputran	✓	✓	✓
Hiligaynon	AS-17	Austronesian, Greater Central Philippine	X	✓	✓
Iloko	AS-20	Austronesian, Northern Luzon	✓	X	X
Tagalog	AS-39	Austronesian, Greater Central Philippine	✓	✓	✓
Albanian	EU-2	Indo-European, Albanian	✓	X	X
German	EU-17	Indo-European, Germanic	X	✓	X
Low German	EU-27	Indo-European, Germanic	X	✓	X
Old Church Slavonic	EU-31	Indo-European, Slavic	✓	X	X
Romani, Moldovan	EU-34	Indo-European, Indo-Iranian	X	X	✓
Abau	OC-1	Sepik, Upper	X	✓	✓
Awtuw	OC-4	Sepik, Ram	✓	X	X
Doromu-Koki	OC-9	Trans-New Guinea, Manubaran	X	✓	X
Hawaiian	OC-15	Austronesian, Oceanic	✓	X	X
Ngan'gityemerri	OC-28	Southern Daly	X	✓	X
Nii	OC-29	Trans-New Guinea, Wahgic	X	X	✓
Orokaiva	OC-30	Trans-New Guinea, Binanderean	X	X	✓
Tidore	OC-40	West Papuan, North Halmahera	✓	X	X
Tok Pisin	OC-42	Indo-European, Pacific Creole English	X	✓	X

As there are only a few and mostly quite irregular instances of this pattern in each macro area, we refrain from trying to find tendencies for G=S syncretism within the language families. In the following subsections, some instances of Pattern III in the different macro areas are discussed.

3.3.1 P≠G=S in Africa

The Central Sudanic language Balese [AF-4] is the only language with the P≠G=S pattern as the only option. This applies to SIs and SDDs alike. Based on

the demonstrative particles *-rà-* ‘this’, *-ri-* ‘that’, and *-re-* ‘the aforementioned’, a total of six SDD constructions can be formed. Three of them have *àpa* ‘place’ as the second part with an elided initial vowel: *ràpà* ‘here’, *ripà* ‘there’, and *repà* ‘there (anaphoric)’. The other three have the directional postposition *-ni* as the second part which expresses either a movement towards or away from an entity: *ràni* ‘hither = hence’, *rini* ‘thither = thence’, and *reni* ‘thither = thence (anaphoric)’. Whether a movement towards or away from a place is expressed depends on the verb (cf. Vorbichler 1965: 148).

(198) Balese THITHER and THENCE [Vorbichler 1965: 148]

- a. *mɔrɔ̃* ***ri-ni***
 1SG:GO.PERF that-DIR
 ‘I went there’
- b. *mɔgɔ̃* ***ri-ni***
 1SG:COME.FROM.PERF that-DIR
 ‘I came from there’

The same directional expression *rini* ‘thither = thence’ is used in both (198a) and (198b). The difference lies in the verb. While THITHER is expressed by the Goal-inducing motion verb *ɔrɔ̃* ‘to go’ in (198a), the Source-inducing motion verb *ɔgo* ‘to come from’ is used in (198b) to express THENCE. This pattern is not restricted to the SDDs. There are several WHERE constructions in Balese. For both WHITHER and WHENCE, on the other hand, there is only one form, namely *àyé*. Neither the WHERE constructions nor the WHITHER = WHENCE construction follows the same marking strategy as the SDDs. The WHERE constructions are based on either *àfu* ‘place’, *áfú* ‘place of the father clan’, or *ádú* ‘place of the mother clan’. These may be preceded by *ài* ‘which, what’ and suffixed by *-à-ni*, a combination of a limitative suffix and the locative suffix *-ni*. While *-ni* usually expresses movement either towards or away from an entity, it may also denote a location when it is attached to a place noun.⁸² Like this, several WHERE expressions are formed: *ài-áfú* (which-place of the father clan), *àfu-à-ni* (place-LIM-LOC), *ài-àfu-à-ni* (which-place-LIM-LOC), and *ài-ádú* (which-place of the mother clan). It is conceivable that even more constructions like these exist. As we do not wish to speculate, we settle for these four constructions. Apart from these WHERE expressions, there is one expression *àyé* to express both WHITHER and WHENCE. The following examples demonstrate the use of a WHERE construction on the one hand and the syncretic WHITHER = WHENCE construction on the other.

⁸² Vorbichler (1965: 90–91) explains that the meaning of the sentence *éfé hɔcà meri-ni* ‘the pygmy is in the forest’ would change to ‘the pygmy is a forest’ if *-ni* is dropped.

- (199) Balese WHERE, WHITHER, and WHENCE [Vorbichler 1965: 161]
- a. *ài-áfú-à-ni-bɔ̂* *àfi* *hɔcà* *ba* *ù:pí?*
 which-place-LIM-LOC-INTERR man 3SG:be PTCPL sit
 ‘Where are the people sitting?’
- b. *àyé* *bɔ̂* *nɔrɔ?*
 where.DIR INTERR 2SG:GO.PERF
 ‘Where have you gone?’
- c. *àyé* *bɔ̂* *nɔgɔ?*
 where.DIR INTERR 2SG:come.from
 ‘Where do you come from?’

In (199a), the static relation is realized by the WHERE construction *ài-áfú-à-ni* and the stative verb *ù:pí* ‘sit’. Similar to the examples in (198), the difference between Goal and Source is expressed through the verbs *ɔrɔ* ‘to go’ in (199b) and *ɔgo* ‘to come from’ in (199c). In all three examples, the interrogative particle *bɔ̂* succeeds the respective SI. It is used to mark a sentence in the interrogative mood and is thus not part of the spatial interrogatives in particular.

Although different marking strategies are used, both SIs and SDDs follow the same P≠G=S pattern. Noticeably, some of the WHERE constructions use the *-ni* suffix to express Place, whereas it is used to mark the dynamic relations Goal and Source in case of the SDDs.

3.3.2 P≠G=S in the Americas

None of the three American languages that are represented in Table 27 above show pervasive use of the G=S syncretic pattern. Comanche [AM-10], which employs the maximally distinct or alternatively the P=G syncretic pattern in the SDDs (cf. Section 3.2.2.1), qualifies for G=S syncretism in the SIs. According to Wistrand-Robinson and Armagost (1990: 259), there are two SIs, viz. *hakɛ* ‘where’, a “locative interrogative [which] has the underlying form /ha-kah/ ‘QUES-at’”, and *hakahpu* ‘to/from where?’, a “directional interrogative [which] has the form /hakah-pun/ ‘QUES-DIR’”.⁸³ Both are exemplified in (200).

⁸³ The abbreviation QUES in (Wistrand-Robinson and Armagost 1990) corresponds to our Q for interrogative stems.

- (200) Comanche SIs
- a. WHERE [Wistrand-Robinson and Armagost 1990: 259]
hakɿ *surɿ* *poko-pi* *ɿ* *ɿʔawe-na*
 where D4NOM fruit-ABS 2GEN.SG tell-N
 ‘Where is that fruit you told of?’
- b. WHITHER [Canonge 1949 as cited in Wistrand-Robinson and Armagost 1990: 259]
hakah-pu *ɿ* *piaʔ* *miʔaa-yu*
 where-ALL 2GEN.SG mother go-DUR
 ‘Where is your mother going?’

The two sentences show the contrast between the locative interrogative *hakɿ* ‘where’ in (200a) and the directional interrogative *hakahpu* ‘to/from where?’ (here: ‘to where’) in (200b). Unfortunately, Wistrand-Robinson and Armagost (1990) do not provide any examples with an SI inquiring about Source. Charney (1993: 215) confirms the existences of the WHERE and WHITHER expressions but introduces an ablative postposition *-H/nai* ‘from, direction’. The postposition may follow some of the demonstrative roots. It also attaches to the SI base *hakah* to form a WHENCE expression *hakanai*.

- (201) Comanche WHENCE [Charney 1993: 81]
haka-nai *inni* *kiimai-YU*
 where-ABL 2SG come-PROG:ASP
 ‘Where are you coming from?’

The use of the SI overtly marked for ablative is exemplified in (201). The examples provided by Charney (1993) proves the existence of the maximally distinct $P \neq G \neq S$ pattern in the Comanche SIs. We found no examples for the alternative $P \neq G = S$ pattern. The only indication is the statement given by Wistrand Robinson and Armagost (1990: 259) that there is a directional interrogative with the meaning ‘to/from where?’.

The Tucanoan language Cubeo [AM-13] constitutes another case of possible $G=S$ syncretism in the SIs. Generally, Cubeo employs the maximally indistinct $P=G=S$ pattern in both SIs and SDDs (cf. Section 3.5.1.1). The SI *’ãrĩ* can be used in all three relations.

- (202) Cubeo SIs [Chacon 2012: 354]
- a. WHERE
’ãrĩ-ba *õpõ=jĩ-a* *pitka=jĩ-a*
 where-COP.INTERR thunder=CL-INAN.PL two=CL-INAN.PL

ōpō=jĩ-a 'hi#jĕkũyo hi-e?
thunder=CL-INAN.PL my#grandfather GN.POSS-MSS
'where are my grandfather's two shotguns?'

b. WHITHER [Chacon 2012: 354]

'*āĩ* *dĩ-jo* *silvia?*
where go-NMZ.F siilvia
'where are you going, silvia?'

c. WHENCE [Chacon 2012: 352]

'*āĩ* *da-jĩ=dĩ*
where come-NMZ.M=2INTERR
'where are you coming from?'

The examples in (202) show the prevalent use of the SI '*āĩ*' in Place, Goal, and Source contexts. However, Chacon (2012: 354) introduces “[a]nother way to ask questions about location [...] by use of *aruka* ‘where is’ or ‘where about’”. This is exemplified in (203).

(203) Alternative WHERE [Chacon 2012: 354]

aruka *bĩ=paki*
where.is your=father
'where is your father?'

As seen in the example, *aruka* ‘where is’ is used in combination with a nominal to inquire about its location. Chacon (2012: 354) explains that

[t]his word is somewhat different than the other forms because it does not require a verb and it is used more frequently in situations related to surprise or sudden inquires, similar to Portuguese *cadê* ‘where is’. The word *aruka* ‘where is’ is very popular in daily conversations and is formed by *aru* ‘and, so’ and =*ka* ‘doubt’.

Due to the possibility of inquiring about Place with a different SI expression, the Cubeo SIs employ an alternative P≠G=S pattern. This is, however, not reflected in the SDDs which make pervasive use of the P=G=S pattern.

3.3.3 P≠G=S in Asia

The Sino-Tibetan language Atong [AS-4] spoken in Northeast India has a number of SI and SDD expressions which may combine with several case marking suffixes to express Place, Goal, and Source. The Place constructions of the first and second deictic stage consist of the demonstrative roots *i* (proximal) or *u* (distal) and the locative marker =*ci*. Two further demonstratives that are only

used deictically, *har* ‘yonder (remote and non-visual)’ and *həyaw* ‘farther than yonder (emphatic remote)’, also combine with =*ci* to form SDDs of a third and fourth deictic degree. There is an additional form *hawtəy* which describes a place out of sight regardless of the distance to the deictic center. Furthermore, there are two WHERE expressions both based on the interrogative formative morpheme *bi*, viz. *bie* ‘which, where’ and *bi=ci* ‘where’. The examples under (204) illustrate the different Place constructions.

- (204) Atong Place constructions
- a. WHERE 1 [van Breugel 2008: 463]
bie *naŋ?* *joŋ=dəraŋ=e?*
 where 2SG younger.brother=PL=FOC
 ‘Where [are] your younger brothers?’
- b. WHERE 2 [van Breugel 2008: 163]
bi=ci *ue?*
 Q=LOC DIST
 ‘Where is he?’
- c. HERE [van Breugel 2008: 271]
i=ci *taw?-ban-ok*
 PROX=LOC bird-trapped-COS
 ‘There’s a bird trapped here.’
- d. THERE [van Breugel 2008: 562]
aŋ taŋka hən?=gba morot u=ci gaŋaŋ
 1SG money give=ATTR person DIST=LOC exist
 ‘The person to whom [I] gave my money is there.’

Apart from *bie* ‘which, where’ in (204a), all forms take the locative enclitic =*ci* to express Place. There are several possibilities for the SDDs to encode Goal. One of the options is to take the forms with the locative enclitic =*ci* and add another enclitic =*na* (DAT), cf. (205).

- (205) Atong HITHER with LOC + DAT [van Breugel 2008: 143]
aŋ i=ci=na seŋ?-khal=ay ray?a=na naŋ-a=cəm
 1SG PROX=LOC=DAT early-COMP=ADV come=DAT need-CUST=IRR
 ‘I should have come here earlier.’

By suffixing the dative enclitic =*na* to *i=ci*, Goal can be expressed. The same can be done with *u=ci=na* ‘thither’, *haw=ci=na* ‘thither²’, and *həyaw=ci=na* ‘thither³’. An SI expression like **bi=ci=na* (ungrammatical) is not possible. Yet, there are other options to express Goal. The mobilative enclitic =*saŋ* may be attached to *bi* ‘which, where’, *i* (proximal), and *u* (distal).

- (206) Atong Goal expressions with MOB
- a. WHITHER [van Breugel 2008: 163]
naʔa bi=saŋ reʔeŋ-aydoŋa
 2SG Q=MOB go-PROG
 ‘Where are you going?’
- b. THITHER [van Breugel 2008: 367]
u=saŋ nalsasaŋ reʔeŋ-wa.
 DIST=MOB the.other.side.of.the.water go.away-FACT
 ‘[I] went there, to the other side of the [sea].’

The mobilative enclitic is used in both (206a) and (206b). In combination with the verb *reʔeŋ* ‘go (away)’, a Goal reading is induced. The enclitic is, however, not an explicit Goal marker. Van Breugel (2008: 322) explains that “[t]he movement can be from a source [...], to a destination [...], or in a certain direction”. It marks movement without indicating the direction of movement, which “is most often made clear by the context and by the form of the verb of movement” (van Breugel 2008: 322). Both SIs and SDDs can be further specified by the dative enclitic =*na* to express Goal.

- (207) Atong Goal expressions with MOB + DAT
- a. WHITHER [van Breugel 2008: 164]
bi=saŋ=na=sa naŋʔ-təm=e
 Q=MOB=DAT=DLIM 2SG-PPP=FOC
 ‘To where exactly [are] you [going]?’
- b. HITHER [Seino van Breugel, p.c.]
i=saŋ=na rayʔa=aydoŋa
 PROX=MOB=DAT come=PROG
 ‘is coming here’

Van Breugel (2008: 164) reports “two recorded instances, both in the same story, of *bisaŋ* ‘to/from where?’ with a dative case added onto it”, which “will emphasise that the speaker questions a Goal rather than a Source”. These two instances coincide with “the two recorded occasions on which this question word was used with the delimitative enclitic” (van Breugel 2008: 164). It is therefore questionable if *bisaŋna* ‘whither’ is used frequently and without the delimitative enclitic =*sa*. The example in (207a) displays one of the two instances of *bisaŋ* ‘to/from where’ with both the dative enclitic =*na* and the delimitative enclitic =*sa*. In contrast, (207b) illustrates the use of the proximal SDD *isaŋ* ‘to/from here’ with the dative enclitic =*na*, but without the delimitative enclitic.

As explained above, the mobilative enclitic can be used for both Goal and Source, so that there is optional G=S syncretism.

- (208) Atong Source with MOB [van Breugel 2008: 428]
bi=san̄ *reʔeŋ-wa* *naʔa*
 Q=MOB go.away-FACT 2SG
 ‘Where do you come from?’ (lit. ‘From where have [you] left, oh you?!’)

In (208), *bisan̄* ‘whither = whence’ is used to express a Source relation. Note that the same verb *reʔeŋ* ‘go (away)’ is used in both (206) where Goal is expressed and (208) where Source is expressed. As van Breugel (2008: 322) points out, whether Goal or Source is encoded depends on the context. This G=S syncretism also applies to the SDDs as the expressions *isan̄* ‘hither = hence’, *usan̄* ‘thither = thence’, *hawsan̄* ‘thither2 = thence2’, and *həyawsan̄* ‘thither3 = thence3’ can equally be used for both Goal and Source (Seino van Breugel, p.c.).

Similar to the Goal expressions, Source forms can also be specified. The genitive/ablative enclitic =*mi*⁸⁴ can be attached to expressions either together with the mobilitative enclitic =*san̄* or directly to the SI or SDD roots, cf. (209).

- (209) Atong specified Source constructions
- a. Source with GEN [van Breugel 2008: 118]
walʔ=dəraŋ=wa *nuk-ca* ***i=mi***
 fire=PL=ACC see-NEG PROX=GEN/ABL
 ‘[We] don’t see the fires from here.’
- b. Source with MOB + GEN [van Breugel 2008: 143]
u=san̄=mi *rayʔa-ca-wa* *doloŋ* *nosto* *donʔ-ok*
 DIST=MOB=GEN/ABL come-NEG-FACT bridge damage IE.be-COS
 ‘[They] will not come from there. The bridge is damaged.’

The proximal demonstrative root *i* bears the genitive/ablative enclitic in (209a), while both the mobilitative enclitic =*san̄* and the genitive/ablative enclitic =*mi* are attached to the distal demonstrative root *u* in (209b). The three possibilities shown in (208)–(209) can form the SI and SDD Source expressions. However, some of these possible forms are not documented. The ‘out of sight’ expression *hawtəy* cannot be used for Source. We can conclude that there are two possible paradigms in Atong, viz. $P \neq G \neq S$ or $P \neq G = S$.

⁸⁴ Van Breugel’s (2008) grammar is based on the two dialects Badri and Sijw. He demonstrates that there is some variation in lexemes and grammatical morphemes in the dialects. This concerns, among others, the genitive/ablative enclitic, which is =*mi* in Sijw but =*məŋ* in Badri (van Breugel 2008: 23). As most examples at hand seem to stem from the Sijw dialect, we decided to list only the expressions featuring =*mi*.

3.3.4 P≠G=S in Europe

Albanian [EU-2] is one of the European languages in our sample that show some traces of the P≠G=S pattern. This concerns only the SIs and seems to be quite uncommon. Albanian employs two SIs, viz. *ku* ‘where = whither’ and *nga* ‘whither = whence’. However, depending on which descriptive source one consults, *nga* is not always listed as ‘whither’. Newmark et al. (1982: 211), for example, lists a number of interrogative pro-adverbs and introduces *ku* ‘where’ and *nga* ‘whence, from where’ without specifying how WHITHER is expressed. Still, it becomes clear that *ku* ‘where’ can also be used to express WHITHER in one of his examples.

- (210) Albanian [Newmark et al. 1982: 154]
 [...] *ku shkon tashti?*
 where go:2SG now
 ‘[...] where are you going now?’

Example (210) clearly shows that *ku* ‘where’ in combination with a motion verb, in this case *shkon* ‘go’, means ‘whither’. The Albanian Bible [ALB] also illustrates the use of *ku* ‘where = whither’ and *nga* ‘whence’.

- (211) Albanian
- a. WHERE [ALB Luke 17:17]
Ku ja-në nëntë të tjerët?
 where be-PL.PRES nine COLL other.PL.NOM
 ‘Where are the other nine?’
- b. WHITHER [ALB John 17:17]
Ku po shkon?
 where PROG go:2SG
 ‘Where are you going?’
- c. WHENCE [ALB John 19:9]
Nga je ti?
 whence be:2SG 2SG
 ‘Where are you from?’

Ku is used in both (211a) and (211b). The stative ‘be’-verb is used in (211a) to express Place, whereas a dynamic ‘go’-verb is used in (211b) to encode Goal. In contrast, *nga* ‘whence’ is used in (211c) to express Source. A Source-inducing verb is not necessary in this context, as *nga* already induces a Source-reading. All spatial interrogative sentences in the Albanian Bible [ALB] appear like this, i.e. *ku* is used for both WHERE and WHITHER, whereas *nga* is used for WHENCE. Thus, we are dealing with a P=G≠S pattern.

That *nga* ‘whence’ may also be used for WHITHER is mentioned, for example, in Buchholz and Fiedler (1987: 370). Similar to Newmark et al. (1982), the authors list a number of interrogative adverbs, inter alia *nga* ‘whence, whither’ and *ku* ‘where, whither’. Their grammar does not include an actual example of *nga* being used as ‘whither’. In fact, examples of this kind proved to be hard to find, so that we may be dealing with a quite uncommon phenomenon which may even be restricted to specific dialects. We were able to find only one proper example of *nga* in a WHITHER construction (cf. [212a]). There are, however, several other examples of *nga* used with a Goal reading when it is used as a locative conjunction (212b) or preposition (212c). Newmark et al. (1982: 211) explains that “[t]he interrogative locative pro-adverbs **ku** ‘where’ and **nga** ‘from where’ are used in both direct and indirect interrogative clauses” and that “[**k**]**u** and **nga** also serve as conjunctions to connect a main clause to a dependent locative clause”. As locative conjunctions, Newmark et al. (1982: 305) clearly lists *nga* as ‘from where, towards where’. Furthermore, *nga* as a preposition can also mean ‘toward, of, by, from’ and may indicate “most often the origin of an action, less often the place toward which the action is directed or where it happens, the place where something is found or from which it derives, etc.” (Newmark et al. 1982: 290).

(212) Albanian *nga* in Goal contexts

- a. Interrogative pronoun [Buchholz et al. 1977: 352]
Nga po shkon?
 whither PROG go:2SG
 ‘Where are you going?’
- b. Locative conjunction [Newmark et al. 1982: 85]
 [...] *Vita do të kish-te rend-ur andej*
 Vita PTCL CNJCTV have.IMPERF-3SG run-PTCLPL there
nga ta ço-nin jo zemra,
 towards.where CNJCTV.3SG lead-IMPF.3PL NEG heart.DEF
po këmbë-t.
 but foot.PL-DEF.NOM
 ‘[...] Vita would have run over to where [her] feet, not her heart, would take her.’
- c. Preposition [Newmark et al. 1982: 81]
 [...] *ju kthye ajo me fytyrë nga i ati.*
 NONACT.PAST return.3SG 3SG.F with face toward GEN father
 ‘[...] she replied, with her face toward her father.’

In (212a), *nga* serves as an interrogative pronoun asking about the Goal of a movement. In (212b), it surfaces as a locative conjunction with the meaning ‘towards where’, whereas *nga* in (212c) is a preposition with the meaning ‘to-

wards'. Although examples of *nga* meaning 'whither' are scarce, we feel safe to include the P≠G=S pattern in Albanian interrogatives based on the given evidence. As different marking strategies are employed for the SDDs, this holds true only for the SIs.

Another interesting case is our native language German [EU-17]. We have already introduced the SIs and the distal SDDs as an introductory example in Section 1.1. They both showed the maximally distinct pattern with a zero-marked Place expression and overtly marked Goal and Source expressions. The Goal and Source relation of the proximal SDDs, on the other hand, show a peculiarity. As demonstrated in Section 1.1, the directional clitic =*her* is used to express Source, e.g. *woher* 'whence' or *dorthier* 'thence'. In combination with the proximal SDD *hier*, however, it is usually a Goal relation that is expressed, cf. (213).

- (213) German HITHER
Komm hierher.
 come:2SG.IMP hither
 'Come here.'

The motion verb *kommen* 'to come' is employed in combination with *hierher* in (213) and our own native speaker intuition tells us that it is undoubtedly perceived as a Goal construction. But, it is not impossible to use *hierher* as a HENCE expression, especially when it is contrasted with *daher* 'thence1' or *dorthier* 'thence2', as in (214).

- (214) German HENCE
 "Woher kommst du? Hierher oder daher?" – "Hierher".
 whence come:2SG.PRES 2SG hence or thence hence
 "Where do you come from? From here or from there?" – "From here."

In the given context in (214), *hierher* is perfectly understandable as a Source construction. Looking at the otherwise unambiguously formed expressions with =*hin* for Goal and =*her* for Source, it is compelling to allocate *hierher* only in the cell for proximal Source constructions in the German paradigm. Zifonun et al. (1997: 332), for example, list *hierher* together with *daher* 'thence1' and *dorthier* 'thence2'. This creates the impression that *hierher* similarly expresses Source. Helbig and Buscha (2017: 310) explicitly state that *hierher* as well as *daher*, *dorthier*, and other adverbs with the Source marking enclitic =*her* describe the source of a movement. In other sources, however, *hierher* is listed as a Goal expression. The German orthography dictionary *Die aktuelle deutsche Rechtschreibung* (2006) cites it as *nach hier, zu diesem Ort* 'hither, to this place'. Nintemann and Robbers (2019) conducted a small corpus study in which they evaluated 270 instances of *hierher* in combination with the motion verb *kommen*

‘to come’. This motion verb can be used in both Goal and Source contexts, so that both HITHER and HENCE are possible. It turned out that “in 100% of the instances, *hierher* describes the GOAL of the movement” (Nintemann and Robbers 2019: 8). We nevertheless decided to include *hierher* not only as a possible HITHER expression but also for HENCE because this reading is still possible as depicted in (214) above. To unambiguously distinguish HITHER and HENCE, it is possible to use *hierhin* with the Goal enclitic =*hin* or the prepositional phrase *nach hier* for HITHER and another prepositional phrase *von hier* for HENCE.

The same phenomenon can also be observed in Low German [EU-27] with the same expression *hierher* meaning both ‘hither’ and ‘hence’ (cf. Appendix IV [EU-27]). The two closely related Germanic varieties both spoken in Germany thus constitute two of the rare cases of G=S syncretism.

3.3.5 P≠G=S in Oceania

Similar to the Americas discussed in Section 3.3.2 above, we did not find any languages in Oceania which make pervasive use of Pattern III. Many of the occurrences of G=S syncretism in the cells of the near and/or far deictic SDDs are due to constructions which express movement towards or away from the deictic center. They may be used for Goal and Source in different distance levels depending on the context, cf. the form *aku* in the Hawaiian paradigm [OC-15] or the form *atu* in Tongan [OC-43].⁸⁵ A case from the Oceanic subsample that is similar to the one of Cubeo [AM-13] discussed in Section 3.3.2 above is that of the Sepik language Awtuw [OC-4]. The SIs generally attest to the P=G=S pattern. The expression *yipke* (or *yiperke*) is used to inquire about the location or direction of an entity in space (cf. Feldman 1986: 46, 144). As the examples show, this includes all three relations under scrutiny.

(215) Awtuw SIs

a. WHERE [Feldman 1986: 46]

ɲaye yipke d-ikiy
father where FA-stay
‘where’s Daddy?’

b. WHITHER [Feldman 1986: 46]

ɲaye yipke d-æy-ka
father where FA-go-PERF
‘where has Daddy gone?’

⁸⁵ Fn. 45 in Section 3.1.5.1.1 further discusses modern reflexes of the Proto-Oceanic forms **maRi* ‘to come hither’ and **atu* ‘move away from the speaker’.

- c. WHENCE [Feldman 1986: 46]
ɲaye yipke d-eya-ka
 father where FA-COME-PERF
 ‘where has Daddy come from?’

A Place relation is brought about by the ‘stay’ verb *iky* in (215a). The two dynamic verbs *æy* ‘go’ and *eya* ‘come’ are used to induce a Goal (215b) and Source (215c) reading, respectively. There is, however, another possibility to inquire about Place.

- (216) Awtuw WHERE [Feldman 1986: 46]
ɲaye yipe?
 father where
 ‘where’s Daddy?’

In contrast to *yipke* (or *yiperke*), the SI *yipe* ‘where’ can only be used to ask about the location of an entity in space. Feldman (1986: 144) argues that “[t]he adverb *yipe where?* occurs only as the predicate in a verbless question and as such is constrained to occur clause finally”. Thus, a sentence like in (215a) is not possible with *yipe*. Nevertheless, the possibility to employ *yipe* as a Place-inquiring alternative evokes an alternative P≠G=S pattern in Awtuw’s SIs. The fact that there are no pervasive cases of G=S syncretism (to the exclusion of P) adds to the impression that Pattern III is only a marginal phenomenon.

3.4 Pattern IV: Place=Source≠Goal

Alongside the P≠G=S pattern examined in the previous subsection, the P=S≠G pattern is the other statistically marginal pattern when it comes to spatial interrogatives (Stolz et al. 2017: 506). As Table 28 suggests, this also applies to the SDDs.

Table 28: Shares of Pattern IV per expression class in each macro area.

	Africa	Americas	Asia	Europe	Oceania
SI	2.9%	0.0%	0.0%	1.5%	2.8%
ND	3.0%	3.5%	1.3%	1.5%	1.5%
FD	3.0%	1.6%	1.4%	1.5%	5.9%

The shares of Pattern IV in the world’s languages are even lower than the ones of Pattern III (cf. Section 3.3). In Stolz et al.’s (2017) sample, the P=S≠G pattern is

employed in 1% of Asia's SIs, in 2% of African and European SIs, and in 3% of the Oceanian SIs. The Americas showed the highest share of this pattern with 4%. P=S syncretism is thus equally peripheral in our sample as it is in Stolz et al.'s (2017) sample. Table 29 displays the few languages that actually attest to Pattern IV.

Table 29: Languages that attest to P=S≠G syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Mambay	AF-30	Atlantic-Congo, Mbumic	X	✓	✓
Munukutuba	AF-32	Atlantic-Congo, Bantu	✓	X	X
Yoruba	AF-48	Atlantic-Congo, Defoid	✓	✓	✓
Pipil	AM-36	Uto-Aztecan, Aztecan	X	✓	X
Totonac, Filomeno Mata	AM-42	Totonacan, Totonac	X	✓	X
Totonac, Upper Necaxa	AM-43	Totonacan, Totonac	X	NA	✓
Tagalog	AS-39	Austronesian, Greater Central Philippine	X	✓	✓
Saami, Skolt	EU-38	Uralic	✓	✓	✓
Abui	OC-2	Timor-Alor-Pantar, Alor	✓	X	X
Futuna-Aniwa	OC-12	Austronesian, Oceanic	✓	✓	✓
Manambu	OC-20	Sepik, Ndu	X	X	✓
Martuthunira	OC-23	Pama-Nyungan, Pilbara	X	X	✓
Tidore	OC-40	West Papuan, North Halmahera	X	✓	✓

Only three of our sample languages make pervasive use of this pattern. Similar to Pattern III, there are too few instances of this pattern to make valid statements about tendencies for P=S syncretism within language families. In the following subsections, some of these rare cases are discussed.

3.4.1 P=S≠G in Africa

The Bantu-based Creole language Munukutuba [AF-32] is one of the languages analyzed by Stolz et al. (2017) which employs the P=S≠G pattern in the SIs. Stolz et al. (2017: 493) argue that “the spatial interrogatives come as multi-word constructions [which] share the Q-stem *wápi* which Mfoutou (2009: 90) equates with French *où* ‘where = whither’”. The Q-stem *wápi*, however, is never used on

its own in the examples given by Mfoutou (2009). Instead, it is accompanied by either *síkà* in the case of WHERE and WHENCE and by *ndáámbù* in the case of WHITHER, cf. (217).

- (217) Munukutuba WHERE, WHITHER, and WHENCE
- a. WHERE [Mfoutou 2009: 90]
Wápi síkà ngé kélé?
 where P?/S? 2SG be
 ‘Where are you?’
- b. WHITHER [Mfoutou 2009: 54]
Wápi ndáámbù bènò ké kwééndà?
 where G? 2PL FUT go
 ‘Where will you go?’
- c. WHENCE [Mfoutou 2009: 54]
Wápi síkà ngé mé kàtúkà?
 where P?/S? 2SG PFCTV come
 ‘Where have you come from?’

Stolz et al. (2017: 494) state that “Munukutuba stands out among the African languages south of the Sahara because the latter generally employ paradigms with a common expression for all three categories”. According to Mfoutou (2009), this does not seem to be the case in Munukutuba. Yet, the Munukutuba Bible [NTK50] draws a different picture. Although there are a few instances of *wapi* ‘where’ being accompanied by either *sika* or *ndambu*, *wapi* mostly occurs by itself in all three relations.⁸⁶ In fact, there are only two instances of *wapi sika* in Place constructions and another two instances of *wapi ndambu* in a Goal relation.

- (218) Munukutuba zero-marked SIs
- a. WHERE [NTK50 John 7:11]
Yandi ikele wapi?
 3SG be.PRES where
 ‘Where is he?’
- b. WHITHER [NTK50 John 16:5]
Nge ikele kwenda wapi?
 2SG be.PRES go where
 ‘Where are you going?’

⁸⁶ The orthography used by Mfoutou (2009) slightly differs from the one used in the Munukutuba Bible [NTK50]. This is not an obstacle for the comparability of the expressions employed. We decided to adopt the Bible translation’s orthography in our paradigm.

- c. WHENCE [NTK50 John 19:9]
Nge katuka wapi?
 2SG come.from where
 ‘Where are you from?’

Like in other P=G=S languages, the verb determines which of the three relations is expressed (cf. Section 3.5). The stative verb *ikele* (be.PRES) is used in (218a) to encode Place, while the two dynamic verbs *kwenda* ‘go’ and *katuka* ‘come from’ are employed to express Goal in (218b) and Source in (218c), respectively. In all three cases, *wapi* ‘where’ is zero-marked. It is striking that the overtly marked SI constructions in the examples in (217) are all in initial position, whereas the zero-marked SI constructions in (218) appear sentence final. Considering the few examples of overtly marked SI constructions in the Munukutuba Bible, the impression that the P/G/S markers *sika* and *ndambu* only occur in initial position is strengthened. We thus assume that *wapi sika* ‘where = whence’ and *wapi ndambu* ‘whither’ only surface in initial position. In this case, the syntax of the sentence determines whether a P=G=S or a P=S≠G pattern is employed. There is no evidence that the same applies to the SDDs. The two expressions *awa* ‘here’ and *kuna* ‘there’ may be used in all three relations, so that the maximally indistinct pattern is employed. Alternatively, Source may optionally be expressed by the preposition *tuka* ‘from’, which presumably has developed from the Source inducing verb *katuka* ‘come from’.

Although the P=S≠G pattern certainly exists in the Munukutuba language, it is limited to the SIs and, moreover, to probably only one syntactic position. As mentioned above, there is only a very small number of instances of the overtly marked SI constructions in the Munukutuba Bible. We suppose that sentences with an initial SI construction, in contrast to a sentence final SI construction, are not as common. This adds to the impression of P=S≠G as a rather rare phenomenon.

Another African language that shows the statistically marginal P=S≠G pattern is the Mbumic language Mambay [AF-30], spoken in Chad and Cameroon. While the SIs *kin* or *kina* ‘where’ remain unchanged in any of the three relations and form a P=G=S pattern, the SDDs employ one form for T/HERE and T/HENCE and another form for T/HITHER. There are three locative nouns that are used for Place and Source, viz. *kǎ* ‘here’, *kô* ‘there’, and *kũ* ‘there’. In order to express Goal, one of the directional adverbs has to be used. The directional adverbs *hîn* ‘to here’ vs. *vòró* or *vè* both meaning ‘to there’ are one of three semantically opposed pairs, the others being *kèti* ‘upward’ vs. *sùgú* ‘downward’ and *fàári* ‘backward’ vs. *tùm* ‘forward’. The following examples illustrate the use of the

locative noun *kǎ* ‘here = hence’ on the one hand and the directional adverb *hîn* ‘hither’ on the other.

- (219) Mambay
- a. HERE [Anonby 2011: 171]
mǐ rè " mǐ yǎǎ kǎ
 1SG TOP EXPECT 1SG stay.PFCTV here
 ‘as for me, I stayed here’
- b. HITHER [Anonby 2011: 431]
mù háá-rń hîn
 2SG come.back.PLUPERF-2SG.INTR to.here
 ‘you had come back here’
- c. HENCE (reconstructed) [Erik Anonby, p.c.]
 *ʔèr *kǎ*
 go.from here
 ‘to go from here’

In combination with a stative verb, the locative noun *kǎ* ‘here’ expresses Place in (219a). The locative noun cannot be used to express Goal. Instead, the directional adverb *hîn* ‘hither’ is used in (219b) combined with a dynamic verb. In (219c), the locative noun *kǎ* ‘here’ surfaces with the Source inducing verb *ʔèr* ‘go from’. We reconstructed this phrase, as there are no instances of Source constructions in either Anonby (2011) or Anonby (2014). Erik Anonby (p.c.) did, however, confirm that P/G/S distinction is generally expressed through verbs. The SI expressions *kin* or *kina* are resorted to in all three relations with different stative and dynamic verbs. As for SDD Source constructions, Anonby states that the locational nouns *kǎ* ‘here’, *kô* ‘there’, and *kũ* ‘there’ are used in conjunction with a Source-inducing verb, such as *ʔèr* ‘go from’, which “expresses a concept which in many other languages is expressed by a preposition meaning ‘from’” (Anonby 2011: 486). Lacking the confirmation of a native speaker, we cannot be entirely sure as far as the SDD Source constructions in Mambay are concerned. Nevertheless, the assumption that Source is expressed by the co-occurrence of a Source-inducing verb and one of the locative nouns is plausible for several reasons. First of all, given that the SIs employ a P=G=S pattern, it is possible to express Source solely by the use of a respective verb in Mambay. We assume that even the SDD paradigm once has been maximally indistinctive. Anonby (2011: 432) clarifies that “[t]he adverb **vòró** appears to have its origins in the perfect verb word **vòró** ‘you (pl.) have gone,’ and **vè** appears to be derived from the simple perfective form **vè** ‘went’”. Although we have no insight into the etymology of *hîn* ‘hither’, it is conceivable that these directional expres-

3.4.2 P=S≠G in the Americas

There is no language in our Pan-American subsample that attests to a pervasive P=S≠G coding strategy. All three American languages represented in Table 29 above employ this pattern in only one of the three categories. The Uto-Aztecan language Pipil [AM-36] partly attests to the pattern in the near deictic SDDs. However, this is due to our decision to include the directional prefix (*w*)-*al* in the paradigm (cf. [225] below). An alternative analysis is to exclude the item from the statistical evaluation. P=G=S is another option for analyzing Pipil, as will become clear in this section.

Spatial deixis in Pipil is realized by different morphological means and not as clear cut as Guerrero Nahuatl (cf. Section 3.5.2.2). Pipil SIs have a short and a long form, viz. *ka:n* versus *kanka*.⁸⁷ The additional *-ka* of the long form does not add to or modify the meaning or function of the interrogative construction. Still, the use of the longer form increases from P via G to S constructions (Alan R. King, p.c.), cf. (222).

- (222) Pipil SIs
- a. WHERE [Campbell 1985: 268]
ka:n *nemi?*
 where be.PRES
 ‘Where is it?’
- b. Short WHITHER [Campbell 1985: 878]
ka:n *ti-yah-tuk [...]?*
 where 2SG-go-PERF
 ‘Where have you gone [...]?’
- c. Long WHITHER [Campbell 1985: 115]
ka:nka *ti-yu?*
 where 2SG-go
 ‘where are you going?’
- d. WHENCE [NBTN Matt 13:27]
Asu inte, kanka witz ne jaral?
 if NEG where come the weeds
 ‘Where then, did these weeds come from?’

The element *ka* is likely to be an enclitic reinterpretation of the proclitic *ka* that may appear with adverbs or adverbials (Alan R. King, p.c.). As the choice of form is irrelevant for the encoding of location or direction, Pipil SIs technically attest to P=G=S. In SDD constructions, however, it becomes even clearer that longer forms including *ka* appear more frequently in dynamic spatial deictic

⁸⁷ Length marks and other diacritics are omitted in the NBTN Bible.

contexts, with a rising frequency from Goal to Source. In SDDs, *ka* is employed as a freestanding particle or preposition. Sentence (223) exemplarily demonstrates the potentially full syncretism with the increasing occurrence of *ka*.

- (223) Pipil SDDs
- a. HERE [NBTN Acts 9:10]
Nikan *ni-nemi, Tajtzin.*
 here 1SG-be Lord.
 ‘Here I am, Lord.’
- b. HENCE [NBTN Luke 13:31]
Shu shi-kis-a ka nikan ika Herodes
 go.IMP IMP-leave-TRANS IN/AT/TO/FROM here because Herodes
ki-neki metz-miktia!
 3OBJ-want 2OBJ-kill
 ‘Leave and go away from here, because Herod wants to kill you!’
- c. THITHER [NBTN Mat 2:22]
 [...] *inte ki-neki-k yawi ka né ika*
 NEG 3SG-want-PRET go IN/AT/TO/FROM there because
majmawi [...]
 be.afraid
 ‘[...], he was afraid to go there, [...]’
- d. THENCE [NBTN Matt 9:27]
Wan Yeshu kis-ki ka ikuni, [...]
 and Jesus go.out-PRET IN/AT/TO/FROM over there
 ‘As Jesus went on from there [...]’

Considering (223), Pipil attests to overt but indistinct coding of directionality via an optional multipurpose marker on the spatial adverbs *nikan* ‘here’, *né*⁸⁸ ‘there’, and *ikuni* ‘over there’. The variety displayed in the NBTN Bible attests predominantly to overt marking of both dynamic spatial deictic relations, while P remains zero-coded. As *ka* is employed optionally, G qualifies for both overt marking and zero-coding. In Campbell’s grammar, implicit deictic G is also found, as displayed in (224).

- (224) Pipil zero-coded Goal [Campbell 1985: 138]
uk yu wi:ts ne: tu-kuhkul
 now go come there our-bogeyman
 ‘Now our bogeyman is going to come there.’

88 The medial or distal form *né* is part of the Pipil paradigm but has mostly anaphoric meanings (Alan R. King, p.c.). Anaphoric use is underpinned here by the existence of the aforementioned place *Yudaya* ‘Judea’ in the same sentence of Matthew 2:22 which we shortened for the sake of space-saving.

Nevertheless, a suppletive addition to the Pipil paradigm is the directional prefix *(w)al-* ‘hither’ which is a cognate of the Classical Nahuatl prefix *huāl-*. Despite the item not being formally paradigmatic with the SDDs discussed above, we decided to include it in the paradigm [AM-36] since we adapt a functional approach. However, we remain aware that the exclusion of it can be equally justifiable on formal grounds.

- (225) Pipil HITHER2 [NBTN Matt 14:18]
Sh-al-wika-kan
 IMP-DIR-take-PL.IRR
 ‘Bring them here to me.’

The optionality and variability of the usage of the default marker opens up various ways to analyze this paradigm. A P=G=S pattern can be proposed due to the logical possibility of the uniformity of forms, as *ka* potentially applies to all spatial deictic relations that the canonical paradigm refers to. That is, it is not ungrammatical in any relation and can thus be applied to any cell of the paradigm. Therefore, considering the SDDs without *(w)al-*, all patterns except for the maximally distinct one are logically possible in Pipil, even P=S syncretism. Still, this is unrealistic. Place is unmarked in most or all instances in a given text or speech, while Source is likely to be marked (Alan R. King, p.c.). According to the revised data, Goal is on the fence between zero-coding and taking the optional marker. Due to the extra option via the directional prefix, however, we count Pipil as P=G=S and P=S≠G in the case of the near deictic SDDs.⁸⁹

3.4.3 P=S≠G in Asia

The only Asian language of our sample which expresses spatial relations with a P=S≠G pattern, is the Austronesian language Tagalog [AS-39]. This applies only to the SDDs and is possible only due to the high number of overabundant forms. To exemplify the P=S≠G pattern in Tagalog, the proximal SDD overtly expresses

89 What is more, the Pipil data drawn from the NBTN Bible translation do not attest to contact phenomena in the realm of spatial deixis. Campbell’s (1985) grammar, on the other hand, includes a few forms with Spanish prepositions, e.g. *axta ni:kan* (Span. *hasta* ‘to, until’) ‘to the present, to here’ (Campbell 1985: 59), which seem to have predominantly temporal meanings. The Spanish preposition *de* ‘from’ is seen only in combination with place names, such as *wi:ts-et de chilyupán* ‘[they] come from Chiltiupan’ (Campbell 1985: 870). Pipil thus behaves similarly as Guerrero Nahuatl (Section 3.5.2.2) insofar as coding is indistinct, Ground is overt, and verbal semantics differentiate static and dynamic spatial deictic relations.

Goal in (226b), whereas the zero-marked form is used in (226a) and (226c) to express Place and Source, respectively.

(226) Tagalog possible P=S≠G pattern

a. HERE [Schachter and Otones 1972: 93]

Mabuti ang panahon dito.
good DEF weather here
'The weather is good here.'

b. Verbal HITHER [TLAB Gen 42:15]

alangalang sa buhay ni Faraon ay hindi kayo
behalf of life PTCL pharaoh INTERJ NEG 2PL
aalis dito, malibang p<um>a-rito ang inyong
leave:CNMPL here before VBZ<AT>-here TOP 2PL.POSS
kapatid na bunso.
brother PTCL youngest
'by the life of Pharaoh, you shall not leave this place unless your
youngest brother comes here!'

c. HENCE [ABTAG2001 Ex 11:1]

Pagkatapos nito ay pa-pahintulutan niya kayong
afterwards this INTERJ RED-allow 3SG to.2PL
umalis dito.
go.away.from here
'After that he'll let you go from here.'

The zero-marked expression *dito* 'here' is used for both Place and Source in (226a) and (226c), respectively. The Source verb *umalis* 'go away from, leave' unambiguously encodes Source, so that no overt marking of the SDD is necessary. Goal is expressed by a verbal variant of the proximal deictic in (226b), so that it differs from the expression used for P/S. It is, however, also possible to express HITHER with the same zero-marked expression *dito*. It follows that we are dealing with P=G=S syncretism here. Due to overabundance and overtly coded forms for each relation next to the P=G=S syncretic zero-marked expressions, all five patterns are possible in Tagalog SDDs. Yet, there are no expressions that are exclusive to both Place and Source (to the exclusion of Goal). Consequently, Tagalog is not a clear case of Pattern IV. Nevertheless, it is the only language in our sample for which the SDDs may be expressed with P=S to the exclusion of Goal. For a more extensive discussion on Tagalog, see Section 6.4.

For the SIs, Stolz et al. (2017) presented one case of P=S≠G in their sample. Based on two different sources for the Austroasiatic language Khasi [AS-22], Stolz et al. (2017) assume two different varieties of the language, viz. Khasi (A) with a maximal distinct P≠G≠S pattern and Khasi (B) with a P=G≠S on the one hand and a P=S≠G pattern on the other. According to Kharwanlang's (2010)

dictionary of the Khasi (B) language, there is “a combination of two syncretic patterns, namely, on the one hand, WHERE=WHITHER-syncretism which manifests itself in the spatial interrogative *shano* ‘where = whither’ and, on the other hand, WHERE=WHENCE-syncretism to which *nangno* ‘where = whence’ testifies” (Stolz et al. 2017: 493). Our own analysis of the Khasi language is based on yet another source, viz. the Khasi Bible [KHASICL-BSI], according to which there is a maximal distinct $P \neq G \neq S$ pattern on the one hand and a $P = G \neq S$ pattern on the other. $P = S$ syncretism does not occur in the paradigm we compiled for Khasi.⁹⁰

The two rather dubious cases of Pattern IV briefly reviewed here as the only cases we came across in Asia add to the impression that Pattern IV is a peripheral phenomenon, perhaps even more so than Pattern III discussed in the previous section.

3.4.4 $P = S \neq G$ in Europe

The Uralic language Saami (Skolt) [EU-38] is quite exceptional, as it pervasively employs the $P = S \neq G$ pattern. Two different case forms are employed for the three relations. Feist (2010: 239) states that “the locative case performs two primary functions. Firstly, it is used to express location at or in a place or object and, secondly, it is used to express movement away from or out of a place or object.” The illative case, by contrast, “is used when a noun functions as the indirect object of a clause and expresses the recipient or destination of an entity or communicative event” (Feist 2010: 237). Thus, nominal referents employ the locative case for both Place and Source and the illative case for Goal. Feist (2010: 304) introduces the spatial adverbs that “express the place where an action takes place, the place from which an action proceeds or the place towards which an action is directed”. The list of SDDs clearly illustrates that they also share one expression for Place and Source and employ a different one for Goal, viz. *täiib/täiiben* ‘here = hence’ but *tii’k* ‘hither’, *to’b/to’ben* ‘there = thence’ but *tok* ‘thither’, and *ku’k’ken* ‘there2 = thence2’ but *kookkas* ‘thither2’. Similarly, the SI *ko’st* is used to express both WHERE and WHENCE, whereas *koozz* expresses WHITHER. Several examples confirm the stipulated pattern, cf. (227).

⁹⁰ See Section 3.1.3.1 for an in depth discussion of Khasi.

- (227) Saami (Skolt) distal SDDs
- a. THERE [Feist 2010: 227]
to'ben *jälstiim* *mängg* *piârjed*
 there live.PAST.1PL many.SG.NOM family.PART
 'there we lived, many families'
- b. THITHER [Feist 2010: 226]
tok *mâ'nne* *ķiččâd* *jiânnai* *oummu*
 thither go.PRES.3PL look.INF much person.PL.NOM
 'a lot of people went there to look'
- c. THENCE [Feist 2010: 354]
Kunnpeeipuž *viüžži* **to'ben** *heäppšees* *da*
 Cinderella.NOM fetch.PAST.3SG thence horse.SG.ACC.3SG and
tä'vvrees
 belonging.SG.ACC.3SG
 'Cinderella fetched her horse and her belongings from there'

Both (227a) and (227c) employ the syncretic expression *to'ben* 'there = thence' to express Place and Source, while *tok* 'thither' is used in (227b) to express Goal. This pattern is not restricted to the Skolt variety of Saami but seems to also apply to other varieties. Stolz et al. (2017: 418) offer a comparison of the SIs employed in three Saami varieties (Inari, Skolt, and North) in the respective translations of *Le petit Prince* (cf. Table 30).

Table 30: Paradigms of spatial interrogatives in three Saami LPP-varieties (cf. Stolz et al. 2017: 418).

Spatial relation	Saami (Inari)	Saami (Skolt)	Saami (North)
Place	<i>kost</i>	<i>ko'st</i>	<i>gos</i>
Goal	<i>kuus</i>	<i>koozz</i>	<i>gosa</i>
Source	<i>kost</i>	<i>ko'st</i>	<i>gos</i>

The above table adopted from Stolz et al. (2017: 418) displays the WHERE=WHENCE syncretism in all three Saami varieties.⁹¹ For North Saami, Pantcheva (2011: 240)

⁹¹ However, this pattern is not employed in every Saami variety. For the Pite variety of Saami, for example, Wilbur (2014: 124) lists three different SIs, viz. *gânne* 'where', *gusa* or *guse* 'to where', and *guste* 'from where'. Thus, the maximally distinct pattern is employed in Pite Saami. In fact, there is an East-West split: In North Saami and the eastern varieties Inari, Skolt,

explains that “the Inessive-Elative syncretism is seen as an accidental homophony resulting from the phonological development of the Proto-Sámi Inessive and Elative endings **-snē* and **-stē*, respectively”. Based on her study of non-deictic declarative constructions, she argues that the P=S≠G pattern is an *impossible* pattern. Thus, the case of Saami is problematic from her perspective, as

the Inessive-Elative syncretism has been extended to other parts of the grammar [e.g.] in the plural paradigm and with spatial adverbs and postpositions by analogy to the singular paradigm and crucially not because of a phonologically conditioned development. (Pantcheva 2011: 240)

This can also be observed for the Skolt variety of Saami. It might be that the WHERE and WHENCE expressions are identical due to the phonological development of **-snē* and **-stē* as outlined above. Nonetheless, SDDs do not employ the same case markers, so that a coincidental homophony can be ruled out. Hence, Saami (Skolt) is one of the few languages that clearly and undoubtedly employ the statistically marginal P=S≠G pattern in both SIs and SDDs.

3.4.5 P=S≠G in Oceania

Four Oceanian sample languages attest to the P=S≠G pattern at least in one column of their sister paradigms. Manambu [OC-20], however, employs complex Source constructions (cf. Section 6.3); a finding that renders a formal morphological analysis inconvenient from a broader functional-typological perspective. Due to our analysis, Manambu attests to Place=Source syncretism in the far deictic relation. The same applies to Martuthunira [OC-23] (cf. Section 3.2.5.2 for a discussion of Martuthunira SDDs). In the following, the two remaining Oceanian sample languages, Abui [OC-2] and Futuna-Aniwa [OC-12] are discussed.

According to Stolz et al. (2017: 495), the Alor language Abui [OC-2] shows WHERE=WHENCE syncretism due to the attestation of a verbal element =*n(g)* that attaches to the spatial Q-stem. Abui SIs are reproduced in (228).

- (228) Abui SIs
 a. WHERE [Kratochvíl 2007: 227]
kaai te mia?
 dog where be.in
 ‘Where is the dog?’

Akkala, Kildin, and Ter Saami, there is the statistically marginal P=S≠G pattern, while Lule, Pite, Ume, and South Saami employ the maximally distinct P≠G≠S pattern (Olle Kejonen, p.c.).

- b. WHITHER [Kratochvíl 2007: 218]
ma a te=ng yaa-e?
 be.PROX you where=see go-IMPF
 ‘Where are you going?’
- c. WHENCE [Kratochvíl 2007: 495]
A te mia yaar-i?
 you where be.in go.CPL-PFCTV
 ‘Where are you coming from?’

However, note that the WHENCE construction in (228c) involves a static verb and a motion verb, similar to Source SDD constructions (cf. Section 6.3). SDD functions in Abui are met by adverbial demonstrative modifiers or deictic motion verbs, serial verb constructions, and combinations of modifiers and verbal elements. Concerning the basic deictic motion verbs, Kratochvíl (2007: 102) explains that they “mostly occur in serial verb constructions, and only in few cases they are inflected for aspect or person”. He adds that “[t]his makes them very adverb-like elements, also due to their semantics” (Kratochvíl 2007: 102). The element *n(g)* ‘see’, as in (228b) above, may add an allative meaning to constructions like (229a). In (229b), however, Goal is not expressed morphologically and Ground is coded by a bare demonstrative.

- (229) Abui far deictic Goal
- a. THITHER1 [Kratochvíl 2007: 482]
nu-tafuda he-n me
 1PL.EXC.REC-be.all PRO.LOC-see.CPL come
 ‘All of us are going there.’
- b. THITHER2 [Kratochvíl 2007: 482]
di o we-i
 3AC MED leave.PFCTV
 ‘He went there.’

The attested Abui SDDs are thus non-paradigmatic and involve complex construction types (cf. also Nintemann and Robbers 2019: 18–21). They thus roughly attest to $P \neq G \neq S$, yet we emphasize that further data would likely draw a clearer picture of this Papuan language.

A clearer case of pervasive Place=Source marking is the Oceanic language Futuna-Aniwa [OC-12], spoken on Vanuatu. Futuna-Aniwa has two options for realizing the Place SI. The first option refers to a spatial interrogative *uahe* or *uafe*, consisting of reflexes of the Proto-Polynesian freely varying “post-article form[s] of *-he* or *-fe*” (Dougherty 1983: 87 referring to Pawley 1967) and a particle *ua* that indicates “an interval of space or time” (Dougherty 1983: 87), cf. (230).

- (230) Futuna-Aniwa SIs
- a. WHERE [Dougherty 1983: 88]
i uahe?
 P/S where
 ‘Where?’
- b. WHERE [Dougherty 1983: 88]
fakai i-ku-nei no uafe?
 people P-1-PROX TNS where
 The people of this place are where?’

The second option is provided by the forms *i* and *ki* that mark oblique case in NPs in Futuna-Aniwa. Dougherty (1983: 47) states that “[t]he semantic relation holding between a verb and its oblique complement is determined by the combination of the semantics of the verb, the oblique noun phrase and the context of the utterance.” Dougherty (1983: 88) further analyzes that, among other functions, “*i* questions origin or source and is also used in existential interrogatives”⁹², and “*ki* questions locative goal”. Both forms are found in the initial slot of the tripartite SDD constructions in Futuna-Aniwa (cf. [235] below). *Ki* is a dedicated Goal marker. The Place and Source relation may be marked with the P=S syncretic *i*. WHERE can thus be constructed as *no i?* (TNS where) which ambiguously signifies ‘Where is he?’ or ‘Is there any (anywhere)?’ (Dougherty 1983: 88). Examples (231) and (232) show the use of *i* and *ki* in Goal and Source SI constructions.

- (231) Futuna-Aniwa WHITHER [Dougherty 1983: 88]
akoe no fano ki?
 2SG TNS go G
 ‘To where are you going?’
- (232) Futuna-Aniwa WHENCE [Dougherty 1983: 88]
akoe ni fakea i?
 2SG TNS emerge P/S
 ‘Where did you come from?’

The SI paradigm for Futuna-Aniwa thus shows Place=Source syncretism due to the shared form *i* and the dedicated Goal form *ki*. We further tentatively include the form *uehe* (written as *wehe*) in the cell for WHENCE since it is attested in the ANIGEN Bible translation and fits with the overall pattern.

⁹² Cf. the marking of Origin in example (230b).

Place=Source syncretism is also attested in the SDD domain in Futuna-Aniwa. The word class that encodes the distance levels in SDD constructions is the demonstrative class. The demonstratives *-nei*, *-na*, and *-ra* are associated with the corresponding Proto-Polynesian forms in Dougherty (1983: 27). They distinguish proximal or near hearer, medial or near addressee, and distal stage (in the same order). In the first slot of the tripartite SDD construction, the Place SDDs are coded by *i* and the Goal SDDs by *ki* (which also constitute SIs of their own, cf. above). The second slot is filled by “a pronominal element probably derived from the person markers *ku* ‘first person’ [...] and *ko* ‘non first person’ (Dougherty 1983: 31). The third slot is occupied by a demonstrative of the set introduced above. Notice, however, that the proximal demonstrative can be omitted, cf. (233).

- (233) Futuna-Aniwa HERE [Dougherty 1983: 32]
nigko sore i-ku.
 TNS plentiful P/S-1
 ‘It’s become plentiful here.’

- (234) Futuna-Aniwa OVER THERE [Dougherty 1983: 544]
ta vai i-ko-ra e tahsu.
 ART water P/S-NON1-DIST is splash
 ‘The water over there is all splashy, churned up.’

Similar to the WHITHER constructions, Goal SDDS are mostly coded overtly with *ki*. Yet, there is one attested instance of a Place-marked form in a phrase that reads as a Goal construction, cf. (235c).

- (235) Futuna-Aniwa THITHER [Dougherty 1983: 32]
- a. *fano ki-ko-ra.*
 go G-NON1-DIST
 ‘Go over there; go away’
 - b. *amkage ki-ko-ra.*
 take.away G-NON1-DIST
 ‘Take them over there.’
 - c. *nigko tere i-ko-na ma ta vaka.*
 TNS go P/S-NON1-MED with ART boat
 ‘She went there with the boat.’

Ki can also appear in free form and indicate THITHER, as it functions as a transparent Goal marker. In (236), the element precedes the anaphoric or neutral pronominal form *ai*.

- (236) Futuna-Aniwa THITHER II [Dougherty 1983: 54, 55]
- a. *amerika ni ro ki ai.*
 America TNS go G there
 ‘America went to there (to the moon).’
- b. *koso fano ki ai.*
 TNS-NEG go G there
 ‘(The wife) does not go into that place.’

Ai also combines with the second oblique argument marker, i.e. the P/S marker *i*. The corresponding Source construction is attested in the ANIGEN Bible translation. Another word class that plays a role in the formation of spatial deictic relations in Futuna-Aniwa is the demonstrative set. Especially for vertical Grounds, “[t]he demonstratives also occur in locative constructions in which a directional particle takes the place of a modified noun” (Dougherty 1983: 30). The directional particles cited mainly include vertical forms such as *kake* ‘up’ and *ifo* ‘down’. *Hate*, conversely, refers to ‘up to, until, as far as’. The directional particles can combine to form Grounds such as *hatekake ra* ‘just up there’ (Dougherty 1983: 301). However, despite the translation given in Dougherty (1983), *hate* is not attested in genuine Goal phrases and is therefore not included in the paradigm. Reflexes of the Proto-Polynesian forms **ma(R)i* ‘towards speaker’ and **atu* ‘towards addressee’ (cf. fn. 45 in Section 3.1.5.1.1) function as directional particles in Futuna-Aniwa. A bound form *-mai* is attested in HITHER constructions, such as *afe-mai* ‘return here’ (Dougherty 1983: 350). Example (237) shows another instance of proximal allative *-mai*.

- (237) Futuna-Aniwa HITHER II [Dougherty 1983: 165]
- aia koi-arafia-mai.*
 he 3-bring-hither
 ‘He takes her by the hand to lead her here.’

The directional particles *-(k)atu* ‘toward addressee’ and *-(k)age* ‘thither, away, out; toward some third party’ (Dougherty 1983: 108) are only tentatively included in the paradigm [OC-12] since they are not attested in genuine spatial deictic functions in Dougherty’s (1983) grammar.

As mentioned above, the attested Source SDDs in Futuna-Aniwa are syncretic with Place and indicated through the oblique case marker *i*. Example (238) shows the syncretic use of the form *iku* for the proximal relation in Source and Place reading alike (cf. example [233] above).

- (238) Futuna-Aniwa HENCE [Dougherty 1983: 32]
ni kamata i-ku.
 TNS start P/S-1
 ‘We started from here.’

The syncretism of *i-* already indicates that Futuna-Aniwa has telic motion verbs that suffice to encode direction without additional morphological marking. Given that transparent marking with dedicated forms and constructions for Place and Goal relations exists, it seems that the Source relation relies more heavily on verbs and their meanings. For ablatival (deictic) motion, some verbs occur frequently, such as *faka(-a)* ‘to come from, leave from, come out from’ (Dougherty 1983: 215) which is often followed by *i*. Specialized aspectual markers are further deemed important. In (239), the bound form *niro-* creates implied Source motion in combination with allative verbs. Dougherty (1983: 402) refers to this item as a “[m]arker of tense and aspect indicating past completed action and a departing aspect”.

- (239) Futuna-Aniwa motion via aspect marker [Dougherty 1983: 402]
akitea niro-sua niro-rako ki orea
 we.INC ASP(depart)-paddle ASP(depart)-arrive to their
niro-roke-amai.
 ASP(depart)-emerge-bring
 ‘They paddled to go out to their special place and then went away (from there) coming towards us.’

Futuna-Aniwa is thus largely Place=Source syncretic in both related paradigms. Certainly, a study of static locational verbs, motion verbs, and the aspectual markers such as *niro-*, that may apply to encodings of spatial deictic relations, must remain a concern for future studies. Still, only for this Oceanian sample language Place=Source syncretism is attested pervasively.

3.5 Pattern V: Place=Goal=Source

This chapter covers the sample languages that attest to the maximally indistinct and thereby fully syncretic pattern, subsumed as P=G=S. The full syncretism implies that all three relations are characterized each by an identical and unmodified SI or SDD. In our sample languages that attest to this pattern, the respective SIs and SDDs are either zero-marked or bear a general spatial marker that is indistinctive to P/G/S. The absence of dedicated markers for the three spatial relations implies the presence of dedicated spatial verbs that encode the

Place, Goal, and Source meaning components. The following subsections offer areal counts and qualitative analyses of Pattern V, based on a selection of sample languages that attest to this pattern partly or fully.

3.5.1 P=G=S in Africa

Stolz et al. (2017) found Pattern V to be the predominant pattern in Africa as it occurs in 43% of the SI paradigms in 72 African languages. Our own sample shows very similar shares of the maximally indistinct pattern with 45.6% in the SIs and 44.8% and 45.5% in the near and far deictic SDDs, respectively. Table 31 displays the 31 sample languages that attest to the P=G=S pattern.

Table 31: African languages that attest to P=G=S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Angolar	AF-3	Indo-European, Lower Guinea Portuguese	✓	✓	✓
Bambara	AF-5	Mande	✓	✓	✓
Bangime	AF-6	Bangime	✓	✓	✓
Bunoge Dogon	AF-7	Dogon	✓	✓	✓
Dii	AF-8	Atlantic-Congo, Central Adamawa	✓	✓	✓
Ekoti	AF-10	Atlantic-Congo, Bantu	✓	✓	✓
Ewe	AF-11	Atlantic-Congo, Gbe	✓	✓	✓
Fon	AF-12	Atlantic-Congo, Gbe	✓	✓	✓
Fulfulde, Adamawa	AF-13	Atlantic-Congo, North Atlantic	✓	✓	✓
Gonja	AF-15	Atlantic-Congo, Guang	✓	✓	✓
Kaba	AF-18	Central Sudanic, Saraic	✓	✓	✓
Kabiyé	AF-19	Atlantic-Congo, Gur	✓	✓	✓
Kikuyu	AF-21	Atlantic-Congo, Bantu	✓	✓	✓
Koyra Chiini	AF-22	Songhay	✓	✓	✓
Koyraboro Senni	AF-23	Songhay	✓	✓	✓
Loma	AF-25	Mande	✓	✓	✓
Luo	AF-26	Nilotic	✓	✓	✓
Malagasy	AF-29	Austronesian, Greater Barito	✓	✓	✓
Mambay	AF-30	Atlantic-Congo, Mbumic	✓	X	X
Munukutuba	AF-32	Atlantic-Congo, Bantu	✓	✓	✓
Òkọ	AF-35	Atlantic-Congo, Oko-Eni-Osayan	✓	✓	✓

Languages	Appendix	Affiliation	SI	ND	FD
Òṅìchà Igbo	AF-36	Atlantic-Congo, Igboïd	✓	✓	✓
Pamue	AF-37	Atlantic-Congo, Bantu	✓	✓	✓
Penange	AF-38	Dogon	✓	✓	✓
Sango	AF-39	Atlantic-Congo, Ubangi	✓	✓	✓
Supyire Senoufo	AF-41	Atlantic-Congo, Gur	✓	✓	✓
Susu	AF-42	Mande	✓	✓	✓
Swahili	AF-43	Atlantic-Congo, Bantu	✓	✓	✓
Tswana	AF-46	Atlantic-Congo, Bantu	✓	✓	✓
Yoruba	AF-48	Atlantic-Congo, Defoid	✓	✓	✓
Zialo	AF-50	Mande	✓	✓	✓

Compared to other patterns, it is striking that the P=G=S pattern appears as very regular in African languages. Apart from Mambay [AF-30], all languages in Table 31 show the same pattern in the SIs and both the near and far deictic SDDs. Within the language families, some tendencies for Pattern V can be found. In our sample, all four Mande languages and both Songhay languages follow the P=G=S pattern. The same can be said about most of the languages belonging to the Atlantic-Congo macrophyllum. The indistinction of Place, Goal, and Source is also a typical feature of the Dogon language family (cf. Heath 2017: 78), although Bunoge [AF-7] shows a P≠G=S pattern in the SDDs to some extent (cf. Nintemann and Robbers 2019: 14–17). The isolate Bangime [AF-6], the Austronesian Malagasy [AF-29], and the only African creole language of our sample Angolar [AF-3] also show the P=G=S pattern. Other phyla, such as the Nilotic, Central Sudanic, or Omotic language families, do not show such clear tendencies, as other languages belonging to these groups show different syncretic patterns. Furthermore, it is striking that none of the ten Afro-Asiatic languages of our sample shows Pattern V despite it being so prominent in Africa. In the following subsections, we have a look at different members of three language families in which the maximally indistinct pattern is a frequent occurrence, viz. Mande, Bantu, and Songhay languages.

3.5.1.1 P=G=S in Mande languages

The four Mande languages in our sample are all spoken in the West African coastal region around Guinea, Liberia, and neighbouring regions. They all employ the P=G=S pattern in both SIs and SDDs. As in other P=G=S languages, the static and the two dynamic relations are expressed by the verb. The Zialo [AF-

50] examples in (240) illustrate the use of the deictic adverb *nây* ‘there = thither = thence’ in all three relations.

- (240) Zialo THERE, THITHER, and THENCE [Babaev 2010: 79]
- a. *á wɔ̄ yé nây*
3SG.IRR PROSP be there
‘He will be there’
- b. *gè lì-gɔ̄ nây*
1SG go-AOR there
‘I went there’
- c. *Kòli và-gɔ̄ nây bēgì*
Koli come-AOR there yesterday
‘Koli came from there yesterday’

Whether *nây* expresses ‘there’, ‘thither’, or ‘thence’ in a sentence depends on the meaning of the verb. In (240a) the static relation Place is expressed by the verb *yé* ‘be’, while the two dynamic relations are expressed by *lì* ‘go’ in (240b) and *và* ‘come’ in (240c).⁹³ The SI *mìnì* ‘where’ and the other SDDs *vè* ‘here’, *nòvè* ‘there’, and *mùnɔ̄* ‘yonder’ follow the same P=G=S pattern. Depending on the SDD, however, the verb *và* ‘come’ may be used for either a Goal or a Source reading. In (241) it is used in combination with *vè* ‘here’ and induces a Goal reading.

- (241) Zialo HITHER [Babaev 2010: 79]
- á vílá è và vè*
3SG.IRR can 3SG.DEP come here
‘He can come here’

The same verb root *và* ‘come’ used in (241) to induce a Goal reading brings about a Source reading in (240c) above. Thus, whether *và* is used for Goal or Source depends on the corresponding SI or SDD. There are other verbs which may also be used for Source.

- (242) Zialo WHENCE [Babaev 2010: 103]
- mìnì lɔ̄ yè zìyè-gɔ̄ nây?*
where COP 2SG return-AOR there
‘Where do you come from?’

In (242), the verb *zìyè* ‘return’ is used to induce a Source reading. One might assume that the Source reading is induced by a complex construction in which

⁹³ As “monosyllabic verb roots are lengthened in the aorist and preterite forms” (Babaev 2010: 25), *lì* ‘go’ and *và* ‘come’ occur as *lìi* and *vàà* in the example sentences.

the SDD *này* ‘there’ is used following the directional verb in the interrogative sentence. Babaev (2010: 103), however, explains that the interrogative pronoun *mìni* ‘where’ “may be placed either at the initial or the final position” and that “[i]n case it is put initially, it requires a following copula *tɔ* [lɔ], and the interrogative utterance always ends with demonstrative pronouns *nà* or *này* ‘there’”. As it seems that the requirement of the copula *lɔ* and the demonstrative pronoun *này* ‘there’ has syntactic reasons, we assume that the Source reading is completely brought about by the verb.

The closely related language Loma [AF-25] has a similar system. The SI *mine* ‘where’ and the SDDs *vɛ* ‘here’ and *na* ‘there’ are zero-marked for location and direction and are similarly used for P/G/S.

- (243) Loma distal SDDs
- a. THERE [Sadler 2006: 64]
té yéni ná.
 3PL was there
 ‘They were there.’
- b. THITHER [Sadler 2006: 77]
gé líi-ni ná.
 1PL.EXC go-REM there
 ‘We (excl.) went there.’
- c. THENCE [Sadler 2006: 60]
zúnù lómai ziyi ná.
 boy DEF leave there
 ‘Take the boy away from there.’

All three examples in (243) show an unaltered form of *na* ‘there’⁹⁴ without any overt marking of Place, Goal, or Source. In (243a), the auxiliary *yéni* ‘was’ acts like a stative verb to induce a Place reading, whereas the dynamic verb *li* ‘go’ is used to express Goal in (243b). Another dynamic verb *ziyi* ‘leave’ is used to express a movement away from the Ground *na* ‘there’ in (243c), i.e. Source is expressed.

It seems, Loma also has a similar syntactic structure for interrogative sentences as Zialo. As explained above, if the SI *mìni* ‘where’ is placed in initial position in Zialo, the interrogative sentence always ends with demonstrative pronouns *nà* or *này* ‘there’. The only example of this structure in Zialo concerned an interrogative Source construction. For Loma, however, we were able to attest this structure in all three relations, cf. (244).

⁹⁴ Tone may change according to the surrounding of a syllable. The distal SDD *na* ‘there’ may occur as *ná* with high tone in a sentence.

(244) Loma SI constructions

- a. WHERE [LNT71 John 1:38]
Loabai, mine ya è na?
 Rabbi where AUX 2SG there
 ‘Rabbi (which translated means Teacher), where are you staying?’
- b. WHITHER [LNT71 John 13:36]
Gé maliyii, mine ya è lii-zu na?
 2PL.EXC Lord where AUX 2SG go-PROG there
 ‘Lord, where are you going?’
- c. WHENCE [LNT71 Rev 7:13]
Mine ya te ziyi-a na?
 where AUX they leave-PAST there
 ‘[...] where did they come from?’

The sentences in (244) all show the same structure with the SI *mine* ‘where’ in initial position and *na* in sentence final position. We are unsure whether it is the same *na* with the meaning of ‘there’ or rather a sentence final particle with the same phonological shape. Nevertheless, it seems to be a syntactic feature rather than a morphological component of a spatial interrogative construction, independent from the relation expressed. We assume that this is similar in both Loma and Zialo discussed above.

Bambara [AF-5] similarly uses the SI *min* ‘where’ and the SDDs *yan* ‘here’ and *yen* ‘there’ without overtly marking P/G/S. Kastenholz (1998: 51) explains that *min*⁹⁵ is used to ask about a place, both locally (where something or someone is located; where something is happening) and directionally, i.e. where an action or a process is directed to or from.⁹⁶ In a declarative sentence, a concrete locational takes the same clause-final position as *min* in an interrogative sentence, cf. (245).

⁹⁵ The orthography used in Kastenholz (1998) slightly differs from the one used in the Peace Corps training program in that accents are used, viz. *mín* ‘where’, *yân* ‘here’, and *yèn* ‘there’. As most of the forms and examples stem from the Peace Corps material, we decided to use their orthography for the paradigm.

⁹⁶ Original quote: “**mín** stellt die Frage nach dem Ort, sowohl *lokal* (wo sich etwas oder jemand befindet; wo etwas geschieht) als auch *direktional*, d.h. *wohin* bzw. *woher* eine Handlung, ein Prozess gerichtet ist” (Kastenholz 1998: 51).

- (245) Bambara SI and SDD Source constructions
- a. WHENCE [Peace Corps 2009: 17]
I bε bɔ min?
 2SG AUX come.from where
 ‘Where are you from?’
- b. HENCE [Peace Corps 2009: 131]
N bε bɔ yan.
 1SG AUX come.from here
 ‘I’m from here.’

The example sentences in (245) display two Source constructions, viz. an interrogative construction with the zero-marked SI *min* ‘where’ in (245a) and a declarative construction with the zero-marked SDD *yan* ‘here’. Both sentences exhibit a similar syntactic structure. Both *min* and *yan* are in sentence final position. The dynamic verb *bɔ* ‘come from’ is used to induce a Source reading. To express Place or Goal, stative verbs like the auxiliaries *bε* ‘be’ or *tε* ‘not be’ or dynamic verbs like *taa* ‘go’ or *ka na* ‘come’ are used, respectively.

The fourth Mande language in our sample, Susu [AF-42], also has a completely neutralized pattern. The SIs *minde* or *minden* ‘where’ and the three SDDs *be* ‘here’, *na* ‘there’, and *mènni* ‘there’ are used without any overt marker for P/G/S. The following examples show different instances of *minden* ‘where’ and the two SDDs *be* ‘here’ and *mènni* ‘there’.⁹⁷

- (246) Susu THERE [SOSO Matt 2:15]
E naxa lu mɛnni han Herode naxa faxa [...]
 3PL EV stay there until Herod EV die
 ‘He stayed there until Herod died.’
- (247) Susu dynamic SIs
- a. WHITHER [SOSO John 13:36]
Marigi, i siga-ma minden?
 Lord 2SG go-PROG where
 ‘Lord, where are You going?’
- b. WHENCE [SOSO John 19:9]
I tan, i keli-xi minden?
 2SG PTCL 2SG leave-PRES where
 ‘Where are you from?’

⁹⁷ The orthography used in the Susu Bible [SOSO] differs from the one used by Friedländer (1974), so that *mènni* ‘there’ in Friedländer’s grammar is written as *menni* ‘there’ in the Susu Bible.

- (248) Susu HENCE and THITHER [SOSO Matt 17:20]
Keli be, i i masiga menni
 leave here 2SG PREF come.back there
 ‘Move from here to there’

In (246), the stative verb *lu* ‘stay’ expresses the static relation Place with *menni* ‘there’. The two interrogative sentences in (247) are of dynamic nature. While Goal is expressed in (247a) with the dynamic verb *sigá* ‘go’, *keli* ‘leave’ induces a Source reading in (247b). The sentence ‘Move from here to there’ in (248) cannot be expressed in one phrase with only one verb like in English. As P/G/S are unmarked and determined only by the verb, two phrases are needed in order to express a movement away from one place and a movement towards another. In this manner, a Source inducing verb (here: *keli* ‘leave’) is used in the first phrase and a Goal inducing verb (here: *masiga* ‘come back’) is used in the second phrase. This is a typical phenomenon in P=G=S languages.

All four genetically and areally close Mande languages in our sample similarly employ the maximally indistinct P=G=S pattern. Which of the three relations is expressed is completely determined by the use of stative and dynamic verbs. This pattern is wide-spread, especially in the West African area and far from being an exclusive feature of the Mande language family (cf. Map 2 in Section 4.1).

3.5.1.2 P=G=S in Bantu languages

The P=G=S pattern is also a common feature of Bantu languages. There are six Bantu languages in our sample, which all employ Pattern V at least partly. Ekoti [AF-10], a language of Mozambique, is one of the Bantu languages that has this pattern as the only option. The language’s demonstratives distinguish between three distance levels, viz. near speaker, near hearer, and away from both. Additionally, there are two noun classes used to distinguish specific (Cl. 16) and general (Cl. 17) location. By combining the demonstrative with the respective noun class prefixes, six different SDDs⁹⁸ are formed: *apha* ‘here (near speaker, specific)’, *okhu* ‘here (near speaker, general)’, *apho* ‘there (near hearer, specific)’, *okho* ‘there (near hearer, general)’, *aphale* ‘there (away from both, specific)’, and *okhule* ‘there (away from both, general)’. Both the SDDs and the SI *vai*⁹⁹ ‘where’ are used without any additional marker in all three relations, cf. (249).

⁹⁸ In fact, there are even more forms, as apart from specific and general location, an interior location can also be expressed (cf. Section 6.1.3).

⁹⁹ Schadeberg and Mucanheia (2000: 73) introduce the interrogative *vai* ‘where’ as an “invariable word”, i.e. *vai* is used without any additional markers in Place, Goal, and Source rela-

- (249) Ekoti SIs [Schadeberg and Mucanheia 2000: 73]
- a. *e-ri váî*
Cl.7-be where
'Where is it?'
- b. *o-n-tt-a váî*
2SG-TNS-go-FV where
'Where are you going?'
- c. *o-n-lankh-a váî*
2SG-TNS-rise-FV where
'From where are you coming?'

The stative verb *ri* 'be' is used in (249a) to express Place, whereas the dynamic verb *-tt-a* 'go' is used in (249b) to express Goal. Another dynamic verb *lankh-a* 'rise' induces a Source reading in (249c). Similar constructions can be found with the SDDs, cf. (250).

- (250) Ekoti THITHER [Schadeberg and Mucanheia 2000: 169]
- Khuúziwa: "Olawé aphó [...]*
tell.PASS.PSTN 2SG.leave.OPT 16.DEM.SPEC
'Then he was told: "Go there [...]'

The 'near hearer', specific SDD *apho* is used in (250) in combination with a dynamic verb *law-a* 'leave' to express Goal.

Pamue [AF-37], a language spoken in a number of countries in Central Africa, is another Bantu language that employs Pattern V. Similar to Ekoti, it has a three-way distinction of *near hearer*, *near speaker*, and *away from both* expressed by the SDDs *va*, *yui*, and *olui*, respectively. The interrogative *ve* 'where' is similarly used without additional markers.

- (251) Pamue SIs [Ndongo Esono 1956: 96]
- a. *A ne ve?*
3SG be where
'Where is it?'¹⁰⁰

tions. Tone is marked in the examples given below (cf. [249]). Given the explanation of *vai* being invariable and the inconsistency of how tone is marked on the word, we assume that tone is dependent on surrounding words and speech situations and not a sign of different marking. However, we do not have an explanation for the different marking of tone in the examples in (249).

100 Original: ¿Dónde está?

- b. *Ua ké ve?*
 2SG go where
 ‘Where do you go?’¹⁰¹
- c. *Ua so ve?*
 2SG come.from where
 ‘Where do you come from?’¹⁰²

(252) Pamue HITHER [Ndongo Esono 1956: 26]
Bor(t) bese ba nzu vá.
 people all.PL 3PL come here
 ‘All people come here.’¹⁰³

As in other languages discussed before, P/G/S are expressed by stative or dynamic verbs in the sentences in (251). The stative verb *ne* ‘be’ is used in (251a) to express Place, whereas Goal is expressed by the dynamic verb *ké* ‘go’ in (251b), and another dynamic verb *so* ‘come from’ is used to induce a Source reading in (251c). Pamue employs similar constructions with SDDs. The motion verb *a nzu* ‘come’ is used in (252) for a HITHER construction. In this manner, Ekoti and Pamue display a completely neutralized P=G=S pattern. The four other Bantu languages of our sample show an additional option for Source constructions.

This is, for example, the case in the Kenyan language Kikuyu [AF-21]. Kikuyu has an elaborate system of SDDs, in which different features are distinguished. One of these “is the classification of location as either “extended” such as a stretch of space or an area of space, or “non-extended” such as a spot in space” (Denny 1978: 72). This difference is marked by the two noun class prefixes *ha* ‘non-extended’ and *kū* ‘extended’, which coincide with the two interrogative expressions *ha* ‘where’ and *kū* ‘where’. By reduplicating these noun class prefixes, the proximal SDDs *haha* ‘here (non-extended)’ and *gūkū* ‘here (extended)’ are formed. Another feature concerns the distal expressions, where a distinction is made “between locations regarded by the speaker as “in field”, typically but not exclusively those that can be seen and pointed to, and locations which are “out of field”” (Denny 1978: 73). These distal SDDs are formed with the aforementioned noun class prefixes and a root *-rĩa*. To distinguish between the “in field” and “out of field” expressions, the prefixes vowel is lengthened for the “in field” constructions. Like this, *haarĩa* ‘there (in field, non-extended)’, *kūürĩa* ‘there (in field, extended)’, *harĩa* ‘there (out of field, non-extended)’, and *kūrĩa* ‘there

101 Original: *¿A dónde vas tú?*

102 Original: *¿De dónde vienes?*

103 Original: *Todo el mundo viene aquí.*

(out of field, extended)' are formed. Finally, a distinction is made "between the deictic field centered on the speaker and any other deictic field centered on some other person or thing" (Denny 1978: 73). These expressions consist of a combination of the noun class prefixes and the root *-u*, so that *hau* 'there (other field, non-extended)' and *kūu* 'there (other field, extended)' are formed. All of these expressions may be used in all three relations, so that there is P=G=S syncretism.

- (253) Kikuyu proximal SDDs
- a. HERE [Gecaga and Kirkaldy-Willis 1953: 73]
Ikara haha kinya nyūkwa a-cok-e.
 IMP.stay here until your.mother 3SG-return-SBJV
 'Stay here until your mother returns.'
- b. HITHER [Gecaga and Kirkaldy-Willis 1953: 54]
ũka haha
 IMP.come here
 'Come here.'
- c. HENCE [GKY Ex 33:15]
Angĩkorwo ndũ-gũ-twarana hamwe na ithũ, ndũ-ga-tũme
 COND 2SG-NEG-go.with together with 1PL 2SG-FUT-cause
tu-um-e haha.
 1PL-leave-SBJV here
 "If Your presence does not go [with me], do not lead us up from here.

The examples in (253) show how the proximal, non-extended SDD *haha* is used without additional marking for P/G/S. The stative verb *ikara* 'stay' is used in (253a) to induce a Place reading. The dynamic verb 'come' in (253b) is used to express Goal, while *uma* 'leave' induces a Source reading in (253c). This is, however, not the only possibility to express Source. There is a preposition *kuuma* 'from', which can be combined with any of the SDDs and SIs.

- (254) Kikuyu overtly marked Source constructions
- a. HENCE [GKY Luke 4:9]
Angĩkorwo wee nĩ-we Mũrũ wa Ngai, wĩ-gũithi-e
 COND 2SG 3SG-POSS son of God 2SG-fall.CAUS-SBJV
thĩ kuuma haha.
 down from here
 'If You are the Son of God, throw Yourself down from here.'
- b. THENCE [GIKDC Deut 10:7]
Kuuma hau ma-kĩ-gwata rũgendo
 from there 3PL-REM.CONSEC-take.hold journey

ma-gĩ-thĩ *Gudugoda.*
 3PL-REM.CONSEC-go Gudgodah
 ‘From there they traveled to Gudgodah.’

The constructions *kuuma haha* ‘from here (non-extended)’ in (254a) and *kuuma hau* ‘from there (other field, non-extended)’ in (254b) show that there is the possibility to mark Source overtly in Kikuyu. Thus, apart from the P=G=S pattern, there is also an alternative P=G≠S pattern. Kikuyu is no individual case in the Bantu languages, although there are cases which are not as clear.

In Swahili [AF-43], for example, all three relations may be expressed without any overt marking. There is an SI pronoun *wapi* ‘where’ and six different SDDs¹⁰⁴ *hapa* ‘here (near speaker, specific)’, *huku* ‘here (near speaker, unspecific)’, *hapo* ‘there (near hearer, referential, specific)’, *huko* ‘there (near hearer, referential, unspecific)’, *pale* ‘there (away from both, specific)’, and *kule* ‘there (away from both, unspecific)’.

- (255) Swahili proximal SDDs
- a. HERE [NEN 1 Kings 18:8]
Eliya yuko hapa.
 Elijah 3SG.be here
 ‘Elijah is here.’
- b. HITHER [NEN Matt 14:18]
Ni-lete-eni hivyo vi-tu hapa.
 1SG-bring-IMP.PL DEM Cl.7/8.PL-thing here
 ‘Bring them here to me!’
- c. HENCE [NEN Ex 33:15]
Kama Uso wako ha-u-end-i pamoja nasi,
 if face 2SG.POSS NEG-2SG-go-NEG together with.us
u-si-tu-ondo-e hapa.
 2SG-NEG-1PL-remove-SBJV here
 ‘If Your presence does not go [with me], do not lead us up from here.’

Similar to the cases above, stative and dynamic verbs are used to express P/G/S in (255). The locative verb *kuwako* ‘to be (located at)’ is used for Place in (255a). The motion verb *kuletea* ‘to bring’ induces a Goal reading in (255b), whereas *kuondoa* ‘to remove’ induces a Source reading in (255c). There is, however, also the possibility to express Source by means of the preposition *kutoka* ‘from’.

104 Similar to Ekoti (cf. fn. 98), there are even more forms in Swahili as “insideness” can also be expressed, cf. Section 6.1.3.

- (256) Swahili overtly marked Source construction [NEN Luke 4:9]
Kama wewe ndiwe Mwana wa Mungu,
 if 2SG 2SG.be son of God
ji-tup-e chini kutoka hapa
 REFL-throw-SBJV down from here
 ‘If You are the Son of God, throw Yourself down from here.’

In (256), Source is expressed with the expression *kutoka* ‘from’. The status of *kutoka* is, however, not clearly that of a preposition. It is also the infinitive form of the Source inducing verb ‘to come from’. Compare the two sentences in (257), which are different translations of the same Bible verse.

- (257) Swahili WHENCE
- a. *kutoka* as preposition [BHN 2 Kings 20:14]
Na, wa-me-ku-j-ia kutoka wapi?
 and 3PL-PERF-INF-come-PREP.EXT from where
 ‘From where have they come to you?’
- b. *(ku)toka* as verb [NEN 2 Kings 20:14]
 [...] *na wa-me-toka wapi?*
 and 3PL-PERF-come.from where
 ‘From where have they come to you?’

A combination of the motion verb *kuja* ‘to come’ and *kutoka* ‘from’ is used in (257a) to express Source. In (257b), however, an inflected form of the Source inducing verb *kutoka* ‘to come from’ is used. While the case is clear in (257b), i.e. that a Source inducing verb is used with a zero-marked SI form, there are two possibilities for (257a): Either a motion verb is used in combination with an overtly marked SI construction *kutoka wapi* ‘from here’ or the Source reading is induced by a kind of serial verb construction, in which an inflected motion verb and the infinitive form of *kutoka* ‘to come from’ precede the zero-marked SI *wapi* ‘where’. Two major points militate against the second hypothesis. For one thing, it is sufficient to use *kutoka* ‘to come from’ as a main verb, so that there is no reason to use it in a serial verb construction with another verb that expresses ‘to come’. And for another thing, Swahili does generally not employ serial verb constructions. Furthermore, several dictionaries (e.g. Awde 2002 or the online dictionary africanlanguages.com) list *kutoka* as a preposition with the meaning ‘from’. For these reasons, we decided to treat *kutoka* as a preposition used to overtly mark Source constructions. This case may be an iconic example of a motion verb becoming an adposition through a grammaticalization process, as the status of *kutoka* assumably changed from a dynamic verb ‘to come from’ to that of a preposition ‘from’.

3.5.1.3 P=G=S in Songhay languages

The two Songhay languages in our sample similarly display the P=G=S pattern in both SIs and SDDs. In the Eastern Songhay language Koyra Chiini [AF-22], there are the deictic adverbs *nee* ‘here’, *doodi* or *dooti* ‘there (anaphoric)’, and *hentu* ‘over there (deictic)’ as well as the interrogative *man* ‘where’. The anaphoric *doodi* “is possibly still recognizable formally as the combination of *doo* ‘place’ and Def *di*”, although “*doo* ‘place’ is now used mainly as a postposition” and “[t]he usual noun for ‘place’ is *nangu ~ nongu*” (Heath 1998: 62). It is used to denote “a location that has been established by the prior discourse or is otherwise cognitively accessible” (Heath 1998: 353). In contrast to that, “*hentu* is a deictic ‘there’ adverbial which introduces a new location as discourse referent”, whereas “*nee* is the basic proximal ‘here’ adverbial” (Heath 1998: 353). For *nee*, however, “[s]ince every speech event presupposes a ‘here’ space, the distinction between deixis and anaphora is blurred” (Heath 1998: 353). All three expressions may be used to express Place, Goal, and Source alike, as demonstrated exemplarily with the proximal deictic *nee* ‘here’ in the examples below.

(258) Koyra Chiini

a. HERE [Heath 1998: 150]

har di kaa goo nee
man DEF REL be here
‘the man who is here’

b. HITHER [Heath 1998: 56]

a har ngu o kaa nee
3SG.SUBJ say LOG.SG.SUBJ IMPF come here
‘He said he would come here.’

c. HENCE [Heath 1998: 359]

farru foo woo daa kaa hun nee ka koy,
lot one DEM EMPH REL leave here INF go
saarey woo yo nda cere game
cemetery DEM PL with friend among
‘this same lot which goes from here to (a point) between the (two) cemeteries.’

Depending on the verb, *nee* may express ‘here’, ‘hither’, or ‘hence’. In combination with a stative verb like *goo* ‘be’, Place is expressed as in (258a). Dynamic verbs, however, are used to express either Goal as in (258b) or Source as in (258c). Heath (1998: 358) explains that verbs play a greater role in expressing motion (and path) structure in Koyra Chiini than in English. He lists the major lexical resources for describing “an event consisting of a person going from location A to location B” (Heath 1998: 358), cf. Table 32.

Table 32: Major motion verbs in Koyra Chiini (cf. Heath 1998: 358).¹⁰⁵

Verb	Gloss	Other senses
<i>kaa</i>	'come'	'become'
<i>koy</i>	'go'	–
<i>bisa</i>	'pass by, proceed further'	'surpass, be or do more (than ...)'
<i>dira</i>	'be in motion, set off'	'walk, travel'
<i>too</i>	'arrive (at), reach'	'be equal; suffice'
<i>hun</i>	'leave, depart from (place)'	'come off, (e.g. leaf) fall off'

The verb *kaa* is used to describe the motion towards the deictic center, whereas *koy* denotes “motion in any other direction (or [...] motion when no deictic center is active)” (Heath 1998: 358). Just like in (258b), “*kaa* is often used to denote an undifferentiated complete trajectory including final arrival, and is optionally accompanied by the deictic adverb *nee*” (Heath 1998: 358–359). (258c) shows how a combination of two dynamic verbs is necessary to express Source. Heath (1998: 359) explains:

The verb *hun* ‘leave, depart from’ is very important since [Koyra Chiini] has no postposition translatable as ‘from’ in the directional sense. Therefore, ‘I came from A’ must be translated by a two-VP sequence of the type ‘I left (*hun*) A to come (*kaa*) here.’ To express noncentripetal ‘I went from A to B,’ one says ‘I left (*hun*) A to go (*koy*) to B.’ This construction can also be used to indicate in motional terms the extend of a space, defined as ‘leaving’ (=starting at) one point and ‘going’ to another [...].

In certain constructions, however, the movement from one place to another may be expressed with the particle *nda*, which may assume different functions in different types of constructions. “With deictic adverbials, *nda* usually indicates the measured distance from some reference location to the denoted location” (Heath 1998: 119) as demonstrated in (259).

- (259) Koyra Chiini ‘from here to here’ [Heath 1998: 119]
a *koy* [*nee nda nee*]
 3SG.SUBJ go here and here
 ‘He went from here_x to here_y’

¹⁰⁵ For a more extensive list of motion verbs in Koyra Chiini, the interested reader is referred to Heath (1998: 360).

Nevertheless, neither particles nor adpositions usually play a role in the semantic distinction between Place, Goal, and Source, as “these distinctions are expressed (if at all) by verbs or inferred from the context” (Heath 1998: 355). Even the two “[l]ocative postpositions *ra* and *kuna* cannot be added directly to *nee*, *doodi* ~ *dooti*, or *hentu*” (Heath 1998: 353).

Although largely similar, there are some differences in Koyra Chiini’s closely related neighboring language Koyraboro Senni [AF-23], a Western Songhay language. Similar to Koyra Chiini, a spatial interrogative *man* ‘where’ and the deictic adverbs *nee* ‘here’ and *hendi*, *henti*, or *hetti* ‘there’ are employed. Furthermore, constructions consisting of the ‘place’ noun *nongu* or *nonguru* and the definite singular suffix *-oo* followed by either *woo* or *din* can be found. While the demonstrative *din* is always used for anaphora, the demonstrative *woo* (and its plural form *w-ey*) “can range over the complete proximal to distal scale, and can be deictic (pointing) or discourse-anaphoric” (Heath 1999: 130). Thus, the constructions *nong-oo woo* or *nongur-oo woo* both meaning ‘there’ and *nong-oo din*, *nongur-oo din*, or the short form *noo din* all denoting ‘there (anaphoric)’ belong to the group of major spatial demonstrative adverbs in Koyraboro Senni (cf. Heath 1999: 83).

Similar to Koyra Chiini, all of the expressions mentioned above can be used for Place, Goal, and Source alike. They are, however, “optionally (but quite frequently) followed by Loc *ra* with no appreciable change in meaning other than to make the adverbial usage explicit”, while “*ra* can be glossed variously as a static locative, an allative, or even an ablative, depending on the verb(s) in the construction” (Heath 1999: 84).

(260) Koyraboro Senni HERE with and without LOC postposition

- a. *agey bara nee* [Heath 1999: 222]
 1SG.F exist here
 ‘It is I [focus] who am here.’
- b. *mey bara [nee ra]?*
 who? exist [here LOC]
 ‘Who [focus] is here?’

The example sentences in (260) demonstrate how *nee* ‘here’ can be used with the general locational postposition *ra* (260b) or without it (260a) in similar constructions. The meaning does not change. Thus, Koyra Chiini and Koyraboro Senni share the same P=G=S pattern, even though Koyraboro Senni optionally employs a locational postposition which can, however, be used in all three relations.

3.5.2 P=G=S in the Americas

The maximally indistinct pattern is attested in 37% of the SI paradigms of the American subsample in Stolz et al. (2017). As explained in Section 3.1.2, this is due to a Mesoamerican bias since Stolz et al.'s (2017) Pan-American sample consists of almost 47% Mesoamerican languages, 26% North American languages and 27% South American languages. In our own sample, North America is overrepresented with 46% due to better access to written grammars of North American indigenous languages in comparison to South America and Mesoamerica. South America is represented with 30% and Mesoamerica with 24%. Due to the different areal distribution, the shares of the patterns are different in our sample in comparison with Stolz et al. (2017). While the P=G=S pattern is the most prominent one in Stolz et al.'s (2017) sample languages, it is only the third most prevalent in our sample with only a marginal distance away from the P=G≠S pattern in second place. 25.0% of the SI paradigms in the Americas employ the maximally indistinct pattern, while a share of around 21% of the two degrees of SDDs each give evidence of this pattern. The 16 languages by which Pattern V is at least partially employed are displayed in Table 33.

Although the great diversity of language families in our Pan-American subsample prevents us from drawing any definite conclusions about trends and tendencies for syncretism patterns the Americas, it is still noticeable that all three Mayan languages and three out of six Uto-Aztecan languages in our sample attest to the P=G=S pattern. More than half of the American P=G=S languages in Table 33 are Mesoamerican, rendering this pattern especially prominent in this area.

Table 33: American languages that attest to P=G=S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Cayuga	AM-7	Iroquoian	✓	✓	✓
Choctaw	AM-8	Muskogean	✓	NA	X
Ch'ol, Tila	AM-9	Mayan, Cholán-Tzeltalan	✓	✓	✓
Cubeo	AM-13	Tucanoan, Western Tucanoan	✓	✓	✓
Hualapai	AM-17	Cochimi-Yuman, Yuman	✓	X	X
Mapudungun	AM-26	Araucanian	✓	✓	X
Movima	AM-27	Movima	✓	✓	✓
Nahuatl, Guerrero	AM-30	Uto-Aztecan, Aztecan	✓	✓	✓
Otomí, Sierra	AM-34	Oto-Manguean, Otomian	✓	✓	✓

Languages	Appendix	Affiliation	SI	ND	FD
Pipil	AM-36	Uto-Aztecan, Aztecan	✓	✓	✓
Popoluca, Highland	AM-37	Mixe-Zoque	✓	X	X
Totonac, Filomeno Mata	AM-42	Totonacan, Totonac	✓	X	✓
Totonac, Upper Necaxa	AM-43	Totonacan, Totonac	✓	NA	✓
Tzotzil, Zinacantán	AM-45	Mayan, Cholan-Tzeltalan	✓	✓	✓
Yaqui	AM-47	Uto-Aztecan, Cahitan	X	✓	✓
Yine	AM-48	Arawakan, Purus	✓	✓	✓
Yucatec Maya	AM-49	Mayan, Yucatecan	✓	✓	✓

3.5.2.1 P=G=S in South America

The Tucanoan language Cubeo [AM-13] organizes spatial deictic relations by means of telic motion verbs. Auxiliary verb constructions are frequently found in Chacon's (2012) data. The proximal deictic stage is expressed through a proximal deictic base 'jo- plus the locative suffix *-i*. The distal stage is only attested in form of the anaphoric base *dō-* suffixed by locative *-i*, as exemplified in (261).

- (261) Cubeo indistinct Source [Chacon 2012: 340]
- | | | | | | |
|----------------|----------------|--------------------|------------|---------------|-------------|
| <i>kopa-dī</i> | <i>da-dī</i> | <i>dō-i</i> | <i>dia</i> | <i>korika</i> | <i>bahi</i> |
| come.back-CNV | come-CNV | ANAPH.ICO-LOC | river | middle | exactly |
| <i>'je</i> | <i>hoki=ki</i> | | | | |
| INDEF | tree=CL:tree | | | | |
- '(the tinamou that one was hunting) came back from there until the middle of the river towards a tree'

Cubeo SIs are also P=G=S syncretic. Example (262) gives the Source construction which features the unmarked SI.

- (262) Cubeo Source SI [Chacon 2012: 352]
- | | |
|--------------------|-----------------------|
| <i>'āri</i> | <i>da-ji=dī?</i> |
| where | come-NMZ.M=2SG.INTERR |
- 'where are you coming from?'

In the same vein, the Bolivian Amazonian language Movima [AM-27] serves as a prime example for a coding system that employs indistinct and covert marking, cf. the examples in (263):

- (263) Movima
- a. WHERE [Haude 2006: 315]
naya' kus májniwa=*n*
 where ART child.of=2
 'Where is your son?'
- b. WHITHER and HITHER [Haude 2006: 178]
di' éteła=i di' naya' joy-na=*i*, joy **ney** jey-na=*i*
 HYP what=PL HYP where go-DR=PL SPC here far-DR=PL
nokowa
 right.now
 'Where may they be going? They must be coming here.'
- c. THITHER [Haude 2006: 189]
kulro' en-*cheł* **nosde:** n-*as*
 DEM.RTR.M stand-REFL/RECP there OBL-ART.N
 'He is going over there to stand in the street.'
- d. THENCE [Haude 2006: 294]
isko **nosde:** n-*as* Sékure
 PRO.PL.ABST there OBL-ART.NEUT Sécure
 'They (were) from over there, from Sécure.'

The initial *n-* present in Movima deictics marks the oblique case. A Movima SDD consists (at least diachronically) of a neuter or pronominal demonstrative. The demonstrative is preceded by the oblique case prefix in order to create a demonstrative adverb which, in turn, encodes temporal or spatial deictic relations (Haude 2006: 144). Indeed, Movima has a rich demonstrative set. Positional demonstratives form a different subset, e.g., 'moving towards speaker' and 'moving away from speaker'. These demonstratives cannot be shown to employ genuine P/G/S functions on the basis of Haude's (2006) instructive grammar. This behavior stands in opposition to that of the demonstrative adverbs described in (263) above. Notice that the adverbial usage of other forms within the demonstrative subsets is indicated by the "elevated" class (cf. Section 6.1.1 on vertical relations).

Among our four Arawakan sample languages, Yine [AM-48] is the only one with a P=G=S pattern in both SI and SDD paradigms. The mirative marker =*he* is attested twice in combination with the SI form *hinaka* in Goal function. As a mirative marker, =*he* does not add or modify any spatial deictic meaning. It is generally translated as 'where (on earth)' by Hanson (2010: 328). The genuine SDDs *hewi* 'here' and *hawla* 'there' encode the proximal and far deictic stage, respectively. Nevertheless, as opposed to *hewi* (PROX), *hawla* (DIST) does not combine with any morphology and functions neither as a noun modifier nor

predicate head (Hanson 2010: 59). Furthermore, the existential or anaphoric *wane* “has only a locational sense if it modifies a predicate with locational semantics” (Hanson 2010: 59). *Wane* is attested in distal deictic or anaphoric settings, such as (264e). Similarly, *hawla* functions as a distal deictic or anaphoric adverb (264f). The P=G=S syncretism is illustrated in (264a-c) using the proximal locative adverb. Only the proximal adverb is attested in predicate head position (264d). Examples (264e) and (264f) show the same distribution of non-deictic *wane* in spatial constructions with zero-coded spatial relations.

- (264) Yine SDDs
- a. HERE [Hanson 2010: 31]
hewi nwaçet-hita ~ hewi nwaçeta hita
hewi n-hwa-çe-ta hita
 here 1SG-be-FREQ-VCL 1SG
 ‘I am always here.’
- b. HITHER [Hanson 2010: 57]
hewi napokatka
hewi n-hapoka-tka
 here 1SG-arrive-PFCTV
 ‘I arrived here.’
- c. HENCE [Hanson 2010: 333]
cani halikaka hewi rişpakinitkana makliçine
 cani halikaka **hewi** r-hişpaka-ini-tka-na makliçi-ne
 now indeed here 3-exit-TEMP-PFCTV-3PL youth.SG.M-PL
 ‘Now, indeed, let the boys leave from here.’
- d. HERE as predicate head [Hanson 2010: 254]
hewno
hewi-no
 here-1SG
 ‘I am here’
- e. anaphoric THITHER [Hanson 2010: 86]
hiyahni wane hima yana
 hiyaho-ni **wane** hima Ø-ya-na
 then-DECL there QUOT 3-go-3PL
 ‘Then they went there, reportedly.’
- f. THERE [Hanson 2010: 59]
hawla ntşanicika
hawla n-tşanica-ya-ka
 there 1SG-invite-APPL-PASS
 ‘I am invited there.’

The presence of the applicative *-ya*, which may stem from the verb *ya* ‘go’, in (264f) suggests that non-spatial verbs such as *tʃanica* ‘invite’ require the addition of the suffix to encode a locational reading.¹⁰⁶ As far as we can see, the suffix is not found in constructions involving verbs of a genuinely spatial, static, or dynamic nature in Hanson (2010). For distal and probably anaphoric spatial notions, the gender-sensitive demonstratives *tika* ‘there (male singular)’ or *toka* ‘there (female singular)’ are attested in Hanson (2010) as well.

The *unmarked* spatial relations P/G/S in form of adverbs are zero-marked in the Yine spatial system. This is attested in dynamic constructions and with non-deictic spatial forms in Hanson (2010). It follows that the P/G/S meanings are expressed through the verbs’ semantics. There are less deictic and more environment-bound adverbs such as *hawaka* ‘upriver’ and *mala* ‘downriver’ which can indicate Place but also Direction or Goal. Overall, it can be stated that there is no dedicated morphological marking of spatial relations in Yine P/G/S constructions, despite the use of, for example, the elative *-pa*, which usually adds a purposive sense (Hanson 2010: 227). The elative suffix may further encode “motion from the deictic centre” (Hanson 2010: 348) in some spatial contexts. Yet, it is primarily found to encode a variety of “change of state” meanings (Hanson 2010: 229).

Further, the P=G=S pattern does not only apply to zero-coding languages from South America. The Araucanian language Mapudungun [AM-26] is analyzed as a ‘Source-Goal indifferent’ language by Wälchli and Zúñiga (2006). The analysis is based on the instrumental suffix *-mew* which marks Place, Goal, and Source alike. Smeets (2008: 62) explains that “[t]he instrumental does not only indicate a place where, but also a direction in which, from which, etc. The ambiguity of the suffix *-mew* as a direction marker may be cleared up by adding a verb which indicates direction [...]”. This applies to both non-deictic and deictic settings. In the ARNNT Bible, another apparently bound word form frequently co-occurs with the demonstratives to derive SDDs, i.e. *püle*. In Hernández Sallés et al. (2006), the form is referred to as a postposition that marks Place or Direction but in a “less precise” fashion than *-mew*.¹⁰⁷

106 This hypothesis is further supported by the fact that it also works vice versa, i.e. when it is “used with the ambiguous location/manner adverb *wane* ‘there, thus’, *-ya* disambiguates its sense in favour of the location.” (Hanson 2010: 210).

107 Smeets (2008: 84), on the other hand, refers to constructions of demonstratives followed by *püle* as indicating a proximal, medial, or distal ‘side’. This is supported by an analysis of selected ARNNT Bible phrases, such as Luke 16:26, which we could not, however, gloss to completion.

Mapudungun SIs are P=G=S syncretic and feature the polyfunctional interrogative form *chew*. The SDDs are either followed by *-mew* or *(-)püle* or stand in isolation.

- (265) Mapudungun SDDs
- a. Zero-coded HERE [ARNNT Acts 9:10]
Tüfa *ta-ñi müle-n, Ñidol.*
 here ART-POSS3 be-IND.1SG lord
 ‘Here I am, Lord.’
- b. Default-coded HENCE [ARNNT Luke 13:31]
Tripa-tu-nge tüfa mew, Erode ayü-le-y ta-mi
 leave-TRANS-2SG here PPOS Herod like-IND-3SG ART-POSS.2SG
langüm-a-e-t-ew.
 kill-NRLD-IDO-AVN-DAT.S
 ‘Leave (and go away from here), because Herodes wants to kill you.’
- c. Default-coded HITHER [ARNNT Acts 17: 6-7]
Tüfa-chi pu wentru ta welu-rakiduum-el-fi kom mapu
 this-ADJ COLL man the upside-think-BEN-EDO all land
müle-chi pu che, ka femngechi akuy engün
 be-ADJ COLL person and such came.hither they
ta tüfa mew, Jason ta llow-fi tüfa-chi pu wentru
 ART here PPOS Jason ART receive-EDO this-ADJ COLL man
kisu ñi ruka mew!
 self POSS3 house PPOS
 ‘These men who have caused trouble all over the world have now come here, and Jason has welcomed them into his house.’
- d. Clause-linkage strategy including HENCE [ARNNT Matt 17:20]
Tripa-tu-nge ta tüfa mew. Kañpüle amu-tu-nge.
 leave-VBZ-IMP.2SG ART here PPOS elsewhere go-VBZ-IMP.2SG
 ‘Go from here to there.’ (lit. ‘Leave here. Go somewhere else’)
- e. Zero-coded THENCE [Zúñiga 2006: 183]
Fey(-)mew *kon-mawida-iñ.*
 from.there enter-mountain-1PL.IND
 ‘From there we went into the mountain.’

Example (265d) shows that Mapudungun assigns a designated clause to each motion event if two Grounds need to be expressed. This constitutes a typical trait of P=G=S languages. A comparison of (265a) with the other examples from (265b) to (265e) creates the impression that only dynamic spatial deictic motion is coded overtly by the default marker. The ARNNT Bible, however, contains

phrases with static spatial deictic relations that co-occur with (-)*mew*, such as the negated construction in (266).

- (266) Default-coded HERE [ARNNT Luke 24:6]
Nge-la-y tati tüfa mew!
 exist-NEG-IND ART here PPOS
 ‘He is not here[!]’

All in all, Mapudungun is a language that, although optionally, frequently employs an indistinct spatial marker to indicate primarily Goal and Source but also Place. There is a certain similarity to Pipil’s system (see Section 3.4.2). To elaborate, there is no dedicated morphology to mark P/G/S but a general marker that assigns an SDD function to the demonstratives. Mapudungun’s system leans towards full syncretism. Nonetheless, since the marker is not attested in all cells of the paradigm [AM-26] and given that the attested instances of (-)*mew* and (-)*püle* vary, the paradigm remains inconsistent. Spatial deixis involving these markers in Mapudungun demands a more in-depth study to reveal (i) the conditions for zero-marking and (ii) shed light on the use of (-)*mew* and (-)*püle*.

3.5.2.2 P=G=S in Mesoamerica

The neutralized pattern is especially prominent in Mesoamerica where the languages appear to have a preference for verb-centric encoding of P/G/S. Out of twelve Mesoamerican sample languages, nine display the pattern at least partially. The Tila variety of the Mayan language Ch’ol [AM-9] shows clear P=G=S syncretism in the interrogative paradigm according to the Bible translation, cf. (267).

- (267) Ch’ol (Tila) SIS
- a. WHERE [CTUNT Luke 17:17]
Baqui an-∅ jini yambΛ nueve?
 where EXI-B3 DEM other nine
 ‘Where are the other nine?’
- b. WHITHER [CTUNT John 13:36]
C Yum, baqui mi quej a majl-el?
 Lord where IMPF leave A2 DIR:away-NF
 ‘Lord, where are you going?’
- c. WHENCE [CTUNT Matt 13:27]
baqui tyΛlem jini mach'Λ wen bΛ pimel?
baqui tyΛl-∅-em jini mi-a-ch'Λ wen bΛ pimel
 where come-B3-PTCPL DEM IMP-A2-take bad EMPH plant
 ‘... where, then, did these weeds come from?’

The question word *baqui* is employed in all attested P/G/S contexts, so that the static or dynamic spatial deictic component is encoded in the semantics of accompanying the verb. In (267b) above, a directional marker *majl-e(l)* (or *ma*) ‘away’ additionally marks Goal. The marker is derived from the verb *majl* ‘to go’. As becomes apparent in the SDDs, Tila Ch’ol regularly employs directionals that take the nonfinite suffix *-el* and function as secondary verbs. These directionals are derived from intransitive motion verbs. Vázquez Álvarez (2011: 165) identifies eleven directionals. Items such as *k’oty-e(l)* ‘here to there’ (from *k’oty* ‘to arrive here’) co-encode the two spatial deictic functions. Derived Place notions are also attested, cf. *käyty* ‘to stay’ → *käyty-ä(l)* ‘remain’.

In a dynamic spatial deictic construction, a main verb co-occurs with a directional. The Ground is expressed via the deictic particles *wΛ* ‘here’, *la* ‘here (closer)’, *ya* ‘there’, and *ix* ‘there (further away)’ which function as spatial adverbs (Vázquez Álvarez 2011: 275), cf. (268).¹⁰⁸

- (268) Ch’ol (Tila) SDDs [CTUNT Matt 14:18; Matt 9:9]
- a. *Ch’Am-∅-Λ-la* **tyΛ-el** **wΛ** *ba’-añon.*
bring-B3-IMP-PL3 DIR:toward-NF here where-EXI.1SG
‘Bring them here to me.’
- b. *Che’ jini, ti loq’u(el)-∅-i* **majl-el** *Jesús ya’-i.*
as DEM LK leave-B3-INTR.PFCTV DIR:away-NF Jesus there-ENC
‘As Jesus passed on from there.’

In (268a) above, Ground is expressed overtly and the respective SDD form remains unchanged, so that we may speak of P=G=S syncretism. However, mildly grammaticalized secondary verbs qualify as P/G/S markers in Tila Ch’ol, both in isolation and in combination with the spatial adverbs. This becomes clearer in light of other Mayan languages where secondary verbs seem to have progressed further on the grammaticalization cline towards genuine and obligatory directional markers (cf. Section 6.4.2 grammaticalization).

A Mesoamerican member of the Uto-Aztecan family which also attests to pervasive indistinct coding is Guerrero Nahuatl [AM-30], which behaves similarly to Classical Nahuatl. In view of Classical Nahuatl’s general spatial constructions, Sasaki (2011: 8) follows Launey (1979: 55) and Andrews (2003: 445–446) in arguing that “various spatial roles such as Location, Goal, or Source can be and usually are encoded by the same locative form”. Sasaki (2011) thus identifies Classical

¹⁰⁸ Except *la*, the deictic particles may appear post-verbally as reduplicated (Vázquez Álvarez 2011: 275). We could, however, not identify a change in meaning or function of a spatial deictic construction via reduplication.

Nahuatl as *path neutral*, but not as *radically verb-framing* as, for instance, Yucatec Maya (Bohnenmeyer and Stolz 2006) due to some general locative and dynamic direction markers that may apply. In relation to non-deictic spatial contexts, Hill and Hill (2004) analyze the modern Nahuatl variety Malinche Mexicano and find that locational affixes are generally omitted, and ‘come’ and ‘go’ verbs suffice to encode P/G/S. Notice therefore that the SI pattern in Classical Nahuatl is P=G=S via the word form *cān(in)* (cf. Stolz et al. 2017: 524).

The deictic declarative side of Classical Nahuatl is also predominantly P=G=S syncretic, but with two overabundant options, i.e. the directional prefixes *huāl-* ‘hither’ and *on-* ‘thither’ (Sasaki 2011: 14). In contemporary Guerrero Nahuatl, we also find P=G=S syncretism in the SIs, cf. (269).

- (269) Guerrero Nahuatl SIs [NGU Luke 17:17; John 13:36; Matt 13:27]
- a. **Canon** *nemi-j on ocse chicnahui-mej?*
where be-3PL ART other nine-PL
‘Where are the other nine?’
 - b. *ToTeco, canon tiau?*
Lord where 2SG.go
‘Lord, where are you going?’
 - c. [**C**]anon, *tej, o-hualeu on xcuajli xojtli?*
where FIL PRET-come ART weeds
‘Where, then, did these weeds come from?’

Parallel to the SI *canon* ‘where = whither = whence’ in (269), the spatial adverbs *nican* ‘here’ and *ompa* ‘there’ remain unmodified in Place, Goal, and Source constructions. That is to say that there is no overt coding in the form of affixation, suppletion, or addition of an adposition, cf. examples (270)–(272).

- (270) Guerrero Nahuatl Place [NGU Acts 9:10; Matt 2:15]
- a. **Nican** *ninemi noTeco.*
here 1SG.be Lord
‘Here I am, Lord.’
 - b. **Ompa** *o-nen-quej hasta ijcuac o-mic Herodes.*
there PRET-live-PL until when PRET-die Herod
‘[They] remained there until the death of Herod.’
- (271) Guerrero Nahuatl Goal [NGU Matt 14:18; John 11:18]
- a. *X- nech-ajcuili-can nican.*
IMP REFL-provide-IMP.PL here
‘Bring them here to me.’
 - b. *niman ocsejpa ti-c-nequi t-ia-s ompa?*
and again 2SG-OBJ.DEF-want 2SG-go-FUT there
‘Now you want to go back there?’

- (272) Guerrero Nahuatl Source [NGU Luke 13:31; Matt 9:27]
- a. *X-mej-cuani nican pampa Herodes qui-nequi*
 IMP-PL-move.away here because Herod 3SG.OBJ-want
mitz-micti-s.
 2SG.OBJ-kill-FUT
 ‘Leave and go away from here, because Herod wants to kill you.’
- b. *Jesús ompa o-quis.*
 Jesus there PRET-leave
 ‘(As) Jesus went on from there.’

Overt coding, as is realized in the Uto-Aztecan sister language Pipil by means of the freestanding element *ka* (cf. Section 3.4.2), is not encountered in the Bible translation for Guerrero Nahuatl.¹⁰⁹ Interestingly, a suffixal element *-ka* is found in the dynamic spatial interrogative forms *ampaka*, *kanika*, and *kanka*. This stands in opposition to the static SI *kanon* cited by Aburto and Mason (2005) in their comparative vocabulary draft. Similarly, the dynamic SDDs in this doculect show a final *-ka*, cf. *nanika* (PROX), *ompaka* (MED), and *ne ika ~ nepaka* (DIST). Conceivably, a comparison between several modern Nahuatl varieties would bring forth interesting insights into coding strategies of spatial deictic relations.

The variety of Guerrero Nahuatl as displayed in the NGU Bible translation thus attests to zero-coding and verb-framedness in the realm of spatial deixis. However, with additional data on modern Nahuatl varieties in mind, we expected to observe contact phenomena such as the intrusion of Spanish prepositions. Hober (2019), for example, discusses the intrusion of Spanish *de* into the languages of Mesoamerica and shows that the preposition serves to encode an ablative function in Mexicanero (Uto-Aztecan), Nahuatl de Acaxochitlán (Uto-Aztecan), Otomi (Oto-Manguéan), Zoque (Mixe-Zoque), and Chontal (Tequistlatecan). As for Guerrero Nahuatl, our analysis parallels findings by Wälchli and Zúñiga (2006) who analyzed Guerrero Nahuatl as Goal-Source indifferent. Other grammatical or lexical descriptions of Guerrero Nahuatl, on the other hand, attest to overt coding of directionality (for a discussion, cf. Robbers and Hober 2018).

Yaqui [AM-47], a member of the Cahitan branch of the Southern Uto-Aztecan languages, functions as the line separating the indistinctly coding languages of the Uto-Aztecan group of the South and the distinctly coding

¹⁰⁹ Pipil SDDs therefore seem more complex due to the many logical possibilities that result from the optional employment of prepositional *ka*. The overall marking strategy in Pipil leads to increased length and therefore growing complexity from Place via Goal to Source contexts (cf. Section 3.4.2).

members that are located further in the North. Yaqui has a split system with overt and distinct marking in the SIs but fully syncretic and zero-coded SDDs. The SIs are formed by an indefinite pronoun cliticized by the interrogative marker =*sa*, the combination of which suffices to inquire about WHERE. For WHITHER, however, a ‘site’ morpheme *bíčáa* attaches directly to the pronoun and precedes the clitic, while WHENCE is derived by internal change in the SI base. Table 34 offers a comparison between the two sources citing Yaqui SIs. It becomes apparent that the allative or directional marking is lost in the Goal interrogative in the newer description. Additionally, the Source interrogative still attests to weak stem suppletion but with a more complex ending.¹¹⁰

Table 34: Comparison of two descriptive sources for Yaqui SIs.

SR	SIs in Dedrick and Casad (1999)	SIs in Valenzuela et al. (2016)
P	<i>háak=sa ~ hakún=sa</i> ‘where=Q’	<i>jaksa ~ jaku’u ~ jausa</i>
G	<i>hakún-bíčáa=sa</i> ‘where-site=Q’	<i>jakun</i>
S	<i>hakú’ubo=sa</i> ‘from:where=Q’	<i>jakku’ubotana</i>

The commonality between both SI paradigms is that P/G/S are marked in a maximally distinct fashion, i.e. meeting the P≠G≠S pattern. Conversely, in the realm of Yaqui SDDs, zero-coding applies to many Place and Goal construction and potentially also to Source contexts. As Belloro and Guerrero (2018: 105) assert: “Their interpretation depends on the discourse or situational context and represents the most semantically bleached form of spatial reference”. Examples (273a–b) show that P/G/S are unambiguously zero-coded, while some forms cited in Appendix II [AM-47] are attested for certain functions only on the basis of Dedrick and Casad (1999). Example (273c) also demonstrates that directionality is overtly marked on explicit Grounds in Yaqui, as opposed to pervasive zero-coding of deictic SRs.

¹¹⁰ Belloro and Guerrero (2012: 9) provide some information on the markers encountered in the SI paradigm found in Dedrick and Casad (1999). In their analysis, the morpheme *-bicha* (cf. *bíčáa*) is cited as a locative postposition meaning ‘toward’, while the postposition *-po* (cf. the last segment of *hakú’ubo*) signifies ‘in/from’, and the postposition *-betana* (cf. the ending *-botana* in the S interrogative from Valenzuela et al.’s [2016] data) denotes ‘in/from’. According to them, the marker *-bicha*, however, indicates transversal and atelic motion, while a final *-u* indicates telic movement.

- (273) Yaqui SDDs [Dedrick and Casad 1999: 216; 86]
- a. *yoéme húm tekípanoa*
 person there work
 ‘A man is working there.’
- b. *húm né káa wéama-n*
 there 1SG NEG walk-PCN
 ‘I was not walking there.’
- c. *hunáma ‘intok bátwe-u kó'om-siika*
 there and river-DIR down-go:PAST
 ‘And from there he went down to the river.’
- d. *hunáma béha temái-wa*
 there well question-PASS
 ‘He was questioned there.’

Taking into account Belloro and Guerrero’s (2012) data and analyses, Yaqui is a P=G=S language in the declarative realm. The zero-coding of Yaqui SDDs fits with the picture drawn by other sample languages of the Mesoamerican *Sprachbund*. The overt and distinct coding of the corresponding SIs, however, is an isolated case in our sample. Yet, there are some overt marking strategies in spatial deictic constructions. Belloro and Guerrero (2012: 10–11) explicitly cite spatial deictics, among those a specialized allative form *i’ibo* ‘towards here’, cf. (274).

- (274) Yaqui HITHER [Silva 2004 as cited in Belloro and Guerrero 2012: 11]
- I’ibo karo-Ø bwite-n Rajúm-betana.*
 hither car-NOM run.SG-PCN Ráhum-from.side.of
 ‘A car was running towards here, from Ráhum side.’¹¹¹

Still, spatial deictic relations are also mostly zero-coded in Belloro and Guerrero’s (2012) data and consequently analyzed as a “weak” class by the same authors. Among many examples, an option to encode HITHER is constructed via the verb *siime* ‘go (NFUT)’ in combination with the bound form =*yeu* ‘out/away’ and the free-standing SDD *aabo* ‘here’. This results in the form *a’abo yeu=siime* ‘come here (go outside here)’ (Belloro and Guerrero 2012: 11–12). Notice, however, that verb-framed patterns are also crucial in Yaqui (Guerrero 2014). Yaqui presents the border between more overtly and distinctly coding languages of the geographical northern sphere of the Uto-Aztecan family and zero-coding languages of the southern sphere. With its split system of P≠G≠S in SIs and a zero-coding tendency in SDDs it is a remarkable instance in our global sample.

¹¹¹ Original: *Un carro corría hacia acá, del lado de Ráhum.*

A third language family of Mesoamerica, namely Totonacan, is represented by Filomeno Mata Totonac [AM-42] and Upper Necaxa Totonac [AM-43] in this section. To begin with, Filomeno Mata Totonac has a fully syncretic SI paradigm due to a multifunctional SI *lhaa* (Santiago Francisco, p.c.). All attested WHENCE constructions feature the distal suffix *-chá'*, such as (275c) where the suffix attaches to the proximal allative motion verb *min* 'come'. In (275b) the SI co-occurs with the distal allative motion verb *a(n)* 'go'.

- (275) Filomeno Mata Totonac SIs [José Santiago Francisco, p.c.]
- a. WHERE
lhaa la-ma
 where exist-PROG
 'where is s/he?'
- b. WHITHER
lhaa a-ma
 where go.3SG-PROG
 'where is s/he going?'
- c. WHENCE
lhaa min-chá'
 where come-DIST
 'where does s/he come from?'

Turning to the declaratives, the static proximal relation can, amongst other strategies, be expressed by the existential deictic *'a=* 'here', as in example (276).

- (276) Filomeno Mata Totonac existential HERE [McFarland 2009: 192]
'awaayán
a-waayán-aa
 here-eat-IMPF
 'here he is, eating'

While (276) above might cast doubt on a genuinely spatial reading of the existential deictic *a-*, the element reappears in a more transparent manner in the Goal construction shown in example (277).

- (277) Filomeno Mata Totonac HITHER [José Santiago Francisco, p.c.]
a-'an
 here-go
 's/he goes (to) here'

Other than that, proximal and distal SDD relations are marked by bound SDDs derived from 'arrive here' and 'arrive there' verbs. The irregular forms *čĩ* 'here' and *čá* 'there' are exclusively attested as prefixes attaching to the motion verb

‘an’ go’, such as (278).¹¹² McFarland (2009) glosses these markers as ‘here’ and ‘there’ according to their function, i.e. assigning proximal or distal value to the spatial construction rather than their exact meaning.

- (278) Filomeno Mata Totonac THITHER with ‘go’ verb [McFarland 2009: 30]
čá-an
 there-go
 ‘s/he goes (to) there’

McFarland (2009: 192) further states that “deictic suffixes seem likely to have developed from verb sequence constructions in which the verbs *čín* and *čá’an* occurred in the V2 position.” In combination with any other motion verb, the deictics appear as suffixes, see example (279).

- (279) Filomeno Mata Totonac THITHER [McFarland 2009: 55]
taminiitančá’q
 ta- min -niitq -čá’q
 3S.PL- come -PFTV -there
 ‘they came there’

Conceivably, the suffixed ‘there’ in (279) corresponds to the *-chá’* suffixed to the main verb in the Source SI construction in (275c) above. There is no attestation of morphological marking of allative or ablative in the Filomeno Mata Totonac data available to us. The P=G=S syncretism thus fits with the Mesoamerican areal trend. Expanding on the data in McFarland (2009), José Santiago Francisco (p.c.) advocates the existence of three distance levels instead of two.¹¹³ Place is

112 Compare the cognate pair in the near relative Misantla Totonac where the dedicated forms *čan* ‘arrive there’ and *čín* ‘arrive here’ can be traced back to the verb roots *qn* ‘go’ and *min* ‘come’, e.g. in (v).

- (v) Misantla Totonac Goal
 a. *ʔút kímáaličinií* [MacKay 1999: 271]
 ut kin- maa- lii- čín- ii
 s/he 1OBJ- CAUS- INST- arrive.here- TRANS
 ‘s/he makes X arrive here for me’
 b. *čáaʔq̄t ʔq̄ntq̄hʔ* [MacKay 1999: 446]
 čaa- q̄n- la(ʔ) q̄ntuhʔ
 only- go- PFTV there
 ‘he had just arrived there’

113 Note that we did not align the differing orthographies in McFarland (2009) with in the examples provided by José Santiago Francisco (p.c.).

expressed with an existential verb and the free-standing deictics *atsá*¹¹⁴, *tsanú*, and *anú*’, the far distance deictic being accompanied by the distal marker *-chá*’ (280c).

(280) Filomeno Mata Totonac static SDDs [José Santiago Francisco, p.c.]

- a. HERE¹¹⁵
atsá *la-ma*
 here exist-PROG
 ‘s/he is here’
- b. THERE
tsanú *la-ma*
 there exist-PROG
 ‘s/he is there’
- c. OVER THERE
anu *la-ma-chá*’
 over.there exist-PROG-DIST
 ‘s/he is over there’

In our data, the suffix *-chá*’ occurs in Place and Goal constructions with (far) distal Grounds and in all attested Source constructions (e.g. [279] and [281a–b]). The suffix therefore systematically increases the complexity of Source constructions. However, it cannot be considered a Source marker due to the missing attestation of HENCE. This can be traced back to the apparent impossibility of expressing the proximal ablative in anaphoric or deictic reading when a spatial adverb is involved (see [281c]) (cf. also the discussion on Upper Necaxa Totonac below).¹¹⁶

(281) Filomeno Mata Totonac Source [José Santiago Francisco, p.c.]

- a. THENCE I
tsanú *min-chá*’
 there come-DIST
 ‘s/he comes from there’
- b. THENCE II
anu *min-chá*’
 over.there come-DIST
 ‘s/he comes from over there’

¹¹⁴ *Tsanú* and *anú*’ are also attested as *tsa-* and *a-*, we suggest that the longer forms bear the bound postposition =*nú* ‘in’.

¹¹⁵ It is likely that *atsá* ‘here’ is related to the non-demonstrative medial ‘local’ deictic *a:tzá:* in Upper Necaxa Totonac (cf. Table 35 below).

¹¹⁶ Note that the unsuffixed construction *atsá min* would constitute a Goal phrase, i.e. ‘s/he comes here’.

- c. **atsá min-chá'* (ungrammatical)
 here come-DIST
 's/he comes from here'

Since the SDDs do not carry any overt marking in any spatial relation, Filomeno Mata Totonac largely attests to the P=G=S pattern. However, the frequent occurrence of *-chá'* in Source constructions and the ability of motion verbs such as *min* 'come' to occur in both Source and Goal readings (cf. [279] above for *min* in a Goal construction) leaves room for an alternative analysis favoring the P=G≠S pattern. The diachrony of the spatial terms involved in SDD constructions as well as the role of *-chá'* require further investigation. Also, more options are deemed possible. On the basis of the data that are available to us, however, Filomeno Mata Totonac is analyzed as partly showing the P=S≠G pattern in addition to the general P=G=S pattern.

To shed more light on the mechanisms that may be involved in the formation of the Filomeno Mata Totonac paradigm, a second Totonac language is consulted in the following. Upper Necaxa Totonac [AM-43] has a largely transparent deictic system based on a vast set of spatial adverbs, subsets of which have been identified by Beck (2011: 54). Column (I) of Table 35 contains a class of adverbs which appear in pre-verbal position. The subset of determiners (II) surfaces in pronominal form. The remaining 'local' (III), 'non-local' (IV), and 'long ago' (V) classes bear forms that precede or follow the verb. Items of classes I, III, and IV are attested as SDDs, both in demonstrative and in non-demonstrative form. The 'local' class is defined by the immediate environment in the sense of a demarcated field, such as a room where an entity is located (David Beck, p.c.). The 'non-local' class likely refers to more remote, less demarcated regions.¹¹⁷

Table 35: Upper Necaxa Totonac deictic adverbs (adopted from Beck 2011: 54).

		I. pre-verbal adverbs	II. <i>-má</i> 'determiner'	III. <i>-tzá:</i> 'local'	IV. <i>-nanú:</i> 'non-local'	V. <i>-tzananú:</i> 'long ago'
PROXIMATE	NON-DEM	<i>a:</i>	<i>a:má</i>	<i>a:tzá:</i>	<i>a:nanú:</i>	–
	DEM	<i>wa:</i>	<i>wa:má</i>	<i>wa:tzá:</i>	<i>wa:nanú:</i>	–

¹¹⁷ Note that in (280b) and (281a) above, the Filomeno Mata Totonac form *tsanú* 'there' seems to bear the ending *-nanú:* of the 'non-local' class and the base form *tza'* (SPEC) as displayed in Table 35. Similarly, *anu* 'over there' may carry the class IV ending along with the non-demonstrative medial base *a'n*.

		I. pre-verbal adverbs	II. - <i>má</i> 'determiner'	III. - <i>tzá:</i> 'local'	IV. - <i>nanú:</i> 'non-local'	V. - <i>tzananú:</i> 'long ago'
MEDIAL	NON-DEM	<i>a'n</i>	<i>a'nma</i>	<i>a'ntzá:</i>	<i>a'nanú:</i>	–
	DEM	<i>wa'n</i>	<i>wa'nma</i>	–	<i>wa'nanú:</i>	–
DISTAL	NON-DEM	<i>a:'j</i>	<i>a:'jmá</i>	<i>a:'jtzá:</i>	<i>a:'jnanú:</i>	<i>a:'jtzananú:</i>
	DEM	<i>wa:'j</i>	<i>wa:'jmá</i>	<i>wa:'jtzá:</i>	<i>wa:'jnanú:</i>	<i>wa:'jtzananú:</i>
SPECIFIC		<i>tza'</i>	<i>tza'má</i>	–	<i>tzananú:</i>	–

In the field data David Beck (p.c.) provided us with, all three demonstrative forms of class I are attested in Place constructions, cf. example (282). Non-demonstrative forms of the same class, however, cannot be employed in either of these construction types.

(282) Upper Necaxa Totonac Place SDDs class I
[David Beck and Porfirio Sampayo Macín, p.c.]

- a. *wa: lawílh*
w-a: la-wi:lh
DEM-PROX do-sit
'here s/he is'
- b. *wa'n lawí:lh*
w-a'n la-wi:lh
DEM-MED do-sit
'there s/he is'
- c. *wa:'j layá:lh*
w-a:'j la-ya:lh
DEM-DIST do-stand
'(over) there s/he is'

In SDD constructions, items from classes II to V are employed. Yet, their distribution appears to be irregular. For the proximal Place relation, non-demonstrative forms of the 'local' category are deemed ungrammatical. Instead, the proximal 'local' class demonstrative *wa:tzá:* is employed (283a). For the medial Place relation, non-demonstrative items of the 'local' and 'non-local' classes are chosen (283b–c), whereas the demonstrative form *wa:'jtzá:* from the 'local' class in the medial category is rejected entirely.

(283) Upper Necaxa Totonac HERE and THERE(MED)
[David Beck and Porfirio Sampayo Macín, p.c.]

- a. *wa:tzá: (la)wí:lh*
w-a-tzá: (la)-wi:lh
DEM-PROX-LOCAL do-sit
'here s/he is'

- b. *a'ntzá: lawí:lh*
a'n-tzá: la-wi:lh
 MED-LOCAL do-sit
 'there s/he is'
- c. *a:nanú: lawí:lh*
Ø-a-nanú: la-wi:lh
 NONDEM-PROX-NONLOC do-sit
 'there s/he is'

The 'non-local' forms *a'nanú:* and *wa'nanú:* are also not accepted for the medial category frame, but a proximal demonstrative form *wa:nanú:* is employed and accompanied by a pointing gesture. Despite the fact that the 'non-local' non-demonstrative form *a:'jnanú:* is accepted in the distal frame, the demonstrative equivalent is more common (David Beck, p.c.), cf. example (284).

- (284) Upper Necaxa Totonac THERE (DIST)
 [David Beck and Porfirio Sampayo Macín, p.c.]
wa:'jnanú: xlayá:lh
w-a:'j-nanú: i'x-la-ya:lh
 DEM-DIST-NONLOC PAST-do-stand
 'there s/he was (as if s/he disappeared)'

In relevant allatival deictic or anaphoric settings, the pre-verbal demonstrative adverbs may again be employed.

- (285) Upper Necaxa Totonac Goal SDDs class I
 [David Beck and Porfirio Sampayo Macín, p.c.]
- a. *wa: a'má:lh*
w-a: a'n-ma:lh
 DEM-PROX go-PROG
 's/he goes (to) here'
- b. *wa'n ama:lh*
w-a'n a'n-ma:lh
 DEM-MED go-PROG
 's/he goes (to) there'
- c. *wa:'j amalh*
w-a:'j a'n-ma:lh
 DEM-DIST go-PROG
 's/he goes (to) over there'

Furthermore, Goal SDD constructions as in (286) include both demonstrative and non-demonstrative forms of the ‘local’ class. Demonstratives of the non-local class, however, were rejected by the Upper Necaxa Totonac speaker.

- (286) Upper Necaxa Totonac Goal SDDs class III
[David Beck and Porfirio Sampayo Macín, p.c.]
- a. *wa:tzá: min*
w-a:-tza: min
DEM-PROX-LOCAL come
‘s/he comes here (~ close)’
- b. *a'ntzá: a'ma:chá*
a'n-tza: a'n-ma:-chá
MED-LOCAL go-PROG-DIST
‘s/he goes (to) there’
- c. *wa:'jtzá: a'machá*
w-a:'j-tza: a'n-ma:-chá
DEM-DIST-LOCAL go-PROG-DIST
‘s/he goes (to) there’

The suffixal form *-chá* appears in distal Goal constructions such as in (286b-c). It occurs with a higher frequency compared to Filomeno Mata Totonac [AM-42] (see the discussion above). The affix is absent from the attested Place contexts. It is consistently employed in Source relations such as (287)–(288) below.¹¹⁸ David Beck (p.c.) remarks that, on the basis of the elicited data cited here, the repertoire for answering Source interrogations is conceivably smaller than those for Place and Goal.¹¹⁹ In the Source SDD frame, the speaker rejects the distal demonstrative forms of the ‘local’ and ‘non-local’ classes. Furthermore, the frame for HENCE is rejected entirely, similar to what was found for Filomeno Mata Totonac (cf. above)

118 Note that, for instance, Source interrogation in the near relative Misantra Totonac does not exhibit a cognate of Upper Necaxa Totonac *-chá* and Filomeno Mata Totonac *-chá'*, according to the following example:

- (vi) Misantra Totonac WHENCE [MacKay 1999: 434]
nántimin
nan- ta- min
where INCH come
‘where does s/he come from?’

In addition to the short SI *nan*, a longer form *ninčun* exists for all three basic spatial deictic relations. A full paradigm of Misantra Totonac could not be compiled on the basis of MacKay (1999).

119 Note that the elicitation may invoke only some possible forms while others, unattested in the elicitation, may still surface in the appropriate contexts.

(289).¹²⁰ There is further evidence for a P=G=S pattern in Upper Necaxa Totonac according to the example in (290) which, however, does not contain a motion verb and thus does not provide a satisfactory solution to the issue.

(287) Upper Necaxa Totonac WHENCE

[David Beck and Porfirio Sampayo Macín, p.c.]

ja: 'mima:chá?

ja:' min-ma:-chá
where come-PROG-DIST
'Where is s/he coming from?'

(288) Upper Necaxa Totonac THENCE

[David Beck and Porfirio Sampayo Macín, p.c.]

a'ntzá mimachá

a'n-tza: min-ma:-chá
MED-LOCAL come-PROG-DIST
's/he is coming from there'

(289) Upper Necaxa Totonac HENCE

[David Beck and Porfirio Sampayo Macín, p.c.]

**wa:tzá: min-chá* (ungrammatical)

w-a:-tza: min-chá
DEM-PROX-LOCAL COME-DIST
's/he comes from here'

(290) Upper Necaxa Totonac HENCE

[Beck 2004: 47]

kampa:lá:uw katapa:nú:w wa:tsá

ka-ǵn-pa:lá:-w ka-tapa:nú-w **wa:tsá**
OPT-go-RPT-1PL.S OPT-get.away-1PL.S here
'let's go again, let's get out of here!'

There is thus no evidence for the marking of Place, Goal, or Source in Upper Necaxa Totonac. Beck (2004: 77–79) refers to the affixes *-chá* (~ *tʃá-*) and *-chi'* (~ *tʃi-*) as 'quasi-inflectional' and as having adverb-like functions (cf. Beck 2011: §2.3.7). The proximal suffix *-chi'* is probably derived from the verb *chi'n* 'arrive

120 Functionally similar, however, is the following phrase elicited by David Beck (p.c.). The translation is preliminary.

(vii) Upper Necaxa Totonac Source

tzenu:tzá' mimá:lh/mima:chá
tzenu:=tzá' min-ma:lh / min-ma:-chá
near=now come-PROG / come-PROG-DIST
's/he is coming from around here/nearby'

here'. The suffix distal *-chá* stems from the verb *cha:n* 'to arrive there' (cf. the discussion of the verb *tfa:n* 'arrive there' in Beck 2004: 78). Both therefore encode proximal versus distal Ground and are attested not only in Place but also in Goal constructions such as (291).

- (291) Upper Necaxa Totonac Goal [Beck 2004: 78; 79]
- a. *katapá:nu: nakintéx kana:tfá*
 ka-tapá:nu: nak-kin-téx ik-ān-a:-**tfá**
 OPT-remove:2SG.S:PFCTV LOC=1POSS-path 1SG.S-go-IMPF-DIST
 'get out of my way! I'm going there'
- b. *mat waní, kis' áta, kis' áta katántfi*
 mat wan-ní kin-s'áta kin-s'áta ka-tán-**tfi**
 QUOT say-BEN 1POSS-child 1POSS-child OPT-come:2S-PROX:2SG.S
 'she said to her, "my child, my child, come here"'

As identified by Stolz et al. (2017: 500), the near relatives Misantla Totonac and Papantla Totonac attest to P=G=S syncretism in their SI paradigms. This also applies to the SDD paradigms of the two Totonac languages in our sample, contributing to a strong areal tendency in the Mesoamerican subsample.¹²¹ There is evidence that both SDD deictic systems are more intricate. Although many logical options for (a)syncretism are available due to the overabundance of Place forms in the paradigm [AM-43], Upper Necaxa Totonac is largely verb-centrally coding. The analyses of the SI and SDD constructions presented here cover only part of the system. Broader and more extensive research on deictics in Totonac is hoped to be conducted in the near future.

3.5.3 P=G=S in Asia

Unlike in Africa and the Americas, the P=G=S syncretism is not as prevalent in Asian languages. Only 7.5% of the interrogative paradigms and 8.0% and 8.5% of the near and far deictic SDD paradigms, respectively, attest to this pattern. The numbers are only a shade higher compared to the data compiled by Stolz et al. (2017) about SI syncretic patterns, where the share of the P=G=S pattern in

¹²¹ The impossibility of eliciting a HENCE construction in both Upper Necaxa Totonac and Filomeno Mata Totonac is noteworthy and hopefully encourages future research. Both datasets were directly elicited from speakers and are therefore among the most detailed, authentic, and robust in the entire sample.

Asia amounts to 6%. Table 36 displays the Asian languages of our sample that show the maximally indistinct pattern.

Table 36: Asian languages that attest to P=G=S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Hiligaynon	AS-17	Austronesian, Greater Central Philippine	✓	✓	✓
Hmong Njua	AS-19	Hmong-Mien, Chuanqiandian	✓	✓	✓
Iloko	AS-20	Austronesian, Northern Luzon	✓	✓	✓
Muna	AS-32	Austronesian, Celebic	✓	✓	✓
Nicobarese, Car	AS-34	Austroasiatic, Nicobaric	X	✓	✓
Tagalog	AS-39	Austronesian, Greater Central Philippine	✓	✓	✓

Overall, six languages in our sample attest to the P=G=S pattern in the SDDs. As Car Nicobarese shows this pattern only in the SDDs, there are only five languages that show this pattern in the SIs. Noticeably, four out of six languages that show this pattern belong to the Austronesian macrophylum. Similarly, four out of the six Austronesian languages spoken in Asia in our sample are P=G=S languages. While Hmong Njua is the only representative of the Hmong-Mien language family, Car Nicobarese seems to be quite exceptional for the Austroasiatic phylum, as the other seven representatives usually show a P=G syncretic or a maximally distinct pattern. All six languages are located in the Southern parts of Asia and apart from Hmong Njua, all of the languages are spoken on islands south of the mainland. In the following subsections, Pattern V in Asian Austronesian languages and in the only mainland representative will be discussed.

3.5.3.1 P=G=S in Austronesian languages of Asia

The Celebic language Muna [AS-32], spoken on the Indonesian island Muna, is one of the Austronesian P=G=S languages. It has an elaborate deictic system combining a *near speaker, near hearer, away from both* system with different distance levels and a vertical level system. There is, however, no distinction between Place, Goal, and Source. The most *unmarked* expressions that we take into consideration in this study consist of a locative preposition *ne* and a demonstrative, e.g. *ini* ‘this’ or *watu* ‘that (away from both)’. Similar to the *unmarked* preposition *ne*, *we* ‘level or lower’ and *te* ‘higher’ can have the meaning “‘in’, ‘on’, ‘to’, ‘from’, etc., depending on context as these prepositions cover both position and movement” (van den Berg 1997: 204). As it is usually the case

in P=G=S languages, “[o]ften the correct gloss has to be inferred from the verb of motion” (van den Berg 1997: 204). The examples in (292) display the use of the SDD *ne ini* ‘here’ in all three relations.

- (292) Muna proximal SDDs
- a. HERE [van den Berg 1989: 64]
ae-late ne ini
 1SG.REAL-live LOC this
 ‘I live here.’
- b. HITHER [René van den Berg, p.c.]
na-mai ne ini
 3SG.IRR-come LOC this
 ‘S/he is coming here.’
- c. HENCE [René van den Berg, p.c.]
no-mai-ghoo ne ini
 3SG.REAL.come-APPL LOC this
 ‘S/he comes from here.’

Depending on whether a static or a dynamic verb is used, the construction *ne ini* can be used to express ‘here’, ‘hither’, or ‘hence’. The dynamic verb *mai* ‘come’ is used in connection with the proximal SDD to express Goal. If the applicative suffix *-ghoo* is added to *mai*, the reading is changed from Goal to Source. While *mai* ‘come’ is only used with the proximal *ne ini* ‘here’ in Goal constructions, *mai-ghoo* ‘come-APPL’ can be used with every SDD and SI to express Source. To put the distal SDDs in a Goal construction, other directional verbs such as *kala* ‘go’ are used, e.g. *Na-k<um>ala ne watu* (3SG.IRR-<IRR>go LOC that) ‘S/he is going there.’ (René van den Berg, p.c.).

Another Austronesian language that employs the P=G=S pattern is Iloko [AS-20], a Malayo-Polynesian language native to the Philippines. Its deictic system is much simpler than that of Muna above. Three distance levels are distinguished, viz. *ditoy* ‘here (near speaker)’, *dita* ‘there (near hearer)’, and *idiay* or *sadiay*¹²² ‘there (away from both)’. Furthermore, there is an SI *sadino* ‘where’, which can be used in all three relations, and an SI *ayan* ‘where located’, which is used only to ask for the location of an entity, i.e. for Place only. Rubino (1997: 433) explains that “[a]yan may not be used to ask where an action is taking

¹²² Rubino (1997: 359) introduces three locative adverbs, “a proximal *ditoy* to designate the area near the speaker, a medial *dita* to designate the area around the addressee, and a distal *idiay* (*didaiy*) used to denote the area not immediately in the environs of either the speaker or addressee”. The form *sadiay* is not mentioned, but does occur in two examples (Rubino 1997: 215; 311). It does also frequently occur in the Iloko Bible translation [RIPV].

place, as *sadino* is used for this purpose” and that “[a]yan questions only take nominals”, cf. (293).

- (293) Iloko locational WHERE [Rubino 1997: 433; 434]
- a. **Ayan** *ti balay=na?*
 where ART house-3SG.ERG
 ‘Where is her house?’
- b. **Ayan=(na)** *ni Juan?*
 where=3SG.ERG P.ART Juan
 ‘Where is Juan?’

Both sentences in (293) are verbless interrogative sentences, in which *ayan* asks about the location of the subject. As the example in (293b) illustrates, “[a]yan questions may optionally take third person enclitic pronouns that co-reference a full NP” (Rubino 1997: 433). *Sadino* ‘where’, in contrast, “ask[s] the location of an event, where the action of a verb root takes place” (Rubino 1997: 434). It may, however, also be used to ask about Goal or Source.

- (294) Iloko
- a. WHERE [Rubino 1997: 434]
Sadino *ti nag-adal-an ni Maria?*
 where ART PFCTV.LOC-study-NMZ P.ART Maria
 ‘Where did Mary study?’
- b. WHITHER [Rubino 1997: 434]
Sadino *ti pa-pan-an=yo?*
 where ART LOC-go-NMZ=2PL.ERG
 ‘Where are you going?’
- c. WHENCE [RIPV Judg 19:17]
Sadino *ti n-ag-gapu-an=yo?*
 where ART PFCTV-DUR-come.from-NMZ=2PL.ERG
 ‘[...] where do you come from?’

Similar to other P=G=S languages, the verb determines whether Place, Goal, or Source is expressed. The stative verb *adal* ‘study’ in (294a) expresses Place, whereas the dynamic *pan* ‘go’ in (294b) expresses Goal and *gapu* ‘come from’ in (294c) expresses Source¹²³. The SDDs can similarly be used without overt marking of P/G/S.

123 There is another construction *taga-ano* ‘where from’ which we, however, suspect to ask about Origin.

- (viii) Iloko question about Origin [Rubino 1997: 440]
Taga-ano ti uliteg=na?
 from-Q ART uncle=3SG.ERG
 ‘Where is his uncle from?’

- (295) Iloko proximal SDDs
- a. HERE [Rubino 1997: 360]
Nangan=da ditoy.
 ate.PFCTV=3PL here
 ‘They ate here.’
- b. HITHER [Rubino 1997: 41]
Ku-kua=m kadi daytoy igid ti baybay tapno
 RED-POSS=2SG.ERG INTERR this edge ART sea so
i-parit=mo nga um-ay=kami ditoy?
 TF-forbid=2SG.ERG LIG INCH-come=1PL.EXC here
 ‘Is this beach yours so you can forbid us to come here?’
- c. HENCE [RIPV 1 Kings 17:3]
Pumanaw=ka ditoy [...]
 leave.INCH=2SG here
 ‘Go from here [...]

The examples in (295) show how HERE, HITHER, and HENCE are expressed by the same zero-marked expression *ditoy*. The stative verb *mangan* ‘to eat’ is used in (295a), so that Place is expressed. In (295b), the motion verb *ay* ‘come’ induces a Goal reading, while *panaw* ‘leave’ in (295c) expresses Source. The SDDs show another possibility to express Source, viz. the preposition *manipud* ‘from, since, because’.

- (296) Iloko overtly marked THENCE [RIPV 2 Kings 2:25]
Manipud sadiay, na-pan ni Eliseo ket na-pan
 from there PFCTV-go P.ART Elisha and PFCTV-go
idiay Bantay Carmel
 there mountain Carmel
 ‘Elisha went from there to Mount Carmel’

In (296), the construction *manipud sadiay* ‘from there’ is used as a Source construction. The preposition *manipud* can be used with all four SDDs. We did not, however, come across any occurrences of *manipud* in combination with the SI *sadino* ‘where’. This does not necessarily mean that this kind of construction does not exist, but as we do not want to make any assumptions, we do not include a construction **manipud sadino* ‘where from’. Without having actually conducted a quantitative study on overtly and zero-marked Source construc-

All instances of this construction are similar to the example in (viii) and ask where someone is from without motion verb. We thus assume that it is used to ask about the Origin rather than the Source of an entity.

tions in Iloko, it seems to us that the zero-marked constructions and thus the indistinctive P=G=S pattern is much more common.

3.5.3.2 P=G=S on the Asian mainland

The Hmong-Mien language Hmong Njua [AS-19], spoken in Southern China and neighboring regions, is another representative of P=G=S languages in Asia and the only representative in our sample from the Asian mainland. The interrogative expression *hǎo tǵ* ‘where’ consists of the preposition *hǎo* ‘at’ and the interrogative pronoun *tǵ* ‘which’. There are two SDDs, viz. *ndǎw*¹²⁴ *nǎa* ‘here’, consisting of the preposition *ndǎw* ‘at’ and the demonstrative *nǎa* ‘this’, and *hǎo ndǎw* ‘there’, consisting of the preposition *hǎo* ‘at’ and the demonstrative *ndǎw* ‘that’. These prepositions do not work as a locative marker in the sense of a static relation, but as a general spatial marker. Occasionally, all of the expressions are used without the corresponding prepositions.

- (297) Hmong Njua HERE constructions [Taweesak 1984: 59; 18]
- a. *lɛng tǵ sǎng nyáo ndǎw nǎa*
 person which want be at this
 ‘Who wants to be here?’
- b. *kù nyáo nǎa*
 1SG be here
 ‘I am here.’

The examples show how the proximal SDD can be used either as a complete construction consisting of the preposition *ndǎw* ‘at’ and the demonstrative *nǎa* ‘this’ (297a) or just the demonstrative *nǎa* ‘this (here: ‘here’)’ (297b). The dropping of the preposition is not restricted to the SDDs or to the static relation, cf. (298).

- (298) Hmong Njua WHITHER constructions [Taweesak 1984: 95; 68]
- a. *kâo mǝng hǎo tǵ*
 2SG go at where
 ‘Where are you going?’
- b. *kâo yǎa mǝng tǵ*
 2SG will go where
 ‘Where will you go?’

¹²⁴ Taweesak (1984) uses a small plus sign (+) as a diacritic to express a falling-rising tone. For technical reasons, we decided to use the common symbol ~, instead.

In (298a), the full SI construction *hǎo tǔ* ‘where (lit. at which)’ is used in a Goal relation, while only the interrogative pronoun *tǔ* ‘which (here: where)’ is used in (298b). In both cases, the dynamic verb *mǒng* ‘go’ is used to induce a Goal reading. Source can be expressed with the same dynamic verbs also used for Goal. However, two dynamic verbs are necessary to induce a Source reading. Taweesak (1984: 19) explains the typical structure of a motion clause:

an optional Subject slot filled by a nominal phrase, an obligatory Predicate slot filled by a motion verb phrase, an obligatory Destination slot filled by a locative phrase, and an optional Direction verb slot filled by *túa* ‘come’, *mǒng* ‘go’, *lủ* ‘come’.

If the optional Direction verb slot remains empty, Goal is expressed, cf. (298). If it is filled by one of the aforementioned motion verbs, Source is expressed, cf. (299).

(299) Hmong Njua WHENCE constructions [Taweesak 1984: 19; 75]

- a. *nủ túa hǎo tǔ túa*
 3SG come at which come
 ‘Where does s/he come from?’
- b. *púa mǒng hǎo tǔ lủ*
 3PL go at which come
 ‘Where did they come from?’

Both example sentences in (299) reflect the sentence structure as explained by Taweesak (1984: 19). In (299a), *nủ* ‘he’ fills the (optional) subject slot, *túa* ‘come’ fills the obligatory predicate slot filled by a motion verb phrase, *hǎo tǔ* ‘where’ fills the obligatory destination slot, and the second *túa* ‘come’ fills the optional direction slot to induce a Source reading. The sentence in (299b) follows the same structure, although a different subject and different motion verbs are employed. As the examples show, Source is expressed when one motion verb precedes the locative phrase and another motion verb follows the locative phrase. This may be reached by using the same verb twice as in (299a) or by using two different motion verbs as in (299b). Although the SIs and SDDs remain unchanged, Source constructions are undeniably more complex than Place and Goal constructions. This, however, cannot be measured by looking only at the SI and SDD forms in isolation.

3.5.4 P=G=S in Europe

One of the most striking results in Stolz et al. (2017) is that the P=G=S pattern, although quite prevalent on a global scale, does not occur in any of the 134

European sample languages based on the varieties represented by the parallel corpus *Le petit prince*. Stolz et al. (2017: 656) thus “claim that Europe is the only macro-area from which the neutralized paradigm in the shape of Pattern V WHERE = WHITHER = WHENCE is absent.” Although, on the basis of our data, we have to agree that the P=G=S pattern is mostly absent from Europe, we did find one exception, so that Pattern V is represented in Europe with a share of 1.5% of all SI and SDD paradigms each in Europe, cf. Table 37.

Table 37: European languages that attest to P=G=S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Adyghe	EU-1	Abkhaz-Adyge	✓	✓	✓

According to Jakolev and Aschamaf (1941: 291), the Caucasian language Adyghe [EU-1] does indeed attest to this pattern. The SDDs consist of a deictic demonstrative *mə* ‘this’, *mo* ‘that (visible)’, or *ā* ‘that (invisible)’ and a general locative marker *dǎ*. The same locative marker is used in combination with the interrogative root *tə* to form the spatial interrogative *tə-dǎ* ‘where’. Neither the SIs nor the SDDs are overtly marked for allative or ablative case. The examples in (300) show how *mo-dǎ* ‘there’ is used in all three relations.

(300) Adyghe THERE, THITHER, and THENCE [Jakolev and Aschamaf 1941: 291]¹²⁵

- a. *sé mo-dǎ sy-ščylagy*
 1SG DEM.DIST-LOC 1SG-be:PAST
 ‘I was there’
- b. *mo-dǎ sé-kIo*
 DEM.DIST-LOC 1SG-go
 ‘I go there’
- c. *sé mo-dǎ sy-kyekIy*
 1SG DEM.DIST-LOC 1SG-come
 ‘I go from there’

Similar to the cases discussed above, Place, Goal, and Source are distinguished by the verb meaning. While static verbs induce a Place reading like in (300a), dynamic verbs may either induce a Goal reading like in (300b) or a Source reading like in (300c).

¹²⁵ The original examples are given in Cyrillic.

Stolz et al. (2017: 656) admit that there is some evidence of the P=G=S pattern even in the European macro-area at least in a variety of Italo-Albanian. Furthermore, colloquial Ukrainian also shows some evidence of this pattern. While it seems that the Italo-Albanian variety of Falconara attests to real P=G=S syncretism with one general question word *ku* ‘where’, “in Ukrainian it is a matter of style only, i.e. speakers have always direct access to alternative constructions which disambiguate the neutralized distinctions” (Stolz et al. 2017: 658). The use of this pattern in Ukrainian is also very limited. It “depends on a small number of verbs – and importantly also on the desire of the speaker to express surprise” (Stolz et al. 2017: 658). Furthermore, it seems to be a dialectal phenomenon which is restricted to the SIs and which does not apply to the SDDs (Nataliya Levkovych, p.c.). The case of Adyghe is thus more similar to that of the Italo-Albanian variety, as Pattern V is the only option for all three relations. With the evidence from Italo-Albanian and colloquial Ukrainian, Stolz et al. (2017: 659) conclude “that Pattern V is not categorically excluded from Europe but it cannot aspire to a status higher than that of an areal *rarissimum*”, as “[t]he two exceptional languages account for 1.4% of the European subsample at the utmost”. Although we found some further evidence of the P=G=S pattern, we agree that this pattern, although quite prevalent on a global scale, has to be viewed as absolutely exceptional in Europe.

3.5.5 P=G=S in Oceania

Although Pattern V is more frequent in Oceania than in Europe and Asia as discussed above, it has fewer instances than Pattern I and II. While it is employed in 17% of all SI paradigms in Stolz et al.’s (2017) sample, the numbers are slightly lower in our own sample. It is found in around 10.8% of the ND SDDs, while it occurs in 13.2% of the FD SDDs and in 12.7% of the SIs. Overall, there are twelve Oceanian sample languages which display the maximally syncretic pattern at least in one of the expression classes. These languages are given in Table 38.

No clear tendencies can be identified among the language families of Oceania. It is noticeable that two out of three Sepik languages give evidence of Pattern V. However, neither of the languages display this pattern exclusively. Four out of six Trans-New Guinea languages similarly show traces of Pattern V.

Table 38: Oceanian languages that attest to P=G=S syncretism.

Languages	Appendix	Affiliation	SI	ND	FD
Abau	OC-1	Sepik, Upper	X	✓	✓
Awtuw	OC-4	Sepik, Ram	✓	X	X
Bunaq	OC-6	Timor-Alor-Pantar, East Timor-Bunaq	✓	✓	✓
Chamorro	OC-7	Austronesian, Malayo-Polynesian	X	✓	✓
Kilivila	OC-18	Austronesian, Oceanic	✓	X	X
Mauwake	OC-24	Trans-New Guinea, Madang	✓	✓	✓
Nii	OC-29	Trans-New Guinea, Wahgic	✓	X	X
Orokaiva	OC-30	Trans-New Guinea, Binanderean	X	X	✓
Palauan	OC-31	Austronesian, Malayo-Polynesian	✓	✓	✓
Ponapean	OC-33	Austronesian, Oceanic	✓	✓	✓
Tidore	OC-40	West Papuan, North Halmahera	✓	✓	✓
Tok Pisin	OC-42	Indo-European, Pacific Creole English	✓	X	✓

Another four out of the twelve languages represented in Table 38 are Austronesian. As the other ten Austronesian languages of our Oceanian sample can not be allocated to the P=G=S pattern, it does not seem to be a prevailing feature of Austronesian languages. In the following subsections, some cases of Oceanian P=G=S languages are discussed.

3.5.5.1 Indistinct locative marking in Oceania

All three basic spatial relations investigated can be subject to the same marker, optionally or obligatorily. The Papuan language Bunaq [OC-6] is pervasively P=G=S syncretic in both SI and SDD paradigms. Ground is therefore indistinctly expressed as spatial relations are encoded in the verbal semantics. This is also supported by serialization of motion verbs (as depicted in a template by Schapper 2009: 465). However, the overt expression of Ground with SDDs, here ‘locationals’ (Schapper 2009: 96), seems to be optional, but frequent. A single main verb or a verb series specify the spatial position or the dynamic spatial relation. The verbal component mostly co-occurs with a freestanding deictic word form denoting Ground marked for locative by a postposition. The locationals include, inter alia, forms specified for elevation stages. For instance, *ota* ‘(same) LEVEL’ belongs to the ‘spatial locationals’ subset and may refer to proximal as well as distal relations. For the time being, it is excluded from the paradigm for Bunaq, as *huqe* ‘here’ and *haqe* ‘there’ correspond closest to the

unmarked SDDs favored by the canon. The distance-neutral form *hoqe* (SPEC) is also not included in view of the distance-sensitive forms. Another form which belongs to the macro-set of spatial deictics is *o*. The element is an addressee-based locational with mostly demonstrative deictic functions.

According to Schapper's (2009: 291) count, the 'LEVEL' form *ota* has a higher frequency in her corpus than e.g. *haqe* 'there'. This observation indicates that the subset specified for verticality is more central to the conceptualization of space in Bunaq. Apart from *ota*, the two remaining vertically specified 'spatial locationals' are *ola* 'low' and *esen* 'high'. All of these forms appear in the same basic syntactic distribution, usually with a locative postposition *gene*.

- (301) Bunaq SDDs [Schapper 2009: 410]
- a. vertical Place
Ola gene nei t-ege bai g-olo.
 low LOC 1PL.EXC RECP-BEN thing 3-bury
 'We bury stuff for each other.'
- b. THERE
En haqe gene gereja tekeq.
 person there LOC church look
 'People in that (place) were looking at the church.'
- c. HENCE
En huqe gene tebe saqe.
 person here LOC return ascend
 'The person ascended back from here.'

Similarly, the spatial Q-word *teo* appears with either the postposition *no* to inquire about a specific location or with the locative *gene* to ask about a more general location. The two postpositions "can occur almost interchangeably" (Schapper 2009: 410), also in declarative contexts.

- (302) Bunaq WHENCE [Schapper 2009: 175]
- a. *Ei bare teo gene man?*
 2PL PROX.INAN where LOC come
 'Where have you here come from?'
- b. *Eto teo no man?*
 2SG where PPOS come
 'Where did you come from?'

Moreover, word order plays a key role for the encoding of motion. NPs may either be introduced by *no* or *gene*. The respective form "encodes an origin [=Source] location when it precedes a motion verb [...], and a goal location when following a motion verb" (Schapper 2009: 411) in general spatial contexts. This

emphasizes the rich repertoire of serializing motion verbs which naturally also cover the vertical relations. All in all, Bunaq has a verb-centric spatial deictic system. Ground is indistinctly expressed by elevationals and horizontals both of which pervasively appear as Place-marked by the locative postposition *gene*.

3.5.5.2 Irregular and split paradigms in Oceania

The Sepik language Abau [OC-1] is P=G=S syncretic in the declarative realm, although the AAUNT Bible translation attests to many different construction types for the dynamic spatial deictic relations. The language has two spatial deictic adverbs, *serey* ‘there’ and *erey* ‘here’, which can potentially be employed for Place, Goal, and Source functions alike. Both are derived from the verb *ley* ‘go’ and the prefixes *so-* (DIST) and *o-* (PROX) (Lock 2011: 286).¹²⁶

(303) Abau spatial adverbs [Lock 2011: 279]

a. THERE

Uwrsa serey ma lwak mokwe, 'poso uwrsa mo'

uwr-sa so-rey ma lwak mo-kwe po-so
man-woman DEM.DIST-there RCM be GL.PL-TOP Q-HUM

uwr-sa mo

man-woman Q.SP.PFCTV.PL

‘Those people over there, what people (or: who) are they?’

b. THITHER [AAUNT Matt 2:22]

Josep hiy-kwe serey ley ey ho-kwe hok.

Joseph 3SG.M-TOP there come INTN GL.M-TOP fear

‘He [Joseph] was afraid to go there.’

The prefixes appear again in proximal and distal demonstrative formations which may also play a role in figurative (304a) and genuine spatial deixis (304b). Spatial deictic relations are often combined of demonstratives and gender-sensitive ‘general topic’ morphemes as in (304b).¹²⁷

(304) Abau demonstratives

a. HITHER

[Lock 2011: 397]

Okpey ok okukwe, senkinaw.

ok-pey ok o-ko-kwe so-enkin-aw

talk-part talk DEM.PROX-GL.F-TOP DEM.DIST-MAN-RSTR

‘As for this story, it goes to here (= that is all).’

¹²⁶ Note that vowel harmony may lead to the forms *serey* and *erey* (Lock 2011: 284).

¹²⁷ See also the discussion on gender-sensitivity in Manambu [OC-20], another Sepik sample language, in Section 6.2.

- b. THENCE [Lock 2011: 125]
Arawh kokwe uwr sohokwe 'nuw-ey ha.
 Arawh ko-kwe uwr **so-ho-kwe** 'nuw-ley ha
 evening GL.F.S-TOP man DEM.DIST-GL.M.S-TOP INTS-go OBJ>SUBJ
 'In regard to this man he really went (from there).'

Turning to the interrogative realm, the SI *perey* has the underlying structure *po-erey* with *po-* as the Q-stem and is found morphologically unmodified in Place and Goal interrogation, see examples (305a–b). In the few attested Source constructions, however, *perey* is always accompanied by *suko* 'originating'. Due to the contexts of the translated sentences given in sentences (305c–d), we cannot rule out the possibility that Abau is fully P=G=S syncretic in the SI paradigm, since *suko* may be a marker of Origin rather than spatial Source.

- (305) Abau SIs
- a. WHERE [AAUNT John 7:11]
*Uwr Jisas so-ho-kwe **perey** lwak o?*
 man Jesus DEM.DIST-GL.M-TOP where be Q.SP.IMPF
 'Where is He?' (lit. 'Where is [this man] Jesus?')
- b. WHITHER [AAUNT John 13:36]
*Hakamay, hunk-we **perey** ley ey so?*
 oldest 2SG-TOP where go INTN Q.SP.IMPF.M
 'Lord, where are You going?'
- c. WHENCE or Origin [AAUNT Matt 13:27]
*Hai, pan piaparaw so-mo-kwe **perey suko***
 O.K. grass bad DEM.DIST-GL.PL-TOP where originating
m-e le mo?
 PL-OBJ come Q.SP.PFCTV.PL
 'Where did these weeds come from?'¹²⁸
- d. WHENCE/Origin [AAUNT John 19:9]
Hunkwe yier perey suko se le so?
 hwon-kwe yier **po-erey suko** s-e le
 2SG.SUBJ-TOP village Q-place originating 3SG.M-OBJ come
 s-o
 Q.SP.PFCTV.M
 'Where are You from?'

Similar to the demonstratives above in example (304), Abau spatial interrogation which is employed "to seek information about the location of an entity" in verbless constructions is realized in a gender-sensitive fashion (Lock 2011: 277).

¹²⁸ The translation is taken from the Contemporary English Version [CEV].

The SIs for verbless phrases bear the same Q-stem *po-* as the indistinct form *perey*. They therefore enrich the system in terms of Place interrogation.

- (306) Abau SIs for verbless interrogation
- a. FEMININE [Lock 2011: 263]
Ara, hno sa pokwo?
 ara hwon-o sa **po-kwo**
 ADDR.M 2SG-GEN wife Q-GL.F
 Man, where is your wife?
- b. MASCULINE [Lock 2011: 277]
Hno uwr poho?
 hwon-o uwr *po-ho*
 2SG-GEN man Q-GL.M
 ‘Where is your husband?’
- c. PLURAL [Lock 2011: 277]
Hyo ney pomo?
 hiy-o ney **po-mo**
 3SG-GEN child Q-PL.PL
 ‘Where are his children?’

Abau thus presents an interesting case with its system of gender-sensitive Place SIs, spatial demonstratives, and spatial adverbs. The interplay of those elements with other crucial parts of speech that encode motion events, especially static and motion verbs, holds opportunities for further study.

3.5.5.3 Disambiguation via syntax in Oceania

Another Oceanian language that shows the maximally indistinct P=G=S pattern is the West Papuan language Tidore [OC-40]. Van Staden (2000: 201) explains that, from a lexico-morphological point of view, Tidore “has no opposition between source and goal in descriptions of movements towards or away from a location”. In fact, even Place is expressed with the same forms. The SI *ka-be* is composed of the predicativizer *ka-* and the interrogative enclitic =*be* and may be used in all three relations, as the examples in (307) show.

- (307) Tidore SIs
- a. WHERE [van Staden 2000: 69]
ngona nihi ka-be?
 2SG 2AC.live PRED-where
 ‘Where do you live?’

- b. WHITHER [van Staden 2000: 378]
Tagi ka-be nde?
 go PRED-where 3NH.here
 ‘Where are you going?’
- c. WHENCE [van Staden 2000: 447]
ee ngofa ngon ngofa ka-be ino?
 hey child 2PL child PRED-where this.way
 ‘hey, children, where do you children come from?’

The SI *ka-be* is used with a stative verb to express Place in example (307a). A peculiarity of the Tidore system can be seen in the Goal and Source construction in (307b) and (307c), respectively. The SI *ka-be* follows the motion verb *tagi* ‘go’ in (307b), so that Goal is expressed. Van Staden (2000: 245) explains that “when inquiring after a source, this [= the SI] is placed before the direction or goal of the movement”. This can be seen in example (307c), where the direction of the movement is expressed with the directional verb *ino* ‘move towards deictic center’ following the SI. In addition to the full form *ka-be*, the enclitic *=be* may also appear directly attached to a nominal in a verbless sentence to inquire about its location.

- (308) Tidore WHERE with encliticized *=be* [van Staden 2000: 481]
*Se aya=**be**?*
 and father=where
 ‘So where is he?’

The SDDs show a similar pattern. The Tidore spatial system is characterized by a complex interplay between locational enclitics that share traits of an absolute, i.e. landscape-oriented, FoR, directional verbs, and locative NPs. For the distinction of Goal and Source, word order is the decisive factor “whereby the source of the movement precedes the direction, and the source, like the goal, is expressed in a location constituent” (van Staden 2000: 201). Table 39 gives an overview of the expressions denoting location and direction. Grey shading marks the forms corresponding to our definition of SDDs.

Table 39: Tidore directional and locational expressions (van Staden 2000).

	Direction	Location
‘sea’	<i>hoo</i>	<i>ka-tai</i>
‘land’	<i>isa</i>	<i>ka-tina</i>
‘up’	<i>ine</i>	<i>ka-tau</i>
‘down’	<i>tora</i>	<i>ka-tahu ka-tau</i>

	Direction	Location
'here'	<i>ino</i>	<i>ka-re</i>
'there'	<i>ia</i>	<i>ka-ge</i>
'yonder'		<i>ka-ta</i>

For the SDDs, we find combinations of the abovementioned predicativizer *ka-* and one of the locational enclitics. Furthermore, a set of directional verbs also plays a key role. The use of the proximal Place SDD *ka-re* 'here' in all three relations is exemplified in (309).

- (309) Tidore proximal SDDs
- a. HERE [van Staden 2000: 247]
otu ka-re ma!
 sleep PRED-here MIT
 'Why don't you just sleep here!'
- b. HITHER [van Staden 2000: 379]
Tapi ena ma-sarat ngona no-gahi paku-besi
 but 3NH 3NH.POSS-condition 2SG 2A-make nail-iron
nyagi-raha se raha, se martel rimoi, gosa ka-re.
 10-four and four and hammer one carry PRED-here
 'But then you must make 44 nails and a hammer, and bring them here.'
- c. HENCE [van Staden 2000: 346]
pa Leman=ge kantor ka-re hoo=re, a?
 sir Leman=there office PRED-here seawards=here huh
 'mister Leman's office is seawards from here, right?'

Similar to the case of the SIs in (307) above, the verbs and their syntactic position partake in the marking of P/G/S. The stative verb *otu* 'sleep' in combination with *ka-re* 'here' leads to a Place reading in (309a). Goal is expressed in (309b) with the verb *gosa* 'carry' preceding the SDD. Similar to the interrogative Source construction in (309c) above, it is again one of the directional verbs, in this case *hoo* 'move seawards' with the proximal enclitic *=re*, following the SDD expression *ka-re* which forms a Source construction in (309c). It is thus not possible to express Source without also giving an account of the direction of the movement.

Another possibility to express HITHER and THITHER is to use the directional verbs *ino* 'move towards deictic center' and *ia* 'move away from deictic center'. Like the vertical and landscape-oriented verbs displayed in Table 39 above, they may stand alone to express the direction or Goal of a movement.

- (310) Tidore Goal SDDs
- a. HITHER [van Staden 2000: 407]
Soba gate=ge=ge ino, ino
 if manner=there=there this.way this.way
 ‘In that case, come here, come here’
- b. THITHER [van Staden 2000: 401]
Ngan ia masusu pas ngan ni-fayaa
 2SG that.way enter exactly 2SG 2SG.POSS-woman
ma-kamar
 INAL-room
 ‘You go there and enter no other but your wife’s room’

In (310a), *ino* is used to express ‘hither’, while *ia* encodes ‘thither’ in (310b). These directional verbs “form a paradigm with the locational enclitics [...] and are often used in conjunction with the locationals and other locative expressions in expressions of direction, source and destination” (van Staden 2000: 110). As already seen in (310c) and (309c), Source is induced if a directional verb follows an SI or SDD. If the directional verbs appear alone or before an SI or SDD, Goal is expressed.

- (311) Tidore HITHER constructions [van Staden 2000: 447, 387]
- a. *fangare mansia gam romoi yali, mansia ino ka-re*
 1SG.M person village one more person this.way PRED.here
 ‘I am from another village, I have come here’
- b. A, *ino=re*
 ah this.way=here
 ‘Come here’

As illustrated in the examples, the directional verbs may also combine with a full SDD, e.g. *ino ka-re* ‘come here’ as in (311a). Further, they may directly take a locational enclitic, e.g. *ino=re* ‘come here’ as in (311b). Given that the directional verbs do not behave differently from other motion verbs in constructions like the one in (311a), we decided to refrain from listing *ino ka-re* and similar constructions separately. In addition to the maximally indistinct P=G=S pattern, a P=S≠G pattern is possible for the SDDs due to the different options in the Goal cells. Furthermore, the SI and SDD enclitics may sometimes appear in isolation, as the following excerpt on the story of the island Gebe suggests: “He shouted to his friends that he saw an island, whereupon his friends shouted back *be?* ‘where?’, and he replied *ge!* ‘there!’” (van Staden 2000: 11).¹²⁹ However, they do

¹²⁹ This sentence stems from an anecdote about the name of the island Gebe and is only available in English in van Staden (2000). We thus do not have any data on the use of *be?* ‘where?’ and *ge* ‘there’ in actual Tidore contexts.

not seem to occur in full sentences to express the location of an action, so that we decided to exclude them from the paradigm. Due to the SI enclitic *=be* appearing on nouns to inquire about their location, an alternative $P \neq G = S$ pattern is possible for the SIs. The case of Tidore convincingly shows that a paradigm based only on SI and SDD expressions without reflecting other morphological, syntactical, or semantical features cannot always fully grasp the complexity of a language's spatial system.

4 The quantitative side of syncretism

In the previous chapter, we concentrated on the qualitative side of syncretism by describing various languages from the five macro areas and illustrating how the five syncretism patterns are realized. In this chapter, we turn to the quantitative side of syncretism. As explained in Section 1.5, our sample consists of 250 languages or, more precisely, of 50 doculects from each of the macro areas, i.e. Africa, the Americas, Asia, Europe, and Oceania. Each of these macro areas will be discussed in terms of the distribution of syncretic patterns (as introduced in Section 1.2.2). Although many languages have more than two distance levels that are reflected in the SDDs, we base our quantitative analyses and comparisons on two stages, i.e. a near deictic stage (ND) and a far deictic stage (FD), as two contrastive SDD levels are considered the minimum in all languages (see Diessel 1999: 50).

As already shown, we were able to attest each of the five patterns in each macro area, albeit with different distributions. In the following subsections, the five macro areas are reviewed in alphabetical order. We discuss the shares of each pattern in the SIs and the two distance degrees of SDDs. The results are compared to the shares calculated by Stolz et al. (2017) for SIs only. In addition to that, tendencies within language families and areal trends are presented. Afterwards, we address the issue of heterogeneous configurations, i.e. paradigms in which one syncretism pattern is employed in the SIs and another in the SDDs, or where the different SDD stages employ different patterns. The procedures undertaken to arrive at the final quantitative analyses are explained in the subsequent Section 4.1 on the basis of the African subsample. The same procedures are applied to the quantitative analyses of all macro areas in the respective sections. A worldwide comparison concludes this chapter (Section 4.6).

4.1 Africa

As has been elucidated in Section 3.5.1, the maximally indistinct Pattern V is the most frequent one on the African continent. It is followed by Pattern II, while the maximally distinct Pattern I ranks third. Both Pattern III and Pattern IV occur only marginally. To adequately measure the shares of each pattern, we consider all syncretism patterns that appear in one language. This means that if a language employs the $P \neq G \neq S$ pattern with optional $P = G$ syncretism, i.e. two

patterns are applied, both are counted for this sample language. This usually leads to a higher number of attested paradigms¹³⁰ as compared to the number of languages. The counts form the basis for most of our quantitative analyses. The absolute distribution of patterns identified according to this procedure over the 50 African languages looks as follows:

Table 40: Absolute distribution of patterns over the expression classes in Africa.

	SI	ND	FD	Total
Pattern I ($P \neq G \neq S$)	13	11	10	34
Pattern II ($P = G \neq S$)	18	20	20	58
Pattern III ($P \neq G = S$)	4	4	4	12
Pattern IV ($P = S \neq G$)	2	2	2	6
Pattern V ($P = G = S$)	31	30	30	91
Total	68	67	66	201

As can be inferred from Table 40, the number of attested patterns is higher than the number of sample languages in all three categories since some languages attest to more than one pattern. The absolute numbers already suggest that there is little variation between the SIs and the two degrees of SDDs. Figure 1 illustrates the shares of patterns per expression class. The percentages indicate a pattern's share of the total number of attested patterns per expression class. The 13 occurrences of Pattern I in the SIs thus account for 19.1% of the overall 68 attested SI paradigms from our African subsample.

The shares displayed in Figure 1 confirm the presumption that the SIs and the two degrees of SDDs have similar coding tendencies. With around 45% in each category, the $P = G = S$ pattern is unquestionably the most frequent one in Africa.

130 The term *paradigm* here has to be understood as the combination of constructions in P/G/S relation in one language leading to one syncretism pattern. If more than one syncretism pattern is employed in one category of one language, the respective language has more than one paradigm.

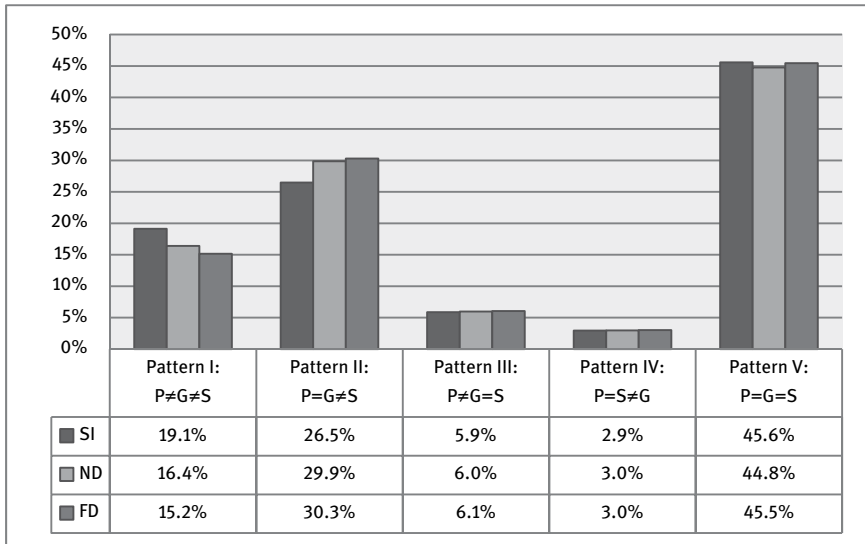


Figure 1: Shares of syncretism patterns per expression class in Africa.

Both SIs and SDDs employ this pattern most commonly. The gap between SIs on the one hand and SDDs on the other appears to be slightly higher in the cases of Patterns I and II. Pattern I is employed more often in the SIs with approximately 19%, as opposed to roughly 16% in the SDDs. For Pattern II the reverse is the case. It occurs less often in the SIs (around 26.5%) and more frequently in the SDDs (around 30%). These differences are, however, marginal and do not undermine the overall tendencies. Pattern III and Pattern IV are found to be equally peripheral in both SIs and SDDs. Considering the results provided by Stolz et al. (2017) on spatial interrogatives, Pattern I and Pattern II switch places in terms of frequency. Figure 2 illustrates the shares each pattern has in Stolz et al.'s (2017) sample of African SIs.

As can be inferred from Figure 2, Pattern V occurs similarly often in Stolz et al.'s (2017) sample of African SIs when compared to both SIs and SDDs of our own sample. Pattern III and Pattern IV are also marginal phenomena. The only striking difference concerns Pattern I and Pattern II, which appear reversed in comparison to Figure 1 above. This can be explained on the grounds of two factors: (i) Stolz et al. (2017) work with a different sample¹³¹ which may include a higher number of languages that employ Pattern I, and (ii) our analyses may differ from Stolz et al.'s (2017) analyses in certain aspects.

¹³¹ Stolz et al. (2017) work with a subsample of 72 African languages of which 22 are also featured in our sample.

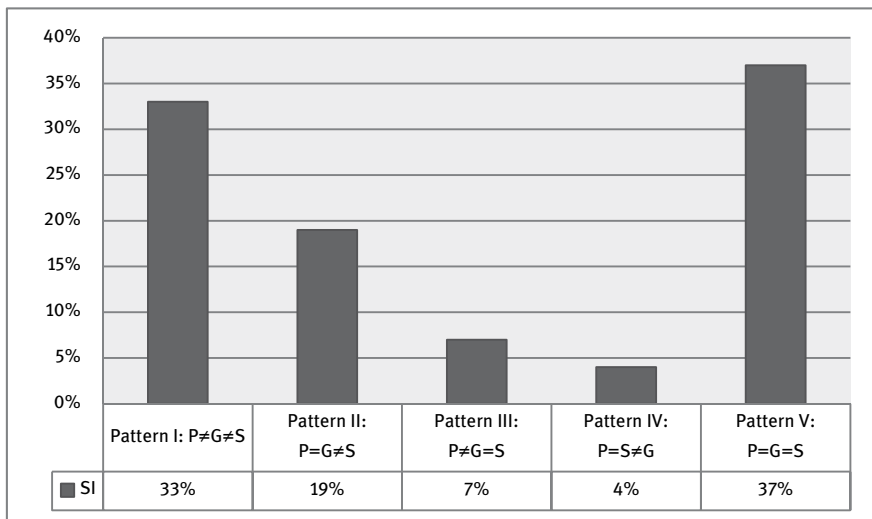


Figure 2: Shares of syncretism patterns in Stolz et al.'s (2017) sample of African SIs.

For instance, we identified an alternative $P = G \neq S$ syncretism to the otherwise $P = G = S$ syncretic language Swahili [AF-43], which is not represented in the data analyzed by Stolz et al. (2017). Whether Pattern I or Pattern II is more frequent in Africa cannot be answered on the basis of our and Stolz et al.'s results. Nevertheless, both studies clearly show the predominance of the maximally indistinct $P = G = S$ pattern, while the $P \neq G = S$ and $P = S \neq G$ patterns constitute peripheral phenomena.

Certain trends in connection to language families can be observed in Africa. The following figure depicts the absolute distribution of patterns across language families. As a basis for the distribution analysis, we selected all syncretism patterns that occur in the respective languages, independent of the expression class, i.e. the results for the SIs and the two degrees of SDDs were conflated. For this, we gave a weighting to the corresponding patterns. If a pattern occurs in the SIs, ND SDDs, and FD SDDs, it is given a weighting of 3. If a pattern occurs in two of the three categories, it is given a weighting of 2. If a pattern occurs in only one expression class, say only in the SIs or in one of the SDD stages, it is given a weighting of 1. As the overall tendencies are very similar in all three categories (cf. Figure 1 above), we consider it unproblematic to evaluate a conflation of the data that were formerly treated separately. Figure 3 displays the shares of each pattern per language family. Note that the language families are represented by varying numbers of languages. The number of languages per family is given in brackets in the caption of the x-axis.

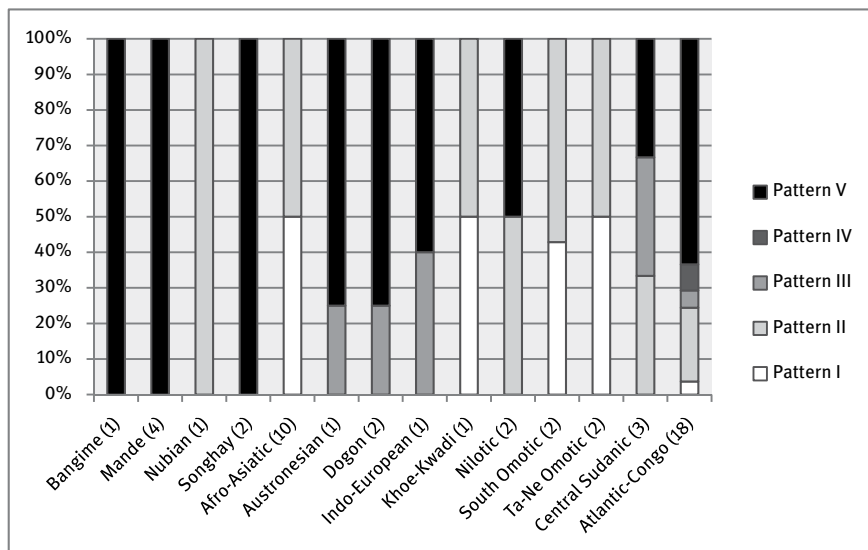


Figure 3: Distribution of syncretism patterns across language families in Africa.

Figure 3 illustrates how some language families show a clear tendency towards one pattern, while others are more diverse. The two biggest language families of our African sample – which also rank first and second among the world’s biggest language families according to Glottolog (Hammarström et al. 2019) – deserve a closer look. Overall, there are ten Afro-Asiatic and 18 Atlantic-Congo languages in our sample. Figure 4 and Figure 5 depict the complementary distribution of patterns in the two language families. In these two figures, the absolute occurrences of the attested patterns in the two language families are displayed. This directly reflects the weighting method explained above.

Figure 4 shows the clear tendency of the Afro-Asiatic languages of our sample to encode P/G/S either distinctly (Pattern I) or with P=G syncretism (Pattern II). In fact, the two patterns occur equally often. However, Pattern I surfaces in eight of the ten Afro-Asiatic sample languages, whereas Pattern II is employed in only seven of the ten sample languages. This means that 80% of the Afro-Asiatic sample languages attest to Pattern I either exclusively or in addition to Pattern II. Pattern II, on the other hand, can be found exclusively or additionally in 70% of the Afro-Asiatic languages. In contrast, Figure 5 shows the clear predominance of the maximally indistinct pattern in Atlantic-Congo languages. It is employed in all 18 Atlantic-Congo sample languages. The other patterns appear as alternatives, while Pattern I occurs least and Pattern II most often.

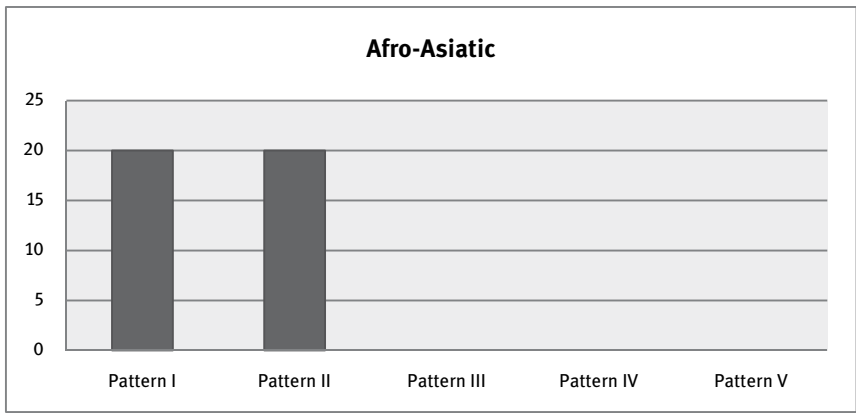


Figure 4: Afro-Asiatic distribution.

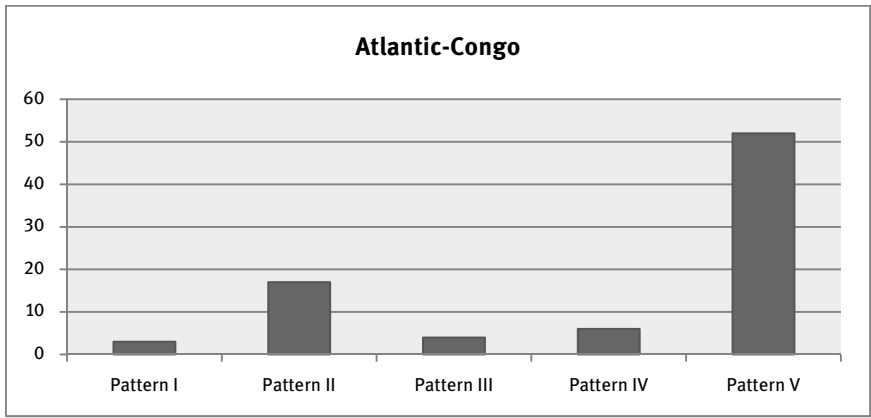
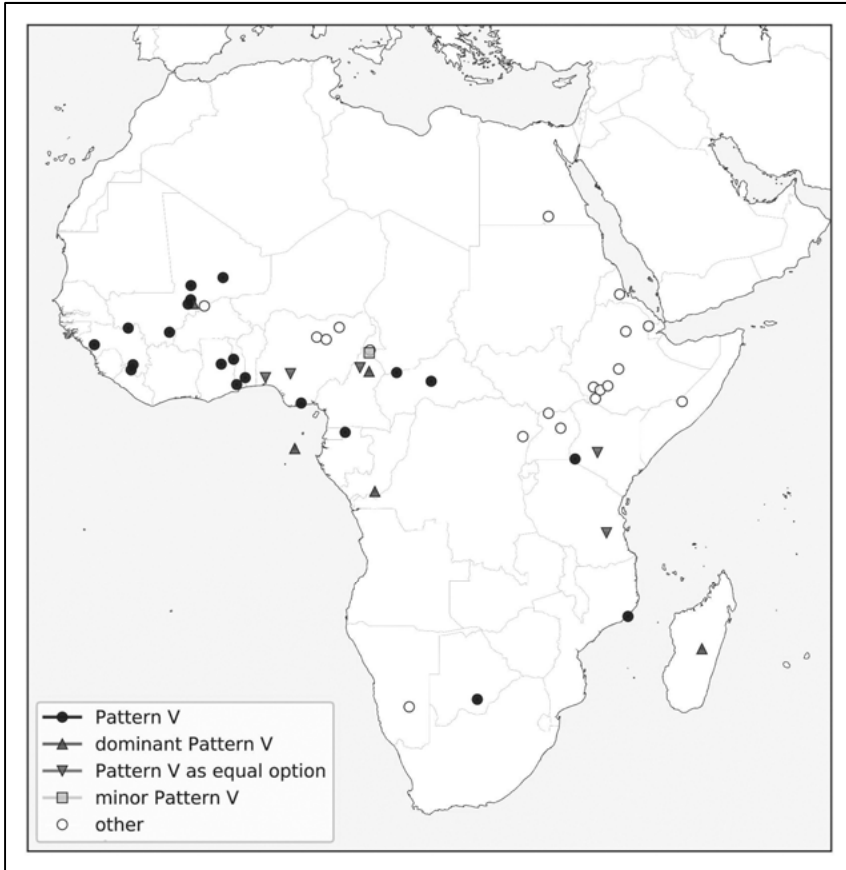


Figure 5: Atlantic-Congo distribution.

Certain trends in the distribution of patterns cannot only be observed within language families. Map 2 illustrates the distribution of languages that employ the dominant, maximally indistinct Pattern V in comparison to languages that employ any of the other patterns. Black dots represent languages that employ Pattern V as the only option. Dark grey triangles display languages that employ Pattern V as the dominant option, while dark grey upside down triangles display languages that employ Pattern V as an equal pattern among other options. Light grey squares represent languages that employ Pattern V as a minor option and languages that do not employ Pattern V but any of the other patterns are represented by white dots.



Map 2: Distribution of Pattern V against all other patterns in Africa.

As can be deduced from Map 2, the maximally indistinct Pattern V largely cumulates in the Western parts of the African continent. There is only one language in which Pattern V is only a minor option. In the large majority, Pattern V is at least equal to other options, if not the dominant or even the only option. Languages in which at least one relation is distinctly coded are therefore predominantly located in the East. Since most of the languages in our African subsample are situated in equatorial areas, we cannot offer insight into the distribution of patterns in the Northern and Southern regions.¹³² Considering the

¹³² The distribution of our African sample languages roughly mirrors the distribution of the world's languages, i.e. about half of the attested languages are spoken near equatorial areas

overall distribution of language families in these areas, however, we expect the Northern region in which Afro-Asiatic languages are prevalent to feature more distinctly coding languages. For the Southern regions, on the other hand, we assume that more P=G=S languages are present, based on the evaluation of our Atlantic-Congo sample languages. Especially in the South-Eastern areas where Bantu languages are predominant, P=G=S is likely the prominent pattern. Lastly, the South-Western areas with Khoisan languages and Afrikaans are expected to feature some more distinctly coding languages.

As stated above, languages may employ more than one syncretism pattern. In our African subsample, most languages show one or two patterns. Due to a high number of possible expressions with different marking strategies, Yoruba [AF-48] presents an exception as all five patterns are possible (cf. Section 3.2.1.3). We also demonstrated that languages do not always employ the same syncretism patterns throughout the expression classes. This is, for example, the case in Munukutuba [AF-32], one of the few languages that show traces of Pattern IV. This pattern can, however, only be found in the SIs. The SDDs, on the other hand, may employ Pattern II, which is not found in the SIs. Another possibility is Pattern V which appears in both SIs and SDDs (cf. Section 3.4.1 for a discussion of Munukutuba).

Concerning our global sample, we always account for the possibility that SI and SDD paradigms do not behave uniformly in one and the same language. Additionally, SDD stages may show different patterns.¹³³ Logically, the following configurations are possible:

- A. SIs and both ND and FD SDDs employ the same pattern [SIs = SDDs]¹³⁴,
- B. SIs have a different pattern as opposed to SDDs [SIs ≠ SDDs],
- C. SIs and ND SDDs behave differently from FD SDDs [SIs = ND ≠ FD],
- D. SIs and FD SDDs behave differently from ND SDDs [SIs = FD ≠ ND], or
- E. all three classes employ different patterns [SIs ≠ ND ≠ FD].

while the other half is spread throughout the northern and southern areas of the globe (Andresen and Carter 2015: 187).

133 We assume that different patterns especially in individual SDD stages (but also in SI vs. SDD paradigms) are often due to diachronic reasons such as differing geneses of markers, zero-coding of Goal due to unidirectional or default allative motion verbs, and so on. The diachronic background of these patterns involves domains like motion verbs and grammaticalized elements thereof. It is therefore subject to in-depth studies of individual languages and language families and cannot be discussed in this work, as we aim to provide a global overview of syncretism patterns.

134 Note that a shared syncretic pattern among SIs and SDDs does not necessarily indicate the occurrence of the same marking strategy or even the same markers on SIs and SDDs.

In our African subsample, only the configurations A, B, and C occur. In total, 73 configurations can be drawn from the 50 African sample languages. Of these 73 configurations, 59 show configuration A, i.e. the SIs and both SDD stages share the same syncretism pattern. Configuration B occurs nine times, i.e. in nine cases the SIs and SDDs behave differently. In another five cases, SIs and ND SDDs may optionally share the same pattern to the exclusion of the FD SDDs (configuration C). The seven languages with configuration B and the five languages with configuration C are displayed in Table 41. Grey shading marks those languages that have no optional configuration A.

Table 41: African languages with heterogeneous configurations.

Languages with configuration B [SIs ≠ SDDs]	Optional configuration A [SIs = SDDs]
[AF-7] Bunoge	yes
[AF-8] Dii	yes
[AF-14] Gidar	yes
[AF-30] Mambay	no
[AF-32] Munukutuba	yes
[AF-40] Somali	yes
[AF-44] Tamasheq	yes
Languages with configuration C [SIs = ND ≠ FD]	Optional configuration A [SIs = SDDs]
[AF-3] Angolar	yes
[AF-16] Hamar	yes
[AF-27] Maale	yes
[AF-29] Malagasy	yes
[AF-47] Wolaytta	yes

Table 41 shows that most of the languages with heterogeneous configurations optionally employ at least one configuration A, i.e. the same pattern is employed in the SIs and both SDDs. There is only one language, viz. Mambay [AF-30], in which SIs and SDDs never share the same syncretism pattern. Conversely, this means that 98% of the African sample languages employ at least one pattern that both SIs and SDDs of two degrees of distance share. One should, however, bear in mind that only two deictic stages are evaluated here. More variation may occur if more distance levels are added. Furthermore, irregularities in the employment of syncretism patterns in our sample doculects may be caused by incomplete information in the sources at hand. Nevertheless, heterogeneous configurations certainly do occur and should not be regarded as a marginal phenomenon.

4.2 The Americas

In our Pan-American sample, the maximally distinct Pattern I proved to be the most frequent pattern throughout the expression classes. Pattern II and Pattern V occur almost equally often, while Pattern II is in the lead by a narrow margin. Pattern III and Pattern IV are again only marginally attested. Table 42 displays the absolute frequencies with which the five syncretism patterns occur in the Americas.

Table 42: Absolute distribution of patterns over the expression classes in the Americas.

	SI	ND	FD	Total
Pattern I ($P \neq G \neq S$)	29	28	31	88
Pattern II ($P = G \neq S$)	17	14	15	46
Pattern III ($P \neq G = S$)	2	1	2	5
Pattern IV ($P = S \neq G$)	0	2	1	3
Pattern V ($P = G = S$)	16	12	13	41
Total	64	57	62	183

As some languages employ more than one pattern, there is again a higher number of attested paradigms compared to the number of sample languages.¹³⁵ Considering the absolute numbers, the Americas do not seem to show much variation between SIs and SDDs either. The relative distribution of patterns over the expression classes is illustrated in Figure 6.

Considering the shares displayed in Figure 6, it is noticeable that there are some differences between the SIs and the two degrees of SDDs. There is a difference of approximately 5% between the occurrence of Pattern I in SIs as compared to the FD SDDs. Nevertheless, the tendencies are clearly the same. In all of the expression classes, Pattern I is the most frequent one with around 50% of all paradigms. Conversely, Pattern II has a slightly higher share in the SIs with 26.6% compared to the SDDs with approximately 24%. Pattern V occurs only slightly less often with shares roughly ranging between 21% and 25%. Pattern III and Pattern IV can be called nothing but peripheral. Apart from the two mar-

135 However, we must acknowledge the possibility that several stages of far deixis have erroneously been lumped together in the FD category. This happens easily based on English-based descriptions and translations in some of the source literature.

ginal Patterns III and IV, the tendencies displayed in Figure 6 look quite different from the ones given by Stolz et al. (2017), as Figure 7 illustrates.

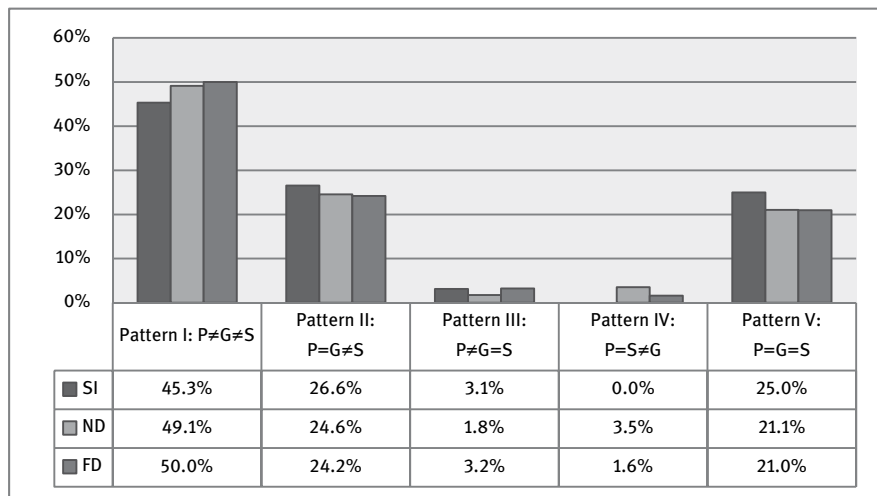


Figure 6: Shares of syncretism patterns per expression class in the Americas.

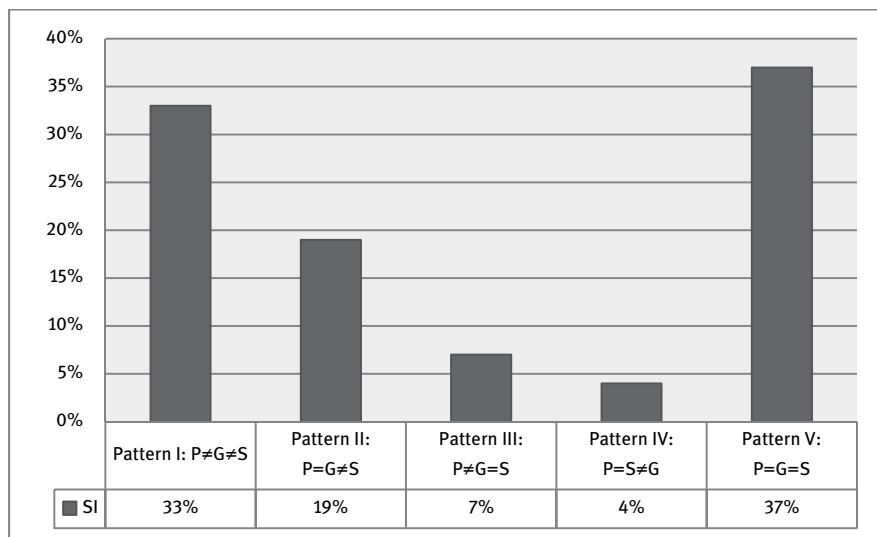


Figure 7: Shares of syncretism patterns in Stolz et al.'s (2017) sample of American SIs.

As Figure 7 shows, Pattern V occurs most frequently in Stolz et al.'s (2017) Pan-American sample, closely followed by Pattern I. Pattern II is also employed quite frequently, while Patterns III and IV are rather marginal – although not as marginal as was observed in the other macro areas. The differences between Stolz et al.'s (2017) results for SI paradigms in the Americas and our results for both SIs and SDD paradigms are mainly caused by different proportions of languages of the two continents and the Mesoamerican area in the respective samples. As explained in Section 3.5.2, around 47% of Stolz et al.'s (2017) Pan-American sample is represented by Mesoamerican languages, creating a strong bias towards the P=G=S pattern which is areally predominant. On the other hand, due to scarcity of data for South America and Mesoamerica, nearly half of our Pan-American sample is North American, resulting in much higher scores for the maximally distinct pattern. Overall, 16 languages of our Pan-American subsample are also treated in Stolz et al. (2017). In another four cases, our sample languages constitute different varieties than those treated in Stolz et al. (2017).¹³⁶ As 78% of our Pan-American sample contains languages that are not found in Stolz et al.'s (2017) American subsample, these variations do not come as a surprise.

As already described in the previous subsections about syncretism in the Americas in Chapter 3, it is difficult to determine tendencies for the American language families. The high number of different language families in our subsample of 50 languages prevents us from making meaningful statements regarding this matter. Nevertheless, the distribution of possible syncretism patterns in the language families represented in our Pan-American subsample is depicted in Figure 8.

Overall, it can be seen that the predominant Pattern I is featured in most of the language families represented in Figure 8. It is found in around 70% of the 26 phyla. In around 20% of the language families, the two direct opposites, i.e. Pattern I and Pattern V, are employed in the languages of one and the same family. In most families for which Pattern I can be found, Pattern II occurs as well. This is the case in approximately 78% of all languages for which Pattern I is attested. In both Totonacan and Uto-Aztecan, all five patterns can be found. In Totonacan, this is mostly due to the high degree of overabundance in the FD SDDs of Upper Necaxa Totonac [AM-43].

¹³⁶ Stolz et al.'s (2017) Pan-American subsample includes Acaxochitlan Nahuatl, Pajapan Nahuatl, and Classical Aztec. Further, Stolz et al. (2017) include Texistepec Popoluca as well as Ayacuchano Quechua, Cuzqueño Quechua, and Kichwa (Ecuador). The two Totonac languages in their sample are the ones spoken in Misantla and Papantla.

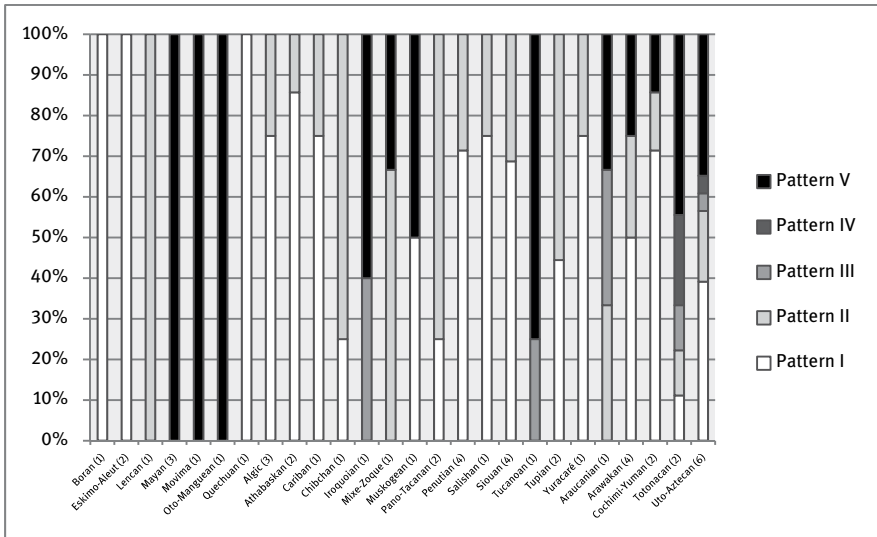
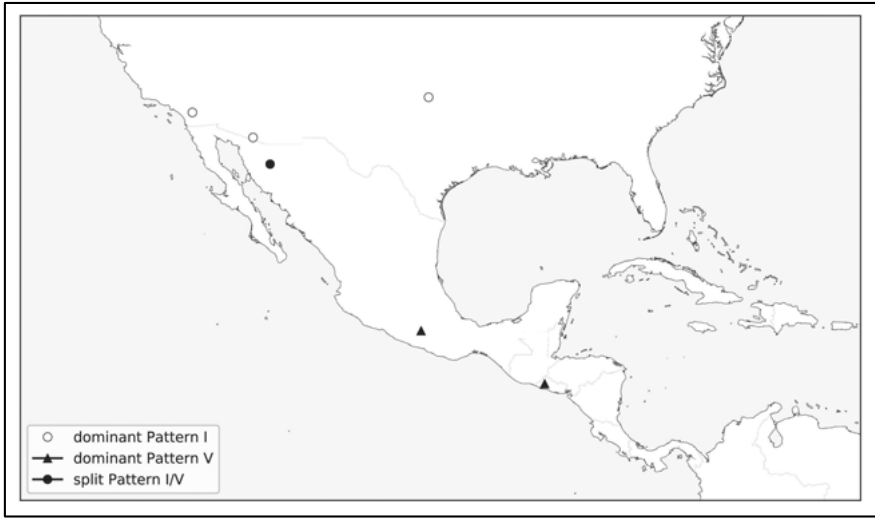


Figure 8: Distribution of syncretism patterns across language families in the Americas.

Uto-Aztecan, the biggest language family in our Pan-American subsample with six representatives, appears to be quite rich in variety when it comes to syncretism patterns in spatial interrogative and spatial deictic expressions. There are languages in which Pattern I is the only attested option (Cahuilla [AM-5]), languages which employ only Pattern V (Nahuatl [AM-30]), and a number of languages which allow for different patterns in between (Comanche [AM-10], Pipil [AM-36], Tohono O’odham [AM-41], and Yaqui [AM-47]). Pattern I or Pattern V are usually the dominant pattern. Their distribution is depicted in Map 3, where white dots mark languages with a dominant Pattern I, black triangles mark languages with a dominant Pattern V, and black dots mark languages with a pervasive split between Pattern I and Pattern V in the expression classes.

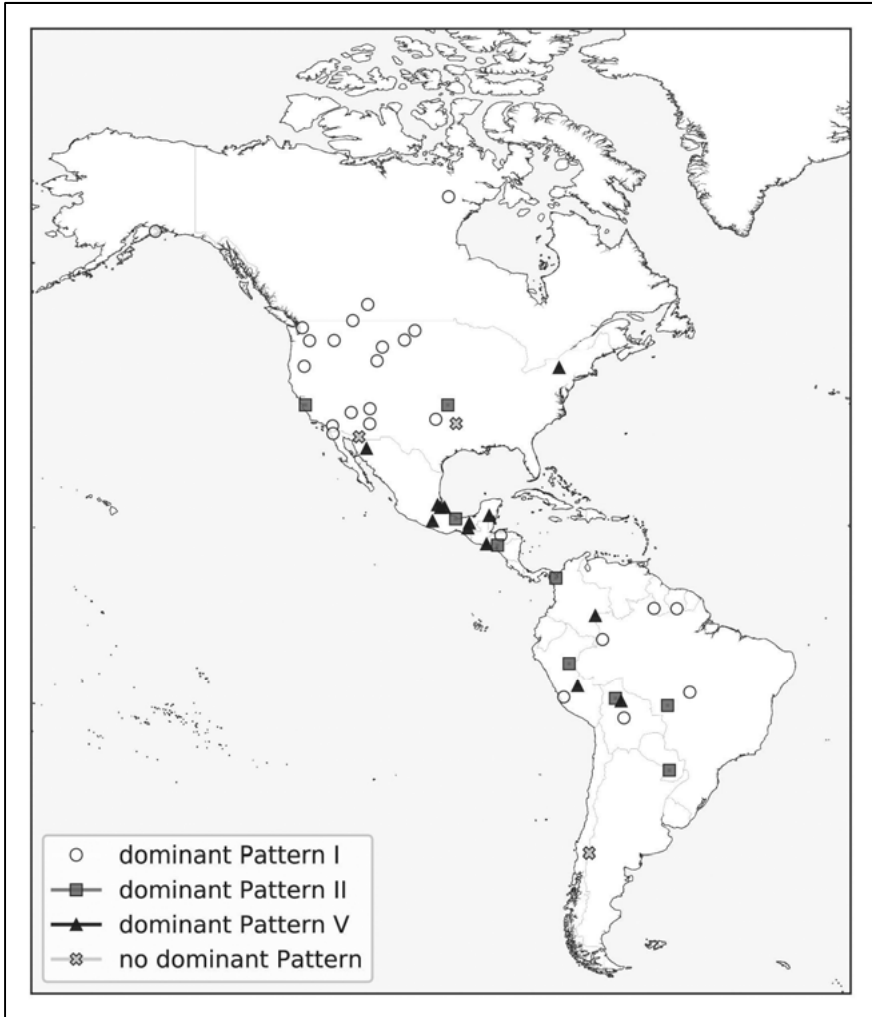
The six Uto-Aztecan languages displayed in Map 3 show a clear distribution of Pattern I and Pattern V. The two languages that show a dominance of Pattern V, viz. Guerrero Nahuatl [AM-30] and Pipil [AM-36], are located in Southern Mexico and El Salvador, respectively. They reflect the tendency of Mesoamerican languages to employ the maximally indistinct coding pattern. The three languages with the definitively dominant Pattern I, viz. Cahuilla [AM-5], Comanche [AM-10], and Tohono O’odham [AM-41], are located in the USA and behave more like other North American languages in terms of spatial coding on SDDs. Yaqui [AM-47], which is located just south of the Mexico-United States border, is a special case in that it shows a pervasive split between the SIs and SDDs.



Map 3: Distribution of patterns in Uto-Aztecan languages.

As shown in Section 3.5.2.2, Yaqui SIs exhibit Pattern I as the only attested option, while the SDDs, on the contrary, employ only Pattern V. It is thus located right between the North American languages with their preference for Pattern I and the Mesoamerican languages with their preference for Pattern V. Overall, the areal split of patterns in the Uto-Aztecan languages reflects the areal tendencies in North and Mesoamerica well. In Map 4, Pattern I ($P \neq G \neq S$) as the dominant option is marked by white dots, while a dominant Pattern II ($P = G \neq S$) is marked by dark grey squares. Black triangles stand for languages with Pattern V ($P = G = S$) as the dominant option and the light grey X-shaped symbols reflect languages for which we were not able to determine a dominant pattern.

Map 4 shows the predominance of Pattern I and thus the absence of full syncretism in the North American languages of our sample. In Mesoamerica, on the other hand, Pattern V is the most prevalent pattern. Pattern II occurs in all three regions apart from the northern parts of North America as the dominant pattern. For South America, however, clear tendencies cannot be determined. The three major Patterns I, II, and V are all similarly spread over the South American continent, likely reflecting its rich linguistic diversity.



Map 4: Distribution of patterns in the Americas.

Heterogeneous configurations are a frequent occurrence in the languages of our Pan-American sample. Similar to the African languages discussed above, most American languages employ either one or two patterns. There are three languages for which three different patterns can be found, viz. Comanche [AM-10], Hualapai [AM-17], and Mapudungun [AM-26]. Due to the high degree of overabundance in the FD SDDs of Upper Necaxa Totonac [AM-43], all five patterns can be logically employed here. Upper Necaxa Totonac and Choctaw [AM-8] are, however, left out

of the following statistics as the paradigms are incomplete. In both cases, we lack examples of the Source constructions of the ND SDDs (i.e. HENCE), so that the configurations cannot be determined. Of the five logically possible configurations (A-E) defined in Section 4.1 above, configurations A-D occur. Overall, 75 configurations can be created on the basis of the 48 statistically evaluable American sample languages. In 43 of the 75 configurations, we find the same pattern in the SIs and both degrees of SDDs (configuration A). In 21 cases, there is a difference between the SIs on the one hand and both SDD stages on the other (configuration B). Configuration C occurs four times, i.e. SIs and ND SDDs employ a different pattern than the FD SDDs. Finally, in seven cases the same pattern for SIs and FD SDDs is employed to the exclusion of the ND SDDs (configuration D). The 23 Pan-American sample languages which have at least the option to employ heterogeneous configurations are displayed in Table 43.

Table 43: American languages with heterogeneous configurations.

Languages with configuration B [SIs ≠ SDDs]	Optional configuration A [SIs = SDDs]
[AM-1] Apache	yes
[AM-6] Cavineña	yes
[AM-7] Cayuga	yes
[AM-10] Comanche	yes
[AM-11] Cree	yes
[AM-13] Cubeo	yes
[AM-14] Dakota	yes
[AM-16] Guaraní, Paraguay	yes
[AM-17] Hualapai	no
[AM-20] Klamath	yes
[AM-23] Kuna, Border	yes
[AM-26] Mapudungun	no
[AM-28] Musqueam	yes
[AM-37] Popoluca, Highland	no
[AM-47] Yaqui	no
Languages with configuration C [SIs = ND ≠ FD]	Optional configuration A [SIs = SDDs]
[AM-19] Kamaiura	yes
[AM-26] Mapudungun	no
[AM-29] Mutsun	yes
[AM-41] Tohono O'odham	no

Languages with configuration D [SIs = FD ≠ ND] Optional configuration A [SIs = SDDs]

[AM-33] Osage	yes
[AM-36] Pipil	yes
[AM-41] Tohono O'odham	no
[AM-42] Totonac, Filomeno Mata	no
[AM-44] Trio	yes
[AM-44] Yuracaré	yes

17 out of the 23 languages with heterogeneous configurations employ at least one pattern throughout the expression classes, i.e. there is an option for configuration A. Three languages, viz. Hualapai [AM-17], Highland Popoluca [AM-37], and Yaqui [AM-47] exhibit a pervasive split between SIs on the one hand and SDDs on the other. Mapudungun [AM-26] also shows a split between SIs and SDDs according to the attested constructions. There is, however, a third pattern that is employed in the SIs and ND SDDs but not in the FD SDDs. Two patterns can be found in Tohono O'odham [AM-41]. One is employed in the SIs and ND SDDs, the other in the SIs and FD SDDs. There is no pattern that surfaces in all three categories. Finally, Filomeno Mata Totonac [AM-42] shows a pervasive split between the SIs and FD SDDs on the one hand and the ND SDDs on the other. Overall, 87.5% of the statistically evaluable languages of our Pan-American subsample have at least one syncretism pattern that is featured homogeneously throughout the expression classes.

4.3 Asia

The languages of our Asian subsample show a great preference for the maximally distinct Pattern I followed by Pattern II, while the share of the maximally indistinct Pattern V is almost as low as the marginal Patterns III and IV. The absolute occurrence numbers of the five patterns in Asia are displayed in Table 44.

Table 44: Absolute distribution of patterns over the expression classes in Asia.

	SI	ND	FD	Total
Pattern I (P≠G≠S)	35	35	32	102
Pattern II (P=G≠S)	24	30	29	83
Pattern III (P≠G=S)	3	3	3	9

	SI	ND	FD	Total
Pattern IV (P=S≠G)	0	1	1	2
Pattern V (P=G=S)	5	6	6	17
Total	67	75	71	213

The absolute numbers of attested patterns in Asia reveal that the near deictic SDDs employ the highest number of attested patterns, while the SIs have the lowest number, and the far deictic SDDs are situated right in the middle between the two. Naturally, the total number of attested patterns per expression class has an influence on each of the five pattern's shares. This is illustrated in Figure 9.

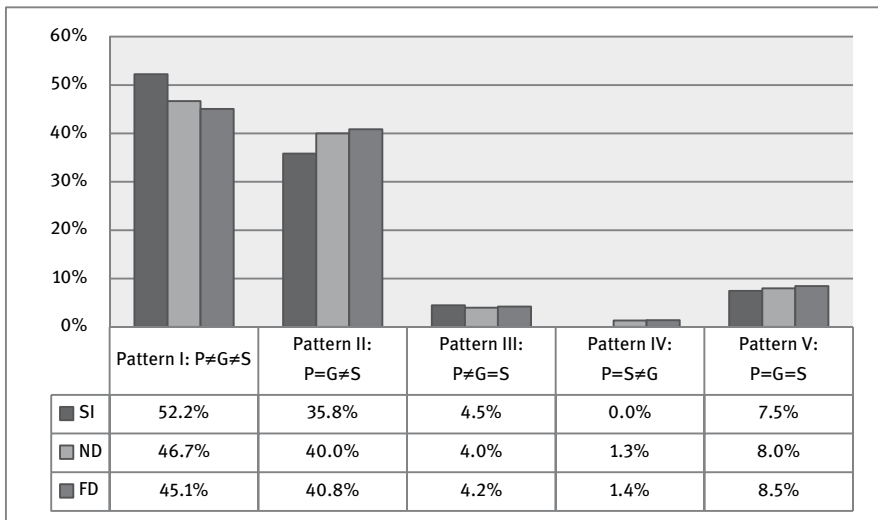


Figure 9: Shares of syncretism patterns per expression class in Asia.

As expected, the maximally distinct $P \neq G \neq S$ pattern has the greatest share in both SIs and SDDs. The difference between Pattern I and Pattern II is highest in the SIs, as Pattern I has a share of more than 50%, while Pattern II occurs in around 35% of all SI paradigms. The difference is not as striking in the two degrees of SDDs. Pattern I is still more frequent, as it is employed in approximately 45% of all SDD paradigms. Nevertheless, Pattern II comes closer to Pattern I in the SDDs with shares around 40% each. Overall, the shares of Patterns I and II per expression class are almost reversed, as there is a decreasing tendency for Pattern I to occur from SIs via ND SDDs to FD SDDs but an increasing tendency

for Pattern II. Patterns III and IV are peripheral as is the case in Africa and the Americas. Although Pattern V is represented more often than Pattern III and IV, it still appears as rather marginal in comparison to Pattern I and II. Despite similar tendencies, the difference between Pattern I and II for Stolz et al.'s (2017) sample of Asian languages is even more striking. Compare Figure 9 above to Figure 10 which displays the findings by Stolz et al. (2017).

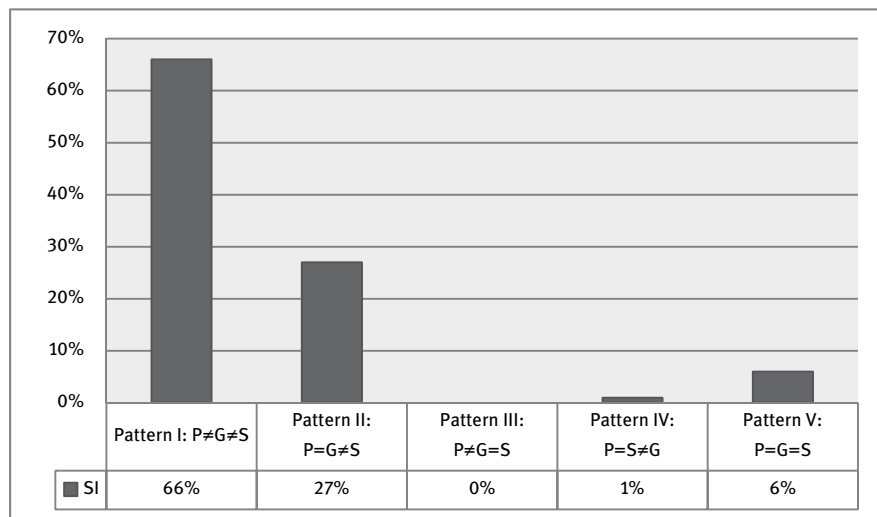


Figure 10: Shares of syncretism patterns in Stolz et al.'s (2017) sample of Asian SIs.

Stolz et al. (2017) examine 67 Asian languages with respect to their SI constructions in the three relations. The predominance of the maximally distinct option, with 66%, is even more pronounced. Pattern II is slightly less frequent in their sample and the other three syncretism patterns occur either less often than in our sample (Patterns IV and V) or are even absent (Pattern III). The differences between our and Stolz et al.'s findings are again due to the different set of sample languages and some differing analyses. Compared to the sample of Stolz et al. (2017), there are more languages that exclusively attest to Pattern II in our sample. Furthermore, we also identified more languages with an optional Pattern II. Although as many as 30 languages are treated in both studies, some variation in the patterns' shares is to be expected. The overall tendencies are still similar, and it is safe to say that Pattern I is the dominant pattern for both SIs and SDDs in Asia, followed by Pattern II. Patterns III-IV are only peripheral phenomena. Even Pattern V plays only a minor role.

Albeit trends across language families are not as obvious as they are in Africa, some generalizing statements can still be made. Again, the results for the SIs and the two degrees of SDDs were conflated to analyze the patterns' overall distribution. Figure 11 depicts the distribution of patterns per language family in our Asian subsample.

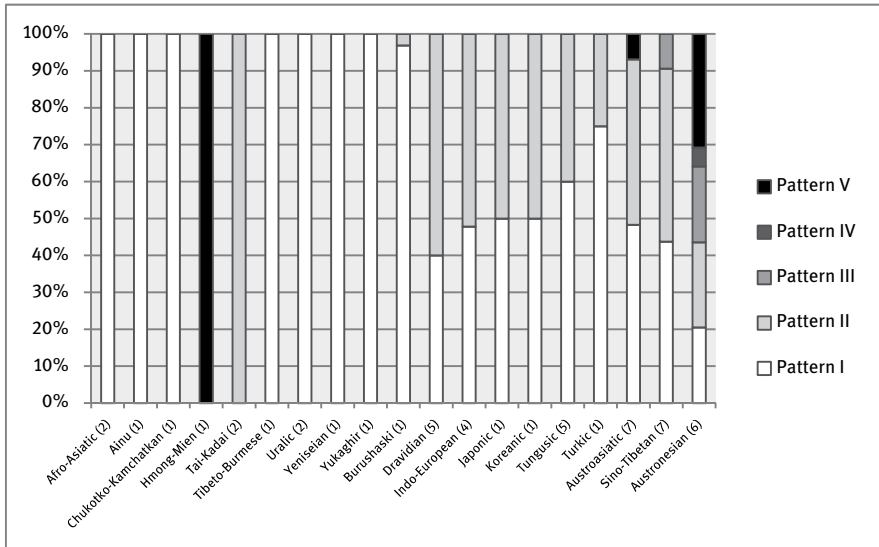
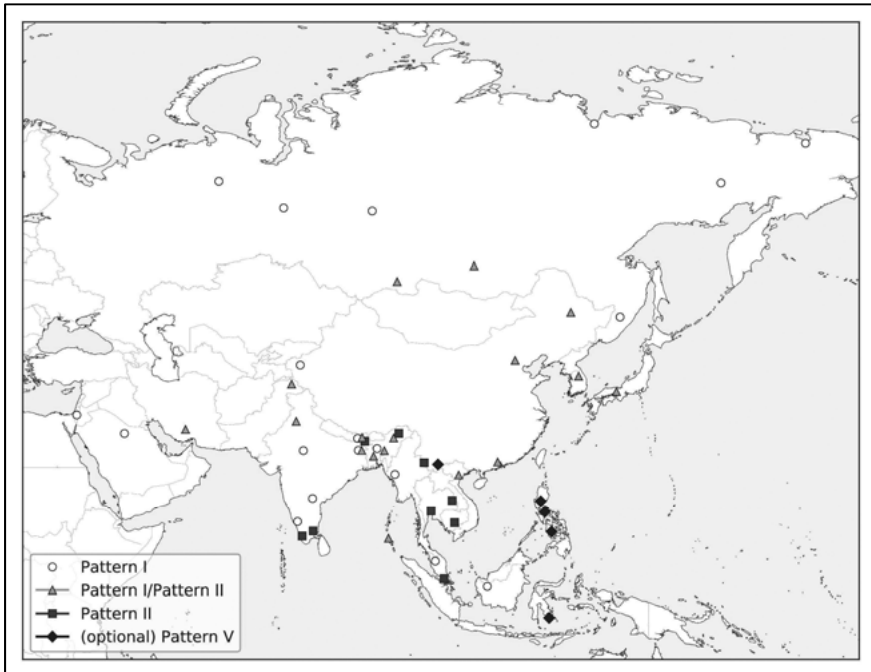


Figure 11: Distribution of syncretism patterns across language families in Asia.

As can be deduced from Figure 11, the shares of Pattern I and Pattern II in many language families are roughly the same. The two Afro-Asiatic languages in Asia conform to the tendency observed for Afro-Asiatic languages, i.e. to code spatial relations distinctly (cf. Section 4.1 above). Of the three most strongly represented language families, namely Austroasiatic, Austronesian, and Sino-Tibetan, the Austronesian phylum is undoubtedly the most diverse. All five patterns can be found in the six Austronesian languages of our Asian subsample. Furthermore, the highest number of patterns per language can be identified for the Austronesian languages. As will be discussed below, of the four languages that employ more than two patterns, three belong to the Austronesian phylum. Pattern V, which plays a rather marginal role in Asia compared to Africa and the Americas, surfaces in three different languages families. Overall, Pattern V is employed in six different languages, four of which are Austronesian. The one Austroasiatic language attesting to Pattern V is Car Nicobarese [AS-34], noticeably one of the languages that employ more than two patterns.

Certain areal trends can also be identified in Asia. Map 5 displays the distribution of selected patterns. White dots mark languages that exclusively attest to Pattern I ($P \neq G \neq S$). Languages that are marked by a light grey triangle employ Pattern I and optionally also Pattern II ($P = G \neq S$). Languages that exclusively attest to Pattern II are indicated by dark grey squares. Finally, black rhombs mark languages that at least optionally allow for Pattern V ($P = G = S$).



Map 5: Distribution of patterns in Asia.

Map 5 shows that the sample languages located in the northern parts of Asia all exclusively attest to Pattern I. Going further south, more languages that allow for both Pattern I and Pattern II can be found. Languages that exclusively attest to Pattern II become more frequent even further to the South. Apart from Hmong Njua [AS-19], which is located on the southern border of China, all languages that at least optionally allow for Pattern V can be detected on the southern islands facing Oceania. In Asia, it seems that the further south a language is located the higher the possibility of it allowing for syncretism.

Asia also has a number of languages which do not always employ patterns regularly throughout the expression classes. Again, most languages have one or

two patterns. There are two languages, Iloko [AS-20] and Car Nicobarese [AS-34], which attest to three different patterns, one language (Hiligaynon [AS-17]) attesting to four, and another language (Tagalog [AS-39]) attesting to all five syncretism patterns. Of the five logically possible configurations (A–E), configurations A–D are featured. Overall, 79 configurations result from the 50 Asian sample languages. In 62 of these 79 configurations, the same pattern is used throughout the expression classes (configuration A). In 14 cases, there is a split between the SIs and the SDDs (configuration B). Configuration C, where SIs and ND SDDs behave similarly to the exclusion of FD SDDs, occurs once, whereas configuration D, where the SIs and FD SDDs behave similarly to the exclusion of ND SDDs, occurs twice. Table 45 displays the 12 languages with at least the option for heterogeneous configurations.

As can be seen in Table 45, most languages with heterogeneous configurations have the option to employ the homogeneous configuration A, i.e. the same pattern is used for all expression classes. Only Car Nicobarese [AS-34] and Santali [AS-38] display a pervasive split between SIs and SDDs. Although quite a few languages have heterogeneous configurations at least optionally, 96% of our sample languages still use at least one pattern that can be applied to SIs and SDDs alike.

Table 45: Asian languages with heterogeneous configurations.

Languages with configuration B [SIs ≠ SDDs]	Optional configuration A [SIs = SDDs]
[AS-2] Apatani	yes
[AS-10] Cantonese	yes
[AS-14] Evenki	yes
[AS-17] Hiligaynon	yes
[AS-20] Iloko	yes
[AS-28] Limbu	yes
[AS-34] Nicobarese, Car	no
[AS-38] Santali	no
[AS-39] Tagalog	yes
Languages with configuration C [SIs = ND ≠ FD]	Optional configuration A [SIs = SDDs]
[AS-7] Bengali	yes
Languages with configuration D [SIs = FD ≠ ND]	Optional configuration A [SIs = SDDs]
[AS-9] Burushaski, Yasin	yes
[AS-44] Tuvinian	yes

4.4 Europe

Similar to Asia, Pattern I is the most frequent pattern in Europe, followed by Pattern II. While a few instances of Patterns III-V were found even in Europe, it seems that all three patterns are similarly marginal. Europe is unique in that Pattern V is just as peripheral as Patterns III and IV. Table 46 displays the absolute distribution of patterns over the 50 European sample languages.

Table 46: Absolute distribution of patterns over the expression classes in Europe.

	SI	ND	FD	Total
Pattern I ($P \neq G \neq S$)	37	39	37	113
Pattern II ($P = G \neq S$)	25	25	25	75
Pattern III ($P \neq G = S$)	2	2	1	5
Pattern IV ($P = S \neq G$)	1	1	1	3
Pattern V ($P = G = S$)	1	1	1	3
Total	66	68	65	199

The absolute numbers clearly show a preference for the maximally distinct Pattern I, while Pattern II is also quite frequent. With only one or two occurrences across the different expression classes, Patterns III-V are evidently only marginally represented. The shares of each pattern are depicted in Figure 12.

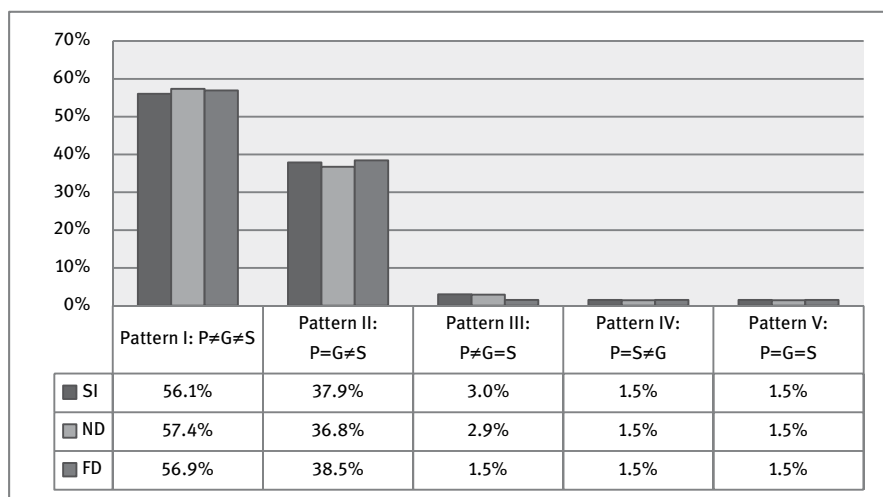


Figure 12: Shares of syncretism patterns per expression class in Europe.

Again, SIs and the two degrees of SDDs have similar tendencies. Differences between the categories are extremely marginal and can thus be conflated for the following evaluations. With around 57% in all categories, Pattern I is definitively the most frequent pattern in Europe. Pattern II can also be found quite often. With a share of around 37% of all patterns, it is the second most frequent in our European subsample. As Pattern III has two occurrences in the SIs and near deictic SDDs each (cf. Table 46 above), it qualifies as the third most common pattern in Europe. With around 3% in the SIs and ND SDDs and only 1.5% in the FD SDDs, Pattern III should nevertheless be classified as marginal. Patterns IV and V have the same shares with around 1.5% in each category. Stolz et al. (2017) obtained similar results in their study on spatial interrogatives, as Figure 13 shows.

Stolz et al. (2017) statistically evaluate 134 European varieties in their study. Of our 50 European languages, 48 are also treated in Stolz et al. (2017) so that there is greater conformity between the two samples compared to the subsamples from the other macro areas. Coincidentally, one of the two languages that are evaluated in our study but not in Stolz et al.'s (2017), Adyghe [EU-1], constitutes the only case of $P=G=S$ syncretism in our European subsample. Based on their analyses of European translations of *Le petit prince*, Stolz et al. (2017: 656) claim “that Europe is the only macro-area from which the neutralized paradigm in the shape of Pattern V WHERE = WHITHER = WHENCE is absent”.

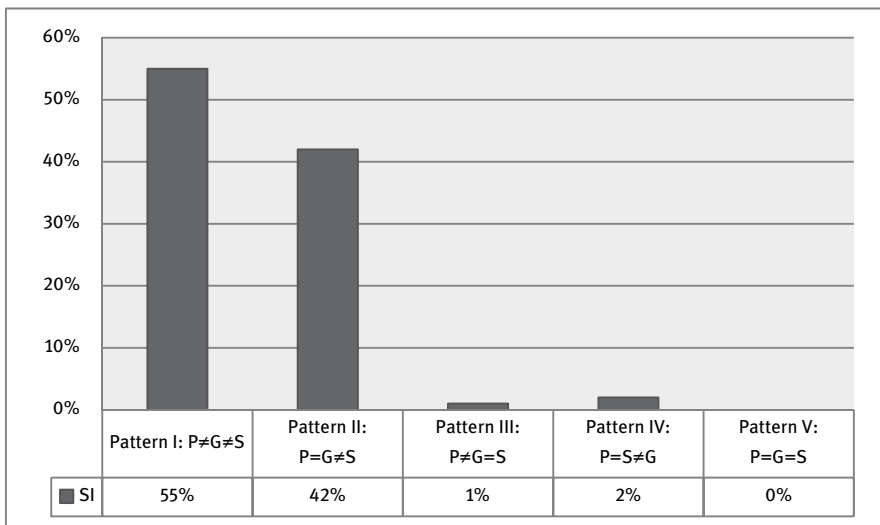


Figure 13: Shares of syncretism patterns in Stolz et al.'s (2017) sample of European SIs.

They immediately relativize their own claim by giving an account of possible $P=G=S$ syncretism in a variety of Italo-Albanian and colloquial Ukrainian (cf. Section 3.5.4). They admit that “Pattern V is not categorically excluded from Europe but it cannot aspire to a status higher than that of an areal *rarissimum*” (Stolz et al. 2017: 659). As the case of Adyghe is still quite exceptional according to our observations, we agree with their assessment of Pattern V’s role in Europe. The shares of the other four patterns largely correspond to our findings, although Pattern II ($P=G \neq S$) has slightly higher shares. Overall, Europe prefers the maximally distinct Pattern I, while Pattern II also shows a high frequency rate. Other patterns appear to be only peripheral phenomena.

Certain trends can also be observed in Europe’s language families. As the majority of languages in our European subsample belong to the Indo-European macro-phylum, the language family is broken down into subphyla. Figure 14 depicts the absolute distribution of patterns per language family in the SIs and SDDs of the European languages in our sample.

As becomes apparent from Figure 14, most of the language families show Pattern I ($P \neq G \neq S$) at least partly. Pattern II ($P=G \neq S$) is also represented in most of the language families. Almost no language family (which is represented by more than one language) attests to only one pattern.

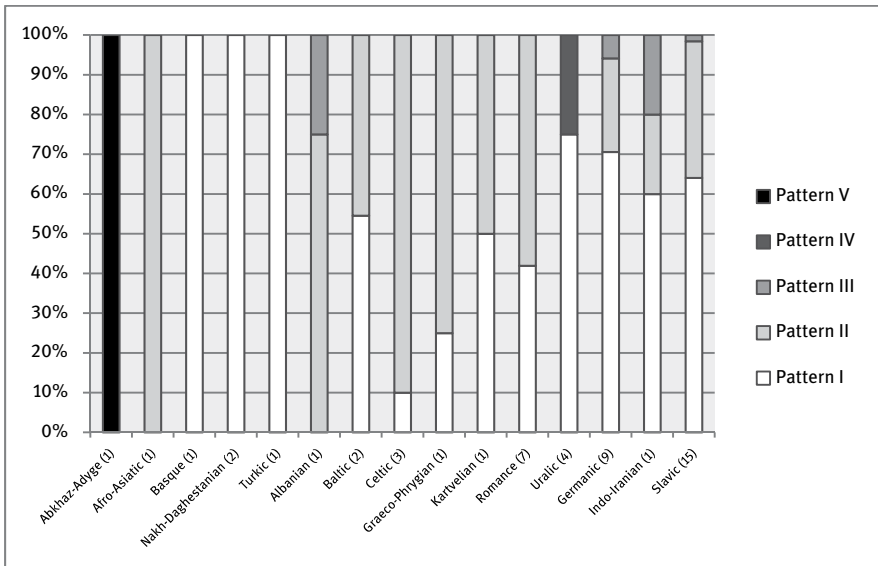
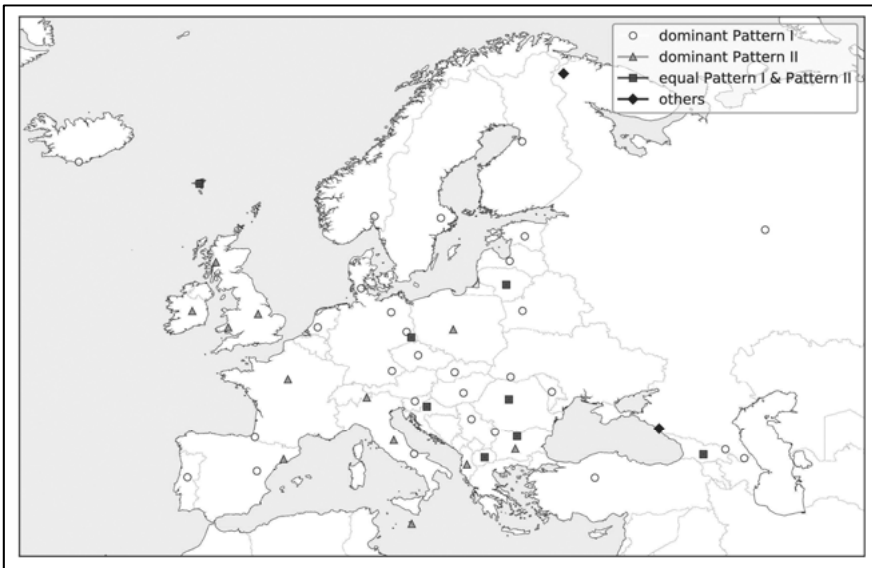


Figure 14: Distribution of syncretism patterns across language families in Europe.

Of the three biggest Indo-European subphyla, Germanic and Slavic show a strong tendency towards the maximally distinct coding pattern, i.e. Pattern I. Pattern II is also frequently employed in Germanic and Slavic languages. Pattern III ($P \neq G = S$) is a marginal occurrence in both subphyla. Romance, on the other hand, shows a stronger tendency towards Pattern II, although Pattern I is almost as frequent.

Areal trends can hardly be recognized in Europe. Map 6 displays the distribution of patterns over the European continent. White dots mark languages with a dominant Pattern I ($P \neq G \neq S$), while light grey triangles mark languages with a dominant Pattern II ($P = G \neq S$). Dark grey squares represent languages in which Patterns I and II are equally viable options. Finally, black rhombs are used to display languages in which another pattern than Patterns I or II is predominantly employed.

Although the distribution of patterns is not as clear as in other macro areas, it seems that languages which predominantly employ Pattern II stretch more or less like a belt from Great Britain over France and Italy to Greece. Pattern I as the dominant pattern is found almost everywhere apart from these regions. Languages which equally employ Patterns I and II seem to be mainly found in Slavic countries. Overall, we have the impression that a language's affiliation with a certain phylum has more influence on the employed patterns than its location on the map.



Map 6: Distribution of patterns in Europe.

Quite a few languages employ irregular patterns in Europe. The languages of this subsample generally employ either one or two patterns, except for Romani [EU-34] with three attested patterns. Similar to Asia discussed in the preceding section, configurations A-D occur. Overall, the 50 European languages employ 79 configurations. In 56 cases, the same pattern is used throughout the expression classes (configuration A). In eleven cases, there is a split between SIs and SDDs so that they can be categorized as configuration B. There are three cases in which the SIs and ND SDDs behave identically (configuration C) and nine cases in which the SIs and FD SDDs behave the same (configuration D). 48 out of 50 languages have at least one pattern that is (at least optionally) homogeneously employed throughout the expression classes. Table 47 displays the 20 European languages with at least the option to form heterogeneous configurations.

Table 47: European languages with heterogeneous configurations.

Languages with configuration B [SIs ≠ SDDs]	Optional configuration A [SIs = SDDs]
[EU-2] Albanian	yes
[EU-6] Catalan	yes
[EU-20] Icelandic	yes
[EU-31] Old Church Slavonic	yes
[EU-32] Polish	yes
[EU-33] Portuguese	yes
[EU-34] Romani, Moldovan	yes
[EU-36] Rumantsch	yes
[EU-41] Slavomolisano	yes
[EU-45] Sorbian, Upper	no
[EU-50] Welsh	yes
Languages with configuration C [SIs = ND ≠ FD]	Optional configuration A [SIs = SDDs]
[EU-8] Czech	no
[EU-34] Romani, Moldovan	yes
[EU-45] Sorbian, Upper	no
Languages with configuration D [SIs = FD ≠ ND]	Optional configuration A [SIs = SDDs]
[EU-17] German	yes
[EU-18] Greek, Modern	yes
[EU-24] Latvian	yes
[EU-27] Low German	yes

Languages with configuration D [SIs = FD ≠ ND] Optional configuration A [SIs = SDDs]

[EU-40] Serbian	yes
[EU-42] Slovak	yes
[EU-43] Slovenian	yes
[EU-44] Sorbian, Lower	yes
[EU-46] Spanish	yes

As Table 47 suggests, two languages, viz. Czech [EU-8] and Upper Sorbian [EU-45], do not have the option for configuration A. Upper Sorbian uses Pattern I ($P \neq G \neq S$) for both SDDs and Pattern II ($P = G \neq S$) for SIs and ND SDDs. There is thus no pervasive split between the categories. In the case of Czech, there is a pervasive split between SIs and ND SDDs on the one hand and FD SDDs on the other, which strikes us as rather rare. Overall, a rather high number of European languages, viz. 46% show traces of heterogeneous configurations, many of them due to some blurred boundaries between Place and Goal coding. The occurrence of heterogeneous configurations does not seem to have a strong influence on the tendencies for the patterns in the different expression classes. The patterns' distribution is quite balanced between the SIs and SDDs as Figure 12 above shows.

4.5 Oceania

Pattern I is undoubtedly the most frequent pattern in the languages of our Oceanian subsample. It is followed by Pattern II. Patterns III and IV appear to be just as peripheral as in the other macro areas discussed above. Although Pattern V is a bit more frequent than the two marginal patterns, it does not appear to be very frequent overall. Table 48 displays the absolute occurrences of the five syncretism patterns in Oceania.

Table 48: Absolute distribution of patterns over the expression classes in Oceania.

	SI	ND	FD	Total
Pattern I ($P \neq G \neq S$)	37	39	39	115
Pattern II ($P = G \neq S$)	20	13	13	46
Pattern III ($P \neq G = S$)	3	4	3	10
Pattern IV ($P = S \neq G$)	2	2	4	8
Pattern V ($P = G = S$)	9	7	9	25
Total	71	65	68	204

Table 48 shows that the SIs bear the highest number of attested patterns, while the ND SDDs have the lowest number of attested patterns. The main difference can be seen in the row reflecting the occurrences of Pattern II in the three categories. While Pattern II is employed 13 times in both ND and FD SDDs, it was found 20 times in Oceanian SIs.¹³⁷ Figure 15 below illustrates the shares of each pattern in the three categories.

Figure 15 shows the expected predominance of Pattern I in both SIs and SDDs. The high occurrence of the maximally distinct pattern is, especially in this macro area, due to a plethora of differently structured paradigms. Distinct, dedicated P/G/S markers, that combine with SDDs and constitute a uniform, structurally paradigmatic class, are found mainly in Australia. In the Oceanian islands and especially in Papua, different word classes often fulfill our predefined SDD functions.

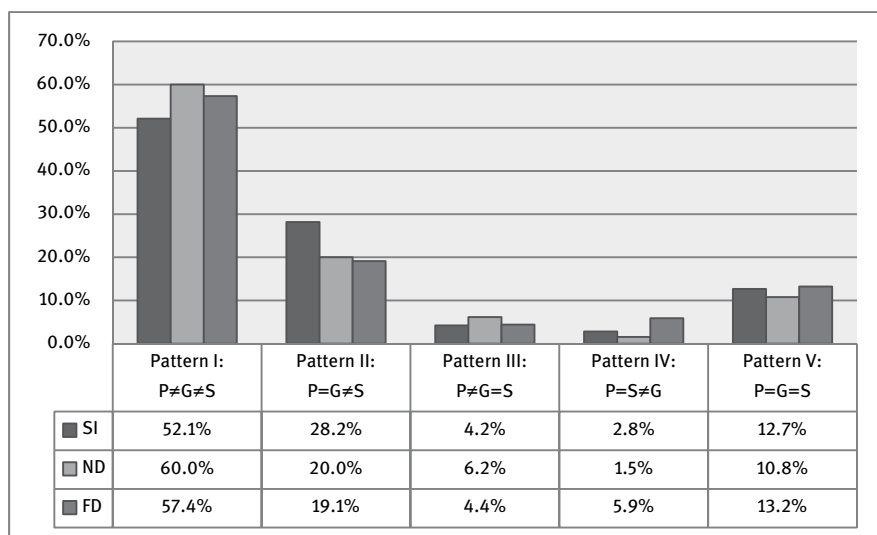


Figure 15: Shares of syncretism patterns per expression class in Oceania.

Along with suppletive forms of the same word class, this naturally leads to a maximally distinct pattern. In percentage terms, Pattern I occurs slightly less

¹³⁷ Note that crosslinguistically it seems that especially P=G syncretism due to a drop of allative marking or default Place marking is often optionally available, but our counts are based only on those constructions that are attested in the grammatical descriptions and/or texts we used to compile our sample (cf. Section 1.5).

often in the SIs than in SDDs. It is most frequently employed in the ND SDDs with 60% and least frequently in the SIs with around 52%. This picture is more or less reverse for Pattern II. Pattern II is attested in around 28% of Oceania's SIs. With 19% and 20% of the ND and FD SDD patterns, respectively, Pattern II occurs noticeably less often in the SDDs. Ranging between 1.5% and 6%, Patterns III and IV are only marginally represented in Oceania as well. Although Pattern V is not frequent either, it still seems to be a more prominent occurrence. With shares ranging between 10.8% and 13.2%, it is the third most frequent pattern in Oceania. The shares calculated by Stolz et al. (2017) for their subsample of Oceanian SIs offer a similar picture as Figure 16 depicts.

Although the shares are not identical, the overall tendencies are not different from the ones resulting from our analysis. Pattern II is not as frequent in the SIs of Stolz et al.'s (2017) Oceanian sample languages (21%) as in the SIs of our own sample languages (28%). Instead, Pattern V occurs slightly more often in Stolz et al.'s (2017) sample (17%) as compared to our sample (12.7%). The shares for Patterns I, III, and IV are quite similar. 23 languages that are treated in our study are also analyzed by Stolz et al. (2017). Overall, our study with partly different sample languages confirms the tendencies observed by Stolz et al. (2017) for the distribution of syncretism patterns in Oceania.

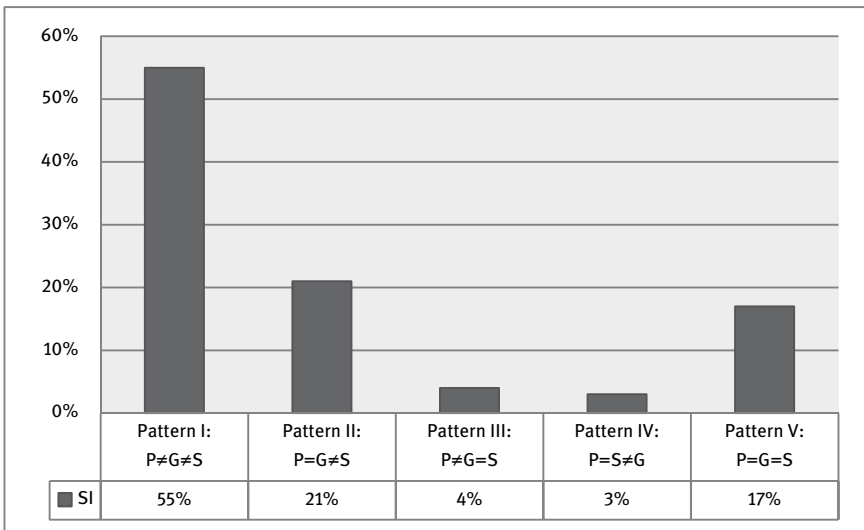


Figure 16: Shares of syncretism patterns in Stolz et al.'s (2017) sample of Oceanian SIs.

Tendencies across language families in our Oceanian subsample are difficult to detect. Figure 17 displays the distribution of patterns across the language families occurring in our sample.

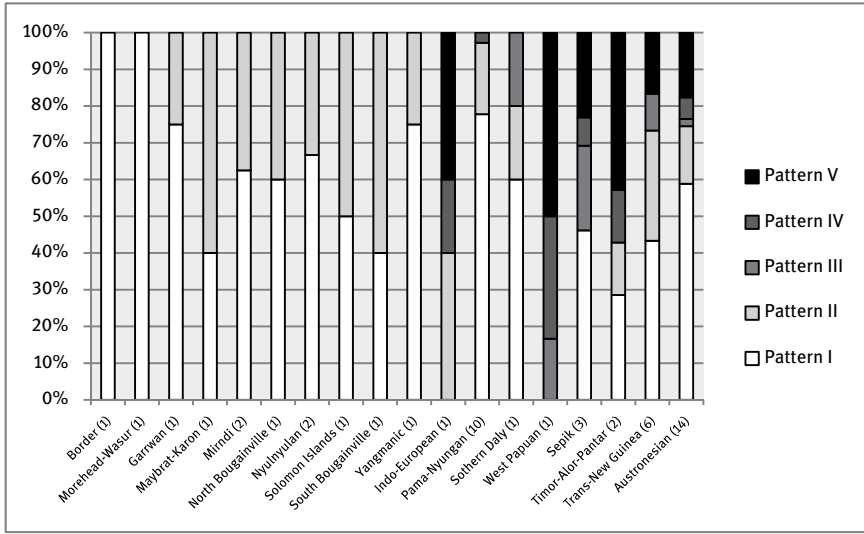


Figure 17: Distribution of syncretism patterns across language families in Oceania.

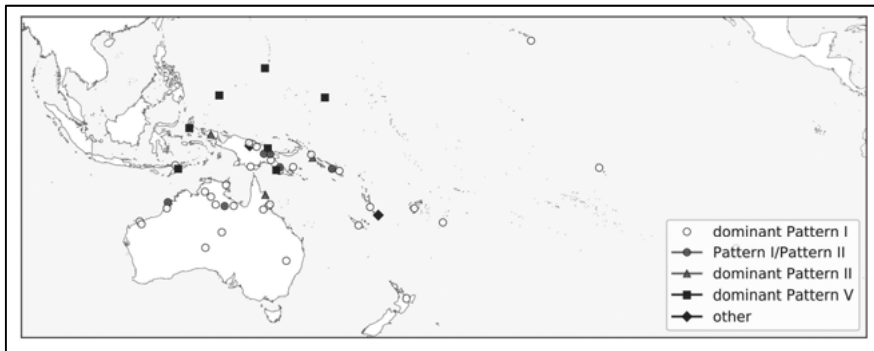
As elucidated in Section 3.1.5, Pattern I surfaces in almost all of the languages at least partly and in all of the language families except for the West Papuan and Indo-European phyla represented by Tidore [OC-40] and the English-based creole Tok Pisin [OC-42], respectively. It is noticeable that almost every phylum that employs Pattern I also employs Pattern II. We demonstrate below that a relatively high degree of languages employs an additional pattern for either the SIs or the SDDs (cf. Table 48 below).

Generally, Pattern I, which comprises the most diverse group of distinct coding strategies, is almost always the dominant pattern within the language families, while Pattern II plays a subordinate role in comparison. Interestingly, Pattern V, which is not a very frequent occurrence in Oceania, is also spread across several language families. It occurs in one third of the language families, most of which exhibit Pattern I as the dominant pattern. As Figure 17 illustrates, clear tendencies for one pattern can hardly be determined for the language families.

The languages of our Oceanian subsample clearly show some areal trends, which are depicted on Map 7. White dots mark languages for which Pattern I ($P \neq G \neq S$) is predominantly found, while grey dots mark languages which simi-

larly employ Pattern I and Pattern II ($P=G \neq S$) with no clear predominance of either of them. The grey triangles show languages which predominantly employ Pattern II, and the black squares mark languages in which Pattern V ($P=G=S$) is the preferred option.

As expected, Pattern I is the most widespread pattern in Oceania. It is primarily found all over Australia with only a few instances of Pattern II as an equal or predominant option. The languages spoken on islands east of Australia similarly exhibit a clear preference for Pattern I.



Map 7: Distribution of Patterns in Oceania.

While Papua New Guinea shows a variety of patterns from Pattern I to V, the languages spoken on the islands further north have a tendency towards Pattern V. The distribution of patterns in Oceania thus almost seems to be a mirror image of the distribution in Asia (cf. Map 5 in Section 4.3 above). Distinct coding is predominantly found in the southern regions and the further north one goes the more syncretism can be found.

Heterogeneous configurations occur quite often in the languages of our Oceanian subsample. Similar to the other macro areas discussed above, most languages employ either one or two patterns. However, languages with three or more patterns do not seem to be rare, as there are nine languages in this subsample that employ three patterns and two that employ four. This means that 22% of the languages have more than two patterns. For the analysis of heterogeneous configurations, we had to exclude Marquesan [OC-22], as we lack a complete paradigm of FD SDDs. In the 49 remaining languages, configurations A-D occur. A total of 94 configurations result from these 49 languages, 44 of which consist of the same pattern displayed in all three categories (configuration A). This amounts to approximately 47% of all configurations. Configuration

B, in which SIs and SDDs have different patterns, occurs 30 times. In eight cases, the SIs and ND SDDs behave similarly to the exclusion of FD SDDs (configuration C) and in twelve cases, the SIs and FD SDDs behave similarly to the exclusion of ND SDDs (configuration D). Configuration E does not occur. The 29 languages with heterogeneous configurations are displayed in Table 49.

Table 49: Oceanian languages with heterogeneous configurations.

Languages with configuration B [SIs ≠ SDDs]	Optional configuration A [SIs = SDDs]
[OC-1] Abau	no
[OC-2] Abui	no
[OC-4] Awtuw	no
[OC-7] Chamorro	no
[OC-12] Futuna-Aniwa	yes
[OC-13] Garrwa, Western	yes
[OC-14] Guugu Yimidhirr	yes
[OC-15] Hawaiian	yes
[OC-17] Jingulu	yes
[OC-18] Kilivila	no
[OC-21] Maori, Southern Cook Islands	yes
[OC-23] Martuthunira	yes
[OC-25] Maybrat	yes
[OC-27] Motuna	yes
[OC-29] Nii	no
[OC-39] South Efate	yes
[OC-40] Tidore	yes
[OC-44] Wambaya	no
[OC-45] Wardaman	yes
[OC-46] Warrongo	yes
[OC-49] Yindjibarndi	yes
Languages with configuration C [SIs = ND ≠ FD]	Optional configuration A [SIs = SDDs]
[OC-9] Doromu-Koki	no
[OC-29] Nii	no
[OC-20] Manambu	yes
[OC-23] Martuthunira	yes
[OC-30] Orokaiva	yes
[OC-36] Rotokas	yes

Languages with configuration D [SIs = FD ≠ ND]	Optional configuration A [SIs = SDDs]
[OC-2] Abui	no
[OC-9] Doromu-Koki	no
[OC-15] Hawaiian	yes
[OC-28] Ngan'gityemmerri	yes
[OC-37] Sa'a	yes
[OC-41] Tinrin	yes
[OC-42] Tok Pisin	no
[OC-44] Wambaya	no

20 out of the 29 languages with heterogeneous configurations employ at least one pattern in all three categories, i.e. they have at least one pattern that corresponds to configuration A. Overall, four languages show a pervasive split between SIs on the one hand and SDDs on the other. These languages are Abau [OC-1], Awtuw [OC-4], Chamorro [OC-7], and Kilivila [OC-18]. In Tok Pisin [OC-42], there is a split between SIs and FD SDDs as opposed to the ND SDDs. Nii [OC-29] employs a total of four patterns, two of which correspond to configuration B and another two to configuration C. None of the patterns surfaces in all three categories. Abui [OC-2] and Wambaya [OC-44] both employ configurations B and D but do not have an option for configuration A. Furthermore, Doromu-Koki [OC-9] has three patterns, one of which corresponds to configuration C and two to configuration D, so that there is no optional configuration A either. Although only 47% of all configurations have the same patterns in all three categories of the respective languages, 82% of Oceanian languages still have at least one pattern that is employed in the SIs and both degrees of SDDs (configuration A).

4.6 The world

The previous subsections constituted a quantitative evaluation of the syncretism patterns in the languages for each macro area. In this section, a worldwide comparison of the obtained results is carried out. We emphasize again that we are aware of the problems that come along with the selection of our sample languages. With relatively small subsample sizes of 50 languages per macro area, we can at most offer a rough approximation to the actual distributions of patterns in the different areas. Generally, we found that the data qualifying for SDD paradigms is rather sparse in grammatical descriptions, so that our convenience sample is only roughly balanced in terms of areality and genealogy (cf.

Map 1 in 1.5). Still, certain areas can be over- or underrepresented in comparison to others due to varying degrees of access to data, which leads to a bibliographical bias. Nevertheless, we contend that our data provides robust indications of trends and tendencies for the distribution of the five syncretism patterns over the five macro areas.

The results presented in Sections 4.1 to 4.5 have shown that there are only marginal differences in the coding strategies between SIs, ND SDDs, and FD SDDs, if at all.¹³⁸ The overall tendencies are always at least similar in the three categories. We therefore deem it unproblematic to treat the three categories together in the worldwide comparison. The shares calculated in Figure 18 below reflect the overall occurrences of each pattern per continent independent of the expression class, i.e. the data for the SIs, ND SDDs, and FD SDDs were conflated.¹³⁹

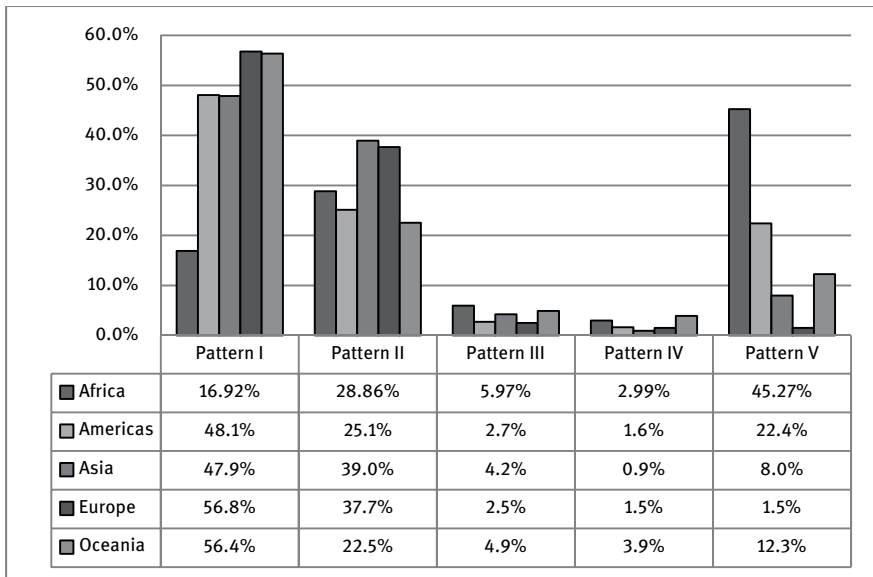


Figure 18: Shares of syncretism patterns per macro area.

The overall tendencies appear to be similar in most macro areas. Pattern I ($P \neq G \neq S$) is the most frequent option in every macro area except for Africa. Pat-

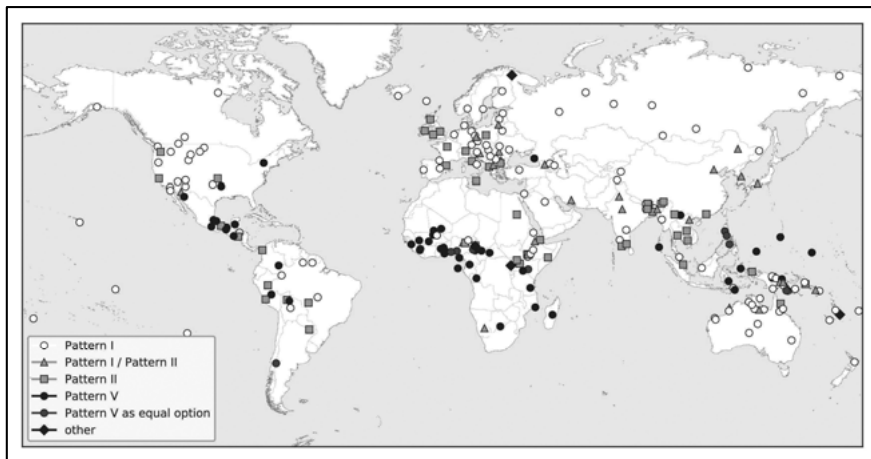
138 Oceania is outstanding in this regard due to the plethora of coding strategies that are unevenly distributed (cf. Section 4.5 above).

139 For the exact distribution of patterns per category in all languages, see Appendix VI.

tern II ($P=G\neq S$) frequently surfaces everywhere and although the shares vary by up to 16.5% (between Asia and Oceania), Pattern II is the second most common option in all macro areas. As expected, Patterns III ($P\neq G=S$) and IV ($P=S\neq G$) occur only peripherally. Pattern V ($P=G=S$) is the most diverse with regard to its worldwide distribution. While it is almost absent from Europe, it takes the leading role in Africa. Pattern V is rather marginal in Asia and not very frequent in Oceania either. In the Americas, it is almost as frequent as Pattern II. Due to the inversion of the shares of Patterns I and V in comparison to the other continents, Africa stands out the most. Stolz et al. (2017: 596) compare the results they acquired for Europe on the one hand and the rest of the world on the other and come to the following conclusion:

What distinguishes Europe from the rest of the world is the absence of the syncretic Pattern V which in turn is a characteristic (but not a monopoly!) of Sub-Saharan Africa. There is thus evidence of crosslinguistic homogeneity and at the same time of areal preferences and dispreferences.

Although our data partly show different shares compared to the values calculated by Stolz et al. (2017), we agree with their analysis of the global situation.



Map 8: Global distribution of all patterns.

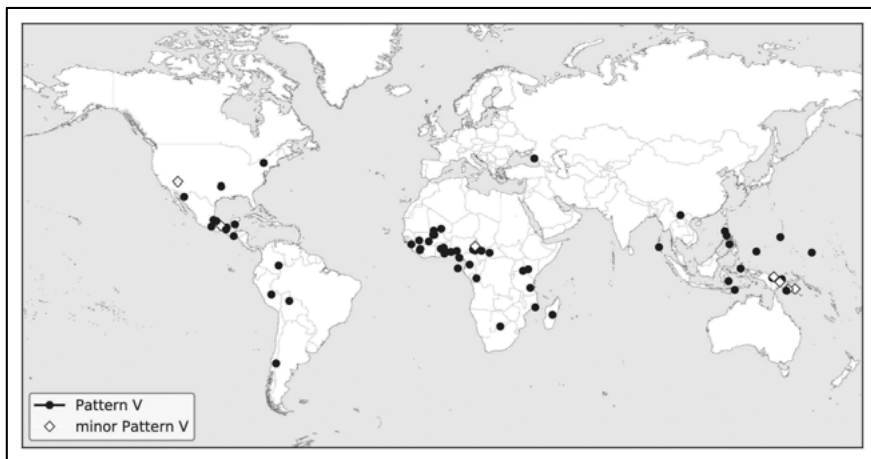
Map 8 shows the distribution of the patterns over the world. White dots mark languages that employ Pattern I ($P\neq G\neq S$) as the only or dominant option. Languages that equally employ Patterns I and II ($P=G\neq S$) are displayed by light grey triangles, while languages that employ Pattern II as the only or dominant option

are marked by light grey squares. Languages that have Pattern V (P=G=S) as the only or dominant option are represented by black dots. Dark grey dots, on the other hand, mark languages that equally employ Pattern V and one or more other patterns. Finally, black rhombs are used to indicate languages with other patterns.

The areal distribution of patterns displayed in Map 8 allows for an interesting observation. We have already stated that Pattern V occurs most frequently in our African sample, while it is almost absent from Europe. It can also be found in the other macro areas, viz. the Americas, Asia, and Oceania, although considerably less often. In the Americas, Pattern V is the preferred option by Mesoamerican languages, while it is mostly absent from North America. South America hosts some indistinctly coding languages. However, due to a low amount of South American sample languages, we deem it plausible that a plethora of coding strategies can still be found on this linguistically diverse continent. The few occurrences of Pattern V in Asia can be spotted in southern regions of the continent, mostly on the southern islands. In Oceania, on the other hand, the majority of the occurrences surface on the islands north of Australia, while Australia itself is free of Pattern V. Pattern V is particularly interesting to studies on space and deixis in general, since it strongly hints at spatial (deictic) relations being coded by verbs' semantics, i.e. by monoverbal or multiverbal constructions.¹⁴⁰ These languages qualify for further studies promising insight into grammaticalization channels from motion verbs to grammatical spatial markers.¹⁴¹ The overall distribution of Pattern V in our sample is depicted in Map 9. Black dots mark languages which exhibit Pattern V as the only or dominant pattern or as one of two or more competing options, while white rhombs mark languages in which Pattern V plays only a minor role.

140 Note that individual members of the verb class or combinations thereof may code the relations under scrutiny in multiverbal constructions. We have the impression that the relevant forms of multiverbal constructions belong to closed classes, e.g. auxiliaries or preverbs. Therefore, those have tentatively been regarded as markers in this study. However, since our convenience sample hosts relatively few languages that attest to pervasive use of multiverbal constructions or even genuine serial verb constructions, we hope that future studies will shed more light on verbal space deixis.

141 See Heine and Kuteva (2002: 159, 117, 230) for examples of these crosslinguistically observed developments and Hober (forthcoming) for an analysis of the grammaticalization of Mayan motion verbs into inter alia spatial markers and directionals.

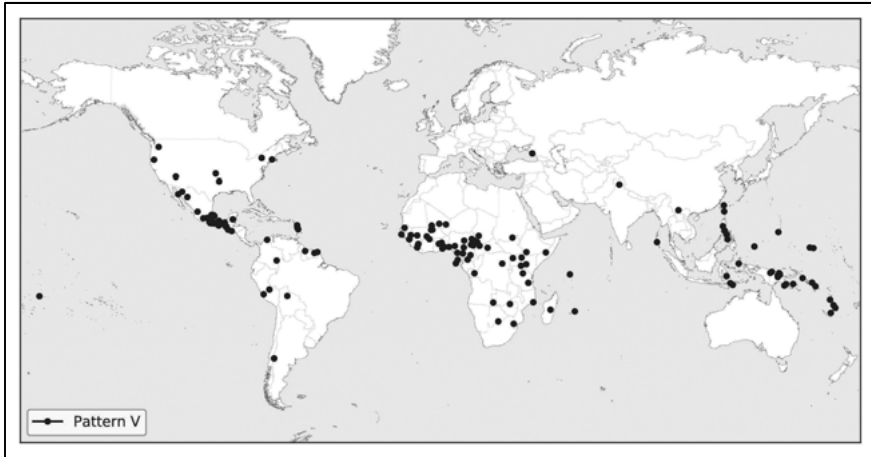


Map 9: Global distribution of Pattern V ($P=G=S$).

As can be seen in Map 9, the bulk of languages employing Pattern V ($P=G=S$) at least optionally largely concentrates around the equatorial area. Especially the northern regions are almost free of this pattern. Europe proved to be the only macro area in which Pattern V is just as marginal as Patterns III ($P \neq G=S$) and IV ($P=S \neq G$). Considering Map 1 in Section 1.5, it is noticeable that almost none of the sample languages spoken in northern regions attests to this pattern. The picture is not as clear for the southern regions.

The southern hemisphere has significantly less landmass. It follows that comparatively few languages are spoken in these regions. Some areas, however, show a strong tendency towards at least distinct coding of Source constructions, e.g. our Australian sample languages are entirely free from Pattern V. South America and the southern regions of Africa, on the other hand, show some instances of the maximally indistinct pattern. However, given the relatively small number of South American sample languages, we doubt that the linguistic diversity of the continent is reflected by our counts. Similar constraints apply to South Africa as represented in our study. We added Stolz et al.'s (2017) results for spatial interrogative paradigms that attest to $P=G=S$ syncretism in order to compare our findings for Pattern V.¹⁴² The conflated results of the distribution of Pattern V over the world are depicted in Map 10.

¹⁴² Note, however, that the data provided by Stolz et al. (2017) only concerns SIs. Evaluating our own sample languages, we observed that heterogeneous configurations occur in all macro areas and that SIs and SDDs do not always employ the same syncretism pattern. We thus calcu-



Map 10: Conflated global distribution of Pattern V ($P=G=S$) in our and Stolz et al.'s (2017) sample languages.

Map 10 again shows a tendency for Pattern V to appear around the equator. This comprises precisely those areas where the density of languages is higher than that in the northern and southern parts of the globe (e.g. Greenhill 2015, Nettle 1998). The higher density of languages in areas such as West and Central Africa, Southeast Asia, the Pacific Islands, and Papua is also roughly reflected by our respective subsamples.¹⁴³ Andresen and Carter (2015: 187) summarize that “[t]he fact of the matter is that languages are distributed unevenly around the world, with about half the languages of the world occupying one tenth of the world’s area, namely, the area around the equator”.

Accordingly, the diversity among languages and language families is also higher in these regions. Furthermore, other areas host very large families so that certain patterns may be widespread due to genetic reasons, such as spatial case

lated how often the ND and FD SDDs match the SIs in terms of syncretism patterns on the basis of our data. We came to the conclusion that if a language employs a certain syncretism in the SIs, it employs the same pattern in 82.3% of the ND SDDs and in 82.9% of the FD SDDs. We thus expect a large portion of languages taken from Stolz et al. (2017) to employ Pattern V not only in the SIs but also in the SDDs. On the other hand, languages that do not employ Pattern V in the SIs may employ the pattern in the SDDs. The exact numbers for our calculation can be found in Appendix VII.

143 One could thus speculate about whether the existence of Pattern V and a concomitant heavily verb-framed spatial deictic system can be correlated with the language density in a given area. To test this hypothesis, however, remains a task for the future.

marking in the Pama-Nyungan languages in Australia. Other linguistic areas represented in the sample are usually referred to as a *Sprachbund* due to common areal traits, such as Mesoamerica, which can lead to a shared pattern preference as well. There are thus some areal and genetic factors to be considered when regarding the above Maps 3 and 4.¹⁴⁴ The prevalence of Pattern I, e.g. in northern regions of the globe, can similarly be explained by areal and genetic factors. Pattern I covers a variety of coding strategies. The only commonality of the Pattern I type languages is the distinct marking of all three relations. In other words, languages that are subsumed under $P \neq G \neq S$ in this study attest to different grammatical strategies to code the SDD functions, such as adpositions, affixation, secondary verbs, suppletive forms, and so on (cf. Chapters 3 and 6). As we intend to provide a global overview of patterns from the canonical morphology point of view, further subdivisions and aspects of coding types are subject to future studies which hopefully will be conducted in areal and typological fashion as well as from a diachronic perspective.

Another topic that needs to be addressed is the heterogeneity and homogeneity of paradigms. As was stated in Section 4.1, it has to be noted that for the SDDs, we collected statistics only for two degrees of distance. Patterns may vary if more degrees are considered. Furthermore, it is conceivable that heterogeneity in the paradigms of our sample languages as displayed in Appendices I–V may be a result of incomplete data. Given that we are highly dependent on our sources, we cannot exclude the possibility that we were not always able to compile the complete set of forms for our sample languages. The numbers presented below are thus not to be taken as the ultimate truth but as an attempt to determine tendencies of the heterogeneity and homogeneity in the paradigms of SI and SDD constructions in the world's languages. In the previous subsections, heterogeneous configurations in the languages of the five macro areas have been discussed individually. These results are compared and discussed in the following. Figure 19 displays the shares that each of the configurations (A–E) has of the total number of configurations per macro area.

144 Note that some areas have been defined as showing absence of dedicated spatial marking outside of the deictic domain, e.g. Creissels (2006: 23) identified sub-Saharan Africa as largely verb-framing.

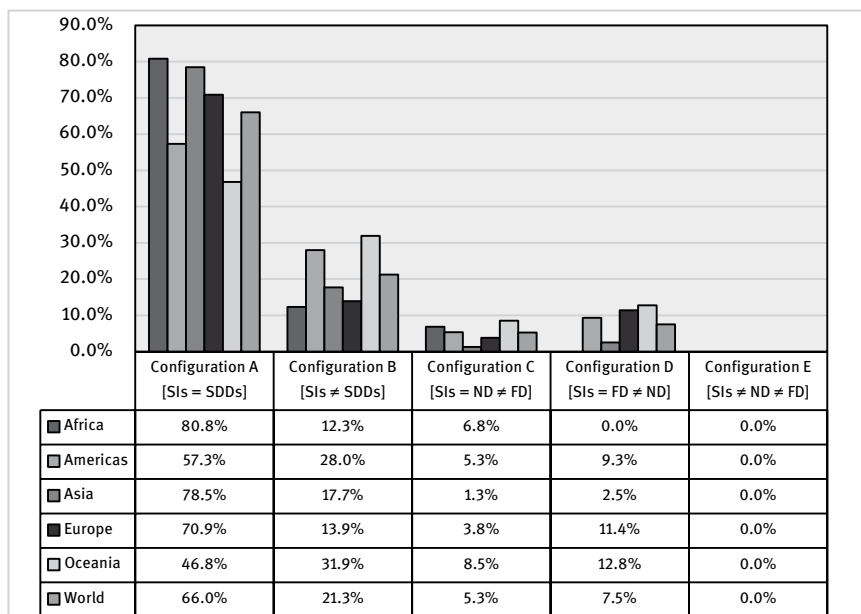


Figure 19: Shares of configurations A-E of the total number of configurations per macro area.

As can be inferred from Figure 19, configuration A, i.e. paradigms in which one and the same pattern is applied in both the SIs and the two SDDs stages, undoubtedly constitutes the majority in all five macro areas, albeit to different degrees. Africa has the highest number of homogeneous configurations (80.8%), followed by Asia (78.5%) and Europe (70.9%). The shares are much lower in the Americas (57.3%) and do not even obtain an absolute majority in Oceania (46.8%). Worldwide, 66.0% of all configurations are homogeneous.

The most frequent type of heterogeneous configurations is configuration B, in which the SIs behave differently from SDDs in terms of syncretic patterns. Configuration B occurs most often in Oceania (31.9%) followed by the Americas (28%). In Asia, configuration B occurs in 17.7% of all cases, while the same configuration in Europe amounts to 13.9%. The lowest share of configuration B is found in Africa (12.3%). Configurations C [SIs = ND ≠ FD] and D [SIs = FD ≠ ND] occur less frequently. Overall, configuration D shows higher shares than configuration C. Still, configuration D does not occur in Africa at all, while configuration C can be found in each macro area. Configuration C is most often found in Oceania (8.5%) and least often in Asia (1.3%). Configuration D also has the highest share in Oceania (12.8%) and the lowest in Asia (2.5%). Languages which employ different patterns for each of the three categories (configuration E) do not occur in our sample.

Among languages with heterogeneous configurations, those with a pervasive split between the categories are of special interest to us, as these may hint at the possible existence of two grammars of space (cf. Stolz et al. 2017: §6.1). That is, to approach the question if there are different grammatical operations involved in the formation of SIs and SDDs.¹⁴⁵ Languages with pervasive splits are those languages in which there is not even an optional configuration A [SIs = SDDs]. Figure 20 displays the shares that each configuration (B–E) has of those heterogeneous configurations with a pervasive split.¹⁴⁶ The number of languages per macro area in which there is a pervasive split is given in brackets behind the respective macro areas.¹⁴⁷

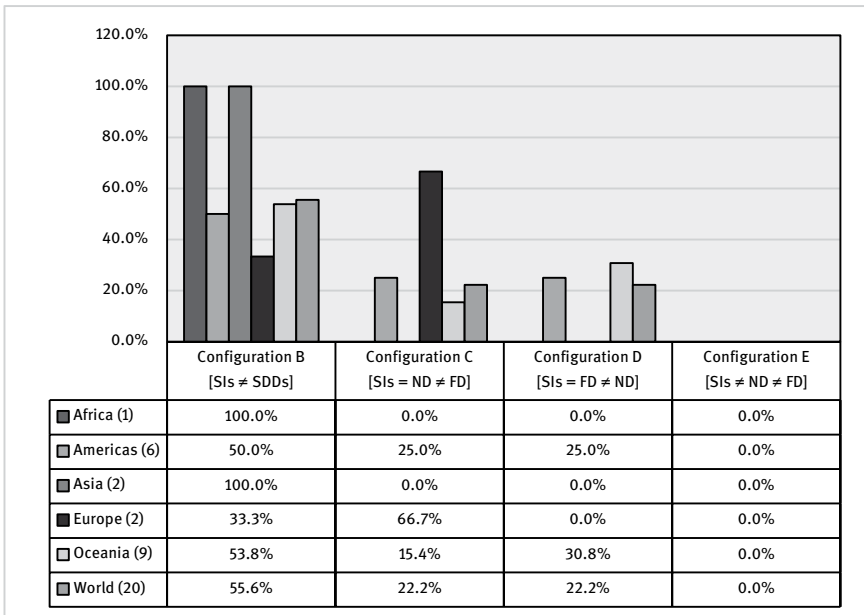


Figure 20: Shares of configurations B–E of heterogeneous configurations with a pervasive split.

¹⁴⁵ A prime example is Yaqui (cf. Section 3.5.2.2) which employs distinct and overt marking on the SIs but attests largely to verb-framed, i.e. zero-coded SDDs for the three relations investigated.

¹⁴⁶ Configuration A is left out since no split can arise from parallel SI=SDD behavior.

¹⁴⁷ Note that one language can have more than one pervasive split, cf., for example, Mapudungun [AM-26] in Table 43 (Section 4.2) above. However, we emphasize again that these splits arise from logical possibilities of combinations of mismatches occurring in the paradigms, which does not reveal anything about preferred or frequent patterns in the given languages.

Although heterogeneous configurations can be found in several languages in each macro area, the number of languages with a pervasive split between the categories is usually only a fraction. In Africa, there is only one language with a pervasively split paradigm, which amounts to 2% of our African sample languages. In Asia and Europe, pervasive splits constitute 4% in each of the two subsamples. The share is noticeably higher in the Americas, where 12.5% of the (evaluable) languages have a pervasively split paradigm. The highest share can be found in Oceania. More than 18% of the (evaluable) sample languages have a split paradigm. These splits can occur with configuration B, C, D, or E, while we have already noted that configuration E does not occur in any of our subsamples. As can be seen in Figure 20, most of these pervasive splits happen between the SIs on the one side and the SDDs on the other (configuration B). A pervasive split with configuration B is attested in every macro area. What is more, 100% of the pervasive splits attested in our African and Asian subsamples correspond to this configuration. Europe is the only macro area in which there are more pervasive splits with configuration C [SIs = ND ≠ FD] than with configuration B. As discussed in Section 4.4, this is due to Upper Sorbian [EU-45] attesting to two different splits (configurations B and C), whereas Czech [EU-8] only attests to a split with configuration C. Both in the Americas and in Oceania, we found pervasive splits with configurations B [SIs ≠ SDDs], C [SIs = ND ≠ FD], and D [SIs = FD ≠ ND]. In both macro areas, the shares of pervasive splits with configuration B are the highest, followed by configuration D, while configuration C occurs least often. From a global perspective, slightly more than half of the pervasive splits (55.6%) are of configuration B [SIs ≠ SDDs], while configurations C [SIs = ND ≠ FD] and D [SIs = FD ≠ ND] occur equally often with 22.2% each.

Overall, our results indicate that the majority of configurations is homogeneous, i.e. a pattern is employed in the SIs and both SDD stages (configuration A). Heterogeneous configurations are most often found between the SIs on the one hand and both SDDs on the other (configuration B). This is also the case for pervasive splits. Heterogeneity within the category of SDDs is less frequent, but it still must not be neglected. In our sample, it is more common that the FD SDDs and SIs are similar, while the ND SDDs behave differently (configuration D). It is only slightly less common that the ND SDDs and SIs are similar, while the FD SDDs behave differently (configuration C). Languages with a different pattern in each of the three categories (configuration E) do not occur in our sample. This means that if a language employs a different pattern in the ND SDDs than in the FD SDDs, one of the two categories shares the same syncretism pattern with the SIs. Figure 21 shows the degrees of consistency of syncretism pattern between the categories per macro area.

Naturally, the degree to which the SIs and the two SDD stages share the same pattern is much higher in macro areas in which there are less heterogeneous configurations. The highest degree of consistency between the SIs and the ND SDDs is found in Africa, where 87.7% of the SIs and ND SDDs share the same pattern. Asia shows the highest degrees of consistency both between the SIs and FD SDDs (81%) and between the ND and FD SDDs (96.2%) As expected, the lowest degree of consistency is found in Oceania, where only 55.3% of the ND SDDs and 59.6% of the FD SDDs share the same pattern as the SIs, and 78.7% of the ND and FD SDDs employ the same pattern. The global average is 73.5% between SIs and ND SDDs, 73.5% between SIs and FD SDDs, and 87.3% between the ND and FD SDDs. The results clearly show that the employment of one syncretism pattern in the ND SDDs and another in the FD SDDs is less common than the employment of one pattern in the SIs and another in both SDD stages.

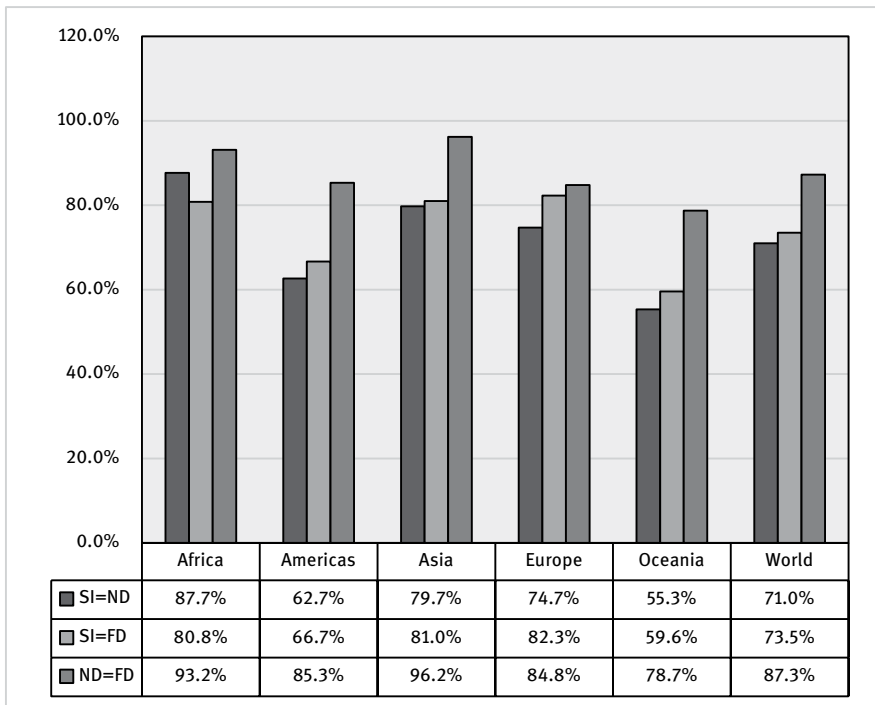


Figure 21: Degrees of consistency of syncretism pattern between the categories per macro area.

5 Complexity

As pointed out in Section 1.3, one of the major findings by Stolz et al. (2017) is the confirmation of an increasing constructional complexity of Place via Goal to Source for the interrogative realm. The increasing constructional complexity results in a markedness hierarchy, which closely resembles the markedness hierarchies put forward by Stolz (1992: 76–90) and Lestrade (2010: 146–154). Stolz et al. (2017: 596) therefore come to the conclusion that

it could be argued that the two hierarchies can be unified by way of cancelling the feature of interrogativity since it does not seem to make any difference whether we look at declarative clauses or at interrogative clauses. To justify this unification it is necessary to prove empirically that the ranking order of the spatial categories is the same in a given language independent of sentence-modality. However, this is an issue to be tackled in future studies.

This issue constitutes the topic of this chapter. As was argued in Section 1.4, we cannot provide complexity counts in the same manner. Due to the comparably much bigger sets of word forms and constructions and the shift away from a Europe-biased sample, complexity counts as conducted by Stolz et al. (2017) would exceed the scope of this study. Nevertheless, we wish to touch upon the topic by examining construction length in the three SRs as an indicator of constructional complexity. In the following, a recapitulation of the complexity counts undertaken by Stolz et al. (2017) is given (Section 5.1) before we turn to our own methods of measuring construction length and the problems that arise with them (Section 5.2). Afterwards, the results are presented and considered in the context of the markedness hierarchy of constructions in P/G/S relation as previously discussed in Lestrade (2010), Stolz et al. (2014), and Stolz et al. (2017) (Section 5.3).

5.1 Complexity counts in Stolz et al. (2017)

To adequately measure the constructional complexity of the spatial interrogatives under scrutiny in Stolz et al. (2017), several parameters were taken into account:

1. **Mono-word constructions vs. multi-word constructions:** Despite the controversy around ‘the word’ as a universal category (cf. Haspelmath 2011), Stolz et al. (2017) consider the number of words of a construction to be one of the yardsticks against which constructional complexity can be measured. For this, they make use of the orthographic conventions used in

their respective sources, although they are aware of the fact that “[w]hat is an orthographic word in language X does not necessarily correspond to an orthographic word in language Y” (Stolz et al. 2017: 51). Constructions consisting of one word get a lower score than constructions consisting of two or more words.

2. **Number of morphs and morphemes:** Similar to the notion of word, Stolz et al. (2017) are also aware of the controversy around morphs and morphemes. Nevertheless, for their purposes they use the term morph “for the units on the expression side” and the term morpheme “for the distinct categories on the content level” (Stolz et al. 2017: 52). Although they argue that “it is necessary to keep the two levels [...] apart since their degrees of complexity do not always correspond to each other one-to-one” (Stolz et al. 2017: 52), they have to “skip the issue of morphemes” outside of Europe “because for many of [their] non-European sample languages [they] lack the necessary information to determine which and how many morphemes are involved” (Stolz et al. 2017: 546). Nevertheless, the number of morphs (and morphemes in the case of European languages) is taken into consideration for their complexity counts.
3. **Zero-marking:** Distinctive zero-marking is another factor checked for in connection with the complexity counts. Distinctive means that only “those cases in which a paradigm hosts both zero-marked spatial interrogatives and overtly marked spatial interrogatives” are counted (Stolz et al. 2017: 54). Overt marking in comparison to zero-marking within one paradigm adds to the complexity of the constructions under scrutiny.
4. **Number of syllables:** Similar to the notions of word, morph, and morpheme before, the notion of syllable is also quite controversial. Nevertheless, Stolz et al. (2017) make an attempt at counting the syllables of the interrogative constructions under study by setting certain rules for what counts as a syllable. “What [they] count as syllable is the number of heterosyllabic syllable peaks”, while they do not, for example, “differentiate a syllable type from the other” (Stolz et al. 2017: 55). A higher number of syllables results in a higher complexity score.
5. **Number of segments:** The last parameter that is analyzed for measuring the constructional complexity is the number of segments. Stolz et al. (2017: 57) explain that they “treat segments as discreet, disjunct, and distinct units although [they] are aware of the problems that arise if one tries to decompose phonological chains into their components”. They assign different values to different kinds of segments, e.g. “[a]ffricates are monosegmental and thus are counted as ‘1’”, while “[g]eminates are bisegmental and thus

are counted as ‘2’”. Similar to the number of syllables, a higher number of segments results in a higher number of complexity.

The five yardsticks introduced above are used in Stolz et al. (2017) to measure the complexity of the spatial interrogative constructions. Each of the parameters is analyzed separately for the constructions occurring in one language. Values between ‘0’ and ‘2’ are assigned. Stolz et al. (2017: 63) explain:

If there are three different numerical values, the lowest corresponds to ‘0’ whereas the highest equals ‘2’. The intermediate value counts as equivalent of ‘1’. If there are only two different values, these correspond to ‘0’ and ‘1’, respectively. If there are three identical values, they are counted indiscriminately as instances of ‘0’. In the case of zero-marking, ‘yes’ corresponds to ‘0’ and ‘no’ is assigned a ‘1’.

By assigning values for each of the parameters to the interrogative constructions employed for Place, Goal, and Source, complexity scores are calculated for the European and non-European varieties. The European varieties are further divided into Romance, Germanic, Slavic, minor Indo-European, and non-Indo-European varieties. This focus on Europe leads to a detailed analysis of the constructional complexity in European varieties, while the non-European varieties are presented in an undifferentiated manner. Nevertheless, the complexity scores for both European and non-European languages look strikingly similar, cf. Figure 22.

Figure 22 clearly shows the similarities in complexity in European and non-European languages. There are only minimal differences in the respective scores. Furthermore, an increase in the complexity from *WHERE* via *WHITHER* to *WHENCE* is conspicuous. Stolz et al. (2017: 585) thus consider their originally assumed markedness hierarchy confirmed, cf. Scheme 2.

<WHERE; WHITHER; WHENCE>

Scheme 2: Markedness hierarchy (Stolz et al. 2017: 585).

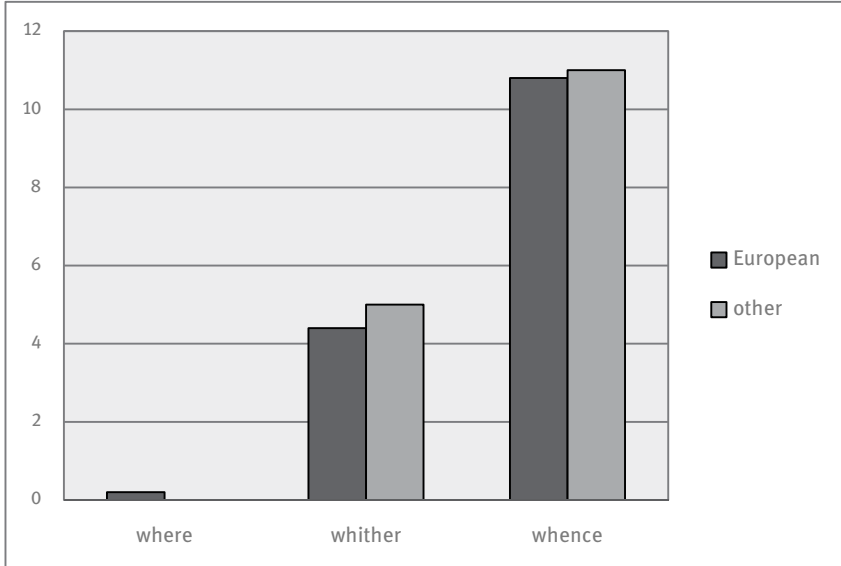


Figure 22: Complexity scores European vs. non-European languages (Stolz et al. 2017: 595).¹⁴⁸

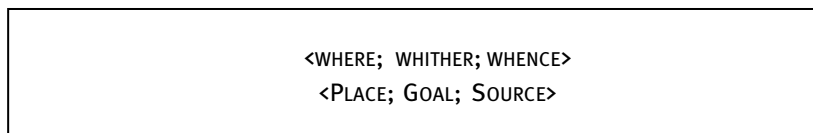
Due to the overwhelming similarities in the complexity scores of European vs. non-European languages, Stolz et al. (2017: 596) conclude that

[i]t makes no difference where a language is spoken. Wherever there are different degrees of complexity of the constructions of a given paradigm of spatial interrogatives, there is an overwhelming probability that the complexity increases from WHERE via WHITHER to WHENCE. Additional phenomena support the interpretation of this complexity scale as a manifestation of what we label a markedness hierarchy.

Considering the results of a previous study (cf. Stolz et al. 2014), Stolz et al. (2017: 596) state that the markedness hierarchy established for spatial interroga-

148 The corresponding Diagram 173 depicted in Stolz et al. (2017: 595) looks different, as the bars representing the European scores of WHITHER and WHENCE are slightly higher than in our Figure 22. We recreated the figure based on the numbers given for the European subsample, which are represented in their Table 313 (Stolz et al. 2017: 457). As these numbers are shown in their Diagram 112 (Stolz et al. 2017: 458), which in turn is supposed to be the basis for their Diagram 173 (Stolz et al. 2017: 595), we assume that some kind of calculation mistake occurred. This does, however, not change the overall tendencies. The conclusions drawn by Stolz et al. (2017: 596) remain valid.

tives may be unified with a markedness hierarchy from the declarative side. On the basis of these considerations, Stolz et al. (2017: 596) establish a parallel markedness hierarchy that reflects not only spatial interrogatives, but constructions in P/G/S relation in general, cf. Scheme 3.



Scheme 3: Parallel markedness hierarchy (Stolz et al. 2017: 596).

In this follow-up study to Stolz et al. (2017), we attempt to test the proposed parallel markedness hierarchy and thereby confirm that the same ranking order can be assumed for constructions marked for Place, Goal, and Source independent of sentence-modality. Although not as fine-grained as the complexity counts undertaken by Stolz et al. (2017), calculations of the mean construction length shall serve as an indication of constructional complexity per spatial relation.

5.2 Measuring construction length

For measuring the mean construction length of the SI and SDD expressions marked for P/G/S in our sample, we automated the approach. To this end, we made use of the free software environment for statistical computing R. In order to refrain from exceeding the scope and time frame of this project, we had to accept some methodological and technical issues that are discussed in this section. Via R code, the characters of the constructions we collected and assigned to P/G/S are counted automatically. This comes closest to Stolz et al.'s (2017) concept of segments described in 5.1 above. The mean construction length per SR is then calculated and compared, which allows us to test if the differences in length are significant. One of the biggest methodological issues we had to accept is that our input is not standardized in terms of orthography. As we work with 250 varieties worldwide with varying degrees of scriptualization, we do not have a uniform orthography for each of the languages. As explained in Section 2.4.1, we work with doculects and our statistical evaluation of the construction length will also be based on the doculectic constructions. We thus take into consideration orthographical words that follow strict rules in different languages, phonological words based on different phonological al-

phabets (e.g. IPA, APA), as well as standardized and non-standardized transcriptions of unwritten languages and languages with other writing systems than the Roman alphabet. The results should thus be interpreted with caution as the number of letters and symbols used in the constructions are equally counted as segments. A phonological /ʃ/ equals *sh* in English orthography or *sch* in German orthography, so that one, two, or even three segments may be counted for the same sound depending on the writing system. It is thus important to keep in mind that the construction length equals the number of symbols used in a construction, independent from whether these are orthographical or phonological entities. As numerous issues like this arise and standardizing everything by checking each phonological rule in each of the 250 sample languages would be too time-consuming for this project, we decided to leave the constructions mostly unchanged. We thus determine the *doculectic* length which strongly depends on the grammatical descriptions and writing systems chosen for examples and other literary sources (e.g. a Bible translation).

Nevertheless, we imposed some regulations to avoid unnecessary inconsistencies in our data. Hyphens, equality signs, etc., which mark morpheme boundaries are generally deleted. Similarly, spaces and the syntactic separation of two constituents indicated by [...] in the appendices are not taken into consideration. If the constructions as displayed in the appendices have optional elements indicated by brackets, the respective constructions appear twice, e.g. Apache [AM-1] *dzqq(-gee)* ‘here’ appears as *dzqq* without the optional element and *dzqqgee* with the optional element. In some languages, SIs and SDDs may be inflected (cf. Section 6.2). The corresponding inflectional morphemes are indicated by <X> in the appendices. In many cases, the inflection is optional or occurs only under certain circumstances. If an uninflected form exists, the corresponding inflected forms are not taken into consideration for the construction length. As whole paradigms with all possible inflected constructions are seldom found, we made this decision for practical reasons. If, however, uninflected constructions do not exist, we exemplarily chose one of the possible inflections as a representative form. Otherwise, we left the constructions mostly unchanged.

In our sample, eight languages were left out from this statistical comparison. These languages have low comparative potential owing to paradigms that are mostly characterized by SRs being encoded in specific sets of verbs or syntactic and combinatory solutions involving different kinds of word classes. In the American subsample, four languages are not counted in the mean construction length statistics. These comprise Blackfoot [AM-3], Cayuga [AM-7], Choctaw [AM-8], and Musqueam [AM-28]. In the Oceanian subsample, another four languages were left out completely, viz. Abui [OC-2], Awtuw [OC-4], Manambu [OC-

20], and South Efate [OC-39]. In other cases, we did not exclude whole paradigms, but only individual forms in case their structure does not allow for a measurement of the construction length. This is, for example, the case when different sets of directional verbs form an indispensable part of the constructions or even make up the whole construction. As these constructions change based on the type of movement involved, there is no fixed construction length.

5.3 Construction length of SIs

As a first step to approach the complexity scale as established by Stolz et al. (2017), we evaluate the SIs of our sample. As the markedness hierarchy was established for the category of spatial interrogatives and not for SDDs, we start out with testing whether a comparison of the mean construction length leads to similar results, i.e. a rising length from Place via Goal to Source, cf. Figure 23.

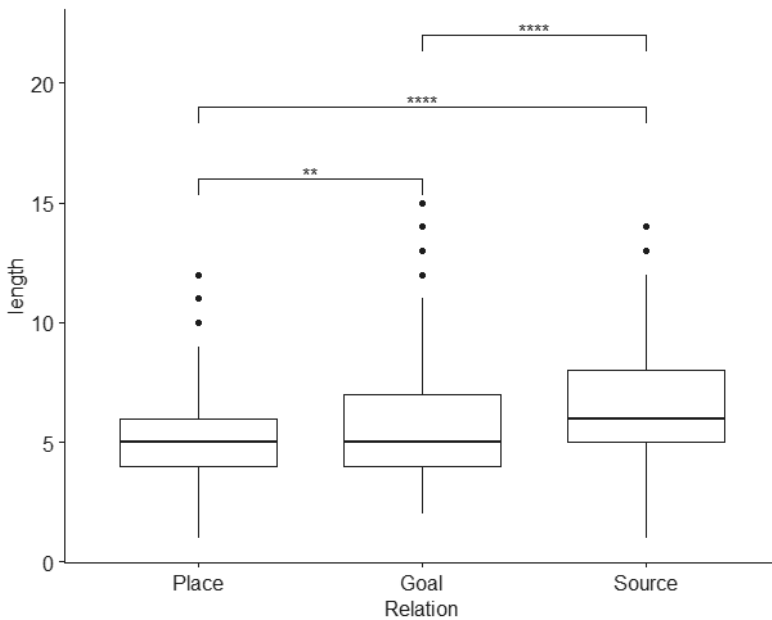


Figure 23: Construction length of SIs in P/G/S relation worldwide.

Figure 23 shows different values of the construction lengths of our sample's SIs in the three relations Place, Goal, and Source. The lines in the boxes represent the median of the constructions for each relation. The median for both Place

and Goal constructions is five characters, while it is six characters for Source. Although Place and Goal share the same median, the differences are visible in the boxplot. The interquartile range (IQR) boxes represent the middle 50% of the dataset. Between Place and Goal, one can see that the range between the first quartile (Q1), i.e. the lower line of the box, and the third quartile (Q3), i.e. the upper line of the box, is wider in the case of the Goal constructions. While both Place and Goal share a Q1 value of four, the Q3 value for Place is six and seven for Goal. Source shows higher values with a Q1 value of five and a Q3 value of eight. The whiskers that extend from the upper and lower sides of the IQR boxes represent the ranges for the bottom 25% and the top 25% of the data – outliers excluded. The minimum of characters per relation in Figure 23 is represented by the lower end of the whiskers. As there are no outliers at the lower end, the minimum equals the lower fence in Figure 23. Both the Place and Source constructions have a minimum of one character, while the lowest number of characters in Goal constructions is two. For the upper end of the whiskers, i.e. the upper fence, there is a rise from Place (nine characters) via Goal (eleven characters) to Source (twelve characters). At this end, outliers are indicated, which are represented by dots. The highest dots represent the maximum of characters, which is the lowest in the case of Place (twelve characters) and the highest in the case of Goal (15 characters). The construction with the maximum length for Source has 14 characters. On top of the figure, the differences between the mean construction lengths in P/G/S relation are compared and tested for significance using a Tukey test.¹⁴⁹ For each comparison, the significance is indicated by the asterisks.¹⁵⁰ As can be seen in Figure 23, the differences in the construction lengths are significant between all three relations. Table 50 gives an overview of the values represented by the boxplot in Figure 23 with the addition of the mean construction length.

Table 50: Construction length values of SIs in P/G/S relation worldwide.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	1	1	4	5	6	9	12	4.892857
Goal	2	2	4	5	7	11	15	5.437956
Source	1	1	5	6	8	12	14	6.544

¹⁴⁹ The Tukey test, which is a post hoc test to the ANOVA test, is used to evaluate pair means.

¹⁵⁰ Significance codes: $p \leq 0.0001$ '****', $p \leq 0.001$ '***', $p \leq 0.01$ '**', $p \leq 0.05$ '*', $p > 0.05$ 'ns'

The mean values in the rightmost column of Table 50 clearly show an increase of construction length from Place via Goal to Source. The results of the Tukey test that compares and evaluates the means of each pair, i.e. Goal – Place, Source – Place, and Source – Goal, are displayed in Table 51.

Table 51: Means comparison of SIs in P/G/S relation worldwide.

Relation	Difference	lower	upper	p adjusted
Goal – Place	0.5450991	0.1804466	0.9097515	0.0013599
Source – Place	1.6511429	1.2777487	2.0245370	0.0000000
Source – Goal	1.1060438	0.7307262	1.4813614	0.0000000

The differences in the number of characters of the mean construction length of each relation are given in the second column. This means that on average, there is a difference of around 0.55 characters between Place and Goal constructions. The difference is higher between Goal and Source with ~1.1 characters. Naturally, as Place has the lowest mean construction length and Source the highest (cf. Table 49 above), the difference is the highest between Place and Source with around 1.65 characters per construction. The next two columns indicate a confidence interval of 95%. In the case of Place and Goal, the confidence interval ranges between 0.1804466 as the lower border and 0.9097515 as the upper border. Finally, the last column gives us the p-values adjusted for multiple comparisons. As can be seen, all of the p-values are lower than 0.05 so that the differences can be called significant according to the standard definition.

As we have seen, there is a measurable and significant difference in the SI construction lengths in the three relations. Although we only checked for the construction length, we are confident that the rise of the mean construction length from Place via Goal to Source strongly hints at a rise in complexity and thus at the same markedness hierarchy as was put forward by Stolz et al. (2017). In order to see if there are any significant differences between the five macro areas, similar analyses are conducted and evaluated for each macro area in the following subsections.

5.3.1 Construction length of African SIs

As elucidated above, there is a significant rise in the SI construction length from Place via Goal to Source in our global sample. However, as we have seen in the

previous Chapter 4, there are some differences between the macro areas in terms of syncretism patterns. Africa is quite exceptional in this regard, as it is the only macro area with a clearly dominant Pattern V ($P=G=S$). So the question arises if similar differences can still be found when it comes to the construction length. Figure 24 displays the construction lengths of our African sample languages in a boxplot.

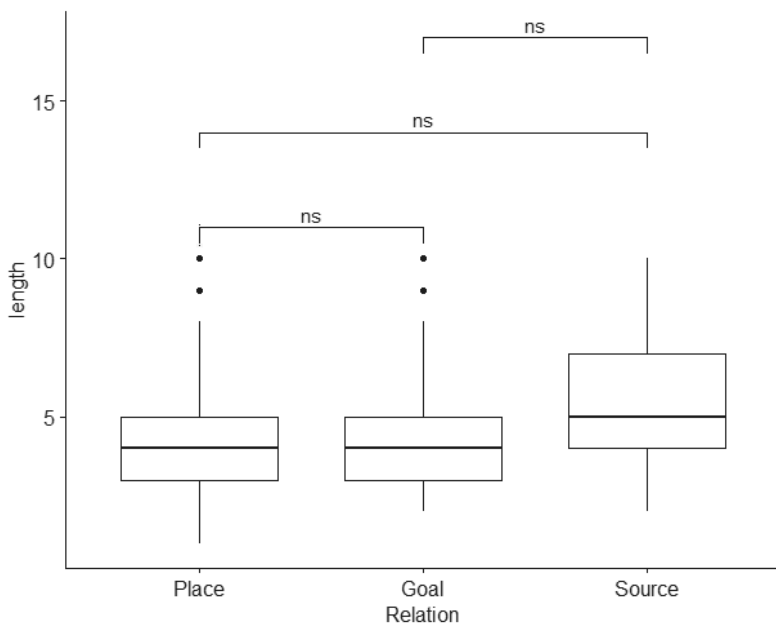


Figure 24: Construction length of African SIs in P/G/S relation.

The figure already shows that Africa is different from the global trend in that there is no significant difference between the mean construction lengths of Place and Goal. In fact, the two relations look very similar in terms of their values except for the minimum value, which is one character for Place and two characters for Goal. Only Source displays higher values in almost every respect in Figure 24. Nevertheless, as indicated in Figure 24, neither the difference between Place and Source nor that between Goal and Source is significant. The exact values are presented in Table 52.

Table 52: Construction length values of African SIs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	1	1	3	4	5	8	10	4.518072
Goal	2	2	3	4	5	8	10	4.513158
Source	2	2	4	5	7	10	10	5.194444

Compared to the mean values presented for the global sample in Table 50 above, African SI constructions are shorter by ~ 0.375 characters in the case of Place, ~ 0.925 characters in the case of Goal, and ~ 1.35 characters in the case of Source. The most outstanding observation here is that there is almost no difference in length between Place and Goal. As shown in Table 53, there is only a difference of around 0.005 characters between Place and Goal, and the mean construction length of Goal actually is the shorter one.

Table 53: Means comparison of African SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	-0.004914394	-0.69187210	0.6820433	0.9998430
Source – Place	0.676372155	-0.02047548	1.3732198	0.0592501
Source – Goal	0.681286550	-0.03031206	1.3928852	0.0638534

As can be inferred from Table 53, the adjusted p-values are all higher than 0.05, so that none of the differences of the mean construction lengths between the SRs can be called significant. This is also reflected by the confidence intervals. The confidence intervals indicate that the true difference in the mean length of, for example, Goal and Place constructions of all African languages may be negative, i.e. Goal is shorter than Place, or positive, i.e. Goal is longer than Place. The negative values in the third column thus indicate that the difference in the mean construction lengths between neither of the relations is significant. As many languages with a high degree of syncretism can be found in Africa, it comes as no surprise that differences between the mean construction lengths of the different SRs are not significant. A slightly shorter mean construction length of the Goal relation as compared to Place may *inter alia* be caused by shorter (Goal) or longer (Place) suppletive constructions. Similar to the distribution of syncretism patterns as discussed in Section 4.1, Africa as represented in our

sample slightly contradicts the global trend of a rising length from Place via Goal to Source in SI constructions.

5.3.2 Construction length of American SIs

The Americas constitute another case where there is no significant difference in at least one of the pairs. The construction length of the SIs of our Pan-American subsample are displayed in Figure 25.

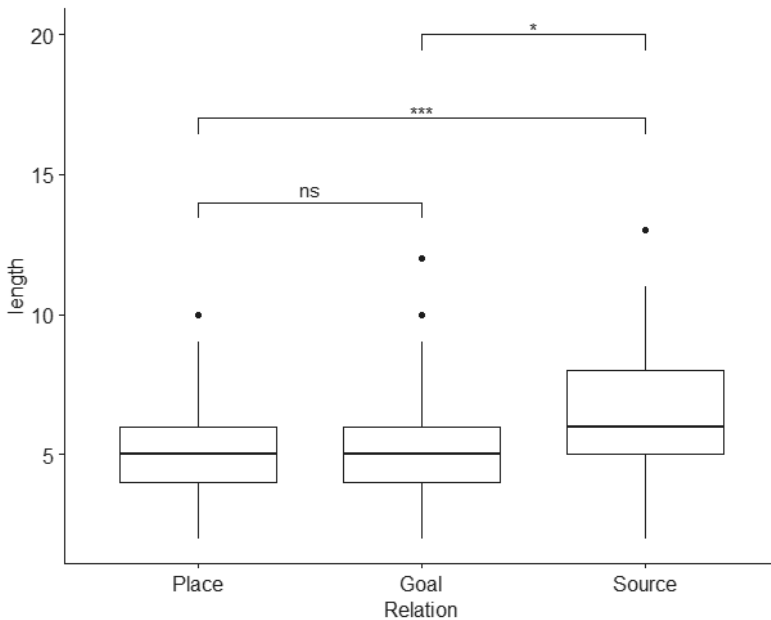


Figure 25: Construction length of American SIs in P/G/S relation.

Similar to Africa presented in Figure 24 above, there are almost no visible differences between Place and Goal in the Americas either. The only difference between Place and Goal in Figure 25 concerns the outliers, as the maximum value for Place is ten, while it is twelve for Goal. Source, on the other hand, presents higher values in every respect except for the minimum length (= upper fence). As indicated in Figure 25, the difference between the construction lengths of Place and Goal is not significant, while the differences between Place and Source and Goal and

Source are significant. Table 54 displays the construction length values for American SIs as depicted in Figure 25 including the mean values.

Table 54: Construction length values of American SIs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	2	2	4	5	6	9	10	4.9375
Goal	2	2	4	5	6	9	12	5.353846
Source	2	2	5	6	8	11	13	6.431034

Overall, the values are quite similar to the global values. The Place mean construction length is slightly higher in the Americas as compared to the global mean (~ 0.045 characters), while the Goal mean construction length is a bit lower (~ 0.084 characters). These small differences, however, have a huge impact, as the Place – Goal difference is not significant in the Americas. Table 55 below displays the results of the Tukey test for the American SI constructions.

Table 55: Means comparison of American SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	0.4163462	-0.4078243	1.240517	0.4588079
Source – Place	1.4935345	0.6423666	2.344702	0.0001489
Source – Goal	1.0771883	0.1856981	1.968679	0.0132189

Compared to Africa, the average Goal construction value in our Pan-American subsample is visibly higher than the average Place construction value as Table 54 reveals. Nevertheless, there is again a negative value in the confidence interval and the adjusted p-value is too high to be significant. Source is again undoubtedly the relation with the longest mean construction length, and the differences between Source and both other relations are significant. There is thus a rise in the mean construction length from Place via Goal to Source in the languages of our Pan-American subsample with the Place – Goal difference being, however, non-significant.

5.3.3 Construction length of Asian SIs

Despite the global trend, our Asian subsample presents another case of the Place – Goal difference being non-significant. This can be seen in Figure 26.

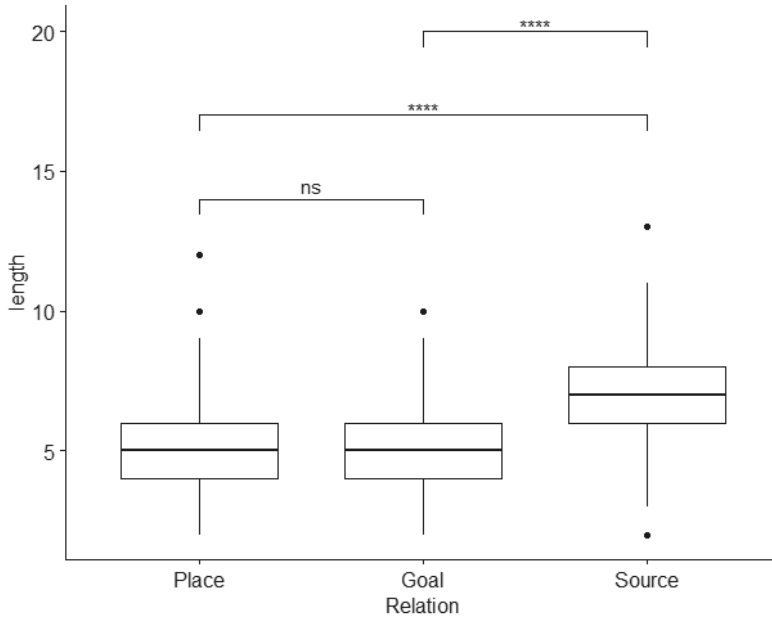


Figure 26: Construction length of Asian SIs in P/G/S relation.

Similar to Africa and the Americas above, Place and Goal look very similar in Figure 26. The only difference lies in the maximum values, which is twelve for Place and ten for Goal. It is again only Source that displays higher values in every respect. In fact, the Q1 value of Source equals the Q3 value of Place and Goal, i.e. the lowest value of the middle 50% of the Source constructions equals the highest value of the middle 50% of the Place and Goal constructions. The exact values can be found in Table 56.

In comparison to the global values, the means of the Asian Place and Source SI constructions are a bit higher (~ 0.118 and ~ 0.271 characters, respectively), while the Goal mean is slightly lower (~ 0.07 characters). The difference between the mean construction lengths of Place and Goal is thus lower and cannot be called significant, as the adjusted p-value for Goal – Place in Table 57 shows.

Table 56: Construction length values of Asian SIs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	2	2	4	5	6	9	12	5.01087
Goal	2	2	4	5	6	9	10	5.367816
Source	2	3	6	7	8	11	13	6.814815

Table 57: Means comparison of Asian SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	0.3569465	-0.2824594	0.9963524	0.3875562
Source – Place	1.8039452	1.1524814	2.4554091	0.0000000
Source – Goal	1.4469987	0.7868281	2.1071693	0.0000014

There is again a negative value in the confidence interval for the difference between the Place and Goal construction length means. The adjusted p-value with around 0.388 is above the significance level. Contrary to that, the differences between Source and Place and Source and Goal are quite conspicuous. In both cases, there is a very low p-value, so that these differences can easily be considered significant. Similar to the Americas above, there is a rising mean construction length from Place via Goal to Source in the SIs of our Asian subsample. However, the difference between Place and Goal is again not significant.

5.3.4 Construction length of European SIs

As discussed in Chapter 4, Europe is outstanding in that Pattern V ($P=G=S$) is almost absent from this macro area. By contrast, it has the highest share of the maximally distinct Pattern I ($P \neq G \neq S$) followed by Pattern II ($P=G \neq S$). European languages thus tend to either mark all three relations distinctly or employ P/G syncretism with a distinctly coded Source construction. Europe exhibits the lowest degree of syncretism. As Figure 27 shows, the differences between the SI constructions lengths of P/G/S in our European subsample are much more conspicuous than in the cases previously discussed.

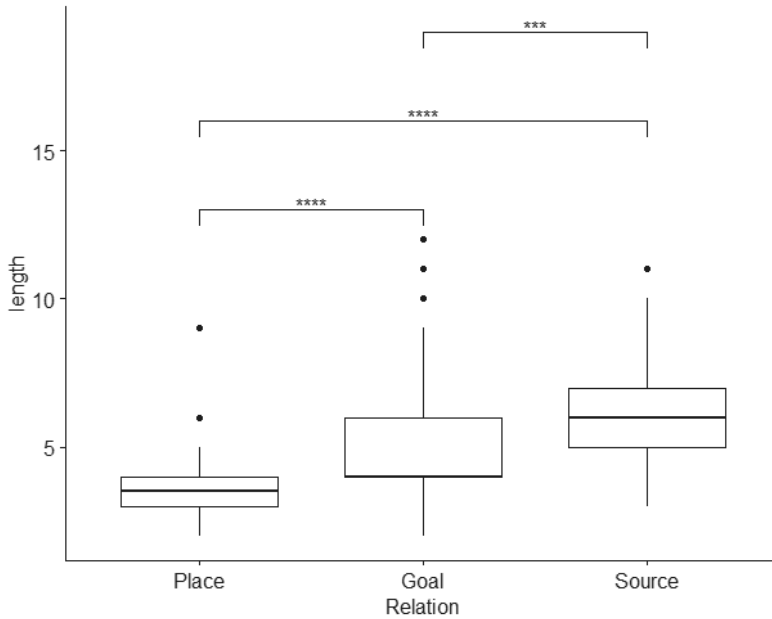


Figure 27: Construction length of European SIs in P/G/S relation.

The boxplot clearly shows a rise from Place via Goal to Source in almost every respect. It is noticeable that the IQR, i.e. the range between Q1 and Q3, is relatively low with only one character in the case of Place. It also strikes the eye that the median is the same as the Q1 in our European Goal constructions. The values depicted in Figure 27 are given in Table 58.

Table 58: Construction length values of European SIs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	2	2	3	3.5	4	5	9	3.603448
Goal	2	2	4	4	6	9	12	5.12766
Source	3	3	5	6	7	10	11	6.197674

As compared to the global values, the average European construction in all three relations is noticeably shorter. This is especially true for Place (~1.289 characters). There is no other macro area where the average SI construction in

Place relation is shorter than four characters. Both Goal and Source means are also lower than the global means (~ 0.31 and ~ 0.346 characters, respectively). Table 59 displays the results of the Tukey test.

Table 59: Means comparison of European SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	1.524211	0.7787448	2.269678	0.0000076
Source – Place	2.594226	1.8356446	3.352808	0.0000000
Source – Goal	1.070015	0.4038106	1.736219	0.0005633

The most outstanding observation for our European SIs is the large difference between the Place and Goal means. While the Place – Goal difference is not even significant in the three macro areas previously discussed, it has an even lower p-value than the Goal – Source difference in Europe. We assume that the high difference between the Place and Goal means is due to a tendency of many Indo-European languages to employ zero-marked Place constructions in contrast to overtly marked Goal and Source constructions, e.g. German [EU-17] *wo* ‘where’ – *wohin* ‘whither’ – *woher* ‘whence’ or Spanish [EU-46] *dónde* ‘where’ – *adónde* ‘whither’ – *de dónde* ‘whence’. The values of the European SI constructions contribute greatly to the Place – Goal difference being globally significant, even though it is non-significant in three of the five macro areas.

5.3.5 Construction length of Oceanian SIs

Oceania is the only other macro area where the differences in the mean construction lengths between all three pairs are significant. Figure 28 shows the construction lengths of Oceanian SIs in all three relations.

The boxplot figure indicates a rise in the construction length from Place via Goal to Source and the difference in all three pairs is marked as significant. Except for the minimum (= lower fence) and the maximum values, this rise is obvious in every category. Table 60 displays the exact values depicted in Figure 28 as well as the means for each relation.

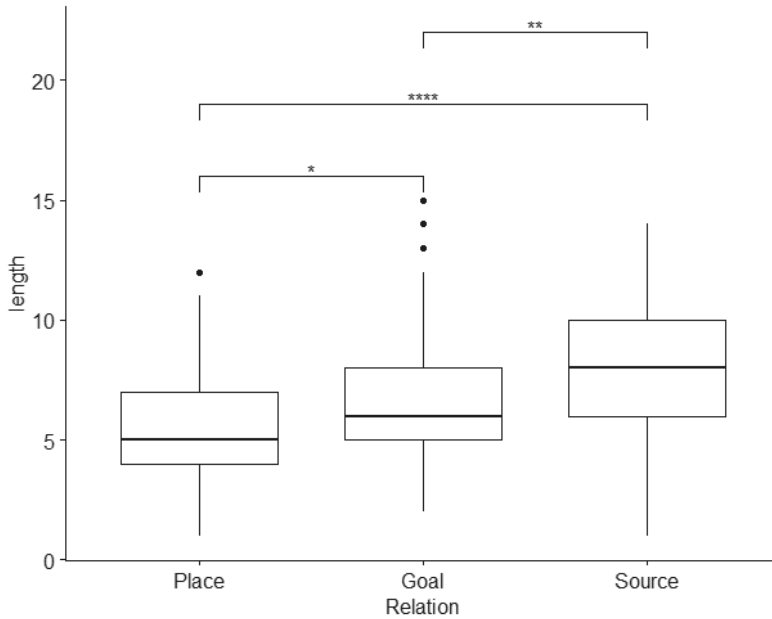


Figure 28: Construction length of Oceanian SIs in P/G/S relation.

Table 60: Construction length values of Oceanian SIs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	1	1	4	5	7	11	12	5.747664
Goal	2	2	4.75	6	8	12	15	6.685393
Source	1	1	6	8	10	14	14	7.974359

It is noticeable that the mean construction lengths in Oceania are higher than the global average in all three relations, viz. ~ 0.855 characters for Place, ~ 1.247 characters for Goal, and ~ 1.43 characters for Source. Comparing the five macro areas, Oceania thus employs the longest constructions. The results of the Tukey test are displayed in Table 61.

As the rightmost column shows, the adjusted p-value of the difference in the construction length between Place and Goal is just below 0.05, so that it can be seen as significant. The differences between Goal and Source and Place and Source are clearer. The values for the confidence intervals of all three pairs are

all in the positive range. Overall, Oceania conforms with the global trend of a rising construction length from Place via Goal to Source.

Table 61: Means comparison of Oceanian SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	0.9377297	0.01986473	1.855595	0.0439816
Source – Place	2.2266954	1.27415299	3.179238	0.0000003
Source – Goal	1.2889657	0.29664151	2.281290	0.0068340

5.4 Construction length of SDDs

In the previous sections, we have seen that there is a rise in the construction length from Place via Goal to Source in our global sample of SIs, albeit with different results for each macro area. Africa is the only macro area in which the Place – Goal difference is not only non-significant, but where Goal is even shorter than Place. From a global perspective, the rise in construction length resembles the markedness hierarchy established by Stolz et al. (2017) as introduced in Section 5.1 above. In this section, we will now turn to the declarative side by evaluating the SDDs of our sample. By doing so, we test if the SDDs take the same ranking order as the SIs in terms of the construction length. If we obtain similar results in the evaluation of SDDs, this may be an indicator for the parallel behavior of spatial categories independent of sentence modality and thus a first step to a validation of the parallel markedness hierarchy introduced by Stolz et al. (2017: 596), cf. Scheme 3 in Section 5.1 above.

Similar to the SIs in Section 5.3, we will start with the visualization of the construction length of the SDDs of our global sample in all three relations in a boxplot figure, cf. Figure 29.

Similar to Figure 23 on our global sample of SIs above, there is a visible rise in the construction length from Place via Goal to Source depicted in Figure 29 as well. The difference between Place and Goal is even more obvious and assigned **** significance. Apart from the minimum (= lower fence) and the maximum values, the rise is conspicuous in every respect. Table 62 contains the values that are depicted in Figure 29, including the means.

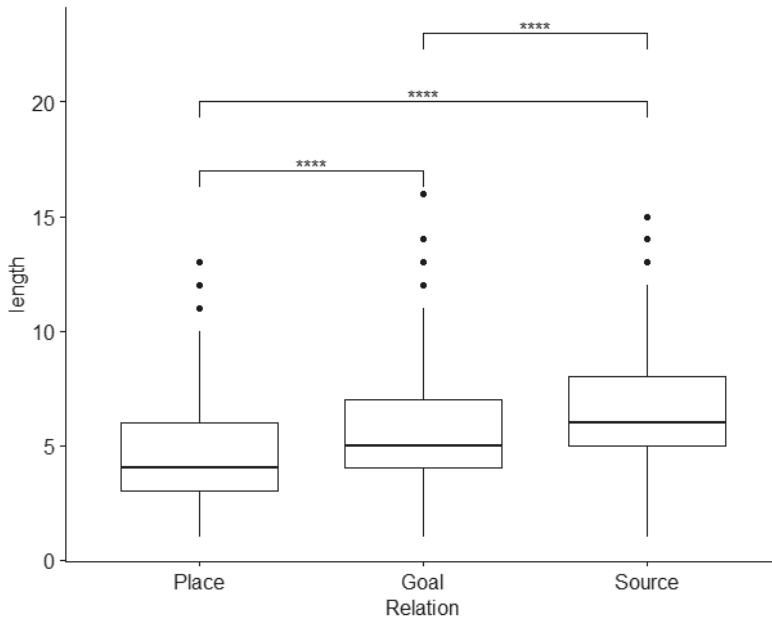


Figure 29: Construction length of SDDs in P/G/S relation worldwide.

Table 62: Construction length values of SDDs in P/G/S relation worldwide.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	1	1	3	4	6	10	13	4.7484
Goal	1	1	4	5	7	11	16	5.261181
Source	1	1	5	6	8	12	15	6.25328

Compared to the SIs, the SDDs are slightly shorter in our global sample, viz. ~ 0.144 characters for Place, ~ 0.177 characters for Goal, and ~ 0.29 characters for Source. The maximum outliers, on the other hand, are longer by one character in each of the three relations. Similar to the SIs, we also conducted a Tukey test for the SDDs. The results are displayed in Table 63.

As Table 63 shows, there are significant differences between each of the three relations. The values of each of the confidence intervals are all in the positive range and the adjusted p-values are all below 0.0001. There is thus a significant rise in the construction length from Place via Goal to Source in our global

sample of SDDs. In the following subsections, the SDDs of each macro area are evaluated in the same manner.

Table 63: Means comparison of SIs in P/G/S relation worldwide.

Relation	Difference	lower	upper	p adjusted
Goal – Place	0.5161807	0.3016927	0.7306687	0.0000001
Source – Place	1.5082795	1.2867909	1.7297682	0.0000000
Source – Goal	0.9920988	0.7669663	1.2172314	0.0000000

5.4.1 Construction length of African SDDs

In the case of African SIs (cf. Section 5.3.1), the differences between neither of the relations are significant. As can be seen in Figure 30, this is different for the SDDs.

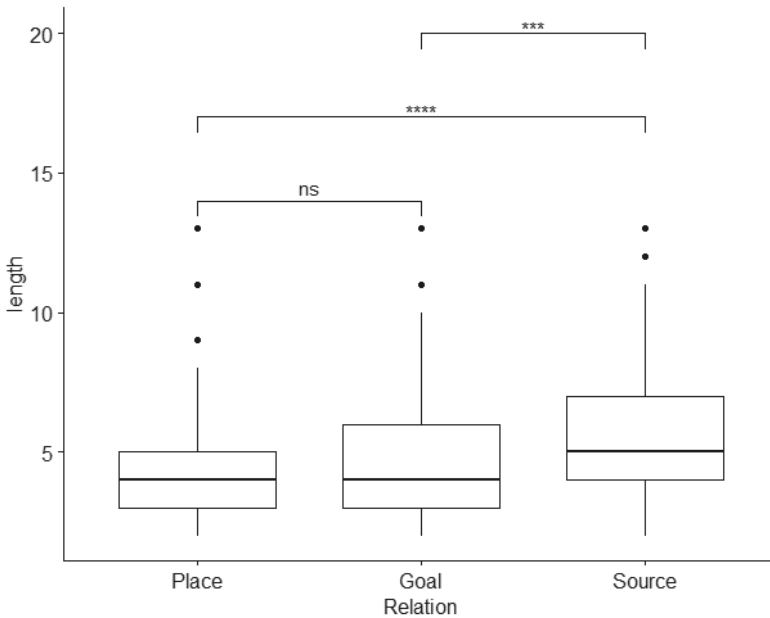


Figure 30: Construction length of African SDDs in P/G/S relation.

Compared to Figure 30 in Section 5.3.1 above, the difference between Place and Goal appears to be more obvious. The IQR is not the same in the case of SDDs. While the Q1 and the median are still the same for both Place and Goal, there is a difference in the Q3 value, which is higher for Goal than for Place. Nevertheless, the difference in the mean construction length between these two relations is still marked as non-significant. In contrast to the SIs, however, both the difference between Goal and Source and Place and Source are significant in the case of SDDs. Table 64 displays the values depicted in Figure 30 with the addition of the mean values.

Table 64: Construction length values of African SDDs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	2	2	3	4	5	8	13	4.474178
Goal	2	2	3	4	6	10	13	4.744395
Source	2	2	4	5	7	11	13	5.524038

When comparing the means of Place and Goal, it can be seen that Goal is indeed longer than Place in the case of SDDs. Overall, the African SDD constructions are shorter than the global average, viz. ~ 0.274 characters for Place, ~ 0.517 characters for Goal, and ~ 0.729 characters for Source. In comparison to the African SI constructions, the Place SDDs are shorter by ~ 0.044 characters. The Goal and Source constructions, on the other hand, are longer by ~ 0.231 and ~ 0.33 characters, respectively. Nevertheless, the Place – Goal difference is still not significant as the results of the Tukey test show, cf. Table 65.

Table 65: Means comparison of African SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	0.2702162	-0.2163194	0.7567518	0.3930458
Source – Place	1.0498601	0.5548282	1.5448919	0.0000024
Source – Goal	0.7796438	0.2901265	1.2691612	0.0005836

The results of the Tukey test show a negative lower and a positive upper value for the confidence interval for the Goal – Place difference. As explained before, this already hints at the difference being non-significant. Indeed, the adjusted

p-value is over 0.05, so that the difference between the two means cannot be called significant. In contrast to that, the difference between Goal and Source is much higher. The adjusted p-value is lower than 0.001 and assigned *** significance. The difference between Place and Source is naturally even higher so that the adjusted p-value is below 0.0001. Contrary to the SIs, there is a rise in the construction length from Place via Goal to Source, although the Place – Goal difference is not significant.

5.4.2 Construction length of American SDDs

For the SIs, the Americas are one of the three macro areas with no significant Place – Goal difference in our sample languages. As Figure 31 shows, this is not the case for SDDs.

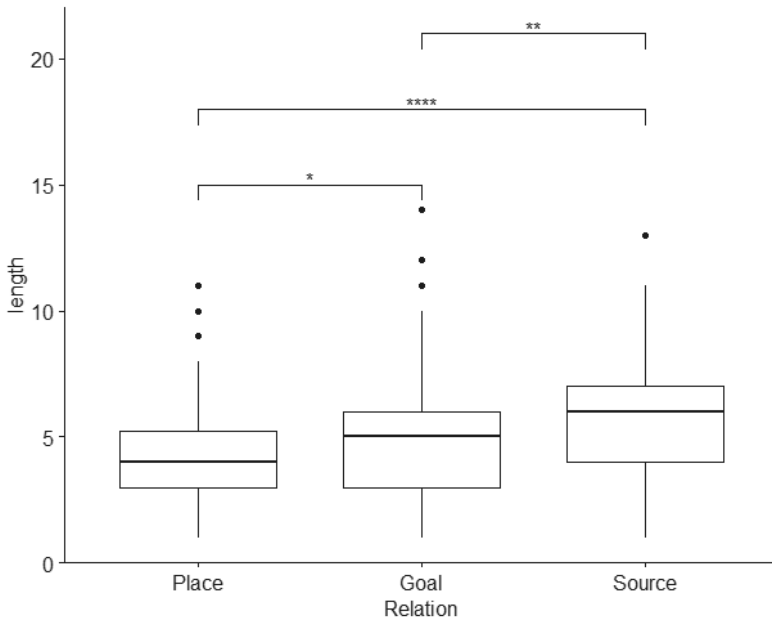


Figure 31: Construction length of American SDDs in P/G/S relation.

In comparison to Figure 25 in Section 5.3.2, the difference between Place and Goal is again much more conspicuous. Goal has a higher median, a higher Q3, and a higher upper fence value compared to Place. As indicated in Figure 31, the

difference between Place and Goal is significant for the SDDs. The differences between Place and Source and Goal and Source are also significant and get an even higher ranking. Table 66 displays the exact values including the means of each relation.

Table 66: Construction length values of American SDDs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	1	1	3	4	5.5	9	11	4.524648
Goal	1	1	3	5	6	10	14	4.986784
Source	1	1	4	6	7	11	13	5.642105

The SDDs of our Pan-American subsample are on average shorter than the global set of SDDs. Similarly, they are shorter than the American SIs by ~ 0.413 characters for Place, ~ 0.367 characters for Goal, and ~ 0.789 characters for Source. As the means in the rightmost column of Table 66 show, there is again a rise in the construction length from Place via Goal to Source. Table 67 shows that the differences between all three relations are significant.

Table 67: Means comparison of American SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	0.4621363	0.03375058	0.8905219	0.0308582
Source – Place	1.1174574	0.66648516	1.5684296	0.0000000
Source – Goal	0.6553211	0.18219723	1.1284450	0.0034235

As can be seen in Table 67, both the lower and the upper values of the confidence intervals of all three pairs are in the positive range. With a p-value of ~ 0.03 , the difference between the Place and Goal constructions lengths can thus be classified as significant in the SDDs.

5.4.3 Construction length of Asian SDDs

Both Africa and the Americas discussed above show some differences between the SIs and SDDs. Differences between relations that are non-significant in the

SIs turned out to be significant in the SDDs. In our Asian sample languages, however, SIs and SDDs seem to behave similarly. Compare Figure 32 to Figure 26 in Section 5.3.3 above.

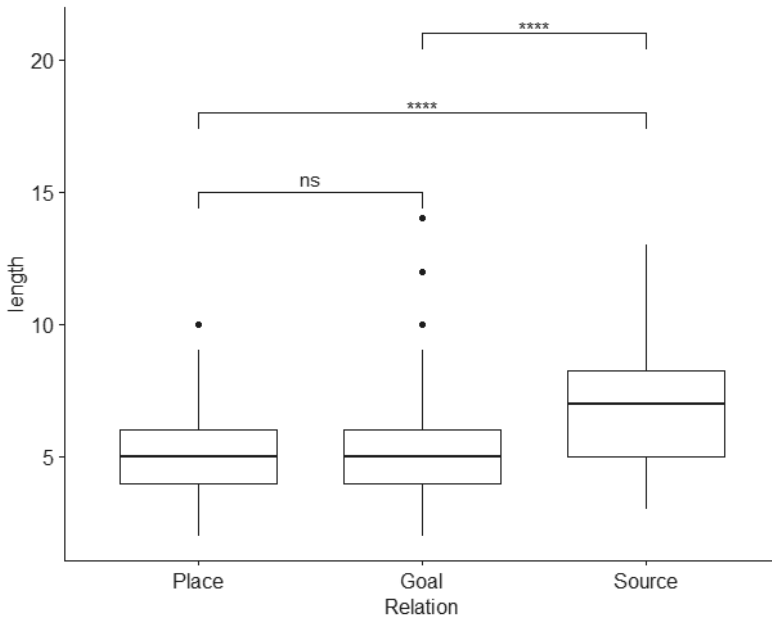


Figure 32: Construction length of Asian SDDs in P/G/S relation.

Both Place and Goal look very similar. Apart from the outliers, they share the same values. Indeed, the same values can also be found for the Asian SIs (cf. Figure 26 and Table 56 in Section 5.3.3). Only Source looks different in that it has conspicuously higher values than the other two relations. Compared to the Asian Source SIs, the SDDs have a higher IQR, i.e. the range between shorter and longer constructions in the middle 50% of our sample languages is higher. Similar to the SIs, the difference between the Place and Goal means is not significant, while the difference between Goal and Source (and Place and Source) is assigned **** significance. The exact values and the means are shown in Table 68.

Overall, the means in the rightmost columns of Table 68 show that there is a rise in the construction length from Place via Goal to Source. The Asian Place and Source SDDs are slightly longer than in our global sample (~0.018 characters and ~0.388 characters, respectively), while Goal and Source SDDs are a bit longer (~0.165 characters).

Table 68: Construction length values of Asian SDDs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	2	2	4	5	6	9	10	4.910638
Goal	2	2	4	5	6	9	14	5.273109
Source	3	3	5	7	8.5	13	13	6.931818

Compared to the Asian SIs, the Place and Goal SDDs are shorter by ~0.1 characters and ~0.095 characters, respectively, while Source is longer by ~0.117 characters. Although Place is indeed shorter than Goal, the difference is not significant as Table 69 shows.

Table 69: Means comparison of Asian SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	0.3624709	-0.05716736	0.7821093	0.1061028
Source – Place	2.0211799	1.59309746	2.4492623	0.0000000
Source – Goal	1.6587089	1.23193304	2.0854848	0.0000000

The adjusted p-value for the difference between Place and Goal in Asian SDDs is above 0.05. The differences between Goal and Source and Place and Source, on the other hand, are relatively high. Even the lower values of the confidence interval are higher than one character for both pairs. Consequently, the adjusted p-values are very low. Considering the mean values in Table 68 above, there is a rise in the construction length from Place via Goal to Source in Asian SDDs. Similar to the SIs, however, the difference between Place and Goal is not significant.

5.4.4 Construction length of European SDDs

Similar to the SIs, the European SDDs also show a definitive rise in the construction length from Place via Goal to Source. Compared to the other macro areas discussed above, Europe shows again the clearest picture of this increase, cf. Figure 33.

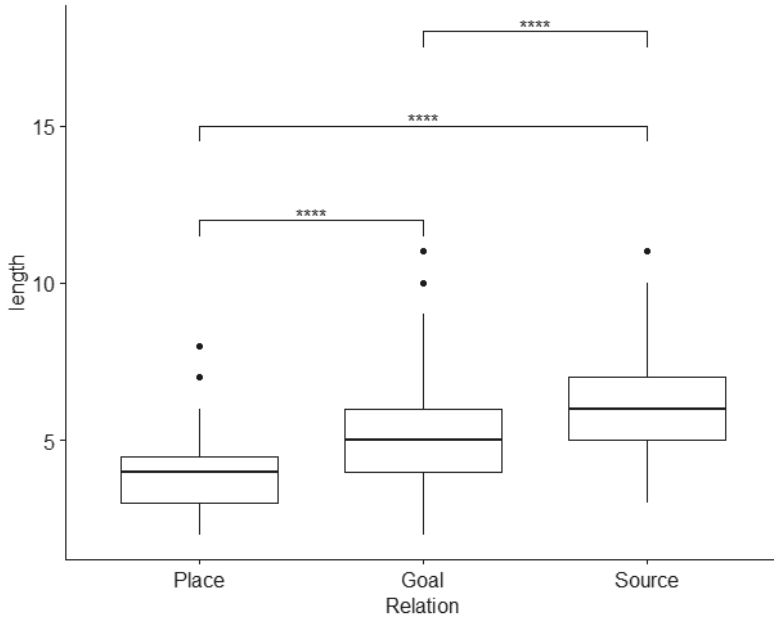


Figure 33: Construction length of European SDDs in P/G/S relation.

Apart from the minimum (= lower fence) and maximum values, the rise in the three relations is visible in every respect. The differences between the means of the three relations are all marked as significant by four asterisks. The values as depicted in Figure 33 and the mean values are displayed in Table 70.

Table 70: Construction length values of European SDDs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	2	2	3	4	4.75	7	8	3.822086
Goal	2	2	4	5	6	9	11	5.052381
Source	3	3	5	6	7	10	11	6.117347

In comparison to the global set of SDDs, the constructions are shorter in our European subsample. Similar to the SIs, the Place constructions in particular are shorter than the global average (~0.926 characters). Even though the differences are not as high, both Goal (~0.209 characters) and Source (~0.136 charac-

ters) are shorter as well. Compared to the European SIs, the Place SDDs are slightly longer by ~ 0.219 characters, while Goal and Source are slightly shorter by ~ 0.075 characters and ~ 0.08 characters, respectively. The difference in the construction length between all three pairs is significant which can be seen in Table 71.

Table 71: Means comparison of European SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	1.230295	0.8263861	1.634204	0
Source – Place	2.295261	1.8850967	2.705425	0
Source – Goal	1.064966	0.6806771	1.449255	0

The Tukey test shows that the values of the confidence intervals are all within the positive range. The differences in all of the three pairs is higher than one character and all of the pairs have an adjusted p-value of zero. Similar to the SIs, Europe seems to also host the shortest Place construction for the SDDs. One of the reasons for the high difference between the means of Place and Goal constructions is a tendency to employ zero-marked Place constructions and overtly marked Goal (and Source) constructions. The rise in the construction length from Place via Goal to Source is very conspicuous in Europe and receives the highest ranking of significance from all of the macro areas.

5.4.5 Construction length of Oceanian SDDs

Almost as clear-cut as Europe, Oceanian SDDs also have a visible rise in length from Place via Goal to Source as Figure 34 shows.

As can be seen in Figure 34, all three relations share the same minimum (= lower fence) value. Place and Goal also share the same Q1 value. Apart from that and the outliers, there is a conspicuous increase from Place via Goal to Source in the median, the Q3, and the upper fence values, cf. Table 72.

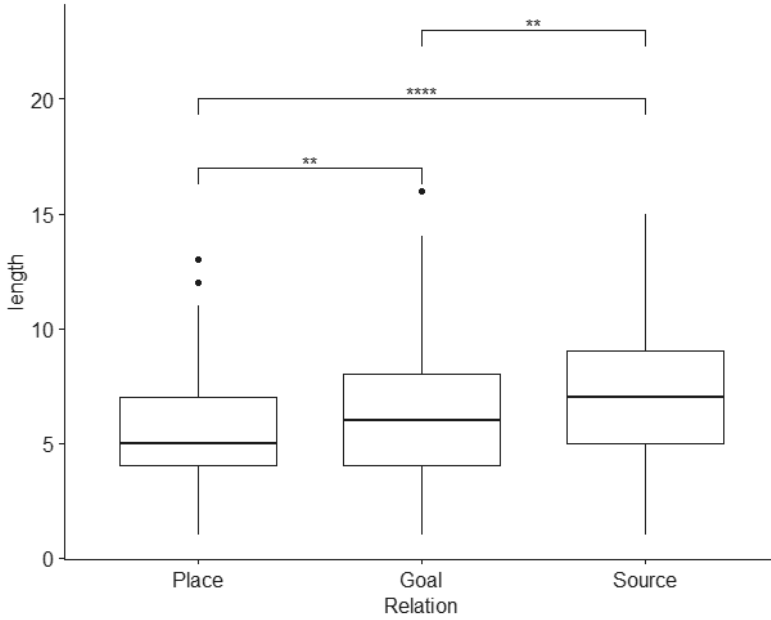


Figure 34: Construction length of American SDDs in P/G/S relation.

Table 72: Construction length values of American SDDs in P/G/S relation.

Relation	Min.	Lower fence	Q1	Median	Q3	Upper fence	Max.	Mean
Place	1	1	4	5	7	11	13	5.504918
Goal	1	1	4	6	8	14	16	6.254545
Source	1	1	5	7	9	15	15	7.073446

Similar to the SIs, the languages of our Oceanian subsample employ both longer SDDs than the languages of our global sample and the longest of all five macro areas. The constructions of all three relations are longer than the global average by ~ 0.757 characters for Place, ~ 0.993 characters for Goal, and ~ 0.82 characters for Source. Yet, the Oceanian SDDs are shorter than the Oceanian SIs by ~ 0.243 characters for Place, ~ 0.43 characters for Goal, and ~ 0.9 characters for Source. The differences between the SDD constructions in P/G/S relation in all three pairs have lower p-values than the SIs so that the significance is even clearer for the SDDs, cf. Table 73.

Table 73: Means comparison of American SIs in P/G/S relation.

Relation	Difference	lower	upper	p adjusted
Goal – Place	0.7496274	0.2002425	1.299012	0.0040325
Source – Place	1.5685283	0.9816537	2.155403	0.0000000
Source – Goal	0.8189009	0.1917737	1.446028	0.0063491

The differences between Place and Goal and between Goal and Source are both below 0.01, but over 0.001, so that they receive ** significance. Only the difference between Place and Source is higher and thus assigned **** significance. Overall, the Oceanian SDDs conform with the global trends of a rising construction length from Place via Goal to Source.

5.5 Summary

In the previous subsections, the construction lengths of the SIs and SDDs of our global sample and each macro area were evaluated. It was shown that, similar to Stolz et al.'s (2017) markedness hierarchy, there is a tendency towards a rising construction length from Place via Goal to Source. The SIs of our African subsample constitute the only case where the Goal mean is slightly shorter than the Place mean. Other than that, the Goal means are always longer than the Place means, and the Source means are always longer than the Goal means in both SIs and SDDs. However, the differences are not always significant. Areal differences concerning the rise in the construction length were uncovered. Table 74 gives an overview of the significances of the differences between the pairs in SIs and SDDs of the five macro areas and worldwide.

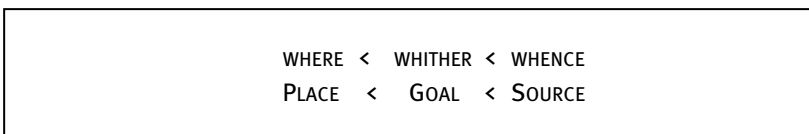
Table 74: Overview of the significances per macro area.

	SIs			SDDs		
	P – G	G – S	P – S	P – G	G – S	P – S
Africa	ns	ns	ns	ns	***	****
Americas	ns	*	***	*	**	****
Asia	ns	****	****	ns	****	****
Europe	****	***	****	****	****	****
Oceania	*	**	****	**	**	****
World	**	****	****	****	****	****

As Table 74 shows, especially the difference between Place and Goal is not always significant. In the SIs, only two of the five macro areas have a significant difference between these two relations. As stated in Section 5.3.4, the high significance ranking of our European subsample is mainly responsible for the high significance ranking of the difference between Place and Goal SIs in our global sample. Africa, on the other hand, has no significant differences in the SIs. In all other macro areas, both the differences between Goal and Source and between Place and Source are significant. For the SDDs, the Place – Goal difference is again not significant in Africa and Asia. Otherwise, all of the differences in the three pairs are significant.

Overall, we see a global trend towards the increase in construction length from Place via Goal to Source in both SIs and SDDs. As measuring the construction length is used as an approximation for measuring the constructional complexity (similar to Stolz et al.'s [2017] counts of segments), we see a similar hierarchy for the construction length as in Scheme 3 presented above.

As Scheme 4 shows, we assume that a unification of a markedness hierarchy concerning declarative constructions and a markedness hierarchy concerning interrogative constructions is indeed justifiable. However, as it was shown that there are differences between the five macro areas, the global trend must not be taken as the ultimate truth. Stolz et al.'s (2017) complexity counts were undertaken for Europe on the one hand and *the outside world* on the other. Based on our results concerning the construction length, we consider it necessary to treat each macro area separately. Future studies are needed to provide more elaborate complexity evaluations of SIs and SDDs – both for the five individual macro areas and globally.



Scheme 4: Parallel hierarchy of construction length.

6 Further qualitative aspects of SIs and SDDs

As explained in Section 2, our current approach focuses on the most *unmarked* and crosslinguistically most comparable spatial deictic expressions to be checked for the relationship between Place, Goal, and Source forms. For reasons of clarity and comparability, deictic expressions, that may form integral parts of a language's spatial system, partly had to be excluded from our quantitative analysis in this study. This concerns, inter alia, categories of SDDs that encode parameters other than distance (Section 6.1), the grammatical inflection of SIs and SDDs (Section 6.2), the encoding of spatial relations by several syntactic components (Section 6.3), and the encoding of spatial deixis in verbs (Section 6.4) or through particular sentence types (Section 6.5).

6.1 Beyond distance

At least one contrastive pair of proximal and distal is expected to surface in all languages (cf. Diessel 1999: 2). Yet, many languages employ SDDs that provide information on features that go beyond distance. In these SDDs, vertical relations (Section 6.1.1), forms marked for 'inside'/'outside' distinctions (6.1.3), (in)visibility (6.1.4), and any kind of landscape-oriented forms such as river-based directionals (6.1.2) may be encoded. All of these systems deserve extensive and dedicated research that is beyond the scope of this study.¹⁵¹ In this section we nevertheless aim to briefly discuss some of these *marked* SDD domains to point out that they often form part of highly canonical paradigms together with the *unmarked* SDDs. We hope to motivate future studies in this domain of spatial paradigms.

6.1.1 Vertical relations

All languages are equipped with strategies to code vertical relations in static or dynamic spatial readings. Constructions such as *come from up there* or (Ger.) *hierunter kommen* 'come down here' are part of every linguistic system, however, degrees of lexicalization, grammaticalization, and obligatoriness of indica-

¹⁵¹ Detailed descriptions of these deictic expressions are subject to dedicated studies, such as Schapper (2014) on Alor-Pantor languages.

tion may well differ from language to language. In this Section, we provide only a small insight into the domain of paradigms marked for vertical relations.

The Amazonian isolate Movima [AM-27] has an SDD system with fully (P=G=S) syncretic demonstrative adverbs which are derived from demonstrative bases and combine with the oblique case prefix *n-* (cf. Section 3.5.1.1). Bases for these SDDs are, at least diachronically, neuter or pronominal demonstratives. In the same fashion, a spatial adverb is derived by prefixing the oblique marker to a member of the [+elevated] demonstrative set. For instance, *kowa*, the proximal neutral ‘elevated’ demonstrative is prefixed with *n-* (with an epenthetic vowel) to function as an adverb, e.g. with a Goal function such as in (312).¹⁵²

- (312) Movima elevated THITHER [Haude 2006: 547]
- | | | | |
|-------------------|-----------------------|----------------------------|-----------------------|
| <i>day-a-ra=n</i> | <i>no-kowa</i> | <i>ban</i> | <i>taw-ka-ra-na=n</i> |
| lie-DR-BE.NTR=2 | OBL-DEM.NEUT | but | stir-MLT-BE.NTR-DR=2 |
| <i>ka: n-as</i> | <i>ba:-les-wa=is</i> | | |
| PRCL | OBL-ART.NEUT | finish-BE.fire-NMZ=PL.ABST | |
- ‘You put [the nuts] there [in the coals], but you stir repeatedly, lest they get burned’

Some systems of our sample languages include several specialized traits, i.e. their SDD sets contain, among other things, vertical SDDs as well as forms marked for [+restricted] or [+extended] space, and possibly more. For example, the Aivilingmiut variety of Inuktitut [AM-18] has a plethora of spatial adverbs that behave morphologically identically and refer to ‘in’ versus ‘out’ distinctions, [+in-field] versus [+out-of-field], [+restricted] versus [+extended] space, to vertical relations, and to more fine-grained distinctions (Denny 1982). Aivilingmiut deictic adverbs consist of a deictic root and a local case suffix. While the suffix *-ani/at* expresses Place, *-anngat* refers to Source, and *-unga* to Goal.¹⁵³ Table 75 includes the roots for SIs and SDDs and further hosts those attested forms that can be considered deictic. Note that the SIs are formed with different allative and ablative suffixes than the SDD sets. Completely *unmarked* Place, Goal, or Source SDDs cannot be expressed in Inuktitut, as forms must be marked at least for [+restricted] or [+extended] in all spatial deictic relations except the far deictics marked for ‘in’, ‘out’, or ‘down’ (cf. Table 75). Both proximal and distal horizontal cells have distinct forms for restrictedness versus extendedness of the place re-

¹⁵² Our interpretation of the phrase in (312) is that the coals are in a slightly elevated position and proximal to the addressee.

¹⁵³ A third dynamic function, i.e. Path, can be expressed by a combination of the same roots with the case suffix *-uuna* ‘via’.

ferred to, cf. *uv-unga* (RESTRICTED.HERE-ALL) ‘to right here’ compared to *ma-unga* (EXTENDED.HERE-ALL) ‘to around here’ (Denny 1982: 361).¹⁵⁴

Table 75: Aivilingmiut Inuktitut (Denny 1982).

	Root	Place	Goal	Source
SPATIAL INTERROGATIVE	<i>na-</i>	<i>na-uk</i>	<i>na-mut</i>	<i>na-ket</i>
HERE [+restricted]	<i>uv-</i>	<i>uv-ani</i>	<i>uv-unga</i>	<i>uv-anngat</i>
HERE [+extended]	<i>ma(j)-</i>	<i>ma-ani</i>	<i>ma-unga</i>	<i>ma-anngat</i>
UP THERE [+restricted]	<i>pik-</i>	<i>pik-ani</i>	<i>pik-unga</i>	<i>pik-anngat</i>
UP-THERE [+extended]	<i>pag-</i>	<i>pa-ani</i>	<i>pa-unga</i>	<i>pa-annga</i>
DOWN-THERE	<i>kan-ug-</i>	<i>kan-ani ~ unani</i>	–	–
IN-THERE	<i>qav-</i>	<i>qam-ani</i>	–	–
OUT-THERE	<i>kig-</i> <i>qag-</i>	<i>ki-ani</i> <i>qa-ani</i>	<i>ki-unga</i>	–
(OVER) THERE [+restricted]	<i>ik-</i>	<i>ik-ani</i>	<i>ik-unga</i>	<i>ik-anngat</i>
(OVER) THERE [+extended] [+horizontal]	<i>av-</i>	<i>av-ani</i>	<i>av-unga</i>	<i>av-anngat</i>

Denny (1982) analyzes the morphosyntactic relations of spatial demonstratives which locate objects and spatial adverbials that refer to static and dynamic Grounds in detail. A third related category, and the second category that may apply for the status of SDDs, consists of uninflected predicative particles which also may express genuine spatial deictic functions under adequate contextual conditions (Denny 1982: 359). These predicates are morphologically just as transparent as the spatial adverbs and demonstratives. The form *pikka* ‘(right) up there’, for instance, can further be segmented into the root *pik-* with final consonant gemination and *-a*. This process is consistent. Denny (1982: 365) points out that “[t]he predicative particles consist only of a deictic root, which is altered into a phonological word by a morphological process which doubles the final consonant and adds *-a*”. These forms often provide the answers to questions inquiring about the location of an object, and they depend on the shape and position of the respective object’s location, goal, or source (Denny 1982: 368). A formally defined complete paradigm of SDDs would thus consist of all

¹⁵⁴ Denny (1982: 361) explains that the [+restricted] proximal form “could refer to a place right beside the speaker”. The [+extended] forms, on the other hand, refer to broader areas, e.g. the entire room and “for indefinite and unknown locations” (Denny 1982: 361).

attested specialized and paradigmatic SDDs. Aivilingmiut Inuktitut is included in our sample and in the quantitative evaluation due to the crosslinguistically comparable pairs of [+restricted] and [+extended] forms.

The Sino-Tibetan language Bantawa [AS-6], a language spoken in the Himalayan mountains of eastern Nepal, has an elaborate system of deictic expressions encoding proximity, distance, and anaphor on different vertical levels, viz. high, low, and same level. Additionally, there are also neutral locative expressions with no reference to altitude at all. “The four-way vertical deictic system pervades all grammatical categories: Demonstratives, as well as verbs of movement [...] and likewise their derivatives [...]; so do adverbial expressions of location, direction, etc.” (Doornenbal 2009: 83). Thus, there are a total of twelve spatial deictic expressions each for P/G/S, cf. Table 76.

Table 76: Bantawa full paradigm of SDDs (Doornenbal 2009; Winter 2003).

	Place	Goal	Source
Proximal neutral	<i>o-da</i>	<i>o-d^ha-tni</i> <i>o-tni</i>	¹ <i>o-da-ŋka</i>
Proximal high	<i>u-du</i>	<i>u-d^hu-tni</i>	* <i>u-du-ŋka</i>
Proximal same level	<i>o-ya</i>	<i>o-hya-tni</i>	* <i>o-ya-ŋka</i>
Proximal low	<i>u-yu</i>	<i>u-hyu-tni</i>	<i>u-yu-ŋka</i>
Distal neutral	<i>mo-da</i>	<i>mo-d^ha-tni</i> <i>mo-tni</i>	<i>mo-da-ŋka</i>
Distal high	<i>mu-du</i>	<i>mu-d^hu-tni</i>	* <i>mu-du-ŋka</i>
Distal same level	<i>mo-ya</i>	<i>mo-hya-tni</i>	<i>mo-ya-ŋka</i>
Distal low	<i>mu-yu</i>	<i>mu-hyu-tni</i>	<i>mu-yu-ŋka</i>
Anaphoric neutral	<i>k^ho-da</i>	<i>k^ho-d^ha-tni</i> <i>k^ho-tni</i>	<i>k^ho-da-ŋka</i>
Anaphoric high	<i>k^hu-du</i>	<i>k^hu-d^hu-tni</i>	* <i>k^hu-du-ŋka</i>
Anaphoric same level	<i>k^ho-ya</i>	<i>k^ho-hya-tni</i>	* <i>k^ho-ya-ŋka</i>
Anaphoric low	<i>k^hu-yu</i>	<i>k^hu-hyu-tni</i>	* <i>k^hu-yu-ŋka</i>

The first part always consists of a demonstrative pronoun *o* ‘this’, *mo* ‘that (visible)’, or *k^ho* ‘that (anaphoric)’ (or due to vocal harmony *u*, *mu*, or *k^hu*, respectively), which “signals the point of reference, i.e. the deictic centre, the reference point of the speaker” (Doornenbal 2009: 108). The second part consists of the locative markers which denote their position in comparison to the deictic center: *da/d^ha* (neutral), *du/d^hu* (high), *ya/hya* (same level), or *yu/hyu* (low). The

allative suffix *-tni* is attached to express Goal, while the ablative suffix *-ŋka* is used to induce a Source meaning. Both “markers only attach to [expressions] that have already been suffixed with one of the four locatives” (Doornenbal 2009: 84). “As location is specified for vertical level by necessity” in Bantawa, both allative and ablative can only be attached if the expression already bears a locative suffix (Doornenbal 2009: 88).

To demonstrate the use of the expressions, Doornenbal (2009: 109) introduces a scenario where “there are three people on a mountain, two on top of the ridge, Rām and Śyām, and one below, Prem”. In (313), Śyām talks to Prem:

- (313) Bantawa [Doornenbal 2009: 109]
u-d^hu-tni *t^haŋ-a!*
 this-up-ALL come.up-PAST
 ‘come up towards here!’ (‘come to me’)

In (313), Śyām tells Prem to come up towards here. As Śyām is the deictic center, Prem is supposed to go up to where Śyām is. If the expression *mu-dhu-tni* ‘up towards there’ is used instead, Śyām tells Prem to go to Rām, who is also up the mountain, but not in the same spot as Śyām.

In another scenario where Śyām and Rām are down, while Prem is up, Śyām might say (314) to Prem:

- (314) Bantawa [Doornenbal 2009: 109]
o-hyu-tni *yiw-a!*
 this-down-ALL come.down-PAST
 ‘come down here!’ (‘come to me’)

If Śyām says the utterance under (314) to Prem in this scenario, he tells him to come down the mountain to where he is. Again, if the expression is changed to *mu-hyu-tni* ‘down towards there’, Prem would be supposed to go to Rām.

In addition to the aforementioned expressions, there is also the possibility to combine the spatial roots *d^ha*, *d^hu*, *hya*, and *hyu* with the locative markers *-na* or *-ni*. While *-ni* has an “adverbial usage with phrasal scope”, *-na* has a “modifier scope” and is “attributive” (Doornenbal 2009: 110). The resulting forms can also be suffixed with the ablative marker *-ŋka*, cf. (315).

- (315) Bantawa [Doornenbal 2009: 110]
 a. ***d^ha-ni-ŋka-c^haŋ*** *i-maj^ha-da* *c^huk-Ø*
 up-LOCAT-ABL-TOO his/her-middle-LOC be.down-NPAST
 ‘from up it is (also) in the middle’

- b. **hyu-na-ŋka**
 down-LOCAT-ABL
 ‘from down below’

The expressions in (315) do not indicate the distance to the deictic center but merely their position on a vertical scale.

Doornenbal (2009: 83) explains that “[t]he vertical level system also is a defining typological feature of the Kiranti languages of Nepal” and that “[t]he elaborate vertical deictic systems have been observed in most descriptions of every language that belongs to this group”. In fact, the only other Kiranti language in our sample, Limbu [AS-28], similarly makes use of a vertical deictic system. While the distinction is made between up and down, there seems to be no expression for an entity on the same level. The expressions listed for Limbu (cf. Appendix III [AS-28]) appear to be neutral regarding altitude. Table 77 displays the expressions of Limbu’s vertical level system used in the Place relation.

Table 77: Limbu vertical level system (van Driem 1987).

	neutral	up	down
Proximal	<i>kɔʔo·</i>	<i>kɔttho·</i>	<i>kɔʔyo·</i>
Distal	<i>khɛʔo·</i>	<i>khɛttho·</i>	<i>khɛʔyo·</i>

The expressions consist of a demonstrative root denoting proximal or distal (from *kɔŋ* ‘this’ and *khɛŋ* ‘that’) and a locative marker *-ʔo* (locative.neutral), *-ttho·* (locative.up), or *-ʔyo·* (locative.down). There is also a third deictic stage *na·* ‘over there’ which does not combine with locative markers of any kind. While there usually is P=G syncretism, there are additional allative forms for the neutral proximal and distal, cf. (316)–(317).

(316) Limbu HITHER [van Driem 1987: 68, 47]

- a. *lisi nasi ya·n po·ks-ɛ anga kɔʔo· ty-an·ba.*
 four five day be-RET 1SG here come-1SG.PS/PRET-IMPF
 ‘It has been four or five days since I came here.’
- b. *a-ndzum-me·, kɔtna phɛr-ɛʔ o·!*
 my-friend-VOC hither come-IMP oh
 ‘Come here, my friend!’

(317) Limbu THITHER [van Driem 1987: 480, 186]

- a. *khɛʔo· pe·lle ku-nijsan pug-ɛ*
 there go/PRET-SUB his-mood fall-PRET
 ‘When he had gone there, he became crestfallen’

- b. *khetna* *pe-g-i-me-n* *a-ya-η* *laʔba!*
 thither go-PL.ADH-NEG 1-get.dizzy probably
 ‘Let’s not go there! We’ll probably get dizzy!’

In (316a) and (317a), it can be seen that the locative expressions of Place can also be used in a Goal relation. Examples (316b) and (317b) display the additional HITHER and THITHER expressions. There seem to be no similarly marked expressions for the interrogative *a-tto* ‘where, whither’, the second distal *na* ‘over there, thither’, or the previously discussed expressions marked for vertical level. All of the expressions, however, combine with the comitative suffix *-nu* or the mediative suffix *-lam* which “may also be used as an ablative in a spatial sense” (van Driem 1987: 51), e.g. *a-tto-lam* ‘where from’, *na-nu* ‘from over there’, or *kheʔyo-lam* ‘from down there’. The vertical deictic system is not restricted to the Kiranti languages. It is a feature that occurs frequently in languages spoken in mountain areas in different parts of the world.

Similar to the cases discussed above, the Omotic language Maale [AF-27] makes use of a vertical deictic system. There are expressions denoting ‘here’ and ‘there’, which are neutral to altitude. These expressions consist of a demonstrative and the locative suffix *-ka*. These forms are depicted in Table 78 and may denote both Place and Goal, while the ablative suffix *-ppa* is used for the relation of Source.

Table 78: Maale neutral deictic expressions¹⁵⁵ (Amha 2001).

	Place	Goal	Source
D1	<i>ha-ka</i> this-LOC	<i>ha-ka</i> this-LOC	<i>ha-ka-ppa</i> this-LOC-ABL
	<i>hayi-ka</i> this.M-LOC	<i>hayi-ka</i> this.M-LOC	<i>hayi-ka-ppa</i> this.M-LOC-ABL
	<i>hai-ka</i> this-LOC	<i>hai-ka</i> this-LOC	NA
D2	<i>ye-ka</i> that-LOC	<i>ye-ka</i> that-LOC	<i>ye-ka-ppa</i> that-LOC-ABL
	<i>ʔii-ka</i> 3SG.M-LOC	<i>ʔii-ka</i> 3SG.M-LOC	<i>ʔii-ka-ppa</i> 3SG.M-LOC-ABL

¹⁵⁵ Please note that there are additional HITHER expressions, which do not include the locative suffix *-ka*. For the full paradigm, see Appendix I [AF-27].

Apart from these expressions neutral to altitude, there is also the possibility to form expressions which give information about the altitude of the location referred to. With this “the distal locative deictic terms are more detailed than their proximal counterparts” (Amha 2001: 140), as these expressions do only exist in the distal locative. The combination of the locative adverbs *lóó* ‘up’, *lúú* ‘down’, and *sóó* ‘there on level ground/distant but visible place’ and the locative suffix *-ka* create distal locative deictic terms with a vertical deictic system. “In proximal deictic expressions, a similar meaning distinction is expressed through the use of two independent words” (Amha 2001: 140).

Table 79 compares the constructions of both the proximate and the distal vertical deictic system.

Table 79: Maale vertical deictic expressions (Amha 2001).

	proximate	distal
‘up’	<i>ha-ka lóó</i> this-LOC up ‘here, a higher altitude than where the hearer is found’	<i>lé-ka</i> up-LOC ‘there, in altitude higher than where the speaker is found’
‘down’	<i>ha-ka lúú</i> this-LOC down ‘here, in a lower altitude than where the hearer is found’	<i>lí-ka</i> down-LOC ‘there, in altitude lower than where the speaker is found’
‘on level ground’	∅	<i>sé-ka</i> level-LOC ‘there, to the side of the speaker’

Although there is no direct reference to far deixis in the morphology of the terms given in the distal column of Table 79, the expressions are always to be understood as being away from the deictic center, i.e. the speaker. Thus, a locative expression containing the ‘up’ morpheme refers to a place that is located on a higher level compared to the speaker. For the proximate counterparts, multiword constructions consisting of the neutral deictic expression *haka* ‘here’ and the corresponding adverbs have to be used. There is, however, “no proximal expression corresponding to *séka*” (Amha 2001: 140), i.e. a construction denoting ‘here on level ground’.

Turning to Oceania, a thorough discussion of every sample language that displays specialized SDDs is beyond the scope of this section, or even this book. As Foley (1986: §4.3) describes, Papuan languages often make use of elevational

and (in)visible distinctions so that systems range from simple to highly complex. Individual works such as Schapper (2014) on elevational spatial systems in Alor-Pantar languages and grammars with much attention to detail on elevation (e.g. Schapper 2009 on Bunaq [OC-6]) provide more insight into these complex systems. Furthermore, they clearly indicate that so-called *unmarked* SDDs are by no means the default in certain languages and (macro) areas, as landscape-oriented forms clearly prevail. For instance, in Malau's (2016) grammar of the Oceanic language Vurës, it unsurprisingly appears that environment-oriented forms occur more frequently than translational equivalents of what we call *unmarked* SDDs. Apart from specific verbs such as *tēqēl* 'to go down, seaward' (Malau 2016: 113), locational adjuncts such as *rōw* 'seaward', *sar* 'inland', *siag* 'up', *sōw* 'down, towards the right when facing the sea', and *wōl* 'towards the left when facing the sea' (Malau 2016: 85) are well described throughout the grammar.

Despite the rich description in Malau (2016), Vurës is not in our sample, as a paradigm of *unmarked* forms could not be composed. Malau (2016: § 9) dedicates an entire chapter to general spatial orientation in Vurës since "[t]he system of spatial reference is such a pervasive part of the grammar that it needs to be described as a discrete category". In an attempt to narrow it down for the comparative reasons of this study, it first becomes clear that a putative Vurës paradigm would include several word classes. Unsurprisingly, dynamic spatial deixis is also often expressed by directional verbs only.¹⁵⁶ However, it has to be kept in mind that "many forms in Vurës have fluid class membership" (Malau 2016: 388). Vurës SIs attest to the P=G≠S pattern, cf. (318).

- (318) Vurës SIs
- a. WHERE [Malau 2016: 75]
- | | | | |
|-----------|----------------|----------|------------|
| <i>Na</i> | <i>vana-n̄</i> | a | vē? |
| POSS.ART | place-2SG.POSS | ABS.LOC | where |
- 'Where is your place?'
- b. WHITHER [Malau 2016: 224]
- | | | | | | |
|--------------|----------------|-----------------|---------------|----------|------------|
| <i>Ei, i</i> | <i>rētne-n</i> | <i>kōmōrōn̄</i> | <i>ma=van</i> | a | vē? |
| hey P.ART | mother-CONST | 2DL | PERF=go | ABS.LOC | where |
- 'Hey, where has your mother gone?'

¹⁵⁶ More precisely, "[d]irectional verbs give information about the direction of movement incorporated in an event. They can occur at the nucleus of the clause as the only verb forming the head of a VP or as a minor verb in a serial verb construction" (Malau 2016: 387).

- c. WHENCE [Malau 2016: 324]
Kōmōrōñī ma=van me den a vē?
 2DL PERF=go hither ABL ABS.LOC where
 ‘Where have the two of you come from?’

The proximal adverb *oko* is the only form we detected which approximates a very narrow definition of SDD. It appears in isolation for the HERE function in (319a) and with a Source preposition *den* ‘from’ for the HENCE function in (319b).

- (319) Vurēs SDDs (adverb)
- a. HERE [Malau 2016: 428]
Ke, no oko.
 yes 1SG here
 ‘Yes, I am here.’
- b. HENCE [Malau 2016: 429]
nēk i ukëg den oko ...
 2SG 2SG.DEF leave ABL here
 ‘... you leave from here ...’

However, there are hardly any example phrases of unmarked SDD constructions in Malau (2016) despite the existence of a full chapter on spatial orientation, which indicates the language’s preference for landscape-oriented locationals and motion verbs. A general tendency for nominal referents and dynamic spatial verbs to co-occur with additional deictic marking seems likely. Verticality is one of the salient features of Vurēs spatial orientation, plus a strong sea-oriented absolute reference frame (cf. Malau 2016: §9 for a detailed discussion). Vertical orientation can be expressed by verbs, e.g. in (320) where the allative verb appears in combination with a deictic particle and a demonstrative.

- (320) Vurēs additional deictic marking [Malau 2016: 92]
Tek o sav reqe e ta=van kal me gēn?
 COM COM.ART which woman DIST.MOD PROG=go go.up hither PROX.DEM
 ‘With what woman is he coming up here?’

For THENCE as well as for many instances of THERE notions, the locative anaphoric pronoun *aē* is frequently employed. This seems intuitive since crosslinguistically the far distance deictic stage is stronger associated with the anaphoric domains than the proximal stage (while *here* is deictic, *there* must usually be specified in discourse). We refrain from reconstructing the THENCE form on the basis of the ablative preposition *den* with distal demonstratives since this construction type is only attested with the sole spatial adverb *oko* ‘here’. Therefore, no paradigm can be provided for Vurēs despite the rich

information in Malau (2016) due to our predefined canon for SDDs. Still, the discussion is hoped to underline the possibility of prevalence of this type of *marked* SDDs in many languages and areas of the world.

A language which, on the other hand, shows high canonicity of neutral and elevation-marked forms is the Angan language Menya [OC-26], a typical P≠G≠S language with overt and transparent marking of all three relations. SDDs have a demonstrative base and are sensitive to elevation levels. Neutral forms are attested which we included in our statistical evaluations. Both neutral bases and bases marked for elevation are also found in the demonstrative pronouns (cf. Whitehead 2004: §3.1.2). A Menya SI comes in three different shapes. Whitehead (2004: 17) specifies that content question words usually occur with three different clitics. The general wh-question marker =wä is the default option, while it is interchangeable with the indicative =i and rarely also with the mood marker =kä. The paradigmatic use of all three clitics is shown with the Place-marked SI in (321a). Sentences (321b) and (321c) show the transparent overt coding of Goal and Source, respectively.

- (321) Menya SIs
- a. WHERE [Whitehead 2004: 17]
Saqä qokiqu ängikä? ~ ängiwä? ~ ängiyi?
 t=yaqä qokä=i=qu **ängi=kä** ~ **ängi=wä** ~ **ängi=i**
 2S=POSS male=DEF=M where=MD where=Q where=IND
 ‘Where is your husband?’
- b. WHITHER [Whitehead 2004: 17]
Qe änginyqäwä?
 qe **ängi=ηqä=wä**
 2DL where=G=Q
 ‘Where are you two (going)?’
- c. WHENCE [Whitehead 2004: 67]
“He wäunjä äkitanuengä?” änatätä ...
 he wäunjä=i **äki=ta=qu=en=kä** ä-na-t-ät-ä
 2PL work=DEF where=S=M=2PL=Q ASS-1PL-tell-SR-3SG/CSR
 ‘saying to us, “What workplace are you from?” ...’

The SDDs are composed of a demonstrative base with a locative clitic for Place, with a locative clitic plus the Goal clitic =ηqä for Goal constructions, and with the locative plus the Source clitic =ta for Source constructions. The morphological markers are the same as in SI constructions and are also found on nominals. The marker-chaining pattern is attested also in other Oceanian sample languages (cf. Section 3.1.5.1.2). As Whitehead (2004: 36, 52) shows on

the basis of demonstrative pronouns and other demonstratives, those forms neutral to elevation have the base *tä* for proximal and *i* for medial and distal functions. Our SDDs are strongly related forms that are equally marked for the two distance levels.

As (322a) and (322b) show, the locative clitic =*qi* is a Place marker for specified location, while the locative clitic =*u* indicates a Place “within a range or area that includes the specified location” as well as the “path along which a motion takes place” (Whitehead 2004: 61). The dynamic SRs are attested only with *qi*= preceding the directional marker. Sentences (322a–d) exemplify all three SRs on the basis of the proximal stage.

(322) Menya proximal SDDs

- a. HERE (specific) [Whitehead 2004: 111]

He täqi pmapu!

he **tä=qi** pma-p

2PL this=LOC be-23PL/IRR

‘Y’all stay here!’

- b. HERE (unspecific) [Whitehead 2004: 68]

Täqi Okalomba täu sitänä anä äpmeñque.

tä=qi Okalomba **tä=u** si=tä=nä anä

this=LOC Ukarumpa this=LOC 2S=with=FOC with

ä-pma-äj-qäqu=i

ASS-be-IMPF-1PL/DSO=IND

‘We’ve been staying here together with you at Ukarumpa.’

- c. HITHER [Whitehead 2004: 130]

“...” tqangutqe, ... täqinyqä quyepqäpñqä.

t-q-anğ-ä-tqä=i

tä=qi=ñqä

say-PFCTV-DIFR-3SG/IRR-GN=DEF this=LOC=G

quyep-q-p=ñqä

come.down-PFCTV-2PL/IRR=G

‘in the event that he says “...”, ... you should come down here.’

- d. HENCE [Whitehead 2004: 186]

Täqisanı nyi ätma, Wau bunqä qe äükäqe

tä=qi=ta=ñi nyi ä-tma Wau m=tu=ñqä qe

this=LOC=S=GVN 1SG ASS-get Wau down=LOC=G CERT

ä-w-k-qäqä=i

ASS-go-PAST/PFCTV-1SG/DSO=IND

‘From here I got (him) and went down to Wau’

Whitehead (2004: 61) introduces nine locative clitics that “frequently (...) attach to one of the demonstrative roots (...) to form locative words which can either stand alone as locative pronouns (...) or occur at the end of a NP as postpositions (...)”. He further states that “[i]t is in these locative words that the elevational demonstratives are used extensively”.¹⁵⁷ Table 80 is combined from Whitehead (2004: 61) and the foregoing list of locative clitics with extensive glosses.¹⁵⁸ Unattested forms are marked with a question mark according to the original table.

As can be inferred from the examples (322c) and (322d) above, these forms can further be cliticized with the Goal and Source clitics. The Menya paradigm is remarkably canonical in comparative perspective. However, by extension, elevational marking is a strong factor in the spatial system and would contribute to the canonicity of a hypothetical extended paradigm due to highly consistent overt marking of every SR on the basis of clearly delimited levels.

Table 80: “Locational words” from a demonstrative base with cliticisation in Menya (Whitehead 2004: 61, Table 19).

Clitics	Gloss	Demonstrative roots				
		<i>tä</i> ‘this’	<i>i</i> ‘that’	<i>m</i> ‘below’	<i>n</i> ‘level’	<i>yä</i> ‘above’
= <i>m</i>	at a distant location and/or unseen from a point of reference	<i>täm</i>	<i>im</i>	<i>mäm</i>	<i>näm</i>	<i>yäm</i>
= <i>ngi</i>	at a location somewhat beyond the speaker but within sight	<i>tängi</i>	<i>iŋgi</i>	<i>mängi</i>	<i>nängi</i>	<i>yängi</i>
= <i>ngisa</i>	in a region adjacent to a reference point	<i>tängisa</i>	<i>iŋgisa</i>	<i>mängisa</i>	<i>nängisa</i>	<i>yängisa</i>

¹⁵⁷ The paradigm [OC-26] includes only *unmarked* forms and constructions that are attested in Whitehead (2004). However, the author mentions that the table includes only forms that were “attested in the texts that are currently prepared for the concordance programme” (Whitehead 2004: 61).

¹⁵⁸ Table 79 includes forms involving eight of the clitics since forms bearing the ninth clitic =*tqä* ‘at a very specific location’ are not included in Whitehead’s (2004: 61) table.

Clitics	Gloss	Demonstrative roots				
		<i>tä</i> 'this'	<i>i</i> 'that'	<i>m</i> 'below'	<i>n</i> 'level'	<i>yä</i> 'above'
= <i>ŋi</i>	at the specified location (extended to use as a givenness marker)	<i>täŋi</i>	<i>iŋi</i>	<i>mäŋi</i>	<i>näŋi</i>	<i>yäŋi</i>
= <i>ŋisa</i>	within a region	?	?	<i>mäŋisa</i>	<i>näŋisa</i>	<i>yäŋisa</i>
= <i>qi</i> ~ = <i>qä</i>	at the specified location	<i>täqi</i>	<i>iqi</i> ~ <i>iqä</i>	?	?	<i>yäqi</i> ~ <i>yeqi</i>
= <i>tu</i>	at the specified location	–	–	<i>bu</i>	<i>du</i>	<i>yätu</i>
= <i>u</i>	within a range or area that includes the specified location; path along which a motion takes place	<i>täu</i>	<i>iu</i>	–	–	–

6.1.2 Elevational and river-oriented systems

Some languages attest to systems that combine several ways to code spatial relations involving landscape-orientation. Again, many grammars with rich information on these systems had to be excluded from our sample due to incomparability with those forms and functions required by the predetermined canonical paradigm. The Trans New-Guinea language Mian, for instance, was excluded due to the absence of an attested set of *unmarked* deictics. The SI pattern is P=G=S (cf. Fedden 2007: 355), while for *WHENCE* the SI *fab* can be attested only on the basis of the GDW Bible text. The horizontal level is rather underspecified, as *tam* 'to the side' is ambiguously bi-directional, as opposed to the pairs of deictics referring to the two "main axes of orientation", elevation, and flow of two rivers in the vicinity (Fedden 2007: 140). Fedden (2007: 139) refers to the respective forms as 'directionals', the non-demonstrative variants of which comprise six word forms as shown in Table 81.

According to Fedden (2007: 140), the river-based pair is also used in small-scale contexts to refer to 'up'/'down' distinctions. With endings marking gender and number, these directionals are applied adnominally and adverbially without additional morphological or lexical material (Fedden 2007: 140–141).

Table 81: Mian bare directionals and demonstrative directionals (Fedden 2007: 139, 141).

	UP(WARDS)	DOWN(WARDS)	UPRIVER	DOWNRIVER	ACROSS (A RIVER)	TO THE SIDE (SAME LEVEL)
Directionals	<i>ut ~wit</i>	<i>daak</i>	<i>met</i>	<i>tab</i>	<i>wat</i>	<i>tam</i>
Directional demonstra- tives PROX	<i>éwit</i> 'up here'	<i>élaak</i> 'down here'	<i>émet</i> 'here upriver'	<i>étab</i> 'here downriver'	<i>éwat</i> 'over here'	<i>étam</i> 'in here'
Directional demonstra- tives DIST	<i>íwit</i> 'up there'	<i>ílaak</i> 'down there'	<i>ímet</i> 'there upriver'	<i>ímet</i> 'there downriver'	<i>íwat</i> 'over there'	<i>ítam</i> 'in there'

Yet, closest to our definition of SDDs come the demonstrative directionals (cf. Table 81) that are combined of the abovementioned directional and the meaning-carrying vowels “*é* ‘here’ and *í* ‘there’, which presumably are contracted forms of *élé* ‘here’ and *yé* ‘there’” (Fedden 2007: 141), cf. (323).

- (323) Mian SDDs [Fedden 2007: 141, 355]
- a. HITHER + UP
éwit tele!
éwit te-(a)l=e
 here.up come-2SG.HORT=HORT
 ‘Come up here!’
- b. WHERE + OVER.THERE
 Q: **fab?** A: **íwat** *bi-Ø-e=be*
 where there.across stay.IMPF-IMPF-SG.NEUT1.S=DECL
 ‘Where?’ ‘It’s over there’

Despite the translation ‘here’, the proximal demonstrative *élé* is mostly found in demonstrative constructions locating objects, i.e. pointing to ‘this’, in Fedden (2007). The distal demonstrative *yé* signifies ‘there’ in various constructions of which some have an existential reading rather than a Place reading. One of the attested Place readings of *yé* is given in (324a), a Goal phrase including *yé* but with further directional marking on the verb is provided in (324b).

- (324) Mian constructions involving *yé* [Fedden 2007: 395, 382]
- a. THERE
yé biaanota Miantení yé yomanota
yé **biaan**-o=ta miantěn=i **yé**
 there stay.IMPF.SS.SIM-3SG.F.S=MED Mian.people=PL.ANIM there

yoma-n-o=ta

create-SS.SEQ-3SG.F.S=MED

‘While staying there, she created the Mian people and then ...’

- b. THITHER (DOWNRIVER)

walotab yé unibole

walo=**tab**

yé

multiply.PFCTV=downriver

there

un-Ø-ib=o=le

go.PFCTV-DS.SEQ-2/3PL.ANIM.S=MED=TOP

‘they multiplied and moved there downriver and then someone else ...’

Altogether, we could not compose a paradigm of Mian SDDs based on the pre-defined *unmarked* SRs. Although *yé* is fit to enter the THERE cell of the canon, no other relation could be attested on the basis of Fedden (2007), which otherwise includes very detailed analyses of the Mian directionals and hence of the salient characteristics of the spatial deictic system.

6.1.3 Interiority

In some languages, deictic expressions may be sensitive to ‘inside’/‘outside’ distinctions. This is for example the case in a number of Bantu languages. “One of the best-known features of the Bantu languages is their noun class system. All nouns are assigned to a noun class, where the number of noun classes varies between 12 and 20” (Zerbian and Krifka 2008: 385). For Swahili [AF-43], Bloom-Ström (2015: 120) explains that “[l]ike other demonstratives [...], the locative demonstratives are formed with a demonstrative root combined with the agreement morphology of the relevant noun class”, viz. a locative noun class. This has also been observed for other Bantu languages in this sample, e.g. Ekoti [AF-10] or Kikuyu [AF-21].

In Swahili [AF-43], “we also find the demonstrative forms of noun classes 16 to 18, which function as locational or temporal deictics” (Bloom-Ström 2015: 120). While noun class 16 and 17 mainly differ in their definiteness – class 16 is more definite than class 17 – noun class 18 “is the most definite of the three and refers to ‘insideness’” (Bloom-Ström 2015: 120). As we decided to use only the most *unmarked* SDDs, the demonstratives of class 18 are not included in the paradigms used for statistical evaluation. Nevertheless, these expressions are part of Swahili’s spatial deictic system and are thus not to be neglected in a qualitative discussion. Table 82 (adopted from Bloom-Ström 2015: 120) displays the total of nine locative demonstratives, which can be used as such for all three relations.

Table 82: Swahili demonstratives in the locational classes (Bloom-Ström 2015: 120).

Noun class	Approximate meaning	Near speaker	Near hearer, referential	Away from both
16	Definite place, position	<i>ha-pa</i>	<i>ha-p-o</i>	<i>pa-le</i>
17	Indefinite place, direction	<i>hu-ku</i>	<i>hu-k-o</i>	<i>ku-le</i>
18	Within	<i>hu-mu</i>	<i>hu-m-o</i>	<i>m-le</i>

The expressions displayed in the ‘near speaker’ column have the noun class concord as the second part, while the first part consists of *h* + a vowel of the same quality as the concord’s vowel. The expressions of the ‘near speaker, referential’ column follow a similar pattern, but the concord’s vowel is overwritten by the referential *-o*. Finally, the expressions of the ‘away from both’ column have the concord as the first part followed by *-le*. Note that the concord’s vowel is dropped in the class 18 demonstrative *mle* ‘in there’. The examples in (325) demonstrate the use of the SDDs of the ‘near speaker’ column according to their different noun classes.

(325) Swahili HITHER constructions

- a. HITHER class 16 [NEN Matt 14:18]
Ni-lete-eni hivyo vi-tu hapa.
 1SG.OBJ-bring-IMP.PL DEM 7/8.PL-thing 16.here
 ‘Bring these things here to me!’
- b. HITHER class 17 [NEN John 6:25]
Rabi, ume-fika lini huku?
 Rabbi 2SG.PERF-come when 17.here
 ‘Rabbi, when did you come here?’
- c. HITHER class 18 [NEN Matt 22:12]
Rafiki, uli-ingia-je humu bila vazi la arusi?
 friend 2SG.PAST-enter-how 18.here without cloth of wedding
 ‘Friend, how did you get in here without the wedding clothes?’

With just a translation, it is not that easy to tell apart the meanings of the SDDs in (325a) and (325b). According to Bloom-Ström, however, *hapa* in (325a) is more specific than *huku* in (325b). This assumption may be supported by the fact that *hapa* in (325a) is accompanied by *nileteeni* ‘bring to me’, where ‘to me’ already indicates a very specific place, so that *hapa* has to be used. Nevertheless, *humu* in (325c), is clearly different from the others in that it denotes interiority.

Ekoti [AF-10] has a very similar set of demonstratives that can combine with three locative classes to express specific location, general location, and interiority. Just like Swahili, Ekoti shows a P=G=S pattern, so that the expressions can be used for all three relations (cf. Section 3.5.1.2). A similar table as above can be used to display the expressions employed in Ekoti.

Table 83: Ekoti demonstratives in the locational classes (Schadeberg and Mucanheia 2000: 68).

Noun class	Approximate meaning	Near speaker	Near hearer	Away from both
16	Specific location	<i>apha</i>	<i>apho</i>	<i>aphale</i>
17	General location	<i>okhu</i>	<i>okho</i>	<i>okhule</i>
18	Within	<i>mphu</i>	<i>mpho</i>	<i>mphule</i>

Comparing the Ekoti expressions in Table 83 to those of Swahili in Table 82, their relatedness is evident. Not only do they share a similar division of distance levels and noun classes, their morphology is also very similar. In both languages, *-o* overwrites the concords final vowel in the ‘near hearer’ column, while *-le* is used to express ‘away from both’. Furthermore, even the concords are similar in both Swahili and Ekoti. They go back to the Ur-Bantu locative classes 16 **pa-*, 17 **ku-*, and 18 **mu-* as suggested by Meinhof (1910: 38).

The three noun classes do also exist in Tswana [AF-46], where *fa-*, *go-*, and *mo-* are used as locative classes for nouns. However, “[t]hese prefixes must be carefully distinguished from the similar and related locative adverbial formatives, *fa-*, *kwa-* [kô-], *go-* and *mô-*, which are high-toned, whereas the noun prefixes [...] are low-toned” (Cole 1955: 97). It seems that the locative adverbial formatives have been derived from the same noun classes used in Swahili and Ekoti. Three of them are used to compose a set of “locative class pronominal forms usually function[ing] as adverbs” (Cole 1955: 349), which are closest to our definition of SDDs¹⁵⁹. Cole (1955: 341) introduces them as follows:

- a) *fa-* implies relative proximity, and therefore indicates that the specified locality *at*, *to* or *from* which the action is effected or directed, is relatively nearby.
- b) *kwa-* implies relative remoteness, and therefore indicates that the specified locality *at*, *to* or *from* which the action is effected or directed, is relatively distant.

¹⁵⁹ Cole (1955: 349) explains that “[u]nlike pronouns of other classes, they never assume the prefixal formative *go-*“. There is, however, a form *gônê* [gônâ] with an anaphoric meaning ‘there, here, at the place referred to’ (Cole 1955: 349).

- c) *mô-* indicates that the action is effected *in, on, or round*, or directed *into or out of*, the specified locality, without reference to the distance involved.

Similar to Swahili and Ekoti discussed above, it is possible in Tswana to express interiority with SDDs. The expressions *mô* ‘in here’, *môo* ‘in there’, *môno* ‘right in here’, and *môlê* ‘in there yonder’ can be constructed by using the locative adverbial formative *mô-*.

6.1.4 (In)visibility

The Arawakan language Garifuna [AM-15] features a seven-stage deictic system with a transparent and maximally distinct (i.e. fully asyncretic) set of spatial adverbs (Haurholm-Larsen 2016: 239). The predominant lexical-semantic distinction is made between a far distance deictic stage which denotes ‘in sight’ and four stages that denote ‘out of sight’. The coding strategy is consistent for these forms. The invisible set hosts an intermediate stage and three genuine distal stages. As the proximal SDDs are seen as ‘coinciding’ with the speaker’s position, there is no ‘in sight’ versus ‘out of sight’ distinction in the proximal stage. Concerning the formal make-up of the SDDs, Haurholm-Larsen (2016: 65) notes that “there is a strikingly parallel pattern between the demonstrative pronouns and the deictic adverbs”. Place SDDs exhibit no clearly separable marking (cf. *HERE* in [326a] below). Apart from identical number of syllables and a shared syllabic structure, especially the non-proximal static SDDs show remarkable similarity to the demonstrative pronouns, also in terms of their final VC (e.g. the intermediate demonstrative pronoun *lira* and the corresponding intermediate locative adverb *yara* in Table 14 in Haurholm-Larsen 2016: 65).

The relatively high canonicity of the Garifuna paradigm is also supported by the fact that the system bears genuine spatial deictic adverbs in form of separate, free-standing, and closed-class word forms that can be traced back to deictic bases. As Haurholm-Larsen (2016: 238) states, “(true) ‘adverbs’ [are] underived phonological words which function as adverbial adjuncts adding information about where, when and how an event takes place”. Adverbials, on the other hand, are regarded as forms that are “derived or otherwise complex phonological words or phrases with the same function as adverbs” (Haurholm-Larsen 2016: 238). The author adds that “[a]dverbial predicates are adverbs and adverbials which can function as a main clause without a copula”. Sentence (326) exemplarily shows some of the visibility-sensitive SDDs that are attested in Garifuna on the basis of the Source relation (cf. also the [–visible] far distal *THITHER* in [326b] below). In contrast to the [+visible] medial deictic setting in

(326a), the context in (326b) seems to be that the people referred to were not visible until a certain moment of time, i.e. the Source of movement remains invisible to the speaker.

- (326) Garifuna Source SDDs
- a. THENCE [+visible] [Haurholm-Larsen 2016: 93]
rára l-inya aságara-gwà-nya nyén-giyen
 standing 3M-exist take.out-REFL-3PL there-ALL
 ‘he was present when they were taken out of there’
- b. THENCE [-visible] [Haurholm-Larsen 2016: 306]
sódni=bug n-aríhi-n h-achûla-gu-n yára-giyen
 suddenly=PAST 1SG-see-USPEC 3PL-arrive-REFL-USPEC there-ABL
 ‘suddenly I saw them come out from over here’

Goal can also appear as zero-marked, see (327).

- (327) Zero-coded THITHER [Haurholm-Larsen 2016: 95]
ságü t-achûlürü-n nyén t-ágawa-ha
 every.time 3F-arrive-USPEC there 3F-bathe-DISTR
 ‘every time she arrives there, she bathes’

The attested SIs are transparently derived from a Q base *halíy(a)* with the same Place and Goal markers that attach to spatial adverbs to form dynamic SDDs (cf. WHITHER in [328a] below). There is no evidence for overabundance in the Goal and Source SI cells. Conversely, there are two options for WHERE. The predicate form *halíya-ny(a)* hosts the derivational suffix *-ny(a)* that functions as existential marker (328a). The inflecting verbal form *hag(á)* likewise forms a question predicate (328b) but does not contribute to higher canonicity of the paradigm.

- (328) Garifuna
- a. Derived WHERE and HERE [Haurholm-Larsen 2016: 175]
Mári halíya-nya-dì-bu? ana-há yá múna-da
 Mári where-exist-DI-2SG 1SG-exist here house-LOC
 ‘Mari, where are you? I’m here at the house’
- b. Inflected WHERE [Haurholm-Larsen 2016: 177]
hag-ón Nimsi?
 where-3F Nimsi
 ‘where is Nimsi?’

With progressive and future tense markers, position and motion predicates can be derived from spatial adverbs (Haurholm-Larsen 2016: 93). These tensed predicates can be deictic, for which Haurholm-Larsen (2016: 94) cites some examples denoting Place. Nonetheless, it seems that especially the progressive tense suffix is associated with Goal, cf. (329).

- (329) Garifuna Goal predicates [Haurholm-Larsen 2016: 95]
- a. WHITHER
halíy-on-bà-dì-bu *n-umá?*
 where-ALL-FUT-DI-2SG 1SG-friend
 ‘where are you going my friend?’
- b. THITHER
áye yagûr-on-be-y *l-aw* *m-arúfudu-n*
 yes over.there-ALL-FUT-3M 3M-with NEG-show-USPEC
l-ubé-y=ti *b-ún*
 3M-FUT-3M=TOP 2.SG-to
 ‘yes, he’s going over there with it, he’s not going to show it to you’

Part of the general SDD paradigm that is not included in the appendix [AM-15], for reasons of crosslinguistic comparability, is the vertical spatial adverb *ûna-bu* (DOWN-LOC). This adverb receives distinct Place marking but the same suffixal marking for Goal (*ûnabu-n*) and Source (*ûnabu-gíyen*) as the horizontal SDDs discussed above. Visibility or invisibility is not indicated in this stage. The visibility parameter is restricted to horizontal forms.

6.2 Inflection of SIs and SDDs

One of the most outstanding paradigms is that of the Nakh-Daghestanian language Khwarshi [EU-23], noticeably a language of Europe. While it is allocated to the P≠G≠S pattern and thus completely in line with the statistically dominant pattern in Europe, it has one feature that is relatively uncommon even from world-wide perspective. A set of demonstrative adverbs has to be inflected for gender and number. Khwarshi has five genders (Khalilova 2009: 42):

- (I) male human
- (II) female human
- (III) animals and inanimate objects
- (IV) animate and inanimate objects
- (V) inanimate objects and names of young

These five genders are marked by a prefix, an infix, or a suffix. Furthermore, the human group (I–II) and the non-human group (III–V) each share one set of plural affixes. The demonstrative adverbs have “an agreement slot for the gender/number infixes” (Khalilova 2009: 114). The examples in (330) demonstrate how the demonstrative adverb for ‘there (far from speaker)’ has to be changed according to gender/number agreement.

- (330) Khwarshi [Khalilova 2009: 115]
- a. **oyne** *hos kad y-eč-i.*
 <II>there one girl II-be-PAST.W
 ‘There was one girl.’
- b. **owne** *l’iho hosunu diyo us-un goli*
 <I>there sideward other 1SG.GEN1 sibling(I)-and be.PRES
 ‘There is my brother over there’

In (330a), the demonstrative adverb takes the female human infix *-y-*, while the male human infix *-w-* has to be used for agreement in (330b). Both the proximal and the distal SDDs have corresponding short forms, e.g. *o<y>e* ‘<II>there’ or *o<w>e* ‘<I>there’ (Khalilova 2009: 115). Thus, each of the five genders and the two plurals have a long and a short form. While the short forms can be used for Place only, the long forms can take directional suffixes to denote Goal or Source, cf. (331).

- (331) Khwarshi [Khalilova 2009: 114]
- a. **awde-l** *guc’a hobo lun il-in ise*
 <I>here-LAT look-INF come QUOT say-PAST.UW that.OBL.ERG
xanqal.
 khan.CONTES.LAT
 ‘Come here to have a look’, he said to the khan.’
- b. *ise lac’a arde-zi ono-yul l-ez-i.*
 that.OBL.ERG food(IV) <IV>here-ABL there-VERS IV-take-PAST.W
 ‘He took the food from here to there.’

Goal is displayed in (331a). Here, the proximal (near speaker) demonstrative adverb ‘<I>here’ takes the lative suffix *-l*. In (331b), the ablative suffix *-zi* induces a Source meaning. Furthermore, (331b) features another demonstrative adverb *ono* ‘there’ with a versative suffix *-yul* ‘towards’. According to Khalilova (2009: 88), “[t]he Versative expresses the basic meaning ‘towards a place’ or ‘in the direction of something’”. Sylak-Glassman et al. (2015: 84) explain that the versative case in two other Nakh-Daghestanian languages (Tabassaran and Tsez) “indicates motion in the direction of a goal, without indication of whether it is reached”. As Khalilova (2009: 88) states that “[t]he meaning of this case is also close to that of the Lative case” and as the examples indicate the same, we decided to include it in our paradigm.

There are four more demonstrative adverbs that are not inflected according to gender and number. These forms and the SIs take the same case marking suffixes as demonstrated above, although the ablative suffix *-zi* is shortened to *-z* in the case of the interrogative and D4. The full paradigm of Khwarshi SIs and SDDs with all inflected forms looks as follows (Table 84):

Table 84: Khwarshi full paradigm including all inflections (Khalilova 2009).

	Place		Goal		Source	
Interrogative	<i>na</i>		<i>na-l</i> <i>na-yul</i>		<i>na-z</i>	
D1	<i>ide</i>		<i>ide-l</i> <i>ide-yul</i>		<i>ide-zi</i>	
D2	(I)	<i>awde</i> <i>awe</i>	(I)	<i>awde-l</i> <i>awde-yul</i>	(I)	<i>awde-zi</i>
	(II)	<i>ayde</i> <i>aye</i>	(II)	<i>ayde-l</i> <i>ayde-yul</i>	(II)	<i>ayde-zi</i>
	(III)	<i>abde</i> <i>abe</i>	(III)	<i>abde-l</i> <i>abde-yul</i>	(III)	<i>abde-zi</i>
	(IV)	<i>arde</i> <i>are</i>	(IV)	<i>arde-l</i> <i>arde-yul</i>	(IV)	<i>arde-zi</i>
	(V)	<i>ayde</i> <i>aye</i>	(V)	<i>ayde-l</i> <i>ayde-yul</i>	(V)	<i>ayde-zi</i>
	(HPL)	<i>abde</i> <i>abe</i>	(HPL)	<i>abde-l</i> <i>abde-yul</i>	(HPL)	<i>abde-zi</i>
	(NHPL)	<i>arde</i> <i>are</i>	(NHPL)	<i>arde-l</i> <i>arde-yul</i>	(NHPL)	<i>arde-zi</i>
	D3	<i>hobode</i>		<i>hobode-l</i> <i>hobode-yul</i>		<i>hobode-zi</i>
D4	<i>ono</i>		<i>ono-l</i> <i>ono-yul</i>		<i>ono-z</i>	
D5	(I)	<i>owne</i> <i>owe</i>	(I)	<i>owne-l</i> <i>owne-yul</i>	(I)	<i>owne-zi</i>
	(II)	<i>oyne</i> <i>oye</i>	(II)	<i>oyne-l</i> <i>oyne-yul</i>	(II)	<i>oyne-zi</i>
	(III)	<i>obne</i> <i>obe</i>	(III)	<i>obne-l</i> <i>obne-yul</i>	(III)	<i>obne-zi</i>
	(IV)	<i>orne</i> <i>ore</i>	(IV)	<i>orne-l</i> <i>orne-yul</i>	(IV)	<i>orne-zi</i>
	(V)	<i>oyne</i> <i>oye</i>	(V)	<i>oyne-l</i> <i>oyne-yul</i>	(V)	<i>oyne-zi</i>
	(HPL)	<i>obne</i> <i>obe</i>	(HPL)	<i>obne-l</i> <i>obne-yul</i>	(NPL)	<i>obne-zi</i>
	(NHPL)	<i>orne</i> <i>ore</i>	(NHPL)	<i>orne-l</i> <i>orne-yul</i>	(NHPL)	<i>orne-zi</i>
	D6	<i>homone</i>		<i>homone-l</i> <i>homone-yul</i>		<i>homone-zi</i>

D1 = proximal, D2 = near speaker, D3 = near hearer, D4 = distal, D5 = far from speaker, D6 = far from hearer

The Khwarshi paradigm of SIs and SDDs is an outstandingly complex and at the same time consistent paradigm in comparison to other European languages.

Turning to Oceania, a grammar that provides detailed insight into a spatial deictic system is Aikhenvald's (2008) grammar of the Ndu language Manambu [OC-20] of the Sepik River region of Papua New Guinea.¹⁶⁰ The SDD system shows a high degree of constructional complexity, and a prevalence of landscape-oriented forms is noticeable in the provided examples. The Sepik River constitutes the pivot of the spatial orientation system per se, as the author states in her introductory section:

The Sepik River is the centrepiece of the Manambu environment. It is also the **major point of reference** in spatial orientation: positions of objects and locations of territories are conceptualized in terms of their position with respect to this river (...). Greetings (...) are also centred around the direction in which the river flows. Trying to understand the Manambu language without having the river near at hand is an almost insurmountable task. (Aikhenvald 2008: 4, boldface added)

There are two basic strategies to encode spatial (deictic) relations in Manambu, i.e. marking on the verb and marking on a set of nominal demonstratives (Aikhenvald 2008: 377). All substrategies include forms and constructions largely based on the same roots as the six “inherently directional” basic motion verbs (Aikhenvald 2008: 377). Related forms appear as bound directionals on optionally directional verbs and as directional suffixes on “intrinsically directional verbs” (Aikhenvald 2008: 380). Furthermore, they attach to demonstratives which in some cases may cause a change in meaning, cf. Table 85 for an overview of the directional markers.

Table 85: Directional verbs and derived markers (Aikhenvald 2008: 380).

Inherently directional verbs		Directional marking on demonstratives	
<i>war-</i>	'go upwards'	<i>-wur</i>	'up, upstream'
<i>da-</i>	'go downwards'	<i>-d(a)-</i>	'down, downstream'
<i>væki-</i>	'go across (away from the speaker)'	<i>-aki-</i>	'across away from speaker'
<i>væra-</i>	'go across (towards speaker)'	–	–
<i>wula-</i>	'enter, come in, come in a direction from the Sepik River'	<i>-wula-</i>	'towards speaker; away and inland from the Sepik River'
<i>waku-</i>	'go out (including motion in direction away from the Sepik River)'	<i>-aku-</i>	'outwards from speaker'

160 See also the discussion on Abau [OC-1], another Sepik sample language, in Section 3.5.5.2.

In the introductory part of her extensive work on Mamanbu, Aikhenvald (2008: 2) already refers to the demonstrative system as “unusually intricate”. The author addresses the topic of adverbial demonstratives in spatial functions and describes three distance levels encoded in the bases, *i.e.* *kə-* (proximal/near speaker), *wə-* (proximal/near addressee), and *a-* (distal). The nominal demonstratives constitute the class that comes closest to our definition of SDDs, as “[t]here is no special set of local adverbial demonstratives: locative forms of spatiotemporal demonstratives and all ‘current relevance’ demonstratives are regularly used to indicate location” (Aikhenvald 2008: 215). In her chapter on demonstratives, Aikhenvald (2008: 200) further specifies that “[s]patio-temporal demonstratives distinguish obligatory gender and number; they may also distinguish either three additional degrees of distance, or five directions”, whereas “‘current relevance’ demonstratives distinguish five directions, and two additional degrees of distance.” This means that this last subset does not distinguish gender. Other than that, some noun referents and deictic Places, Goals, and Sources take a feminine form, whereas other noun referents that code locations require a masculine form, as Aikhenvald (2008: 2) summarizes:

A striking property of Manambu is its gender system. Two genders, masculine and feminine, are assigned to nouns according to their referents’ sex and also shape and size. That is, a large house is masculine, and a small house feminine. Genders are covert in the sense that, rather than being marked on the noun itself, they appear on the agreeing modifiers, verbs, and adverbial demonstratives, and in possessive constructions. The feminine gender is both formally and functionally unmarked.

Although the paradigm for Manambu can be filled entirely with adverbial demonstrative forms, verbs and directional verbal markers may be even more strongly associated with dynamic spatial deixis. Based on the attested examples, forms such as the Place SI can of course also be marked for feminine gender of the referent, so that *e.g.* *akə-l* (Q-F) translates to ‘where is she?’ (Aikhenvald 2008: 115). Solely WHITHER has an unmarked form *akrəl* but may include marking for gender in special cases, *e.g.* the construction in (332) which “can be considered its suppletive focus form” (Aikhenvald 2008: 228).¹⁶¹

- (332) Manambu WHITHER [Aikhenvald 2008: 228]
akəm-aka-nər *yi-na*
 where-FOC.M-LK+ALL go-ACTFOC+3F.SG.BAS.VT
 ‘Where exactly did she go to?’

¹⁶¹ The WHENCE construction is based on a combination of the Place construction type and allatival verbs. The construction is thus discussed in the Section 6.3 on complex Source constructions.

Similar to other domains of grammar, the default gender for spatial deictic contexts and therefore the demonstrative class that provides SDDs is usually marked for feminine gender in Manambu (Aikhenvald 2008: 126), cf. (333a) and (333b) in contrast to (333c).

- (333) Manambu spatial demonstratives [Aikhenvald 2008: 207]
- a. THITHER
a-l-da *kawawa* ***a-l-ayir***
 DEM.DIST-F.SG-down hole+LK+COM DEM.DIST-F.SG-DIST+LK+ALL
waku-d
 go.out-3M.SG.BAS.PAST
 ‘He emerged via that hole down below (going) towards over there (a remote location)’
- b. THERE/‘this distant place’ [Aikhenvald 2008: 208]
kə-l-ayim-a:b, *dəy-a* *tami:* *ma:*,
 DEM.PROX-F.SG-DIST+LOC-too 3PL-LK+F.SG area NEG
kə-l-awi-a:b
 DEM.PROX-F.SG-very.DIST-too
 ‘In this (distant place), it is not their land; in this very distant place, too’
- c. Male noun referent [Aikhenvald 2008: 209]
a-d-a-wula *təp* *də-kə-də* *sə* *Təpayaburman*
 DEM.DIST-M.SG-LK-inland village M.SG-OBL-M.SG name Tepayaburman
 ‘The name of that (big) village inland is Tepayaburman’

As mentioned before and indicated by (333a), vertical relations play a major role in Manambu spatial orientation. At least as prominent are forms and constructions oriented towards the Sepik River, as well as further specific ‘across’ and ‘towards’ notions. Directional verbs play another major role (cf. also Section 6.3 on Source constructions). Note that the paradigm [OC-20] is composed of the default feminine forms that fulfill our SDD functions. Generally, genuine (deictic) Place as well as (deictic) Goal and Source constructions are attested exclusively with feminine forms on the basis of Aikhenvald’s (2008) examples. Anaphoric masculine forms were therefore generally omitted in Appendix V [OC-20]. The same applies to specialized forms such as the focus form of WHITHER in (332) above.

Contrary to the case of Khwarshi and Manambu, in the Ethiopian language Wolaytta [AF-47], only interrogative constructions are inflected. They function as common nouns and inflect according to case, gender, and number, cf. (334).

- (334) Wolaytta [Wakasa 2008: 545, 546]
- a. **7áw-aa** *b-áádii?*
 where-ABS.M.SG go-INTERR.PFCTV.2SG
 ‘Where did you go?’
- b. *shiiK-an-á-u* **7áw-ai** *keh-ée?*
 gather-INF-OBL.M.SG-for where-NOM.M.SG be better-INTERR
 ‘Where is better for gathering?’

In both (334a) and (334b), a masculine singular suffix is used. The cases, however, differ. While it is absolutive case in (334a), the nominative case can be found in (334b). This is not a distinction between a WHERE and a WHITHER construction, as there is P=G syncretism (in parts) and both forms may be used for both relations. The inflection is not obligatory. Sometimes only a case marker is suffixed.

- (335) Wolaytta [Wakasa 2008: 545, 542]
- a. **7áw-a** *b-áádii?*
 where-ABS go-INTERR.PFCTV.2SG
 ‘Where did you go?’
- b. **7áu** *b-ái?*
 where go-INTERR.IMPF.2SG
 ‘Where are you going?’

In (335a), the SI is marked for case only, while it is completely unmarked in (335b). Comparing (334a), (335a), and (335b), there do not seem to be certain rules that trigger or block the inflection of SIs. Wakasa (2008: 545) states that

[a]lthough each inflected form of this is in general used in the same way as that of usual common nouns, both its concrete and non-concrete forms seem to be usually used without any obvious semantic differences [...]. Moreover, the semantic difference between *7áw-aa* and *7áu* is not known in most cases [...]. However, since *7áu* cannot function as a predicate of an interrogative sentence, *7áw-aa* is indeed a useful linguistic form.

It seems that the derived and inflected form is obligatory when it is used as a predicate of an interrogative sentence, whereas it is optional in other contexts.

Something similar to the above case of Wolaytta can be found in the Austroasiatic language Santali [AS-38]. Both SIs and SDDs can be inflected according to person, number, and case. Santali distinguishes between singular, dual, and plural and employs four cases for the person markers, viz. nominative, genitive, dative, and accusative. The following examples display how WHERE constructions can be inflected.

- (336) Santali inflected WHERE [SCLNT Luke 22:9; 1 Cor 15:55]
- a. ***Oka-re-liñ*** *tear-a-m-a* *mente-m*
 which-LOC-1DL.NOM prepare-FUT-2SG.DAT-IND PURP -2SG.NOM
men-joñ kana?
 wish-FUT.REFL.DAT COP
 ‘Where do You want us to prepare it?’
- b. *E gujuk’ oko-r-ta-m jit do?*
 oh death which-LOC-GEN-2SG victory EMPH
E gujuk’ oko-r-ta-m suṅga do?
 oh death which-LOC-GEN-2SG sting EMPH
 ‘O death, where is your victory? O death, where is your sting?’

In (336a), the first person dual nominative suffix *-liñ* is attached to the Place SI *okare* ‘where’. The construction *okortam* in (336b) comprises the genitive suffix *-ta* and the second person singular suffix *-m*. The genitive needed to express the possessive construction ‘your victory’ or ‘your sting’, respectively, is realized in the SI.

The gender/number/case markers are always attached to the rightmost end of the construction. Thus, in the case of Source constructions, the markers are suffixed to the postposition *khon* ‘from’, as the example in (337) shows.

- (337) Santali inflected WHENCE [SCLNT Rev 7:13]
- Ar oka khon-ko hec’-akan-a?*
 and which from-3PL.NOM come-PERF.REFL.ACC.RES-IND
 ‘And from where did they come?’

In the example, *oka khon* ‘whence’ takes the third person plural nominative suffix *-ko*. Not only SIs but also SDDs can be suffixed by gender/number/case markers. Contrary to the case of Khwarshi discussed above, inflection of SIs and SDDs does not seem to be obligatory in Santali, as there are many instances of uninflected constructions.

- (338) Santali uninflected WHERE [SCLNT John 7:11]
- Uni hoṛ do oka-re mena-e-a?*
 3SG human EMPH which-LOC be-3SG.NOM-IND
 ‘Where is He?’
- (339) Santali uninflected HENCE and THITHER2 [SCLNT Matt 17:20]
- nonḍe khon hanḍe ucq̄r-ok’-me***
 here from there remove-REFL-2SG.ACC
 ‘Move from here to there’

As the sentences (338)–(339) show, both SIs and SDDs can occur without inflection. It appears that if the SIs or SDDs are inflected according to gender, number, and case, the information given by these markers is not expressed a second time at some other point in an utterance, cf. (336)–(337). If, for example, the verb bears all the necessary information, the SIs and SDDs appear to be unmarked, cf. (338)–(339). The inflection of these constructions is not mentioned in Skrefsrud's Santali grammar from 1873. All instances of either SIs or SDDs occur without any inflections. Thus, one may speculate that this phenomenon is a rather recent development.

Looking back at the short discussion on gender-sensitive SDD candidates in this section, we cannot rule out the possibility that some less transparent gender-sensitive paradigms were not correctly (or not at all) identified. Still, the additional, albeit rare and often optional and/or context-dependent aspect of gender-sensitivity qualifies as another potential obstacle to the canonical morphological approach as defined in this study. Opening up SDD paradigms for gender classes, for instance, will lead to increased complexity. How exactly this complexity must be weighted, compared to other languages, we do not wish to determine in this first exploratory study.

6.3 Complex Source constructions

In a handful of our sample languages, we regularly witness the occurrence of complex Source constructions that exceed the realm of morphology and are often based on an interaction of morphological marking, syntactical factors, and verb semantics. Sample languages that have paradigms including multiword constructions or purely verb-based Source constructions (which may omit overt Grounds) are indicated by square brackets in the appendices. There are various implementations of this type of interaction. However, in all construction types we observed, the core mechanism is the establishment of Ground by a static location verb together with at least one allative motion verb. The common basis of the systems discussed here is the absence of both morphological ablative marking and motion verbs with inherently ablative meaning in the attested constructions.

In the Muskogean language Choctaw [AM-8], interrogatives combine with verbal morphology (Broadwell 2006), and attest to P=G=S syncretism. Spatial deictic functions are coded by directional participles, static verbs, motion verbs, and/or by an interaction of these elements. Verbs which inherently include a Goal object in their meaning may already suffice to encode Goal functions, cf.

the non-spatial interrogative construction in (340) in which (far deictic) Ground is implicit.

- (340) Choctaw Goal SI [Broadwell 2006: 110]
Kátih-t al-aachi-h miyah?
 Q-PTCPL arrive-IRR-TNS RPT
 ‘How is she going to get there?’

Ground may also be coded overtly in the form of a demonstrative (cf. [341] below), whereas spatial relations rely heavily on deictic particles and most importantly on verbs. Broadwell (2006: 246) explains that “Choctaw does not have adpositions corresponding to the familiar *to* and *from* of English. Instead, verbs of motion in the language can be divided into those that have a goal object and those that have a source object. The verb *iyah* ‘to go’, for example, has as its object a goal.” Choctaw Source constructions, on the other hand, are more complex. Certain verbs co-occur with a participle of the ‘stand’ verb, which establishes a Ground from which ‘motion away’ is expressed via an allative motion verb (341a). Sometimes this is accompanied by prefixation of the locative marker. At this stage, we are unable to establish a rule for this.

- (341) Choctaw Source [Broadwell 2006: 359]
- a. *Obah-at m-ako aa-hikii-t iya-h.*
 rain-NOM there-CON:ACC LOC-stand-PTCPL go-TNS
 ‘The rain started off over there.’
- b. *Ma hikii-t Goodland on-aachi-ka kowi' oshta-ttook*
 there stand-SS Goodland arrive-IRR-CPL.DS mile four-DPAST
 It was four miles to Goodland from there’

Further relevant Choctaw participles are phonologically reduced forms of verbal stems and thus irregular, such as *wakaat* ‘starting from’ from *wakaayah* ‘to rise’ (Broadwell 2006: 220). Broadwell (2006: 247) assumes that “[h]ikiit to indicate source must be an idiomatic use of *hikiiyah* ‘to stand’, since *hikit* it [sic] is used in situations where there is no literal standing involved”. Subsequently, he refers to the example in (341b) above.

Also, in non-deictic spatial contexts, “sources need to be licensed by some additional grammatical element” (Broadwell 2006: 246), which is again the locative prefix and/or *hikiit*, cf. (342).¹⁶²

¹⁶² Example (342) also indicates the tendency for all P=G=S languages to have two linked clauses, each with one Ground and one corresponding motion verb, when expressing linked motion events (cf. Robbers and Hober [2018] on fully syncretic paradigms in Mesoamerica).

(342) Choctaw clause linking [Broadwell 2006: 247]

Moore hikii-t Norman *ona-li-tok*.
 Moore stand-PTCPL Norman arrive-1SG.I-PAST
 ‘I went from Moore to Norman.’

Similarly, in the Papuan language Manambu [OC-20], Source constructions are formed by static and allative verbs. It must be stressed that Manambu “directionals on verbs are inherently associated with motion, while with demonstratives they refer to location in space” (Aikhenvald 2008: 213). Despite the salience of motion verbs in dynamic spatial functions, demonstratives can be employed to establish a Ground (from which motion originates) in combination with certain verbs to code a Source meaning. As Aikhenvald (2008: 151) states, “there is no special ablative case for provenance” in Manambu. SDDs in Source constructions are marked for locative case as well. In (343), motion verb clauses follow static verb clauses to encode a Source reading (343b–c), or allative verbs alone suffice to mark the accompanying SDD as Source (343a).

(343) Manambu Source [Aikhenvald 2008: 158, 151, 282]

- a. **alawur** Kabla-say **dad**
 DEM.DIST.F.SG+’up’ Screw.River+LK-TRANSP go.down+3M.SG.BAS.VT
 ‘He went down from up there via Screw River’
- b. [**akəm** **tə-ku**] **ya-na-d**
 where+LOC stay-CPL.SS come-ACT.FOC-3M.SG.BAS.VT
 ‘Where is he coming from?’ (lit. ‘Where having stayed he come?’)
- c. [**wun-a** **ta:kw** **aləm** **kwa-lə-k**]
 I-LK wife DEM.DIST+F.SG+LOC stay-3F.SG-CPL.DS
 [**wa-yakə-gur-ək**] **ya-kwa**
 say-throw-2PL-CPL.DS come-IMP.3+F.SG
 ‘Get my wife to come from there’ (lit. ‘My wife having stayed there, you order (lit. say-throw) her: may she come’)

Furthermore, the Manambu Source SI construction in (343b) contains a static verb which is followed by a motion verb (cf. the discussion on Choctaw above). The syncretic pattern for SDDs can thus be (P=S)≠G from a purely morphological point of view. Nevertheless, a Source construction usually requires a positional verb plus an allative verb, but minimally an allative verb. Taking syntax into account, the Manambu SDDs could also be analyzed as maximally distinct. Manambu Source could thus be described as having a basic [SDD (+ static V) + V_{ALL}] pattern. As to SIs, Aikhenvald (2008: 506) refers to the co-occurrence of the ‘stay’ verb and the locative SI as “fixed combinations” and cites *akəm tə-ku* and *akəb tə-ku* (the latter SI in suffixed form with the terminative) as idiomatic

Source interrogatives. More precisely, the attested WHENCE patterns (cf. Aikhenvald 2008: 126) are

- [akəm tə-ku (F.SG+LOC_stay-CPL.SS) + motion V_{ALL}]
- [akəb tə-ku (F.SG+TERM_stay-CPL.SS) + motion V_{ALL}] (‘where from exactly?’)
- [akəm tə-lə-k (F.SG+LOC_stay-3F.SG-CPL.DS) + motion V_{ALL}]

Apart from demonstrative roots, motion verbs, and posture verbs, Manambu P/G/S constructions are further characterized by directional affixes which often denote an allative meaning or atelic ‘away’ movement (cf. Aikhenvald 2008: §16.1).

A similar construction type is found in the Papuan language Abui [OC-2] of Alor, where the positional Place verb marks the Figure as being in a static position from which ablative motion can follow, as is indicated with the subsequent allative verbs. Note the constructional similarity of the WHENCE construction in (344a), the Source SDD construction in (344b), and the construction including a nominal Ground in (344c).¹⁶³

- (344) Abui Source [Kratchovíl 2007: 495, 428, 356]
- a. *A te mi-a yaar-i?*
 you where be.in-DUR go.CPL-PFCTV
 ‘Where are you coming from?’
- b. *he-n mi-a ba+ mara melang*
 3II.LOC-see.CPL be.in-DUR LK go.up.CONT village
mi-a-d-i+
 be.in-be.at-hold-PFCTV
 ‘from there they went up and got to the village’
- c. *fala mi-a yaa!*
 house be.in-DUR go
 ‘go from the house!’ (lit. ‘be in the house, go!’)

Note further that the Goal motion verb *mara* ‘go up’ in (344b) is again followed by a verbal clause indicating static position.¹⁶⁴ Generally, Abui has a large repertoire of deictic verbs and some SDDs that may appear in isolation or combination with each other. Similar to Manambu and Choctaw, the reading depends on the meaning of the verb, and complex Source constructions go hand in hand with the pattern [SDD + static V + motion V]. However, examples such as (343a)

¹⁶³ Interestingly, (344b) additionally contains the verbal element *-n(g)* ‘see’ suffixed to the bound pronoun *he-*, which may contribute to the encoding of a Source event combined by indicating direction (cf. Kratchovíl 2007: 129).

¹⁶⁴ We speculate that the second static verb in the example may indicate telicity of motion and thereby anchor *melang* ‘village’ as the Goal.

from Manambu indicate that the static verb may be omitted under certain conditions, for instance, the interpretation of the river as Path and not as Source. These conditions remain subject to future research.

Turning to Africa, we aim to show that complex Source constructions also occur e.g. in the Nigerian language Ọkọ [AF-35], where there is either P=G=S or P=G≠S syncretism in both SIs and SDDs. There are two degrees of distance, viz. the proximal *ẹkọ* ‘here’ and the distal *ẹfà ọnẹbẹ* ‘there (lit. place that)’. Furthermore, there is the interrogative *ẹta*¹⁶⁵ ‘where’. Both SIs and SDDs are used for all three relations without any additional markers to express Place, Goal, or Source.

- (345) Ọkọ [Joseph D. Atoyebi, p.c.]
- a. HERE
È-wó ẹkọ
 3SG-be here
 ‘He is here’
- b. HITHER
À-á-cá ẹkọ
 3SG-PRES.PROG-come here
 ‘He is coming here’
- c. HENCE
È-é-wó ẹkọ à-á-cá
 3SG.PRES.PROG-be here 3SG.PRES.PROG-come
 ‘He comes from here’

Whether a static or one of the two dynamic relations is expressed depends on the usage of verbs. The SDDs and SIs remain unchanged. The examples in (345) display how the proximal SDD *ẹkọ* is used in all three relations. In (345a), *wó* is used as a locative verb. Atoyebi (2010: 142, 146–148) discusses *wó* in a chapter about adpositions, as it “sometimes functions as the locative verb, but at some other times it translates as ‘in’, ‘from’”¹⁶⁶ (Atoyebi 2010: 142). Given that *wó* is marked for person and number in (345a), we decided to treat it as a verb in these

165 The form *ẹta* ‘where’ is listed here as it appears in a construction. Atoyebi (2010: 233) explains that the word for ‘where’ in isolation appears as *ẹtá* ‘where’, whereas “when the word is used in a construction, it is marked with the locative high tone which must immediately be followed by a mid tone *ẹta*, having the literal sense ‘in where’”.

166 Atoyebi (2010: 147) gives, inter alia, the following example as an instance of *wó* being translated as ‘in, at’.

- (ix) Ọkọ [Atoyebi 2010: 147]
- á-cá e-gbe ka, cáná ísùbù ọnẹbẹ di kì-re,*
 3SG.S-come 2SG.S-be Cmpl before day DEM.SG can PREF-reach
údúdò àbẹ kpá ọdórẹ wó ijé
 sheep DEF.PL dig hole in ground
 ‘It happened that before that day, the sheep had dug a hole in the ground’

kinds of constructions. In order to express Goal, the motion verb *cá* ‘come’ is used in (345b). For a Source construction, a combination of the locative verb *wó* and the motion verb *cá* ‘come’ is used in (345c). Atoyebi (2010: 147) mentions that “[w]ó can sometimes be used to express the meaning ‘from’”. Instead of explicitly bearing the meaning ‘from’, we assume that the locative verb *wó* is used to establish the Ground *èkọ* ‘here’. Only after establishing the Ground, the dynamic verb *cá* ‘come’ can be used to express a movement away from the aforementioned Ground.

Yet, this kind of construction is not the only way to express Source. There is a preposition *kàba* ‘from’, which “when used to introduce a prepositional phrase expresses the general direction of motion from point X to Y” (Atoyebi 2010: 217). In contrast to the locative verb *wó*, it “is indeed a preposition because it also behaves grammatically in a non-verb-like way, for instance, it can be used to introduce a prepositional phrase in clause-initial positions” (Atoyebi 2010: 142). It can be used in combination with the SI and SDDs in order to express a Source construction, cf. (346).

- (346) Ọkọ overtly marked HENCE constructions [Atoyebi 2010: 142, 143]
- a. *àde yọ ùbó kàba èkọ*
 Ade go house from here
 ‘Ade went home from here’
- b. *kàba èkọ àyẹ è-jéjen yọ ne*
 from here FOC 3SG.SUBJ-walk go PTCL
 ‘It is from here that he walked away’

The examples in (346) both display the construction *kàba èkọ* ‘from here’. Contrary to (347), the Source construction is independent from its syntactic position. The preposition *kàba* can additionally be used in a construction like (347).

- (347) Ọkọ overtly marked HENCE [Joseph D. Atoyebi, p.c.]
- È-é-wó kàba èkọ à-á-cá*
 3SG.PRES.PROG-be from here 3SG.PRES.PROG-come
 ‘He comes from here’

In (347), the Source construction is overtly marked by the preposition *kàba* ‘from’, although the same phrase already expresses Source even without the preposition. According to Joseph D. Atoyebi (p.c.), the internal structure of *kàba* includes a focus element which puts emphasis on the Source construction, so that the sentence reads ‘It is from here that he comes’.

The dominant syncretism pattern in Ọkọ is the maximally indistinct P=G=S pattern. While it is possible to mark Source overtly “[i]t should be noted that the expression of the allative (goal of motion) lacks an overt marker in Ọkọ” (Atoyebi 2010: 143). Although it is possible to make use of the preposition *kàba*

‘from’ in order to mark Source overtly, it is associated with emphasis on the Source construction. While Place and Goal are distinguished by the use of static or dynamic verbs, respectively, the non-overtly marked Source constructions are dependent on the syntactic structure of the sentence. The Ground has to be established by the locative verb *wó* and only after that the motion can take place, so that it reads like two clauses are involved that express ‘He is here and from here he comes’.

6.4 Verbs

As already discussed in Section 2.2, we define our SDDs on the basis of a purely functional point of view. This means that different word classes and SDD sets that are formally not strictly paradigmatic are permitted. Some of these semanto-pragmatically motivated paradigms, however, were excluded from the crosslinguistic comparison and statistical evaluations. Moreover, since the canon was designed to create an opportunity for comparison of single forms from a morphological point of view, verb classes that are the main encoders of P/G/S functions require a careful treatment. They are only touched upon in this section and will hopefully constitute the subject of further studies on linguistic strategies to code deictic Grounds. In many sample languages, a basic set of deictic motion and/or positional verbs can be identified, the members of which are functional equivalents of more canonical SDDs and may even belong to a closed class of mildly grammaticalized items, opening up possibilities to classify these items as spatial markers (cf. Section 6.4.1). Often, these items function as modifiers in minor verb positions (cf. Section 6.4.2 for a discussion of grammaticalization of motion verbs). They appear in constructions which may be built around a main verb with some static or dynamic spatial (deictic) force (cf. Section 6.4.3 on preverbs). Languages that attest to these strategies can be located at different stages of the respective grammaticalization continua.

6.4.1 Spatial coding in verbs

Section 3.5 deals with languages that code the distance level overtly in form of SDDs that are unchanged in P/G/S functions, the latter being fulfilled by verbal semantics. This section, on the other hand, aims to briefly offer some insight into languages that seem to co-express Ground and SR, at least in some cells of their functionally defined SDD paradigms. The Sepik language Awtuw [OC-4], for instance, attests to $P=G \neq S$ and $P=G=S$ in the SI domain (cf. Section 3.3.5).

But, based on Feldman's (1986) examples, two verb classes fulfill spatial (and spatial deictic) functions, whereas overt Ground cannot always be identified in instances of the dynamic relations. Motion verbs can be divided into subclasses such as Goal and Source verbs, and an optional spatial default marker *-ke* is attested in some constructions, such as (348a–b) and (349).

(348) Awtuw default P/G/S marking (nondeictic) [Feldman 1986: 114, 154]

- a. *wiytape yapo-ke*
 river very-LOC
 'to/from/at a real big river'
- b. *tey æwre-ke d-upokə+d-ey'-e*
 3F.SG house-LOC FA-flee+FA-come-PAST
 'she fled to/from the house'

(349) Awtuw THENCE with default marker¹⁶⁷ [Feldman 1986: 205]

Ey nan-e ŋaye lo+d-æ-e, nan rey-ke
 thus 1DL-OBJ father angry+FA-go-PAST 1DL there-LOC
ti-yæky'-e.
 DL-come.downstream-PAST
 'Our father was angry at us, so we came downstream from there.'

The verbless construction in (348a) shows that if surrounded by only minimal context, *-ke* may mark Place, Goal, and Source alike. (348b), on the other hand, provides the Ground *æwre* 'house' which is accompanied by a serial motion verb construction indicating dynamic motion. If Goal or Source is expressed, however, is still ambiguous in isolation and can only be encoded by adding information on the position of the speaker. Feldman (1986: 93) lists some verbs that imply the speaker as either Goal or Source, e.g. *ma-wey* 'arrive there' and *wutmak* 'arrive here' or *yakey* 'go upstream' and *læya* 'come upstream'. Speaker position in combination with verb meaning is the main encoder for spatial (deictic) relations in Awtuw. Especially a G/S reading must always be interpreted according to real-life contexts. On verbal semantics, Feldman (1986: 114) states that

[t]he meaning of the associated verb determines the interpretation of Locative NP as either location or direction, and if direction, whether from or to. Thus, unless the clause contains a Direction verb, the Locative NP will refer to a location. If the clause contains the verb *æy* go, one of the other Goal verbs [...] or a serialisation with *æy*, then the Locative NP will re-

¹⁶⁷ From the attested adverb-like SDDs, only the form *rey* is attested taking the suffix *-ke* in Feldman (1986). *Rey* is sometimes glossed as 'there' but is identical or homonymous with the 3SG.M pronoun. We assume that it is employed for spatial anaphoric functions.

fer to a goal. And if the clause contains the verb *eva* *come*, one of the other Source verbs [...], or a serialisation ending in *eva*, then the Locative will be a source.

The fact that especially the proximal Goal reading depends on the verb class and may substitute for overt Ground coding (such as *rey-ke* in [349] above) is shown in (350a–b). The proximal deictic stage is co-expressed by the verb in (350a–b). The structurally similar (350c), on the other hand, does not indicate a telic allative motion event in the sense of Goal as we define it.

- (350) Awtuw SDD/directional verbs [Feldman 1986: 205]
- a. *An yok t-ey'-e?*
2DL how DL-come.here-PAST
'How did you come here?'
 - b. *rom rey-e də-way+d-eya-m-e*
3PL 3M.SG-OBJ FA-carry+FA-come-PL-PAST
'they carried him here'
 - c. *rom rey-e də-way+d-æy-m-e*
3PL 3M.SG-OBJ FA-carry+FA-go-PL-PAST
'they carried him away'

Feldman (1986) uses the term *Goal verb* and *Source verb*, but the respective forms generally refer to the speaker's position and thus potentially encode atelic motion. This applies at least to the distal allative but potentially to both verb sets described here. Feldman (1986: 93) states:

In one set, the Direction verb depicts a motion **towards** the speaker. In the other, it depicts a motion **away** from the speaker. The Direction NP may therefore refer to either a source or a goal, depending upon the point of view of the speaker. If the speaker adopts the perspective of being at the **source of motion**, he or she will select an appropriate verb from the first set. If the speaker is at the **goal of motion**, a verb from the second set will be chosen. (boldface added)

The Awtuw paradigm [OC-4] is thus mixed and composed of Place SDDs such as the demonstratives (*tade* (PROX) and (*topo* (DIST)). For both proximal and distal Goal cells as well as for HENCE, we were unable to find a word form that overtly codes Ground. The paradigm is thus enriched with a placeholder entry for (potentially open) verb classes. It is possible that Feldman (1986) does not cover all spatial relations and possible further SDD candidates. Still, Awtuw is verb-framing in many areas of the grammar that are relevant for spatial (deictic) functions. Adding to the lack of dedicated (i.e. non-default) spatial markers, Awtuw has not only allative and ablative verb classes but also five posture verbs (Feldman 1986: 94). Especially the verb serializations open up interesting options for more fine-grained research of the Awtuw spatial system.

Leaving Oceania and turning to North America, the only Salishan language in our study, Musqueam [AM-28], employs locative demonstratives and specialized verbs in SDD functions. The pivot of spatial meanings such as P/G/S phrases were often in the verbal domain. For instance, Suttles (2004: 34–35) discusses the basic auxiliary verbs that may function as predicate heads and prepositional verbs in spatial (deictic) constructions, among them the Place verbs *ʔi* ‘be.here’ and *niʔ* ‘be.there’.¹⁶⁸ A Place construction may consist only of an auxiliary and a main verb (cf. [351a]), or additionally include an oblique nominal adjunct such as the demonstrative in (351b). Similarly, a Goal construction like (352) includes both an auxiliary denoting the distance level and a verb co-expressing P/G/S function along with Ground or distance level, here Goal and proximal distance.

(351) Musqueam HERE [Suttles 2004: 38, 45]

- a. **ʔi ʔi.**
AUX be.here
‘He’s here.’
- b. **ʔi cən ʔi ʔətəniá.**
AUX I be.here OBL this
‘I am here.’

(352) Musqueam HITHER [Suttles 2004: 35]

- ʔi cən técal.**
AUX I arrive.here
‘I arrived here.’

Suttles (2004: 362–363) states that the four basic spatial auxiliaries can be prepositional. In the respective constructions, demonstratives encode the distance level of the deictic spatial relation, while the ‘come’ and ‘go’ auxiliaries encode the direction of movement, cf. the Goal phrases in (353).

(353) Musqueam Goal [Suttles 2004: 363]

- a. HITHER
mí le mǐ ʔə təʔi.
ʔəmí le ʔəmí ʔə təʔi
come(AUX) IMP come OBL here
‘Come here.’

¹⁶⁸ Note that the locative demonstratives such as *teʔi* ‘this, here, this way’ and *təniʔ* ‘there, that way’ are also formed on the basis of these two spatial verbs (Suttles 2004: 351).

- b. THITHER
ném' *le* *nem'* *ʔə* *təníʔ*.
 go(AUX) IMP go OBL there
 'Go there.'

Furthermore, verbs such as *técəl* 'arrive here, reach here' and *təs* 'arrive there' are viewed as telic, i.e. the endpoint of motion is included in the respective meanings. Similar readings apply to further spatial verbs such as *x^wə-ʔi* 'get here' and *x^wə-níʔ* 'get there'. Both are composed of a 'become' prefix and spatial deictic base forms encoding the distance level. This initial *x^wə-* is found again in one of the two forms we detected to denote WHITHER, i.e. *x^wə-ʔə́nəcə* (of which the unaffixed form *ʔə́nəcə* is a WHERE SI, cf. Appendix V [OC-28]).

Source in Musqueam is indicated with the genuine ablative prefix *təl-* (or a derivative *təl-iʔ*) not only in the Source SI *təl-ʔə́nəcə* but also in the relevant verbal constructions. Sentence (354) exemplifies a Source construction along with a second option for WHITHER, viz. *x^wcél* 'go.where', which may also denote WHERE and thus constitutes the only instance of syncretism in the Musqueam paradigm.

- (354) Musqueam WHITHER and HENCE [Suttles 2004: 93]
x^wcél *čx^w* *ceʔ* *k^wə* *wə́niəx^w* *ceʔ* *háyeʔ* *təliʔ* *ə* *tə́niə*.
x^wcél *čx^w* *ceʔ* *k^wə* *wə́-niʔ-əx^w* *ceʔ* *háyeʔ* *təliʔ* *ʔə* *tə́niə*
 where you FUT then when-AUX-you FUT leave from OBL this
 'Where are you going when you leave?'

A Source construction may therefore consist of the derivative *təl-iʔ* 'from' and a demonstrative (preceded by the oblique particle *ʔə*). The construction type has the same structure as Musqueam non-deictic spatial expressions, which then include a nominal referent instead of a demonstrative. Despite verbs being the crucial part of speech to encode P/G/S and the origin of other parts involved, the paradigm is more canonical than e.g. the one for Awtuw (cf. above). All cells are formally distinct except for WHERE and WITHER which have a syncretic option. The verbs that function as P/G/S encoders and therefore fill the SDD slots appear to belong to closed classes, which makes a marker-like treatment more adequate. However, due to the Source column of the paradigm being filled with a constructional pattern involving several word classes, we decided to count Musqueam as dominantly coding P≠G≠S but exclude it from the complexity statistics in Chapter 5. We want to emphasize that we have the impression that Oceania and North America may host some languages that encode P/G/S primarily or exclusively through verbs or have another dominant orientation frame

(e.g. river-based instead of *unmarked* P/G/S) that can also be expressed more or less verb-centrally.

Nevertheless, spatial coding in verbs can also be found in other macro areas. Another case in point is the Austronesian language Tagalog [AS-39]. The Tagalog paradigm displays an interplay of demonstratives, adverbs, and verbs. There are two sets of SDDs to express Place, viz. a demonstrative set and an adverbial set. The demonstratives are used in locative adverbial phrases, so-called *sa* phrases, as comparable constructions with a nominal referent take the locative particle *sa*. The *sa*-demonstratives, however, usually have /d/ as initial consonant, which “is frequently replaced by /r/ when the deictic occurs in the middle of a phrase, particularly after a vowel” (Schachter and Otnes 1972: 93). Schachter and Otnes (1972: 93) list *dito* ‘here’, *dine* ‘here’, *diyan* ‘there’, and *doon* ‘there’ as well as the respective forms *rito*, *rine*, *riyan*, and *roon*. Werner Drossard (p.c.) told us that according to his Tagalog informant, the expressions *dine/rine* ‘here’ are dialectal and advised us to not include them in our paradigm. The other expressions follow a clear *near speaker* (*dito/rito*), *near hearer* (*diyan/riyan*), and *away from both* (*doon/roon*) distinction. The second set of SDDs is used in locative adjective phrases, which “normally consist of *na* (na) plus a *sa* phrase” (Schachter and Otnes 1972: 254). For the SDDs, *na* is prefixed to the *sa*-demonstrative, while “either the initial /d/ of the deictic is replaced by /r/ [...] or an /n/ is inserted between *na* and the initial /d/ of the deictic” (Schachter and Otnes 1972: 255). This results in the forms *narito/nandito* ‘here (near speaker)’, *nariyan/nandiyan* ‘there (near hearer)’, and *naroon/nandoon* ‘there (away from both)’. Schachter and Otnes (1972: 255) add that “there are formations of identical meaning involving duplicating syllables”, viz. *naririto/nandidito* ‘here (near speaker)’, *naririyán/nandidiyan* ‘there (near hearer)’, and *naruroon*¹⁶⁹ ‘there (away from both)’.

According to Schachter and Otnes (1972: 93), the *sa*-expressions may also be translated with ‘to this/that place’, which implies that they may be used for Goal. We found this confirmed in the TLAB Bible, cf. (355).

- (355) Tagalog HITHER [TLAB Gen 42: 16]
Suguin ninyo ang isa sa inyo, na dalhin dito ang
 order 2PL TOP one LOC 2PL now bring here TOP
inyong kapatid [...]
 2PL.POSS brother
 ‘Send one of you [back home], and let him bring your brother [here] [...]’

¹⁶⁹ Schachter and Otnes (1972: 255) state that “[t]here is no duplicated form corresponding to *nandoon* in educated Manila Tagalog”.

With the dynamic verb *dalhin* ‘bring’ and the near speaker SDD *dito* ‘here’, a Goal relation is expressed in (355). Yet, according to Werner Drossard’s informant (p.c.), movement usually triggers a verb construction. These verbs are based on the *sa*-demonstratives with the verbal affix *-um-* and the prefix *pa-*, which “may be considered a replacement of the *na-* that occurs in locative adjective phrases” (Schachter and Otanes 1972: 360). These kinds of verbs are not only restricted to deictic expressions but to “[a]ny locative adjective phrase other than those that include *kay* may serve as the source of the verb base” (Schachter and Otanes 1972: 360). These verbs then express “motion toward the location expressed by the locative phrase, or motion that results in the state (of temporary possession) expressed by the locative phrase” (Schachter and Otanes 1972: 360). With the *sa*-demonstratives, the following verbs are formed: *pumarito* ‘come here’, *pumariyan* ‘go there1’, and *pumaroon* ‘go there2’.

- (356) Tagalog verbal HITHER [TLAB Gen 42:15]
alangalang sa buhay ni Faraon ay hindi kayo
 behalf of life PTCL pharaoh INTERJ NEG 2PL
aalis dito, malibang p<um>a-rito ang inyong
 leave:CNTMPL here before VBZ<AT>-here TOP 2PL.POSS
kapatid na bunso.
 brother PTCL youngest
 ‘by the life of Pharaoh, you shall not leave this place unless your youngest brother comes here.’

In (356), the use of *pumarito* ‘come here’ is displayed. In comparison to (355) above, there is no other dynamic verb to express the movement towards a Goal. Instead, both movement and Goal are indicated by a verbalized form of *dito/rito* ‘here’. While these verbal SDDs do not appear together with other verbs, they frequently occur with an explicit Ground other than an SDD as (357) exemplifies.

- (357) Tagalog verbal THITHER + Ground [TLAB 1 Sam 20:28]
Na=manhik si David na bayaan ko siya na
 PFCTV=beseech FOC David PTCL allow 1SG 3SG PTCL
p<um>a-roon sa Bethlehem
 VBZ<AT>-there2 to Bethlehem
 ‘David earnestly asked me for permission to go to Bethlehem’

The verbalized form of *doon/roon* is used in (357) to express the movement to a Goal that is away from both speaker and hearer. In contrast to (356) above, the Ground, i.e. Bethlehem is explicitly mentioned. Thus, the verbalized forms of SDDs are not only used in deictic contexts but occur frequently with explicit

Grounds in the TLAB Bible. It seems that these verbal SDDs may be used just like any other dynamic verb. Compare the following two sentences:

- (358) Tagalog Goal-Source movement [TLAB John 4:54; Matt 17:20]
- a. [...] *nang siya 'y p<um>a-roon sa Galilea na mula*
 when 3SG be VBZ<AT>-there2 LOC Galilee PTCL from
sa Judea.
 LOC Judea
 '[...] while going from Judea to Galilee.'
- b. *Lumipat ka mula rito hanggang doon*
 relocate 2SG from here until there2
 'Move from here to there'

Both sentences describe the movement from one place to another. In the case of (358a), the verbal SDD is used as a dynamic verb to describe the movement from Judea to Galilee (lit. to Galilee from Judea). In (358b), a different verb *lumipat* 'relocate, move to another place' is employed in connection with two SDDs to express 'from here to there'. Several issues are conspicuous. Both Source constructions, i.e. *mula sa Judea* 'from Judea' and *mula rito* 'from here', are overtly marked by the preposition *mula* 'from'.¹⁷⁰ The two Goal constructions, however, behave differently. The Goal construction *sa Galilea* (here: 'to Galilee') in (358a) is marked only by the general locative particle *sa*. Although Goal is usually not overtly marked in Tagalog (unless it is expressed with a verbal SDD), *doon* 'there (away from both)' in (358b) takes the preposition *hanggang* 'until'. We assume that it has to be overtly marked in these constructions, i.e. when the verb is used to express more than one relation and the Goal SDD does not directly follow the verb (similar to English *from here to there*). What strikes the eye in (358a) is that Goal and Source have switched places in comparison to the English version (and other versions we came across), i.e. 'to Galilee from Judea' instead of 'from Judea to Galilee'. We assume that *pumaroon* 'go there2' and the other verbal SDDs primarily express Goal, which is why the Goal expression *sa Galilea* directly follows the verbal SDD. We cannot rule out that the verbal SDDs may also be used with a directly following Source construction. Yet, we came across similar cases in which Goal and Source are switched in the Tagalog version in comparison to other versions as, for example, in (359).

¹⁷⁰ There is another preposition *buhat* 'from' which is used in a similar way.

- (359) Tagalog Goal and Source [TLAB 1 Kings 2:36]
at huwag kang p<um>a-roon saan man na mula roon.
 and do.not 2SG VBZ<AT>-there2 wherever PTCL from there2
 ‘Do not go from there to any other place.’ (lit. ‘do not go wherever from there’)

As mentioned above, Source constructions are usually overtly marked by either *mula* or *buhat*, both meaning ‘from’. In the case of SIs, there is an additional option with *taga-* ‘from’. With certain verbs, however, the zero-marked SI or SDD expressions may be used. This is, for example, the case with the verb *galing* ‘come from’ as (360) shows.

- (360) Tagalog zero-marked Source construction [LPP Tagalog: 14]
Munti kong tao, saan ka ba galing?
 little 1SG:LIG person where you INTERR come.from
 ‘My little man, where do you come from?’

Source is expressed by the dynamic verb *galing* ‘come from’ in (360), whereas the SI remains unmarked. This is not restricted to the SIs but similarly done with SDDs. Thus, depending on the verb, both SI and SDD Source constructions may be either overtly marked or zero-marked.

As shown, Tagalog employs a complex paradigm of SIs and SDDs with different kinds of constructions, the most outstanding of which are the verbal SDDs. Due to the various kinds of (and absence of) morphological marking, different syncretism patterns can be assumed for Tagalog. As there is the possibility to use the zero-marked SI and SDD expressions in all three relations, the P=G=S pattern can be employed. Usually, however, the Source constructions are overtly marked, so that a P=G≠S pattern arises. With the adverbial set of Place SIs and SDDs and/or the verbal SDDs, it is also possible to have the maximally distinct P≠G≠S pattern. Theoretically, even a P≠G=S and, at least in the case of the SDDs, a P=S≠G pattern are possible. Tagalog therefore has a multifaceted paradigm of SIs and SDDs, in which each of the five patterns can logically be found.

The Austronesian language Malagasy [AF-29] also shows traces of spatial coding in verbs. Rasoloson (1997: 108–111) explains the SDDs’ elaborate system which encodes different nuances of distance. The first constituent of a deictic expression is either *e-* or *a-*. While *e-* refers to a location in sight of the speaker, *a-* marks a location in sight of the hearer or to an unspecific place. The middle part of the expression is a consonant which determines the distance between the speaker’s location and the location referred to. Whenever *-t-* is used, there is no distance between the speaker and the location referred to, whereas *-n-* de-

scribes a place external to the speaker's location or denotes a considerable distance between the speaker and the location referred to. The usage of *-r-* also entails a great distance to the speaker's location. According to Rasoloson (1997: 110), there are two further possibilities, viz. *-Ø-* for a small distance between speaker and the location referred to and *-ts-* for a location not far from the speaker's location. These expressions seem to be rarely used (cf. MBC Bible) and are seldomly cited (cf. e.g. Bergenholtz 1994, Abinal 1970). The last element of the expression, i.e. the final vowel, can take one of two shapes. The vowel *-o* is used to refer to a narrow space, a closed space (e.g. a room), or a specific location, while *-y* describes a broad space. Again, Rasoloson (1997: 111) introduces another possibility which seems to be seldomly resorted to by Malagasy speakers and is rarely cited in secondary sources. The diphthong *-oa* can supposedly be employed to describe great spatial distance between the speaker's location and the location referred to.

Both the SIs and the SDDs are not overtly marked for Place, Goal, or Source. The examples in (361) show the use of the distal (visible) SDDs in all three relations.

- (361) Malagasy
- a. THERE and HERE [MBC Luke 17:23]
Indro erỳ; na indro etỳ
 be.located there or be.located here
 'Look there!' or 'Look here!' (lit. 'S/he is there; or s/he is here')
- b. THITHER [MBC Gen 22:5]
 [...] *fa izaho sy ny zaza dia mikasa ho erỳ*
 meanwhile 1SG and DET child go intend FUT there
hivavaka [...]
 worship
 'the young man and I will go over there and worship [God] [...]
- c. THENCE [MBC Mat 9:27]
Ary nony niala teo i Jesoa, dia nisy jamba
 there when leave PAST P.ART Jesus CONJ there.are:PAST blind
roa lahy nanaraka Azy [...]
 two man follow:PAST him
 'And as Jesus passed by from thence, two blind men followed him [...]'¹⁷¹

(361a) shows how *erỳ* 'there' (and *etỳ* 'here') are used without overt Place marking. Similarly, *erỳ* 'there' is unmarked in the Goal construction in (361b) and *ary* 'there' is unmarked in the Source construction in (361c). The future marking

171 The translation was taken from the ASV Bible, as it matches the Malagasy version most closely.

particle *ho* in (361b) precedes the SDD. It modifies the SDD rather than the verb, as tense is usually marked on SIs and SDDs. Griffiths (1854: 191–196) lists Malagasy spatial interrogatives and adverbs of place in the present, perfect, and future tense. While present tense SIs and SDDs are unmarked, future is indicated by the particle *ho*, as in (361b). Perfect, on the other hand, is marked by an initial *t-*, e.g. *taiza* ‘where’ or *tetỳ* ‘here’. While we did not come across an explanation of tense marking on SIs and SDDs in a newer grammar, constructions like these can still be found in the MBC Bible. Furthermore, the Malagasy online dictionary malagasyword.org also confirms these forms. We decided to list the respective forms with <X> as a placeholder for tense marking morphemes in the appendix. The placeholder <X> may be left empty to code present tense or filled by either *ho* to mark future tense or by *t-* to mark past tense.

The SIs may even occur as interrogative verbs which behave in the same way as other verbs do, cf. (362).

- (362) Malagasy interrogative verb [Rasoloson 1997: 34]
Nankàiza *i* *Sòa?*
 go.where:PAST ART *Sòa*
 ‘Where did *Sòa* go?’¹⁷²

The interrogative verb *nankàiza* expresses ‘to go whither (PAST)’. The present tense form would be *mankaiza* ‘to go whither (PRES)’ and the future tense form would be *hankaiza* ‘to go whither (FUT)’ (malagasyword.org). Malagasy is thus another language in our sample that may employ spatial coding in verbs. We cannot exclude the possibility that even more sample languages have a dominant verb-centric spatial (deictic) system nor can we be sure that more canonical SDDs are not present in the languages discussed above, e.g. in the form of spatial adverbs. Nevertheless, the languages discussed in this subsection have shown that both SIs and SDDs may even be coded in verbs that combine static or dynamic action and spatiality.

6.4.2 Grammaticalization of markers

For some languages, it is difficult to determine whether a certain form is a spatial marker or a verb. This is especially true when the grammaticalization of a motion verb towards a spatial marker is still in full progress. The canon cannot sufficiently grasp the shifting and dynamic systems of such languages and any

¹⁷² Original: *Wo ist Sòa hingegangen?*

resulting paradigms are rendered simplified and, at times, inaccurate. Against this backdrop, this section zooms in on the verb-framed spatial (deictic) systems found in selected Mayan languages pointing to the intricate interplay of motion verbs, their weakly to strongly grammaticalized counterparts, and SDDs.

Robbers and Hober (2018: 400) find for Mesoamerican languages as a whole that the spatial and directional markers are also often derived from motion verbs. It is therefore worthwhile to focus on one particular language family in the area and identify the grammaticalization paths travelled by the respective motion verbs on their (potential) way towards the status of spatial marker. For the marking of spatial relations, languages may resort to no dedicated spatial morphology or a range of spatial markers with various options in-between, as is the case for the languages of the Mayan phylum. Haviland (1993: 47) already observed that “Mayan languages seem to use AUX constructions to encode not only tense and aspect, but also path and trajectory. They use auxiliaries and directionals to build space directly, as it were, into grammar”. It follows that secondary and primary static and motion verbs are the main encoders of locative, allative, and ablative relations. The spatial systems of, for instance, Yucatec [AM-49], Mopan, and Tabasco Chontal (briefly discussed below) can be located at the starting point of the grammaticalization continuum of motion verbs. In the literature on Yucatec, this kind of spatial system has been described under the notion of *path neutrality* (cf. Bohnemeyer and Stolz 2006). Languages in this category may make use of multi-verb constructions with verbal members of unequal status to encode spatial deixis. They do not give evidence of any processes of grammaticalization. Given that Yucatec is amply discussed in the literature, the declarative side of Tabasco Chontal’s spatial deictic system in the proximal stage is outlined in (363) below. The proximal adverb ‘here’ appears as either *yida* or *wida*. Overall, it transpires that Tabasco Chontal exhibits a similar if not identical coding behavior to Yucatec Maya.

(363) Tabasco Chontal proximal SDDs

- a. HERE [Osorio May 2016: 35]
a-noxi’ na’ ma’an yida.
 A2-old mother NEG-EXI here
 ‘Your grandmother is not here.’
- b. HITHER [Osorio May 2016: 181]
¿k=one u-jul-e yida tan kaj?
 INTERR=PRO A3-arrive-IMP here PREP village
 ‘Who arrived here in the village?’

- c. HENCE [CHFNT Luke 13:31]
corr-e *cux,* *pas-en* ***wida*** *uc'a* *aj* *Herodes*
 run-IMP.2SG go.IMP leave-IMP here because CL.M Herod
yo *u* *tzämsen-et.*
 want.3SG A3 kill-B2
 'Leave and go away from here, because Herod [Antipas] wants to kill
 You.'

The examples above neatly illustrate the *radically verb-framed* spatial deixis (cf. Bohnemeyer and Pérez Báez 2008: 296 on Yucatec) and show the prevailing P=G=S syncretism which can be satisfactorily captured by the canon.

Moving along the continuum from primary to secondary verbs, Tila Ch'ol [AM-9] and Zinacantán Tzotzil [AM-45] both give evidence of (weakly) grammaticalized secondary motion verbs. The spatial deictic system of Tila Ch'ol is discussed in Section 3.5.2.2. Zinacantán Tzotzil exhibits a similar behavior in the encoding of motion. In Zinacantán Tzotzil, there are no overt P/G/S markers in interrogative constructions. The question word *bu* is present in all three deictic relations, i.e. P=G=S syncretism is again prominent. Motion is encoded by auxiliaries and directionals. The former is a closed group of twelve words which are a result of conversion and transparently derived from intransitive motion verbs (cf. Haviland 1993: 37). In order to encode deictically anchored motion, the four respective motion roots, featured in Table 86, contrast motion away and towards the deictic center.

Table 86: The four deictically anchored motion roots in Tzotzil (Haviland 1991: 43).

Deictic center	Goal	Source
from here	<i>k'ot</i> 'arrive'	<i>bat</i> 'go'
to here	<i>yul</i> 'arrive'	<i>tal</i> 'come'

Contrary to the ordinary motion verb, which carries both aspect and person markers, only aspect affixes attach to the verb in an auxiliary construction (Haviland 1991: 6). "The resulting construction thus distributes the morphology of the single verb in a simple Tzotzil clause over two different elements; and the two elements – auxiliary and main verb – are closely bound together" (Haviland 1991: 6) and may only be separated by the two second position clitics *xa* 'already' and *to* 'still'. Example (364) taken from the TZOT Bible illustrates the construction in which the auxiliary which occurs in the leftmost slot of a verb complex is an essential and obligatory element to encode motion.

- (364) Tzotzil Auxiliary construction [TZOT Heb 10:9]
xu' ch-ba j-pas li c'usi ch-a-c'an-e.
 be able INCL-AUX:go A1-do DET what INCL-A2-want-ENC
 'I have come to do your will.'

The second group of grammaticalized roots consists of directionals. These share their verbal roots with auxiliaries but add the non-finite suffix *-el*. The directionals function as a kind of locative adverb, follow the main verb and remain uninflected (Haviland 1993: 40). Multiple directionals or auxiliaries may co-occur in one clause, as shown in (365).

- (365) Tzotzil Multiple directionals in one clause [Haviland 1993: 40]
'al-a-ka'-ike 'ich'-ik muy-el tal 'in.
 ART-A2-horse-PL take-IMP.PL DIR:ascend-NF DIR:come.towards CL
 'As for your horses, bring them up.'

As for declarative deictic clauses, the following examples illustrate the encoding of static and dynamic relations, showing that these may feature both directionals and/or auxiliaries as well as the deictic Ground. The deictic elements, that Laughlin (1975) lists under the notion of adjective, include *li* 'here', *te(y)* 'there', and *le* 'over there'.

- (366) Tzotzil de Zinacantan HERE [Haviland 1991: 4]
ꞑmi li'-ot-e totik Xun?
 INTERR here-A2-ENC father John
 'Are you here, father John?'
- (367) Tzotzil de Zinacantan HITHER [TZOT Matt 14:18]
ich'-ic tal.
 bring-HORT DIR:come.towards
 'Bring them here to me.'
- (368) Tzotzil de Zinacantan HENCE [TZOT Luke 13:31]
loc'-an ech'-el li'-to-e
 leave-IMP.2SG DIR:away-NF here-A2-ENC
 'Leave and go away from here'

In (366), it is shown that the SDD may also take person suffixes and enclitics. The reading of the example is static. As for dynamic relations, if the utterance contains one of the four deictically anchored motion verbs displayed in Table 85, the SDD is rendered optional, as the allative or ablative reading in relation to the deictic center is implicit in the directional's semantics, see example (367). Here, it is conceivable that *tal* 'to come towards the deictic center' assumes an SDD-like function. In other cases, the verbal complex is accompanied by an

SDD. This is illustrated in (368) where the point-oriented motion verb *loc* ‘leave’, is followed by the directional *ech’el* ‘away’ and occurs with the SDD of the proximal stage. Haviland (1991: 37) asserts that the motion root in the directional *ech’el* denotes ‘away’ and is based in the point-oriented motion verb *ech* ‘pass’. The overall structure of the construction is therefore [V_{NON-DEICTIC} + DIR + SDD]. Notice the Tzotzil [AM-45] paradigm compiled for the quantitative evaluation is thus highly simplified, as it excludes the auxiliaries and directionals which, at this stage, are neither fully grammaticalized nor obligatorily employed in all contexts.

Chuj, Kaqchikel, Akatek, and Mam, on the other end of the continuum, have more strongly grammaticalized markers, which function as directionals and are not restricted to physical movement. Notice that none of the languages is included in our sample. Yet, given that this discussion serves to outline the grammaticalization continuum of Mayan motion verbs including those that have strongly grammaticalized, they need to be mentioned. The spatial deictic systems of these four languages are rather heterogeneous. We exemplify discuss Kaqchikel. In Kaqchikel, there are postverbal directionals that are derived from intransitive motion verbs which follow the verbal base. In addition, there are three bound morphemes, i.e. *b’e-* ‘go to do sth.’ marking an ablatival motion, *ul-/to* ‘come to do sth.’ encoding an allatival motion, and *it’o* ‘pass (through) to do sth.’, that indicate movement unexpressed in the semantics of the verbal base (García Matzar and Rodríguez Guaján 2001: 190). The verbal complexes incorporating the motion prefixes and directionals are given in Scheme 5. As for intransitive verbs, the motion prefix (MOT) attaches directly to the verbal base and is preceded by TAM markers which are in turn followed by pronouns of Set B. In the transitive verbal complex, the MOT prefix appears between the pronouns of Set B and Set A.

<p><u>intransitive:</u></p> <p>TAM – P (SET B) – MOT – VB – (DIR)</p> <p><u>transitive:</u></p> <p>TAM – P (SET B) – MOT – P (SET A) – VB – (DIR)</p>

Scheme 5: The verbal complex in a motion event in Kaqchikel (García Matzar and Rodríguez Guaján 2001: 193).

As for the declarative side, in dynamic motion encodings, the directional and motion affixes attach to the verb stem and express, together with the location adverbs, i.e. *wa we* ‘here’, *ka re* ‘hereabouts’, *chi ri* ‘there’, *chi la* ‘over there’, or *ke*

la ‘over there somewhere’ (García Matzar and Rodríguez Guaján’s 2001: 201), the deictic meaning. The directionals *pe* (grammaticalized from *pe* ‘come’) and *apo* (from *apon* ‘arrive’) are frequently employed and appear to function as genuine deictic markers. Our understanding stands in contrast to García Matzar and Rodríguez Guaján’s (2001) analysis of them as equivalents for ‘hither’ and ‘thither’. It rather appears that they make reference to movement towards or away from the deictic center, as was also found for Akatek (cf. Zavala Maldonado 1994).

- (369) Kaqchikel
- a. HERE [CAKSC Acts 9:10]
*Ja ri y-in-c'o vave*¹⁷³, *Ajaf*.
 EMPH DET INCL-B1-EXI here lord
 ‘Here I am, Lord.’
- b. HITHER [CAKSC Matt 14:18]
Ti-c'-ama=pe vave’.
 IMP-A3PL-come-DIR:hither here
 ‘Bring them here to Me.’

In both (369a) and (369b), the proximal deictic element *vave* ‘here’ surfaces. In the static relation, it co-occurs with the existential verb *c'o* ‘be’ which is inflected for aspect and person. In the dynamic, allative relation, the motion verb *ama* ‘come’ is additionally modified by the deictic clitic =*pe* indicating movement towards the speaker or deictic center. Although García Matzar and Rodríguez Guaján (2001: 190) state that all grammaticalized directional and motion affixes are facultative, it still appears as though they are highly productive and frequently employed. Especially the two deictic directionals *pe* and *apo* seem to be quasi-obligatory.

The investigation of the grammaticalization continuum of Mayan motion verbs exemplary illustrates the possible grammaticalization paths of motion verbs within one language family.¹⁷⁴ These developments can be observed in various languages (and language families) around the world, the shape and form of which, however, may differ. It follows that the results and intermediate stages of the grammaticalization of motion verbs play a decisive role in the encoding of directionality. A role that cannot be satisfactorily grasped by the canon.

¹⁷³ This form *vave*’ appears to be an orthographical variant of the ‘here’-element listed as *wa we*’ in García Matzar and Rodríguez Guaján (2001: 201).

¹⁷⁴ For a comprehensive overview of the grammaticalization of Mayan motion verbs see Hober (forthcoming).

6.4.3 Spatial coding in preverbs

As separable parts of the verbal stem, so-called preverbs can encode spatial deictic notions in verb-centric languages with complex stems. The Algonquian language Arapaho [AM-1] employs not only suffixes, particles, and proclitics but also preverbs to encode spatial deictic relations which may appear in combination, cf. the construction in (370):

- (370) Arapaho [Cowell and Moss 2008: 224]
héé3ebehnó'kóóhut.
ee3ew-eh-no'ukoohu-t
 there-from.here-run.to(AI)-3S
 'He ran over to there [=THITHER].'

An Arapaho verb stem consists at least of two components, i.e. so-called initials and finals. A verb stem can further be tripartite and thus take a medial. Cowell and Moss (2008: 213) state that “[a]pparently, virtually any semantically appropriate root specifying a direction or location can *potentially* be used as a preverb/initial stem in this category”.¹⁷⁵ Some roots that take the initial preverb slot fulfill two functions which may result (according to context) in the expression of two Grounds, e.g. *seh-* ‘from here to there, speaker/reference point remaining here’ (Cowell and Moss 2008: 215). The stems then encode both atelic movement, e.g. *ceit-ísee* ‘to come toward here’, and telic movement, e.g. *no'-úsee* ‘to arrive at a location, complete a trajectory’ (Cowell and Moss 2008: 213). Components of the spatial function can be complex, as the maximum of spatial/directional information is overtly expressed. The exact meaning of the stems depends on the context and on the combination of the roots, cf. (371) where the initial verb includes a Source (‘here’) and the final verb a Goal notion (‘outside’). Example (371) thus bears both a HENCE reading via *eh* ‘from here’ and a THITHER reading via *nouuhcehi* ‘run outside’.

- (371) Aparaho [Cowell and Moss 2008: 224]
héétnééninoo héétnehnóúhcehínoo.
 eti-neeni-noo eti-**eh-nouuhcehi**-noo
 IC.FUT-be(AI)-1S IC.FUT-from.here-run.outside(AI)-1S
 'I will be the one to go out there.'

¹⁷⁵ The verbal nature of preverbal elements in Algonquian is also evident in Nishnaabemwin (i.e. the Eastern and Ottawa dialects of Ojibwe which are not in our sample). Valentine (2001: 161) discusses directional preverbs and states that they “specify the orientation of the action in time or space relative to the time and location of speaking, or some other reference point established by the narrator. [...] [they] also occur as roots in basic verb structure” (original small capitals omitted).

More primary or secondary spatial aspects can be expressed by means of such verbal constructions. Path notions are of course also in the Arapaho preverb repertoire, e.g. *xook-* ‘through, by penetration’. Non-deictic preverbs refer to absolute directions (e.g. *noow-* ‘downward; south’), manner (e.g. *ko’ei-* ‘in a circular motion’), explicit Grounds (e.g. *EEK-* ‘to home’), and other concepts such as *woohon-* ‘uniting, coming together’ (Cowell and Moss 2008: 215–216).

The Algonquian relative Blackfoot [AM-3] features similarly complex verb stems. Frantz (2009: 92) calls those elements ‘linkers’ that appear in preverbal or initial position of the verb stem and mark the oblique relation of a nominal in the same clause. Many of these linkers or preverbs have a deictic reading, such as (*l*)*poohsap-* ‘toward location of the speaker’ or *i(s)t-* ‘there’ (Frantz 2009: 93). Among the non-linking locations in Blackfoot we find, for instance, *miistap-/yIIstap-* ‘away’ (Frantz 2009: 95). In the interrogative domain, Blackfoot attests to P=G=S given the absence of any morphological marking on the SIs themselves, cf. (372).

- (372) Blackfoot SIs [Frantz 2009: 135]
- a. *Tsimá kitsítokooyihpa?*
tsimá kit-**it**-okooyi-hpa
 where 2-there-dwell-NONAFF
 ‘Where do you live?’
 - b. *Tsimá kitáakitapóóhpa?*
tsimá kit-áak-**itap**-oo-hpa
 where 2-FUT-to-go-NONAFF
 ‘Where are you going?’
 - c. *Tsimá komohto’tóóhpa?*
tsimá k-**omoht**-o’too-hpa
 where 2-from-arrive-NONAFF
 ‘Where did you come from?’

However, the preverbal linkers *it-*, *omoht-*, and *itap-* fulfill the functions of encoding P, G, and S.¹⁷⁶ A second option is to assign Blackfoot to the maximally distinct and overtly coding pattern in all three relations in the SI domain, despite the overt marking taking place (and being part of) the verbal complex, i.e. being non-adjacent to the Q-base. From a morphological point of view, Blackfoot attests to P≠G≠S also in the SDDs due to the subsets of verbal directionals that encode spatial functions (cf. [373]).

¹⁷⁶ *Omoht-* is in fact an instrumental marker that also serves for functions of ‘means, source, content, path’ (Frantz 2009: 92).

- (373) Blackfoot SDDs [Frantz 2009: 94, 95, 81]
- a. HITHER
Póóhsapoot!
poohsap-oo-t
 toward.speaker-go-2S(IMP)
 ‘come here!’
- b. HENCE
Míistapáaatoot annóoma!
miistap-áaatoo-t **annoma**
 away-go(TRANS.INAN)-2S(IMP) here
 ‘Go away from here!’
- c. THITHER
Itapóówa
itap-oo-wa
 toward-go-3S
 ‘he went there’

Proximal deictic constructions may be based on, or combine with, the nominal *annoma* ‘here’ (cf. [373b]). Apart from this, the Blackfoot paradigm is characterized by preverbs that overtly and transparently code spatial relations as part of the verbal stem complex. Those preverbs that were frequently found in Frantz (2009) are included in the paradigm [AM-3]. Blackfoot SDDs thus attest to $P \neq G \neq S$.¹⁷⁷

Similarly, in the Siouan language Osage [AM-33], preverbal elements that correspond to Place and Goal functions occur as part of the verbal complex but remain uninflected.¹⁷⁸ In Quintero’s (2004) Osage grammar, various examples illustrate the use of locational preverbs, such as *a-* in deictic allative constructions, cf. (374).

¹⁷⁷ All SDD cells are filled with preverbs that encode basic horizontal spatial relations, apart from the noun *annoma* ‘here’. We have not been able to find any more unbound SDDs in Blackfoot apart from *annoma*. Yet, the analyses on the basis of the otherwise extensive description by Frantz (2009) may remain fragmentary after all regarding lexical bases for verb roots.

¹⁷⁸ Note that the term *preverb* is employed in many ways in language descriptions. Quintero (2004: 7) defines preverbs in Osage as “those morphemes which form part of the verb stem and precede the point of inflection”. Conversely, preverbs usually form part of the inflected verbal stem in Algonquian languages (cf. Blackfoot and Arapaho above). For comparative reasons, we will stick to the term as it is employed in the descriptions of the sample languages relevant in this section.

- (374) Osage Goal
- a. WHITHER [Quintero 2004: 182]
ilǫ̀q̄hpa howaiki ǫ̀ée?
 ilǫ̀q̄hpa howaiki (a)-ǫ̀-ǫ̀ée
 firstborn.son where (PREV)-AG3SG-go.there
 ‘Where did Sonny go?’
- b. HITHER [Quintero 2004: 177-178]
wiž̄iʔke líi ta, húu hcéa
 wiž̄iʔke a-ǫ̀-lí ta, a-ǫ̀-hú
 wiž̄iʔke PREV-AG3SG-arrive.back.here when PREV-AG3SG-come.here
 hce ée-a
 INJ say-IMP
 ‘she wants you to send Wiž̄iʔke [Sonny] to her when he gets here’
- c. THITHER [Quintero 2004: 185]
pš́íe
 a-Wa-hí-ǫ̀e
 PREV-AG1SG-arrive.there-DECL
 ‘I was [already] over there; I have been over there; I went there; I got there’
- d. THITHER [Quintero 2004: 185]
ahípe
 a-ǫ̀-hí-api-ǫ̀e
 PREV-AG3SG-arrive.there-PL-DECL
 ‘he got there’

Although the exact meaning of *a-* is not specified in Quintero (2004), the SDD is also found in the most frequent allative verbal forms in Quintero (2004), such as *achí* ‘arrive here’ or *alí* ‘return here’ (cf. Quintero 2004: 179–189). Since we were unable to find any Source constructions in Quintero (2004), we have no basis for suggesting that the Source relation can also be coded by preverbs.¹⁷⁹

¹⁷⁹ Note that according to the older source La Flesche (1932), on which the paradigm [AM-33] is based, P=G syncretic SDDs can be identified, while the Source forms are overtly marked (see Section 3.2.2.4).

6.5 Sentence types

One of the factors that may determine SDD constructions is the sentence type. In the Chadic language Gidar [AF-14], deictic expressions may take on three different forms depending on whether they occur in a positive declarative, a negative declarative, or an interrogative sentence. According to Frajzyngier (2008), the proximal SDD consists of a preposition *á* ‘to’ or *də* ‘ASSC’¹⁸⁰, the deictic element *n* ‘proximal’, and the respective demonstrative depending on the sentence type. The examples in (375) demonstrate the three forms of the proximal SDD.

- (375) Gidar [Frajzyngier 2008: 339]
- a. HITHER in positive declarative sentences
é-dé *dá* *n-ká*
 IMP-go:VEN PREP PROX-DEM
 ‘Come here!’
 - b. HITHER in negative declarative sentences
ká-dé-k *dà* *á* *n-bà*
 2SG-go:VEN-PFCTV ever PREP PROX-NEG
 ‘You didn’t come here before’
 - c. HITHER in interrogative sentences
ká-dé-k *dà* *á* *n-sà*
 2SG-go:VEN-PFCTV ever PREP PROX-TQ
 ‘Did you ever come here before?’

Depending on the sentence type, the phrase final markers *-ká* (POSITIVE DECLARATIVE), *-bà* (NEGATIVE DECLARATIVE), or *-sà* (INTERROGATIVE) have to be suffixed to the proximal deictic element *n*-. We decided to stick with the forms found in the GDRNT Bible. Here, *a* is generally used as a locative prefix, so that HERE in positive declarative sentences is expressed as *aŋka*. Similarly, THERE consists of the locative marker *a*, the distal deictic element *da*, and the positive declarative marker *ka*, i.e. *adaka* ‘there’.

While the phrase final markers are usually part of the proximal SDDs, there are some exceptions, cf. (376).

¹⁸⁰ Frajzyngier (2008: 338) states that „[t]he prepositions *á* ‘to’ and *də* ‘ASSC’ are used for locative constructions formed with deictic elements *n* ‘proximate’ and *dà* [...] ‘remote’”. While *də* ‘ASSC’ seems to denote ‘toward’ or ‘through’, “[t]he preposition *á* is used both in stative and directional locatives. It has the function of coding locative complement, rather than a specific spatial orientation” (Frajzyngier 2008: 204).

- (376) Gidar HERE [GDRNT John 6:9]
Wiyən ma-bba-n ta-ya-ŋ dit dupenɗe sle gəm
 boy ATTR-little-M be-3M-PROX ASSC-F bread five CONJ
kilif sula[...]
 fish two
 ‘There is a little boy here with five breads and two fish [...].’

In (376), the proximal element *ŋ* is attached to the verb *taya* ‘he is’. The locative marker *a* is dropped, so that *ŋ* attaches directly to the third person masculine marker. In this case, the positive declarative marker *ka* is not used. Yet, the phrase final markers are not omitted if the proximal element is part of the verb, as examples (377)–(378) demonstrate.

- (377) Gidar HERE negative [GDRNT Luke 24: 6]
Ta-ya-ŋ ba, a-sil-ke.
 be-3M-PROX NEG 3M-rise-PFCTV
 ‘He is not here, he has risen.’
- (378) Gidar HERE positive [GDRNT Mark 13:21]
Messiya ta-ya-ŋ-ka, walla ta-ya da, kə-ltaf-nə-n ba.
 Messiah be-3M-PROX-DEM look be-3M DIST 2SG-believe-3M-PL NEG
 ‘The Messiah is here, look, he is there, do not believe them.’

The construction in (377) contains the negative particle *ba*, while the positive declarative marker *ka* surfaces in (378). Contrary to *ba* in *tayan ba* ‘he is not here’, *ka* in *tayan ka* ‘he is here’ is suffixed to the verbal construction. This orthographical decision might hint at *ka* as the most inherent component for forming the deictic expressions. While the deictic elements and *ka* (positive DEM) usually form a mono-word construction, *ba* (negative DEM) and *sa* (interrogative DEM) are written separately and thus form a multi-word construction.

Example (378) also shows that the distal deictic *da* ‘there’ is not suffixed to the verb. Furthermore, *da* ‘there’ can occur by itself without any phrase-final marker. The proximal deictic *ŋ*, on the other hand, usually has to be accompanied by one of the three markers.¹⁸¹ Nevertheless, the locative marker *a* is still dropped in *taya da* ‘he is there’, so that the deictic element *da* ‘distal’ occurs alone.

Due to the use of the negative particle *ba* and the interrogative particle *sa* replacing the positive declarative particle *ka*, the sentence type has an effect on the form of the deictic expressions in Gidar.

¹⁸¹ Alternatively, one could analyze *n-* or *-ŋ*, respectively, as a bound SDD morpheme representing the proximal stage in Gidar.

7 Conclusions

In this study, we have explored both spatial interrogatives and spatial deictic declaratives in P/G/S relation with a special focus on syncretism. Chapter 3 has given detailed insights into the system of SIs and SDDs of individual languages from all macro areas. Qualitative aspects of syncretism have also been discussed. Chapter 4 has then concerned itself with the quantitative side of syncretism, while Chapter 5 has offered statistical evaluations of constructional complexity. Chapter 6 has provided further insights into qualitative aspects of SIs and SDDs outside of the domain of (a)syncretism of *unmarked* constructions.

The following subsections not only serve to recapitulate the results but also aim at bringing together the different topics of spatial relations in the interrogative and declarative domains, tying up some loose ends, and addressing some topics that remain subject to future studies.

7.1 One or two grammars of space?

Previous studies on spatial relations (cf. Section 1.2.2) largely focused on declarative constructions that involve place names or nouns as overt Grounds. Conversely, Stolz et al. (2017) zoom in on the domain of spatial interrogatives. Our study too offers insights into a different category of expressions. These belong to the declarative domain but have to be differentiated from expressions with explicit Grounds. Thus by comparing two closely related categories, one belonging to the interrogative side and the other to the declarative side, our findings make a valuable contribution to answering the question of whether there are one or two grammars of space (as posed by Stolz et al. 2017, Section 6.1). We, however, refrain from making a distinction between sentence types (interrogative vs. declarative) in this regard, as SDDs are not limited to declarative sentences.

Looking at our data, it becomes apparent that SIs and SDDs are often morphologically closely related. In many languages, they do not only take the same set of spatial markers but also clearly belong to the same class of expressions. This is, for example, particularly transparent in Japanese [AS-21] where the SIs and SDDs belong to the so-called *ko-so-a-do* sets of demonstratives and interrogatives, cf. Table 86.

Table 87: Japanese [AS-21] *ko-so-a-do* sets of demonstratives and interrogatives.¹⁸²

	<i>ko-</i> 'near speaker'	<i>so-</i> 'near hearer'	<i>a-</i> 'away from both'	<i>do-</i> 'interrogative'
Location	<i>koko</i>	<i>soko</i>	<i>asoko</i>	<i>doko</i>
Direction	<i>kochira</i>	<i>sochira</i>	<i>achira</i>	<i>dochira</i>

As the expressions in Table 86 suggest, all of the SI and SDD forms are morphologically related. On a submorphemic level, the expressions may be divided into two parts, viz. the first part consisting of either *ko-*, *so-*, *a-*, or *do-* denoting the deictic degree or interrogativity and the second part coding, for example, location or direction. The morphological relatedness between SIs and SDDs is not always as clear as in Japanese. Nevertheless, we found that SIs and SDDs are frequently related in our sample languages. It turned out to be mostly unproblematic to set up sister paradigms of both SIs and SDDs together.¹⁸³ This does, however, not necessarily mean that there is one homogeneous grammar of space. Based on their analysis of declarative constructions with explicit Grounds of individual languages (Stolz et al. 2017: 597–633), Stolz et al. (2017: 635) state that

[...] the paradigms of spatial categories are not automatically structured identically across the sentence-types in individual languages. The disagreement of the paradigm of spatial interrogatives and the paradigm of spatial categories in declaratives is by no means barred from the attested phenomenology. We do not know yet how common it is cross-linguistically that the paradigms of spatial categories of the two sentence-types fail to match. In the absence of precise statistics, we can only guess that we are not dealing with an absolutely marginal phenomenon.

Although the declarative constructions we consider are of a different kind (cf. Section 2.2), our evaluations offer precise statistics on spatial relations in interrogative vs. declarative constructions. Before we delve into more detail as to the outcome of our analyses, we want to point out why SDDs and declarative constructions with explicit Grounds must be distinguished. Consider the following examples from German [EU-17].

182 For a complete list of the *ko-so-a-do* expressions, see e.g. Kaiser et al. (2005: 121).

183 However, the existence of languages that make do with potentially open word classes such as verbs (cf. Section 6.4) and other phenomena discussed in Chapter 6 opens up the field for further research on the predominant coding strategies outside of canonical SDDs.

- (379) Standard German Goal constructions
- a. *Ich gehe* **dort=hin.**
 1SG go:1SG.PRES there=G
 'I go there.'
 - b. *Ich gehe* **nach** **dort.**
 1SG go:1SG.PRES to there
 'I go there.'
 - c. *Ich gehe* **nach** **Hause.**
 1SG go:1SG.PRES to home
 'I go home.'
 - d. *Ich gehe* **nach** **Berlin.**
 1SG go:1SG.PRES to Berlin
 'I go to Berlin.'
 - e. *Ich gehe* **zur** **Schule.**
 1SG go:1SG.PRES to.DEF.F school
 'I go to school.'
 - f. *Ich gehe* **zu** **Paula.**
 1SG go:1SG.PRES to proper.name
 'I go to Paula.'

Comparing the five example sentences under (379), several differences in the marking of the Goal relation strike the eye. First of all, the THITHER construction in (379a) is the only construction that is marked by the =*hin* clitic also found in other SDD (*hierhin* 'hither', *dahin* 'thither') and SI (*wohin* 'whither') constructions. Example (379b) presents a case of the FD SDD *dort* 'there' with the preposition *nach* 'to'. All of the explicit Grounds (379c–f) are marked for Goal with a preposition. They cannot be marked by =*hin*. Depending on the kind of Ground, different prepositions have to be used. In (379c) and (379d), the preposition *nach* 'to' precedes the Grounds *Hause* 'home' and *Berlin*. In (379e) and (379f), on the other hand, the preposition *zu* 'to' is used. It is employed in its definite feminine form in (379e) in combination with the common noun *Schule* 'school' and in its indefinite form in combination with the proper name *Paula*. The examples in (379) show a great deal of variation in the marking of Goal between SDDs and other declarative constructions with explicit Grounds. Nonetheless, all of the constructions display overt marking of Goal. Looking at the English translations, other differences are revealed. While the English THITHER constructions in (379a–b) are zero-marked, the constructions with explicit Grounds in (379d–f) are overtly marked with the preposition *to*. Sentence (379c) is the only example of a construction with an explicit Ground (*home*) that is zero-marked in the English translation. Examining the Goal

constructions of these two Germanic languages demonstrates that SDDs and other declarative constructions must be treated separately. During our research, we came across numerous languages in which these two types of constructions do not behave in the same way.

This small excursion into comparing spatial marking of SDDs and explicit Grounds emphasizes that different categories may not necessarily use the same marking strategies. Stolz et al. (2017: 636) make a similar observation after comparing SIs and declarative constructions with explicit Grounds in a few individual languages: “[...] we have seen that the paradigms of spatial categories may or may not look the same in the two sentence-types”. Our findings presented in Chapter 4 lead us to draw a similar conclusion concerning SI and SDD constructions, as the paradigms of spatial categories may or may not look the same in SIs and SDDs. This brings us back to our hypotheses I–III from Section 1.4. We will discuss them one by one.¹⁸⁴

Hypothesis I

More often than not, languages employ the same syncretism pattern on both the interrogative and deictic declarative side of the paradigm.

This topic has been discussed at length in Section 4. For every macro area, we found that configuration A, i.e. the configuration in which the SIs and both distance levels of SDDs employ the same syncretism pattern, always has the highest shares, albeit to different degrees (cf. Figure 19 in Section 4.6). Africa has the highest shares of configuration A with 80.8%, while Oceania has the lowest with 46.8%. Oceania is the only macro area in which configuration A does not reach the 50% mark. Although configuration A [SIs = SDDs] still has higher shares than the other configurations (B–E), it does not obtain the absolute majority. Thus, Hypothesis I is not true for Oceania. All other macro areas and the world’s average, however, have shares of more than 50% of configuration A. Therefore, Hypothesis I is confirmed for four of the five macro areas and the global trend. There may be several reasons why configuration A is not as prominent in our Oceanian paradigms as in the other macro areas. The paradigms of our Oceanian subsample (cf. Appendix V) host quite a number of overabundant forms. Especially due to the high number of forms, we cannot be certain that our sources correctly reflect all forms in all three relations. Different syncretism patterns may arise due to incomplete datasets and, of course, due to erroneous analyses on our side. However, different syncretism patterns may

184 Hypotheses I–III and Hypothesis IV discussed in this chapter are repeated word by word. They can be found under (6)–(9) in Section 1.4.

also arise due to phenomena such as language contact and language change. Grammaticalization and lexicalization processes may lead to additional forms that, for example, only occur in the SDDs or even only in certain distance levels of SDDs. Similarly, the constructions may assume more functions within or outside of the realm of spatial relations which may lead to newly formed syncretism. Unfortunately, we cannot say what the exact reasons are that cause Oceania to have a relatively low share of configuration A [SIs = SDDs] in our sample. This must be clarified by future research. The diversity within the domain of spatial relations in Oceania shows that the two categories of SIs and SDDs do not necessarily form homogeneous paradigms. Nevertheless, for our global sample of SIs and SDDs, we find Hypothesis I confirmed.

Hypothesis II

More often than not, languages employ the same syncretism pattern throughout the category of SDDs. Different patterns may be employed in different degrees of distance. This is, however, less common than the employment of one syncretism pattern in the SIs and another in the SDDs (of all distances).

This matter is similarly investigated in Section 4. Hypothesis II actually comprises two assumptions. First of all, it declares that we expect the majority of languages to employ the same syncretism pattern throughout the category of SDDs, i.e. ND SDDs = FD SDDs. We found this tendency confirmed for all five macro areas (cf. Figure 19 in Section 4.6). Configurations C [SIs = ND ≠ FD] and D [SIs = FD ≠ ND], i.e. the configurations in which the two evaluated SDD distance levels employ different syncretism patterns, have considerably lower shares than configurations A [SIs = SDDs] and B [SIs ≠ SDDs], i.e. the configurations in which the two evaluated SDD distance levels employ the same patterns. Secondly, Hypothesis II stipulates that we expect to find more instances of the employment of one syncretism pattern in the SIs and another in the SDDs (= configuration B) than different patterns within the category of SDDs (= configurations C and D). This proved true for all macro areas except for Europe (cf. Figure 19 in Section 4.6). In Europe, 13.9% of all cases show configuration B, while configurations C and D combined make up 15.2%. Hence, a different syncretism pattern within the category of SDDs occurs slightly more often than different patterns in the SIs as compared to the SDDs in Europe. In all other macro areas, configuration B [SIs ≠ SDDs] occurs more frequently than configurations C [SIs = ND ≠ FD] and D [SIs = FD ≠ ND] combined. This is also reflected by the global values, as configuration B has a global share of 21.3%, while the share of configurations C and D taken

together amounts to 12.8%. Overall, we find our Hypothesis II confirmed with the exception of Europe.

Hypothesis III

Both SIs and SDDs show the same tendencies when it comes to the distribution of syncretism patterns in the world's languages. This means that the same Patterns I, II, and V are preferred, while Patterns III–IV remain marginal phenomena, as argued by Stolz et al. (2017) for SIs. There are no significant differences in the distribution of patterns between SIs and SDDs in the five macro areas.

Just like Hypotheses I and II, this issue is also explored in Chapter 4. The figures on the shares of syncretism patterns per expression class in each macro area (cf. Figures 1, 6, 9, 12, and 15) show that there is not much of a difference in the frequency of patterns between the expression classes globally. In Section 4.6, we argued that it is unproblematic to treat the three categories together for the worldwide comparison, as the overall tendencies are always similar. We were thus able to confirm that both SIs and SDDs exhibit the same tendencies in the distribution of syncretism patterns. Furthermore, the global shares of syncretism patterns (cf. Figure 18 in Section 4.6) also suggest that the overall tendencies are similar to Stolz et al.'s (2017) findings on spatial interrogatives. Patterns I, II, and V occur frequently on a global scale, albeit to different degrees in the different macro areas. Patterns III and IV, on the other hand, are nothing but marginal phenomena. Hypothesis III is thus verified. Other authors before us and before Stolz et al. (2017) obtained similar findings on the coding preferences outside of SDDs. Creissels (2006: 20), for example, observes that

[a]mong these five logically possible patterns, only two are commonly found in European languages. Pattern 1 [= Pattern I], in which each meaning is encoded by means of specialized adpositions or case affixes [...], and Pattern 2a [= Pattern II], in which essive and allative conflate, and ablative only is expressed by means of specialized adpositions or case affixes [...].

Our own data gives similar results. We agree with Creissels (2006) in that only Patterns I and II are commonly found in Europe. Nevertheless, our findings demonstrate that the other three patterns (III–V) are not completely absent from Europe (cf. Section 4.4). Creissels (2006: 22) further states that “of the three remaining types, only Types 2b [= Pattern III] and 2c [= Pattern IV] seem to be really exceptional”. “By contrast, Pattern 3 [= Pattern V] is exceptional in the languages of Europe and of many other areas, but is common and even predominant in some areas, particularly in Subsaharan Africa” (Creissels 2006: 23). Although Creissels (2006) does not provide numbers, his observations

match the results from our quantitative analysis. Pantcheva (2010: 1072–1074; 2011: 236–244) makes a very strong claim that Patterns III and IV are impossible patterns. For the counterexamples she discusses, she states that “[u]pon a closer data analysis, I suggested, however, that these syncretisms were not real, because they did not involve genuinely ambiguous spatial markers” (Pantcheva 2011: 245). Lestrade (2010) comes to a similar but more moderate conclusion declaring that Patterns III and IV are rather rare, although he admits that languages that employ these patterns do exist (Lestrade 2010: 100–105). We, however, refrain from blindly following his solution according to which the existence of Pattern III is “an unnecessary violation of the principle of ECONOMY” (Lestrade 2010: 104), supposedly because “the syncretism pattern between Goal and Source is a semantically unmotivated diachronic accident” (Lestrade 2010: 104).¹⁸⁵ We feel confident in stating that real cases of Patterns III (e.g. Balese [AF-4]) and IV (e.g. Saami [EU-38]) do exist.¹⁸⁶

Despite a few exceptions, the three hypotheses discussed above are mostly confirmed for our sample. We thus found that homogeneous paradigms, i.e. paradigms in which both SIs and SDDs employ the same syncretism pattern, occur most frequently. Paradigms with one syncretism pattern in the SIs and another in the SDDs occur much less often but may not be disregarded as a marginal phenomenon. Paradigms with different syncretism patterns within the category of SDDs occur even less often, but they may not be disregarded entirely either. Scheme 6 displays a frequency hierarchy of the homogeneous and two kinds of heterogeneous configurations as discussed above. The capital letters in Scheme 6 reflect the attested configurations as introduced in Section 4.1.¹⁸⁷

185 Stolz et al. (2017: 637–639) discuss the counterexample of Ardeşen-Laz, which is problematic for Lestrade (2010), and come to the conclusion that “the case of Ardeşen-Laz does not prove beyond doubt that the syncretistic pattern which runs counter to the predictions is solely to be attributed to the vicissitudes of the ever changeable phonology of a given language” (Stolz et al. 2017: 639).

186 Note that Pantcheva (2011: 240–241) actually discusses North Saami as a counterexample against the non-existence of Pattern IV (P=S≠G) and concludes that the “Location=Source syncretism in North Sámi is a spurious one” (Pantcheva 2011: 241). For a discussion on this matter see Section 3.4.4 and Stolz et al. (2017: 609–611; 639–640).

187 Note that configuration E [SIs ≠ ND ≠ FD] does not occur in our sample.

$$A: [SIs = SDDs] > B: [SIs \neq SDDs] > C+D: [ND \neq FD]$$

Scheme 6: Frequency hierarchy of homogeneous and heterogeneous configurations.

The scheme is not to be understood as a linear regression from configuration A with the highest frequency to configurations C and D with the lowest frequency. It merely means that configuration A occurs the most often, configuration B less often, and configurations C and D least often, without reflecting actual numbers. The fact that homogeneous configurations globally have the highest share points to a tendency towards a unitary grammar of space of SIs and SDDs, even though heterogeneous configurations also occur quite frequently. After comparing spatial interrogatives to declarative constructions with explicit Ground, Stolz et al. (2017: 636) state that

[t]he fact that the paradigms of the spatial categories do not always match across sentence-types does not seriously impair the extant global picture we have of the system of spatial relations because the spatial interrogatives favor the same syncretic patterns as their declarative counterparts. Moreover, in both sentence-types, the same syncretic patterns are statistically underrepresented.

As outlined above, we made a similar observation for SIs and SDDs. Although heterogeneous configurations frequently occur in individual languages, SIs and SDDs favor (and disfavor) the same patterns, not only globally but also in each of the five macro areas. Furthermore, we must bear in mind that the large majority of languages has at least one option for configuration A [SIs = SDDs]. Overall, only 20 of the 247 evaluable sample languages have a pervasive split either between SIs and SDDs (configuration B) or within the category of SDDs (configurations C and D). Oceania is the most outstanding macro area in this respect as nine of the 49 evaluable languages of our Oceanian subsample display said pervasive split. This is almost half of the global number of languages with a pervasive split. Possible reasons for this are discussed above. On a percentage base, approx. 92% of our sample languages may at least optionally employ the same syncretism patterns in the SIs and both SDDs. Similar to Stolz et al. (2017), we assume that there is a tendency towards a unitary grammar of space. However, it is “a grammar of space which allows and accounts for internal variation” (Stolz et al. 2017: 636). Stolz et al. (2017: 641) conclude that

it is clear that our study of spatial interrogatives provides ample evidence of the unity of the grammar of space. At the same time, the evidence is such that the assumed unity of space must accommodate a considerable degree of internal variation at least some of which is connected to sentence modality. There is thus one grammar of space albeit it being a colorful grammar of space.

A similar conclusion can be drawn for our study. As stated above, we refrain from talking about sentence modality as SDDs may occur in any kind of mood. Nevertheless, we compare spatial interrogative constructions to their declarative counterparts, so that we are dealing with different expression classes. As heterogeneous configurations mostly occur with the difference between SIs and SDDs (configuration B), we can state that most of the variation in the grammar of space does indeed happen between the interrogative category on the one hand and the declarative category on the other. Nevertheless, we have seen that variation may also occur within the category of SDDs (configurations C and D). If that is the case, one of the two evaluated SDD distance levels always shows the same syncretism pattern as the SIs. Inconsistencies, e.g. those induced by contact phenomena and/or internal language change, do thus not only concern the SIs as one category and the SDDs as another (homogeneous) category. Instead, SDDs may also behave heterogeneously, while one of the two SDD distance levels acts homogeneously with the SIs, possibly being reminiscent of a more canonical paradigm.

Our study shows that SIs and SDDs may very well be treated simultaneously, and furthermore, be compared across languages. As discussed above, SIs and SDDs are often morphologically related and show a tendency towards employing the same syncretism patterns. We thus assume a universal tendency towards a unitary grammar of space, which, however, leaves room for some variation.

7.2 Coding asymmetry in spatial relations

In Section 5, we calculated and evaluated the mean lengths of the SI and SDD constructions in P/G/S relation for every macro area and for our global sample. The results show that the SI and SDD sister paradigms are subject to a coding asymmetry in the sense that there is a markedness hierarchy from Place via Goal to Source. Globally, Place constructions tend to be the shortest members of the tripartite set of spatial relations. Goal constructions tend to be longer than Place constructions but shorter than Source constructions. Source constructions, in turn, tend to be longer than both Place and Goal constructions. Coding asymmetries in spatial relations are not a new observation. Apart from Stolz et

al. (2017) on spatial interrogatives (cf. Section 5.1), other authors made similar observations leading to a hierarchical structure of SRs, even in respects other than structural complexity (cf. e.g. Dixon 1980; Lestrade 2010; Pantcheva 2009, 2010, 2011). Haspelmath (2018) explains grammatical coding asymmetries, i.e. “grammatical meaning oppositions [...], where one member is typically zero-coded (or shorter), while the other member has an overt coding element” (Haspelmath 2018: 1) with form-frequency correspondences and predictability. Haspelmath (2018: 2) formulates the grammatical form-frequency correspondence hypothesis:

When two grammatical construction types that differ minimally (i.e. that form a semantic opposition) occur with significantly different frequencies, the less frequent construction tends to be overtly coded (or coded with more segments), while the more frequent construction tends to be zero-coded (or coded with fewer segments).

One of these grammatical oppositions that he introduces is allative vs. ablative case (cf. Haspelmath 2018: 2; 7). Haspelmath (2018: 7) states that “[w]ithin the oblique case-markers and adpositions, we find that allative and ablative are asymmetric, with allatives showing a much greater tendency to be zero than ablatives (Stolz et al. 2014), and if both are overtly marked, the ablative tends to have a longer shape”. Although we are not dealing with case-markers, we made the same observations for the Goal – Source opposition in SI and SDD constructions. What is more, we can also add Place constructions and obtain not only a bipartite but tripartite set of grammatical construction types. Unfortunately, it is impossible to check frequencies of the three spatial relations within the scope of a study such as ours as (big) corpora do not exist for most of the world’s languages.¹⁸⁸ Even if corpora exist, resulting frequencies do not necessarily reflect the frequencies in everyday (oral) language. We can therefore not confirm (or refute) Haspelmath’s (2018) form-frequency correspondence hypothesis, although it seems intuitively plausible that the goal of a movement is more frequently mentioned in conversations than the source of a movement. For SIs and SDDs, we can confirm that, globally, allative (Goal) constructions tend to be shorter than ablative (Source) constructions, and add a third component, viz. locative (Place) constructions, which tend to be even shorter than Goal constructions.

188 For English, Michaelis (2019: 36) presents some numbers taken from the COCA corpus for the motion to and motion from a few explicit Grounds, viz. *US, India, school, church, (home), hospital, and the hospital*. In all cases, motion-to has a higher frequency than motion-from.

The evaluations presented in Section 5 showed different results for the five macro areas (cf. Table 74 in Section 5.5). It is striking that the macro area with the most syncretism, i.e. the highest occurrence of Pattern V, shows the least significant differences between the three SRs. None of the differences between the SIs in P/G/S relation turned out to be significant in Africa. This outcome is not that much of a surprise. Naturally, a high degree of syncretism leads to lower differences in the mean construction lengths, as many languages have the same expressions (= the same construction length) in all three SRs. The African SIs of our sample proved to be a special case as the mean length of the Goal constructions is slightly shorter than that of the Place constructions by ~0.0049 characters. Looking at the SIs of our African sample languages without P=G syncretism (i.e. languages without Patterns III or V), it appears that there are indeed quite a number of languages that employ rather short Goal constructions. While Ngizim [AF-33], Tigrinya [AF-45], and Zay [AF-49], for example, employ P/G/S constructions with the same length in each relation, other languages such as Tamasheq [AF-44] employ comparatively short Goal SIs.¹⁸⁹ In some languages, such as Hamar [AF-16] or Wolaytta [AF-47], the Goal SIs constitute the zero-marked options.¹⁹⁰ We do not know if the mean lengths of the Goal constructions would be longer in comparison to the Place constructions with more and/or different languages in our sample. We are, however, certain that the differences between the Place and Goal means would never turn out to be significant in a (non-biased) sample of African languages.

Europe paints a completely different picture. All of the differences in the mean construction lengths of the three SRs turned out to be significant – and to a high degree at that. Apart from the differences between *WHITHER* and *WHENCE* constructions, there is always a **** ranking, i.e. the p-value is below 0.0001. In Chapter 4, we have seen that Europe has a relatively low degree of syncretism. There is only one language with the maximally indistinct Pattern V (Adyghe [EU-1]) and one language with Pattern IV (P=S≠G) (Skolt Saami [EU-38]). Pattern III occurs only inconsistently in a few languages. Patterns I (P≠G≠S) and II (P=G≠S) undoubtedly are the dominant patterns in Europe with Pattern I taking the lead. Yet, the high significance rankings of the differences between the

189 In Tamasheq, the *WHERE* construction lengths range between seven and ten characters, while the *WHITHER* construction lengths range between two and ten characters. This is a mean construction length of ~8.67 characters for *WHERE* and 5 characters for *WHITHER*.

190 In Hamar, all three relations have an overtly marked option, while the Goal relation additionally has a zero-marked option. In Wolaytta, on the other hand, both Place and Goal may be zero-marked. However, while there is an overtly marked option for Place, Goal is always zero-marked.

constructions in P/G/S relation cannot be explained only by the fact that there is a low degree of syncretism in Europe. The underlying reason lies in the differences in the marking of these constructions. The results of measuring the construction lengths in P/G/S relation clearly show that Goal is coded with more material than Place, and Source is coded with even more material than Goal. Although there is a lot of P=G syncretism in Europe (more than a third of all patterns), the differences in length between Place and Goal SI and SDD constructions are even higher than the differences between Goal and Source SI and SDD constructions. As stated in Sections 5.3.4 and 5.4.4, this is probably caused by a tendency to employ zero-marked Place constructions in contrast to overtly marked Goal (and Source) constructions in languages where there is no P=G syncretism. We tested whether the Place – Goal differences could still be termed significant in our global sample if the European constructions were not taken into account. In fact, there is still a significant difference in the mean construction length of only the African, American, Asian, and Oceanian Place and Goal SIs. With a p-value of ~ 0.0389 , it gets a lower significance ranking as the same difference when the European languages are taken into account ($p = \sim 0.0014$). Nevertheless, the SIs of what is called *the outside world* in Stolz et al. (2017) still exhibit a significant rise in the construction length from Place via Goal to Source. In the case of SDDs, the Place – Goal difference even reaches a *** ranking and the Goal – Source and Place – Source differences a **** ranking, even without taking European constructions into account. This means that the global trend of a rising construction length from Place via Goal to Source is not exclusively attributable to the European languages. This leads us back to our fourth hypothesis:

Hypothesis IV

Similar to the complexity scale provided by Stolz et al. (2017: 595), there is a rise in construction length from Place via Goal to Source for both SIs and SDDs.

Our results of measuring the mean construction lengths have shown that Hypothesis IV is indeed confirmed for our global sample of SIs and SDDs. However, the different macro areas give varying results. While the Goal – Source and Place – Source differences prove to be almost always significant, African SIs being the only exception, the Place – Goal difference was shown to be non-significant in African, American, and Asian SIs as well as in African and Asian SDDs. Except for the African SIs, however, the rise in length from Place to Goal in SIs and SDDs can still be observed when comparing the mean construction lengths, even if they are not significant. Non-significant differen-

ces thus do not contradict our hypothesis. The parallel markedness hierarchy as established by Stolz et al. (2017: 596) may thus be replicated for the construction length of SIs and SDDs (cf. Scheme 4 in Section 5.5).

7.3 Last thoughts on SDDs, verbs, and sundries

This study contributes to the multifaceted research on the grammar of spatial relations by highlighting and cross-linguistically comparing a concept that has often been disregarded or reduced to the Place relation only, i.e. spatial adverbial forms or their closest functional equivalents. By setting up sister paradigms of spatial interrogatives and their declarative equivalents, we have demonstrated that the two paradigms are closely related in a significant portion of languages. Yet, those paradigms which are characterized by high degrees of internal variation, involving several and/or open word classes, point us to languages and areas that provide interesting ground for further research. While our results show clear tendencies, we conclude that many languages employ elements quite far from what we can term canonical SDDs.

The rather canonical forms match what is commonly referred to as spatial adverbs or adverbial demonstratives. As stated in Section 1.2.1, Diessel (2003) discusses the special status of demonstratives and interrogatives. On the one hand, both categories can be considered grammatical markers due to their closed-class membership. On the other hand, they bear semantics generally assigned to open classes, i.e. lexical expressions. We argue that SDDs, especially in their most canonical form as paradigmatic “spatial adverbs”, constitute another separate but strongly related class that fulfills these criteria. Moreover, SDDs are similar to demonstratives and interrogatives in that they “encode the same ontological categories” and “often include the same derivational morphemes” (Diessel 2003: 646).¹⁹¹ However, an obvious difference and additional feature of SDDs is the potential to code dynamic meanings, e.g. Goal and Source, as opposed to the usually static meanings of demonstratives (in isolation). This is not surprising since spatial demonstratives primarily serve to locate objects in space, and SDDs serve to denote locations such as places, goals, paths, or sources of motion. Ultimately, a shared characteristic is the

¹⁹¹ The two further characteristics posed by Diessel (2003: 646) are that “[t]hey cross-cut the boundaries of several word classes” and that “[t]hey usually carry stress accent”. To test these two points, additional analyses of syntactical and phonological properties of our sample languages would have been required, which we could not realize within the scope of our study.

deictic or anaphoric nature of SDDs and demonstratives. Diessel (2003: 647) summarizes that

the ontological features that are commonly encoded in demonstratives provide information that together with the information from the surrounding situation and the ongoing discourse helps the hearer to identify the entity on which the speaker seeks to focus his or her attention.

Similarly, SDDs locate a referent in space, i.e. a location that has been previously mentioned or is inferable from context and provide additional information on distance and direction (e.g. Goal or Source). If they do not combine with spatial markers, the function is shifted entirely to the realm of verbs, which opens up an interesting question for future studies: Do motion verbs that are the sole carriers of Place/Goal/Source meanings tend to belong to open verb classes or to semi-open or closed (so-called “weaker”) classes such as directionals? Furthermore, we might ask questions such as: Do motion verbs correspond to the complexity hierarchy presented in Chapter 5? That is, do Goal verbs tend to be longer than Place verbs, but shorter than Source verbs? Comparative studies on verbs are more challenging than those targeting closed classes. It is difficult, if not impossible, to determine which motion verbs appear most frequently in a given language, although possible options can be inferred from resources such as corpora. The cross-linguistic study of spatial relations encoded by verbs is, therefore, a great enterprise still to be further pursued, despite the numerous follow-ups on the influential works by Talmy (1978), Jackendoff (1972, 1983), and Langacker (1987), who have established the ground for future quantitative research.

A key aspect relating to comparative research on spatial verbs is that morphological coding of spatial relations on SDDs may be redundant even in languages that make pervasive use of their spatial morphology. The existence of dedicated marking does not at all exclude the possibility of zero-coding if the accompanying motion verb is fit to fulfill the function alone, cf. the English phrase *I will leave here* which does not require the Source preposition *from* due to the inherently ablatival verb. It can thus be noted that languages that attest to zero-coding of spatial relations will always have dedicated motion verbs, whereas languages that attest to overt coding may have dedicated motion verbs but do not solely rely upon them to express spatial (deictic) meanings. The interplay of verbal semantics and morphological marking outside of the verb stem delivers further wide-ranging options for fruitful research. Broad functionalist approaches including all relevant parts of speech can certainly bring many more new insights into the grammar of space. Another research area

that is deeply connected to spatial coding strategies is the grammaticalization of spatial markers, which is also hoped to be stimulated by some of the data presented in this study.

Lastly, it was shown that the canonical paradigm for SDDs can be defined functionally, or semanto-pragmatically, for the sake of cross-linguistic comparison. Since a narrowly defined concept of ‘spatial adverb’ does not seem to hold universally, the closest functional equivalents were chosen for comparison. Nevertheless, we believe that a study on SDDs without the restrictions we imposed on this project (i.e. considering only the most *unmarked* forms) would be worthwhile, as becomes clear in Section 6.1.1. Analyzing these rather language-specific SDDs in terms of complexity and functions in crosslinguistic perspective would shed more light on the spatial systems of the world’s languages. Such studies may also contribute to the general research on adverbs, a not uncontroversial category that has often been disputed (cf. Hallonsten Halling 2018 for a detailed analysis and discussion of the concept).

This study combines two widely discussed topics that are, however, seldom brought together. As outlined in Section 1.2, numerous authors contributed to the research on both spatial relations (mostly in declarative constructions with explicit Ground) and spatial deictic expressions (mostly in the form of demonstratives). The marking of spatial relations in spatial deictic expressions, however, has never before been analyzed in a large-scale study. In connection with spatial interrogatives, which have been similarly neglected until Stolz et al. (2017), our project demonstrates that spatial relations affect a number of grammatical categories beyond those which have received most attention previously. Spatial relations can only be studied as a whole if all categories are considered and set into relation. Only the systematic combination of research on different parts of spatial systems, covering as much variety as possible, will enable us to gain a deeper understanding of the grammar(s) of space in the world’s languages.

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Appendix I: Africa

[AF-1] Afar (Afro-Asiatic, Cushitic)

[Bliese 1981]

	Place	Goal	Source
SI	<i>'anke</i>	<i>'anke</i>	<i>'anke-k</i>
	<i>'anke-l</i>	<i>'anke-l</i>	
	<i>'an'nikke</i>	<i>'an'ni-kke</i>	<i>'an'nikke-k</i>
D1	<i>'akke-l</i>	<i>'akke-l</i>	<i>'akke-k</i>
D2	<i>'wokke-l</i>	<i>'wokke-l</i>	<i>'wokke-k</i>

D1 = proximal, D2 = distal

[AF-2] Amharic (Afro-Asiatic, Semitic)

[Hartmann 1980; ¹Leslau 1995]

	Place	Goal	Source
SI	<i>yät</i>	<i>yät</i>	<i>käyät</i>
	<i>yet</i>	<i>yet</i>	<i>käyet</i>
	<i>wädet</i>	<i>wädet</i>	<i>käwädet</i>
		<i>¹wädäyät</i>	
D1	<i>əzzih</i>	<i>əzzih</i>	<i>käzzih</i>
		<i>wädih</i>	
		<i>wädäzzih</i>	
		<i>bästäzzih</i>	
D2	<i>əzziya</i>	<i>əzziya</i>	<i>käzziya</i>
		<i>wädiya</i>	
		<i>wädäzziya</i>	
		<i>bästäzziya</i>	

D1 = proximal, D2 = distal

[AF-3] Angolar (Indo-European, Lower Guinea Portuguese)

[Maurer 1995]

	Place	Goal	Source
SI	<i>a</i>		
	<i>andji</i>	<i>andji</i>	<i>andji</i>
	<i>a pê</i>		
	<i>andji a pê</i>		
D1	<i>ai</i>		
	<i>nge</i>	<i>nge</i>	<i>nge</i>
	<i>ngee</i>		
	<i>inge</i>		
D2	<i>nha</i>	<i>nha</i>	<i>nha</i>

D1 = proximal, D2 = distal

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[AF-4] Balese (Central Sudanic)

[Vorbichler 1965]

	Place	Goal	Source
SI	<i>ài-áfú</i> <i>àfu-à-ni</i> <i>ài-àfu-à-ni</i> <i>ài-ádú</i>	<i>àyé</i>	<i>àyé</i>
D1	<i>ràpà</i>	<i>ràni</i>	<i>ràni</i>
D2	<i>ripà</i>	<i>rini</i>	<i>rini</i>
D3	<i>repà</i>	<i>reni</i>	<i>reni</i>

D1 = proximal, D2 = distal, D3 = anaphoric

[AF-5] Bambara (Mande)

[Peace Corps 2009; 'Kastenholz 1998]

	Place	Goal	Source
SI	<i>min</i>	<i>min</i>	<i>min</i>
D1	<i>yan</i>	<i>yan</i>	<i>yan</i>
D2	<i>yen</i>	<i>¹yen</i>	<i>¹yen</i>

D1 = proximal, D2 = distal

[AF-6] Bangime (Bangime)

[Hantgan 2013; Abbie Hantgan-Soko, p.c.]

	Place	Goal	Source
SI	<i>kótè</i>	<i>kótè</i>	<i>kótè</i>
D1	<i>ímà</i>	<i>ímà</i>	<i>ímà</i>
D2	<i>ηwì</i>	<i>ηwì</i>	<i>ηwì</i>
D3	<i>kèbè</i>	<i>kèbè</i>	<i>kèbè</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AF-7] Bunoge Dogon (Dogon)

[Heath 2017, p.c.]

	Place	Goal	Source
SI	<i>ná-lò</i>	<i>ná-lò</i>	<i>ná-lò</i>
D1	<i>mà:-nâ:</i> <i>má-lò</i> <i>má</i>	<i>má-lò</i> <i>má</i>	<i>má-lò</i> <i>má</i>
D2	<i>bò-nâ:</i> <i>bó-lò</i> <i>bó</i>	<i>bó-lò</i> <i>bó</i>	<i>bó-lò</i> <i>bó</i>

D1 = proximal, D2 = distal

[AF-8] Dii (Atlantic-Congo, Central Adamawa) [Bohnhoff 2010; ¹DIINT]

	Place	Goal	Source
SI	<i>téé</i> <i>télá</i>	<i>télá</i>	¹ <i>télá</i>
D1	<i>yelí</i>	<i>yelí</i>	¹ <i>yelí</i>
D2	<i>wulí</i>	<i>wulí</i>	¹ <i>wulí</i>
D3	<i>zulí</i>	¹ <i>zulí</i>	¹ <i>zulí</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AF-9] Dime (South Omoti) [Seyoum 2008]

	Place	Goal	Source
SI	<i>ʔamó</i>	<i>ʔamó</i>	<i>ʔamó-de</i>
D1	<i>sikiyó</i>	<i>sikiyó</i>	<i>sikiyó-de</i>
D2	<i>sakiyó</i> <i>kiyó</i>	<i>sakiyó</i> <i>kiyó</i>	<i>*sakiyó-de</i> <i>kiyó-de</i>

D1 = proximal, D2 = distal

[AF-10] Ekoti (Atlantic-Congo, Bantu) [Schadeberg and Mucanheia 2000]

	Place	Goal	Source
SI	<i>vai</i>	<i>vai</i>	<i>vai</i>
D1 A	<i>apha</i>	<i>apha</i>	<i>apha</i>
D1 B	<i>okhu</i>	<i>okhu</i>	<i>okhu</i>
D2 A	<i>apho</i>	<i>apho</i>	<i>apho</i>
D2 B	<i>okho</i>	<i>okho</i>	<i>okho</i>
D3 A	<i>aphale</i>	<i>aphale</i>	<i>aphale</i>
D3 B	<i>okhule</i>	<i>okhule</i>	<i>okhule</i>

D1 A = near speaker, specific, D1 B = near speaker, general, D2 A = near hearer, specific, D2 B = near hearer, general, D3 A = away from both, specific, D3 B = away from both, general

[AF-11] Ewe (Atlantic-Congo, Gbe) [Warburton et al. 1968; ¹BEE]

	Place	Goal	Source
SI	<i>áfikà</i>	<i>afika</i>	<i>áfikà</i>
D1	<i>afí</i> <i>afisia</i>	¹ <i>afí</i> ¹ <i>afisia</i>	¹ <i>afí</i> ¹ <i>afisia</i>
D2	<i>afíma</i>	¹ <i>afíma</i>	<i>afíma</i>

D1 = proximal, D2 = distal

[AF-12] Fon (Atlantic-Congo, Gbe)

[FON]

	Place	Goal	Source
S1	<i>fíté</i>	<i>fíté</i>	<i>fíté</i>
D1	<i>fí</i>	<i>fí</i>	<i>fí</i>
D2	<i>fíné</i>	<i>fíné</i>	<i>fíné</i>

D1 = proximal, D2 = distal

[AF-13] Fulfulde, Adamawa (Atlantic-Congo, North Atlantic)

[Stennes 1967; ¹FBDC]

	Place	Goal	Source
S1	<i>toy</i>	<i>toy</i>	<i>toy</i>
	<i>haa toy</i>	<i>haa toy</i>	<i>haa toy</i>
			<i>diga toy</i>
D1 A	<i>do</i>	<i>do</i>	<i>diga do</i>
	<i>dō</i>	<i>dō</i>	<i>*haa do</i>
	<i>do'o</i>	<i>do'o</i>	
	<i>¹haa do</i>	<i>¹haa do</i>	
D1 B	<i>don</i>	<i>don</i>	<i>diga don</i>
	<i>*haa don</i>	<i>haa don</i>	<i>*haa don</i>
D2 A	<i>to</i>	<i>*to</i>	<i>*diga to</i>
	<i>*haa to</i>	<i>*haa to</i>	<i>*haa to</i>
D2 B	<i>ton</i>	<i>ton</i>	<i>diga ton</i>
	<i>¹haa ton</i>	<i>¹haa ton</i>	<i>¹haa ton</i>

D1 A = proximal, D1 B = proximal, anaphoric, D2 A = distal, D2 B = distal, anaphoric

[AF-14] Gidar (Afro-Asiatic, Chadic)

[GDRNT]

	Place	Goal	Source
S1	<i>aŋga</i>	<i>aŋga</i>	<i>səŋga</i>
	<i>ŋga</i>		
D1	<i>aŋka</i>	<i>aŋka</i>	<i>saŋka</i>
			<i>səŋka</i>
D2	<i>ada</i>	<i>ada</i>	<i>sədaka</i>
	<i>adaka</i>	<i>adaka</i>	

D1 = proximal, D2 = distal

[AF-15] Gonja (Atlantic-Congo, Guang)

[GJNB]

	Place	Goal	Source
SI	<i>ńńé</i>	<i>ńńé</i>	<i>ńńé</i>
D1	<i>ńńé</i>	<i>ńńé</i>	<i>ńńé</i>
D2	<i>ńńúng</i>	<i>ńńúng</i>	<i>ńńúng</i>

D1 = proximal, D2 = distal

[AF-16] Hamar (South Omoti)

[Petrollino 2016]

	Place	Goal	Source
SI A	<i>hamáte</i>	* <i>hamá</i> <i>hamáshet</i>	<i>hamárra</i>
SI B	<i>hamóte</i>	<i>hamó</i> <i>hamóshet</i>	<i>hamórra</i>
D1 A	<i>káte</i>	<i>káshet</i> <i>śra</i> <i>śrawal</i>	<i>kárra</i>
D1 B	<i>kóte</i>	<i>kóshet</i>	<i>kórra</i>
D2	<i>óo</i>	<i>óo</i> <i>us¹</i> <i>úsuwal²</i>	<i>órra</i>

SI A = interrogative, specific, SI B = interrogative, unspecific, D1 A = proximal, specific, D1 B = proximal, unspecific, D2 = distal

[AF-17] Hausa (Afro-Asiatic, Chadic)

[Abdoulaye 2013; ¹BHA]

	Place	Goal	Source
SI	<i>¹inaa</i>	<i>¹inaa</i> <i>inaa zuwàa</i>	<i>¹dàgà inaa</i>
D1	<i>nân</i>	<i>nân</i> * <i>zuwàa nân</i>	<i>dàgà nân</i>
D2	<i>nan</i>	<i>¹nan</i> <i>¹zuwàa nan</i>	<i>dàgà nan</i>
D3	<i>cân</i>	<i>¹cân</i> <i>zuwàa cân</i>	* <i>dàgà cân</i>
D4	<i>can</i>	<i>can</i> <i>¹zuwàa can</i>	<i>¹dàgà can</i>

D1 = proximal, D2 = anaphoric, D3 = distal I, D4 = distal II

1 atelic “away from speaker” morpheme

2 atelic “away from speaker” morpheme

[AF-18] Kaba (Central Sudanic, Saraic)

[Moser 2004; ¹KSPDBL]

	Place	Goal	Source
S1	<i>ddá</i>	<i>ddá</i>	<i>ddá</i>
D1	<i>nènn</i>	<i>nènn</i>	¹ <i>nènn</i>
D2	<i>tònn</i>	<i>tònn</i>	¹ <i>tònn</i>
D3	<i>yónn</i>	<i>yónn</i>	* <i>yónn</i>
D4	<i>núnn</i>	<i>núnn</i>	* <i>núnn</i>

D1 = proximal, D2 = distal I, D3 = distal II, D4 = distal III

[AF-19] Kabiyyé (Atlantic-Congo, Gur)

[KABI]

	Place	Goal	Source
S1	<i>le</i>	<i>le</i>	<i>le</i>
D1	<i>cɪɛ</i>	<i>cɪɛ</i>	<i>cɪɛ</i>
D2	<i>peeɖe</i>	<i>peeɖe</i>	<i>peeɖe</i>

D1 = proximal, D2 = distal

[AF-20] Khoekhoe, Nama (Khoe-Kwadi)

[Olpp 1977]

	Place	Goal	Source
S1	<i>mapa</i>	<i>mapa</i> <i>mâî</i>	<i>mapa xu</i>
D1	<i>nepa</i>	<i>nepa</i> <i>nēî</i>	<i>nepa xu</i>
D2	<i>lɪnapa</i>	<i>lɪnapa</i> <i>lɪnāî</i>	<i>lɪnapa xu</i>
D3	<i>naupa</i>	<i>naupa</i> <i>naulî</i>	<i>naupa xu</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AF-21] Kikuyu (Atlantic-Congo, Bantu)

[Helen W. Nintemann, p.c.]

	Place	Goal	Source
S1	<i>ha</i> <i>kū</i>	<i>ha</i> <i>kū</i>	<i>ha</i> <i>kū</i> <i>kuuma ha</i> <i>kuuma kū</i>
D1 A	<i>haha</i>	<i>haha</i>	<i>haha</i> <i>kuuma haha</i>

	Place	Goal	Source
D1 B	<i>gūkū</i>	<i>gūkū</i>	<i>gūkū</i> <i>kuuma gūkū</i>
D2 A	<i>haarīa</i>	<i>haarīa</i>	<i>haarīa</i> <i>kuuma haarīa</i>
D2 B	<i>kūūrīa</i>	<i>kūūrīa</i>	<i>kūūrīa</i> <i>kuuma kūūrīa</i>
D3 A	<i>harīa</i>	<i>harīa</i>	<i>harīa</i> <i>kuuma harīa</i>
D3 B	<i>kūrīa</i>	<i>kūrīa</i>	<i>kūūrīa</i> <i>kuuma kūrīa</i>
D4 A	<i>hau</i>	<i>hau</i>	<i>hau</i> <i>kuuma hau</i>
D4 B	<i>kūu</i>	<i>kūu</i>	<i>kūu</i> <i>kuuma kūu</i>

D1 A = proximal, non-extended, D1 B = proximal, extended, D2 A = distal I, in field, non-extended, D2 B = distal I, in field, extended, D3 A = distal I, out of field, non-extended, D3 B = distal I, out of field, extended, D4 A = distal II, non-extended, D4 B = distal II, extended

[AF-22] Koyra Chiini (Songhay)

[Heath 1998, p.c.]

	Place	Goal	Source
SI	<i>man</i>	<i>man</i>	<i>man</i>
D1	<i>nee</i>	<i>nee</i>	<i>nee</i>
D2	<i>doodi</i> <i>dooti</i>	<i>doodi</i> <i>dooti</i>	<i>doodi</i> <i>dooti</i>
D3	<i>hentu</i>	<i>hentu</i>	<i>hentu</i>

D1 = proximal, D2 = anaphoric, D3 = distal

[AF-23] Koyraboro Senni (Songhay)

[Heath 1999, p.c.]

	Place	Goal	Source
SI	<i>man</i> <i>man la</i>	<i>man</i> <i>man la</i>	<i>man</i> <i>man la</i>
D1	<i>nee</i> <i>nee ra</i>	<i>nee</i> <i>nee ra</i>	<i>nee</i> <i>nee ra</i>
D2	<i>noŋg-oo woo</i> <i>noŋgur-oo woo</i> <i>noŋg-oo woo ra</i> <i>noŋgur-oo woo ra</i>	<i>noŋg-oo woo</i> <i>noŋgur-oo woo</i> <i>noŋg-oo woo ra</i> <i>noŋgur-oo woo ra</i>	<i>noŋg-oo woo</i> <i>noŋgur-oo woo</i> <i>noŋg-oo woo ra</i> <i>noŋgur-oo woo ra</i>

	Place	Goal	Source
D3	<i>nong-oo din</i>	<i>nong-oo din</i>	<i>nong-oo din</i>
	<i>nongur-oo din</i>	<i>nongur-oo din</i>	<i>nongur-oo din</i>
	<i>noo din</i>	<i>noo din</i>	<i>noo din</i>
	<i>nong-oo din la</i>	<i>nong-oo din la</i>	<i>nong-oo din la</i>
	<i>nongur-oo din la</i>	<i>nongur-oo din la</i>	<i>nongur-oo din la</i>
	<i>noo din la</i>	<i>noo din la</i>	<i>noo din la</i>
D4	<i>hendi</i>	<i>hendi</i>	<i>hendi</i>
	<i>henti</i>	<i>henti</i>	<i>henti</i>
	<i>hetti</i>	<i>hetti</i>	<i>hetti</i>

D1 = proximal, D2 = neutral or anaphoric, D3 = anaphoric, D4 = distal

[AF-24] Lango (Nilotic)

[B79]

	Place	Goal	Source
S1	<i>kwene</i>	<i>kwene</i>	<i>i kwene</i>
D1	<i>kan</i>	<i>kan</i>	<i>i kan</i>
D2	<i>kuno</i>	<i>kuno</i>	<i>i kuno</i>
D3	<i>kaca</i>	<i>kaca</i>	<i>*i kaca</i>
	<i>kuca</i>	<i>kuca</i>	<i>*i kuca</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AF-25] Loma (Mande)

[Sadler 2006; ¹LNT71]

	Place	Goal	Source
S1	¹ <i>mine</i>	¹ <i>mine</i>	¹ <i>mine</i>
D1	<i>vε</i>	<i>vε</i>	<i>vε</i>
D2	<i>na</i>	<i>na</i>	<i>na</i>
	¹ <i>munu</i>	¹ <i>munu</i>	<i>*munu</i>

D1 = proximal, D2 = distal

[AF-26] Luo (Nilotic)

[Okoth-Okombo 1997; ¹DH015]

	Place	Goal	Source
S1	<i>ere</i>	¹ <i>ere</i>	¹ <i>ere</i>
	<i>kure</i>	¹ <i>kure</i>	¹ <i>kure</i>
	<i>kanye</i>	<i>kanye</i>	¹ <i>kanye</i>
D1	<i>ka</i>	<i>ka</i>	¹ <i>ka</i>
D2	<i>kanyo</i>	<i>kanyo</i>	¹ <i>kanyo</i>
D3	<i>kacha</i>	<i>*kacha</i>	<i>*kacha</i>

D1 = near speaker, D2 = near hearer, D3 = away from both

[AF-27] Maale (Ta-Ne-Omoti)

[Amha 2001; ¹MB]

	Place	Goal	Source
SI	<i>woka</i>	<i>woka</i> <i>ʔáńko</i>	<i>wokáppa</i>
D1	<i>haka</i> <i>hayika</i> <i>haika</i>	¹ <i>haka</i> ¹ <i>hayika</i> <i>haní</i> <i>hangé</i>	<i>hakáppa</i> ¹ <i>hayikáppa</i>
D2	<i>yeka</i> <i>ʔiika</i>	¹ <i>yeka</i> <i>ʔiika</i>	¹ <i>yekáppa</i> ¹ <i>ʔiikáppa</i>

D1 = proximal, D2 = distal

[AF-28] Ma'di (Central Sudanic, Moru-Madi)

[Blackings and Fabb 2003; Mairi J. Blackings, p.c.]

	Place	Goal	Source
SI	<i>íŋgɔ̄</i>	<i>íŋgɔ̄</i>	<i>íŋgɔ̄ sɪ̄</i>
D1	<i>dʔʔā</i>	<i>dʔʔā</i>	<i>dʔʔā sɪ̄</i>
D2	<i>ɪlédʔʔā</i>	<i>ɪlédʔʔā</i>	<i>ɪlédʔʔā sɪ̄</i>
D3	<i>náʔā</i>	<i>náʔā</i>	<i>náʔā sɪ̄</i>

D1 = near speaker, D2 = near hearer, D3 = away from both

[AF-29] Malagasy (Austronesian, Greater Barito)

[Bergenholtz 1994; malagasyword.org]³

	Place	Goal	Source
SI	<i><X>àiza</i>	<i><X>àiza</i>	<i><X>àiza</i>
D1 A	<i><X>èto</i> <i><X>etỳ</i>	<i><X>èto</i> <i><X>etỳ</i>	<i><X>èto</i> <i><X>etỳ</i>
D1 B	<i><X>àto</i> <i><X>atỳ</i>	<i><X>àto</i> <i><X>atỳ</i>	<i><X>ato</i> <i><X>atỳ</i>
D2 A	<i><X>eo</i> <i><X>etsy</i>	<i><X>eo</i>	<i><X>eo</i>
D2 B	<i><X>ao</i> <i><X>atsy</i>	NA	NA
D3 A	<i><X>èny</i> <i><X>erỳ</i> <i><X>eroa</i>	<i><X>èny</i> <i><X>erỳ</i>	<i><X>eny</i> <i><X>erỳ</i>

³ The division of the SDDs into the deictic categories was done after Bergenholtz' (1994) description, while the forms were confirmed at malagasyword.org.

	Place	Goal	Source
D3 B	<i><X>ány</i>	<i><X>ány</i>	<i><X>any</i>
	<i><X>arȳ</i>	<i><X>arȳ</i>	<i><X>arȳ</i>
	<i><X>aróa</i>		

D1 A = proximal, visible, D1 B = proximal, invisible, D2 A = medial, visible, D2 B = medial, invisible, D3 A = distal, visible, D3 B = distal, invisible

[AF-30] Mambay (Atlantic-Congo, Mbunic) [Anonby 2011, p.c.]

	Place	Goal	Source
S1	<i>kin</i>	<i>kin</i>	<i>kin</i>
	<i>kina</i>	<i>kina</i>	<i>kina</i>
D1	<i>kǎʔ</i>	<i>hîn</i>	<i>kǎʔ</i>
		[V]- <i>in</i>	
		[V]- <i>ñ</i>	
D2	<i>kôʔ</i> <i>kũʔ</i>	<i>hîn kǎʔ</i>	
		<i>vòró</i>	<i>kôʔ</i>
		<i>vè</i>	<i>kũʔ</i>
		<i>vòró kôʔ</i> <i>vòró kũʔ</i>	

D1 = proximal, D2 = distal

[AF-31] Miya (Afro-Asiatic, Chadic) [Schuh 1998]

	Place	Goal	Source
S1	<i>ʔiykwá</i>	<i>ʔiykwá</i>	<i>áa ʔiykwá</i>
	<i>yíkwa</i>	<i>yíkwa</i>	<i>àa yukwá</i>
D1	<i>ʔíykən</i>	<i>ʔíykən</i>	<i>*áa ʔíykən</i>
D2	<i>ʔíyka</i>	<i>ʔíyka</i>	<i>áa ʔíyka</i>

D1 = proximal, D2 = distal

[AF-32] Munukutuba (Atlantic-Congo, Bantu) [NTK50; ¹Mfoutou 2009]

	Place	Goal	Source
S1	<i>wapí</i>	<i>wapí</i>	<i>wapí</i>
	¹ <i>wapí sika</i>	¹ <i>wapí ndambu</i>	¹ <i>wapí sika</i>
D1	<i>awa</i>	<i>awa</i>	<i>awa</i>
			<i>tuka awa</i>
D2	<i>kuna</i>	<i>kuna</i>	<i>kuna</i>
			<i>tuka kuna</i>

D1 = proximal, D2 = distal

[AF-33] Ngizim (Afro-Asiatic, Chadic)

[Schuh 1972]

	Place	Goal	Source
SI	<i>aa rawan</i>	<i>ii rawan</i>	<i>da rawan</i>
D1	<i>aa rii tku</i>	<i>ii rii tku</i>	<i>da rii tku</i>
D2	<i>aa rii tiyu</i>	<i>ii rii tiyu</i>	<i>da rii tiyu</i>
D3	<i>aa riyu</i>	<i>ii riyu</i>	<i>da riyu</i>

D1 = proximal, D2 = distal, D3 = anaphoric

[AF-34] Nobiin (Nubian)

[Werner 1987]

	Place	Goal	Source
SI	<i>síddó</i> <i>híddó</i>	<i>síddó</i> <i>híddó</i>	<i>híddóláak</i> <i>híddótóon</i>
D1	<i>ínná</i> <i>ìndò</i>	<i>ínná</i> <i>ìndò</i>	<i>ínnátóon</i> <i>*ìndótóon</i>
D2	<i>mándó</i>	<i>mándó</i>	<i>mándótóon</i>

D1 = proximal, D2 = distal

[AF-35] Òkọ (Atlantic-Congo, Oko-Eni-Osayen)

[Atoyebi 2010, p.c.]

	Place	Goal	Source
SI	<i>é̄ta</i>	<i>é̄ta</i>	<i>é̄ta</i> <i>kàba é̄ta</i>
D1	<i>è̄ko</i>	<i>è̄ko</i>	<i>è̄ko</i> <i>kàba è̄ko</i>
D2	<i>è̄fà ònèbé</i>	<i>è̄fà ònèbé</i>	<i>è̄fà ònèbé</i> <i>kàba è̄fà ònèbé</i>

D1 = proximal, D2 = distal

[AF-36] Ònìchà Igbo (Atlantic-Congo, Igboïd)

[Williamson 2006]

	Place	Goal	Source
SI	<i>èbeē</i>	<i>èbeē</i>	<i>èbeē</i>
D1	<i>ebe à</i> <i>n'ebe à</i>	<i>ebe à</i> <i>n'ebe à</i>	<i>ebe à</i> <i>n'ebe à</i>
D2	<i>ebe afù</i> <i>n'ebe afù</i>	<i>ebe afù</i> <i>n'ebe afù</i>	<i>ebe afù</i> <i>n'ebe afù</i>

D1 = proximal, D2 = distal

[AF-37] Pamue (Atlantic-Congo, Bantu) [Ndongo Esono 1956]

	Place	Goal	Source
SI	<i>ve</i>	<i>ve</i>	<i>ve</i>
D1	<i>va</i>	<i>va</i>	<i>va</i>
D2	<i>yui</i>	<i>yui</i>	<i>yui</i>
D3	<i>olui</i>	<i>olui</i>	<i>olui</i>

D1 = near hearer, D2 = near speaker, D3 = away from both

[AF-38] Penange (Dogon) [Heath 2016, p.c.]

	Place	Goal	Source
SI	<i>mbá</i>	<i>mbá</i>	<i>mbá</i>
D1	<i>nùwⁿ</i>	<i>nùwⁿ</i>	<i>nùwⁿ</i>
D2	<i>èm-bà</i>	<i>èm-bà</i>	<i>èm-bà</i>

D1 = proximal, D2 = distal

[AF-39] Sango (Atlantic-Congo, Ubangi) [Samarin 1967; ¹MNF2010]

	Place	Goal	Source
SI	<i>na ndo wa</i>	¹ <i>na ndo wa</i>	¹ <i>na ndo wa</i>
D1	<i>ge</i> <i>na ndo só</i>	<i>ge</i> <i>na ndo só</i>	¹ <i>ge</i> ¹ <i>na ndo só</i>
D2	<i>ká</i>	<i>ká</i>	<i>ká</i>

D1 = proximal, D2 = distal

[AF-40] Somali (Afro-Asiatic, Cushitic) [Saaed 1999; ¹KQA]

	Place	Goal	Source
SI	<i>xaggee</i> <i>meeh</i>	<i>xaggee</i>	¹ <i>xaggee ka</i>
D1	<i>halkan</i> ¹ <i>meeshan</i>	<i>halkan</i> ¹ <i>meeshan</i>	¹ <i>halkan ka</i> ¹ <i>meeshan ka</i>
D2	<i>halkaa(s)</i> ¹ <i>meeshaas</i>	¹ <i>halkaa(s)</i> ¹ <i>meeshaas</i>	¹ <i>halkaa(s) ka</i> ¹ <i>meeshaas ka</i>

D1 = proximal, D2 = distal

[AF-41] Supyire Senoufo (Atlantic-Congo, Gur)

[Carlson 1994; ¹SPPNT]

	Place	Goal	Source
S1	<i>taá [...]</i> ké	<i>taá [...]</i> ké	¹ <i>taá [...]</i> ké
	<i>taá [...]</i> gé	<i>taá [...]</i> gé	¹ <i>taá [...]</i> gé
D1	<i>náhá</i>	<i>náhá</i>	¹ <i>náhá</i>
D2	<i>aní</i>	<i>aní</i>	<i>aní</i>
	<i>waní</i>	<i>waní</i>	<i>waní</i>

D1 = proximal, D2 = distal

[AF-42] Susu (Mande)

[Friedländer 1974; ¹SOSO]

	Place	Goal	Source
S1	<i>minde</i>	<i>minde</i>	<i>minde</i>
	<i>minden</i>	<i>minden</i>	<i>minden</i>
D1	<i>be</i>	<i>be</i>	¹ <i>be</i>
D2	<i>na</i>	<i>na</i>	<i>na</i>
	<i>mènni</i>	<i>mènni</i>	<i>mènni</i>

D1 = proximal, D2 = distal

[AF-43] Swahili (Atlantic-Congo, Bantu)

[Helen W. Nintemann, p.c.]

	Place	Goal	Source
S1	<i>wapi</i>	<i>wapi</i>	<i>wapi</i> <i>kutoka wapi</i>
D1 A	<i>hapa</i>	<i>hapa</i>	<i>hapa</i> <i>kutoka hapa</i>
D1 B	<i>huku</i>	<i>huku</i>	<i>huku</i> <i>kutoka huku</i>
D2 A	<i>hapo</i>	<i>hapo</i>	<i>hapo</i> <i>kutoka hapo</i>
D2 B	<i>huko</i>	<i>huko</i>	<i>huko</i> <i>kutoka huko</i>
D3 A	<i>pale</i>	<i>pale</i>	<i>pale</i> <i>kutoka pale</i>
D3 B	<i>kule</i>	<i>kule</i>	<i>kule</i> <i>kutoka kule</i>

D1 A = near speaker, specific, D1 B = near speaker, unspecific, D2 A = near hearer, referential, specific, D2 B = near hearer, referential, unspecific, D3 A = away from both, specific, D3 B = away from both, unspecific

[AF-44] Tamasheq, Tdraq (Afro-Asiatic, Berber) [Sudlow 2001; ¹Heath 2005]

	Place	Goal	Source
S1	<i>əndek diha</i> <i>əndek diha-d</i> <i>əndek-ki</i>	<i>mi</i> <i>mi-s</i> <i>əndek siha-s</i>	<i>mi dət-[V]</i>
D1	<i>diha</i>	<i>diha</i> [V]- <i>id</i> [V]- <i>dd</i>	¹ [V]- <i>in</i>
D2	<i>dihen</i>	<i>dihen</i> [V]- <i>in</i>	*[V]- <i>id dihen</i>
D3	<i>siha</i>	<i>siha</i> [V]- <i>in</i>	[V]- <i>id siha</i>

D1 = proximal, D2 = medial, D3 = distal

[AF-45] Tigrinya (Afro-Asiatic, Semitic) [Teclé 2015; ¹tigrinyadictionary.com]

	Place	Goal	Source
S1	^ə <i>abäy</i> ^ə <i>ayti</i>	<i>nabäy</i>	<i>kabäy</i>
D1	^ə <i>abzi</i>	<i>nabzi</i>	¹ <i>kabzi</i>
D2	^ə <i>ab^ʔu</i> ^ə <i>abti</i>	<i>nab^ʔu</i> <i>nabti</i>	<i>kab^ʔu</i> <i>kabti</i>

D1 = proximal, D2 = distal

[AF-46] Tswana (Atlantic-Congo, Bantu) [Cole 1955]

	Place	Goal	Source
S1	<i>kae</i>	<i>kae</i>	<i>kae</i>
D1	<i>fa</i>	<i>fa</i>	<i>fa</i>
D2	<i>fôo</i> <i>fông</i> <i>fao</i>	<i>fôo</i> <i>fông</i> <i>fao</i>	<i>fôo</i> <i>fông</i> <i>fao</i>
D3	<i>falê</i>	<i>falê</i>	<i>falê</i>
D4	<i>kwa</i>	<i>kwa</i>	<i>kwa</i>
D5	<i>kôo</i> <i>kông</i>	<i>kôo</i> <i>kông</i>	<i>kôo</i> <i>kông</i>
D6	<i>kwalê</i>	<i>kwalê</i>	<i>kwalê</i>

D1 = proximal, nearby, D2 = distal I, nearby, D3 = distal II, nearby, D4 = proximal, remote, D5 = distal I, remote, D6 = distal II, remote

[AF-47] Wolaytta (Ta-Ne-Omotic)

[Wakasa 2008; ¹WAL]

	Place	Goal	Source
SI	<i>ʔáu</i> <i>ʔáw-<X></i> <i>ʔáu-ní</i> <i>ʔáw-<X>-ní</i>	<i>ʔáu</i> <i>ʔáw-<X></i>	<i>ʔáu-ppe</i> <i>ʔáw-<X>-ppe</i>
D1	<i>hagáá-ní</i> <i>hagáá</i> <i>há</i>	<i>háa</i> <i>háa-kko</i> <i>hagáá</i>	<i>¹hagáá-ppé</i> <i>háá-ppé</i>
D2	<i>hegáá-ní</i> <i>*hegáá</i> <i>hín-i</i> <i>híní-ní</i> <i>yá</i>	<i>yáa</i> <i>yáa-kko</i> <i>hín-iyo</i> <i>¹hegáá</i>	<i>hegáá-ppé</i> <i>híní-ppe</i> <i>¹yáá-ppé</i>

D1 = proximal, D2 = distal

[AF-48] Yoruba (Atlantic-Congo, Defoid)

[Rowlands 1969; BM]

	Place	Goal	Source
SI	<i>ibo</i> <i>níbo</i> <i>dà</i>	<i>s'ibo</i> <i>¹níbo</i>	<i>¹látí ibo</i> <i>lát'íbo</i> <i>¹níbo</i>
D1	<i>ìhín</i> <i>níhín</i> <i>¹níhìn-ín</i> <i>ibí</i> <i>níbí</i>	<i>síhín</i> <i>¹síhìn-ín</i> <i>¹níhín</i> <i>¹níhìn-ín</i> <i>síbí</i> <i>¹níbí</i>	<i>¹látí ìhín</i> <i>¹níhín</i> <i>¹níbí</i>
D2	<i>ibè</i> <i>níbè</i>	<i>síbè</i> <i>¹níbè</i>	<i>¹látí ibè</i> <i>¹níbè</i>
D3	<i>òhún</i> <i>l'òhún</i>	<i>¹òhún</i> <i>s'òhún</i> <i>¹sòhùn-ún</i> <i>¹l'òhún</i>	<i>¹òhún</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AF-49] Zay (Afro-Asiatic, Semitic)

[Meyer 2005]

	Place	Goal	Source
S1	<i>bāri</i>	<i>ʔari</i>	<i>lāri</i>
D1	<i>bīǧǧi</i>	<i>yīǧǧi</i>	<i>liǧǧi</i>
D2	<i>bāǧǧi</i>	<i>yāǧǧi</i>	<i>lāǧǧi</i>

D1 = proximal, D2 = distal

[AF-50] Zialo (Mande)

[Babaev 2010]

	Place	Goal	Source
S1	<i>mīni</i>	<i>mīni</i>	<i>mīni</i>
D1	<i>vè</i>	<i>vè</i>	<i>vè</i>
D2	<i>náy</i> <i>nǎvè</i>	<i>náy</i> <i>nǎvè</i>	<i>náy</i> <i>nǎvè</i>
D3	<i>mùnǎ</i>	<i>mùnǎ</i>	<i>mùnǎ</i>

D1 = proximal, D2 = distal, D3 = distal II

Appendix II: The Americas

[AM-1] Apache, San Carlos (Athabaskan-Eyak-Tlingit, Athabaskan)

[De Reuse 2006]

	Place	Goal	Source
SI	<i>ha-yú</i> <i>ha-gee</i>	<i>ha-yú</i>	<i>ha-yú-di</i> <i>ha-dí'</i>
D1	<i>dzqq(-gee)</i> <i>kū</i>	<i>dzqq-yú</i>	<i>dzqq-dí'</i> <i>kū-dí'</i>
D2	<i>a(-gee)</i> <i>ā-kū</i>	<i>a-yú</i>	<i>a-dí'</i>
D3	<i>(n)lāā</i> <i>lāā-yú</i> <i>(n)lāh</i> <i>lāh-gee</i>	<i>lāā-yú</i>	<i>lāh-dí'</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AM-2] Arapaho (Algic, Algonquian)

[Cowell and Moss 2008]

	Place	Goal	Source
SI	<i>teetee-</i> <i>eet-</i> <i>toot-(iino)</i> <i>iitoh-</i>	<i>toot=iǝ</i> <i>toot=éí</i> <i>toot-iino</i>	<i>toot-iit</i>
D1	<i>hiit-</i> <i>huut-</i> <i>iǝǝ-</i> <i>iit-</i>	<i>cih</i> ⁴ <i>cei(t)-</i> <i>no</i> ⁵	<i>(n)eh-</i> <i>seh</i> ⁵ <i>ne(e)'eh-</i>
D2	<i>ǝew-</i> <i>ii</i> ⁴ <i>ein-</i>	<i>eeǝew-</i> <i>ǝew-</i> <i>seh-</i> <i>no</i> ⁵	<i>iǝ</i> ⁶
D3	<i>yih-</i> <i>iiǝe</i> ⁵ <i>ǝeb-ííhi'</i>	<i>ǝeb-iíhi'</i> <i>ǝeb-íís-ííhi'</i>	NA

D1 = proximal, D2 = medial, D3 = distal

⁴ 'to speaker'

⁵ This form co-encodes 'from here to there' as it "converts locational forms to directional forms" (Cowell and Moss 2008: 214).

⁶ This form appears only in conjunction with other preverbs (Cowell and Moss 2008: 214) and is left out of the statistical evaluations in Chapter 5.

[AM-3] Blackfoot (Algic, Algonquian)

[Frantz 2009]

	Place	Goal	Source
S1	[<i>tsimá_1/2/3-it-V</i>]	[<i>tsimá_1/2/3-itap-V</i>]	[<i>tsimá_1/2/3-omoht-V</i>]
D1	<i>annoma_N</i>	[<i>poohsap-V</i>] [<i>lpoohsap-V</i>]	[<i>miistap-V_ annoma</i>] [<i>yllstap-V_ annoma</i>]
D2	[<i>it-V</i>] [<i>ist-V</i>]	[<i>itap-⁷V</i>]	[<i>omoht-⁸V</i>]

D1 = proximal, D2 = distal

[AM-4] Bora (Boran)

[Thiesen and Weber 2012]

	Place	Goal	Source
S1	<i>kiá</i>	<i>kiá-vú</i>	<i>kiá-tú</i>
D1	<i>í-chii</i>	<i>í-chih-vu</i>	<i>Í-chih-dyu</i>
D2	<i>éh-tsíi</i>	NA	NA
D3	<i>té-hulle</i>	<i>té-hullé-vu</i>	<i>á-tsih-dyú</i>

D1 = proximal, D2 = medial, D3 = distal

[AM-5] Cahuilla (Uto-Aztecan, Cupan)

[Seiler 1977]

	Place	Goal	Source
S1	<i>pa?</i> <i>mívi-ŋa</i> <i>mí-va?</i>	<i>mívi-ka</i>	<i>mí-va-x</i>
D1	<i>-ŋa</i> <i>-ʔi-</i> <i>-pa-</i> <i>ʔí-va-ʔ pa?</i> <i>ʔí-pa</i> <i>ʔí-paʔpe</i>	<i>-ika</i> <i>-ka-</i>	<i>ʔí-pa-x</i>
D2	<i>pe-</i> <i>pé-ŋa</i> <i>ʔé-ŋa(?)</i>	<i>ʔí-ka</i> <i>pi-ka</i>	<i>pé-ax</i> <i>pé-ŋa-x</i> <i>ʔé-ax</i>

D1 = proximal, D2 = near hearer

7 May express ‘toward’ or ‘to’ (telic) depending on the final verb.

8 Possibly an atelic instrumental ‘away’ morpheme which encodes Source or Path depending on the final verb.

[AM-6] Cavineña (Pano-Tacanan, Tacanan) [Guillaume 2008]

	Place	Goal	Source
SI	<i>eju</i> <i>eje-keja</i>	<i>eju</i> <i>eje-keja</i>	<i>eje-eke</i>
D1	<i>re-wa</i> <i>re-keja</i> <i>riya</i> <i>jee</i>	<i>re-wa</i>	<i>re-eke</i>
D2	<i>tu-wa</i> <i>tu-me</i>	<i>tu-wa</i>	<i>tu-eke</i>
D3	<i>yu-wa</i> <i>yu-keja</i> <i>yu-me</i>	<i>yu-keja</i>	<i>yu-eke</i>

D1 = near speaker, D2 = near hearer, D3 = distal

[AM-7] Cayuga (Iroquoian) [Mithun and Henry 1982]

	Place	Goal	Source
SI	<i>kaɛ</i> <i>kaɛnhɔ:</i> <i>kaɛ nhɔ:weh</i>	<i>kaɛ</i> <i>kaɛnhɔ:</i> <i>kaɛ nhɔ:weh</i>	<i>kaɛ</i> <i>kaɛnhɔ:</i> <i>kaɛ nhɔ:weh</i>
D1	<i>t(a)-[V]</i> <i>takwá:tih</i>	<i>t(a)-[V]</i>	<i>t(a)-[V]</i>
D2	<i>h(a')-[V]</i> <i>sikwá:tih</i>	<i>h(a')-[V]</i>	<i>h(a')-[V]</i>

D1 = proximal/towards speaker, D2 = distal/away from speaker

[AM-8] Choctaw (Muskogean) [Broadwell 2006; 1998]

	Place	Goal	Source
SI	<i>kátimmah</i> <i>kátommah</i>	<i>kátimmah</i> <i>kátommah</i>	<i>kátimmah</i> <i>kátommah</i>
D1	[V class]	[V class] <i>iit</i> (single-event) <i>at</i> (dual-event)	
D2	<i>mak-</i> <i>yammak-</i>	[V class] <i>pit</i> (single-event) <i>ot</i> (dual-event)	<i>[ma hikiit]_{PTCPL V_{ALL}}</i> <i>[(m(a)-) aa-hikiit]_{PTCPL V_{ALL}}</i>

D1 = proximal/towards deictic center, D2 = distal/away from deictic center

[AM-9] Ch'ol, Tila (Mayan, Cholan-Tzeltalan)

[CTUNT]

	Place	Goal	Source
S1	<i>baqui</i>	<i>baqui</i>	<i>baqui</i>
D1	<i>wł'</i>	<i>wł'</i>	<i>wł'</i>
D2	<i>ya'</i>	<i>ya'</i>	<i>ya'</i>

D1 = proximal, D2 = distal

[AM-10] Comanche (Uto-Aztecan, Numic)

[Wistrand-Robinson and Armagost 2012; ¹Charney 1993]

	Place	Goal	Source
S1	<i>hak̥</i>	<i>hakaapu</i>	<i>hakaapu</i> ¹ <i>hakanai</i>
D1	<i>i-kj</i> <i>i-k̥-hu</i>	<i>i-k̥-hu</i>	¹ <i>i-nai</i> ¹ <i>ma-nai</i>
D2	<i>o-k̥</i> <i>o-k̥-ho</i>	<i>o-k̥-ho</i>	¹ <i>o-nai</i>
D3	<i>u-k̥</i> <i>u-k̥-hu</i>	<i>u-k̥</i> <i>u-k̥-hu</i>	NA

D1 = (immediate) proximal, D2 = (immediate) distal, D3 = (removed) distal

[AM-11] Cree (Algonquian)

[<http://www.creedictionary.com/>]

	Place	Goal	Source
S1	<i>tānte</i> <i>tānita</i> <i>tāniwēhē</i>	<i>tānte</i> <i>tānitē</i>	<i>tānti ohci</i> <i>tānita ohci</i>
D1	<i>ōta</i>	<i>pēci</i> <i>pē-</i>	<i>ōta ohci</i>
D2	<i>tasi</i> <i>nete</i> <i>neta</i>	<i>ohpime ohci</i>	<i>pēci</i> <i>pē-</i> <i>ohci</i>

D1 = proximal, D2 = distal

[AM-12] Crow (Siouan, Core Siouan)

[Graczyk 2007]

	Place	Goal	Source
S1	<i>shóo</i> <i>shóo-n</i>	<i>shóo-ssee</i> <i>shóo-ss</i>	<i>shóo-kaa</i>
D1	<i>hili</i> <i>hilee-n</i>	<i>hili-ss</i> <i>hili-ssee</i>	<i>*hilee-kaa</i>

	Place	Goal	Source
D2	<i>éehku</i> <i>éehkoo-n</i>	<i>éehku-ssee</i>	<i>*éehkoo-kaa</i>
D3	<i>akú</i> <i>íahku</i> <i>íahkoo-n</i>	<i>*akú-ss(ee)</i>	<i>akú-kaa</i>
D4	<i>koó-n</i> <i>íwahku</i>	<i>koo-sh</i>	<i>*koo-kaa</i>
D5	<i>áa</i>	NA	NA
D6	<i>íilakaa(-n)</i> <i>ííilakaa-n</i>	NA	NA
D7	<i>ku</i>	<i>ku-sseeé</i>	<i>ku-kaá</i>

D1 = proximal/near speaker, D2 = medial/near hearer, D3 = remote/out of sight, D4 = distal, D5 = audible, D6 = far distal, D7 = anaphoric

[AM-13] Cubeo (Tucanoan, Western Tucanoan)

[Chacon 2012]

	Place	Goal	Source
SI	<i>'ārī</i> <i>aruka</i>	<i>'ārī</i>	<i>'ārī</i>
D1	<i>'jo-i</i>	<i>*'jo-i</i>	<i>*'jo-i</i>
D2	<i>dō-i</i>	<i>dō-i</i>	<i>dō-i</i>

D1 = proximal, D2 = distal/anaphoric

[AM-14] Dakota (Siouan, Core Siouan)

[Williamson 1992]

	Place	Goal	Source
SI	<i>to'kiya</i> <i>tukten</i>	<i>to'kiya</i>	<i>to'kiyatanḥaŋ</i> <i>totaḥḥaŋ</i>
D1	<i>den</i> <i>de'ci</i>	<i>de'ciya</i> <i>a de'ciyatanḥaŋ</i>	<i>detanḥaŋ</i> <i>tokaŋ</i>
D2	<i>hen</i> <i>he'ci</i> <i>∅_{INDEF}</i>	<i>he'ciya</i> <i>heciyotaŋ</i>	<i>hetanḥaŋ</i>

D1 = proximal, D2 = distal

[AM-15] Garifuna (Arawakan, Caribbean Arawakan)

[Haurholm-Larsen 2016, CABNT]

	Place	Goal	Source
S1	<i>halíya-ny(a)</i> <i>hag(á)</i> ⁹	<i>halíy-on</i>	<i>(halíya-na)</i> ¹⁰ <i>*halíya-giyen</i> ¹¹
D1	<i>yá/ya</i>	<i>nyá-h-on</i>	<i>yá-giyen</i>
D2	<i>nyé(n)</i>	<i>nyén</i> <i>nyí-h-i</i> <i>nyén-h-i</i>	<i>nyén-giyen</i>
D3	<i>yára</i>	<i>yár-on</i>	<i>yára-giyen</i>
D4	<i>yagûra</i>	<i>yagûr-on</i>	<i>*yagûra-giyen</i>
D5	<i>yágûta</i>	<i>yágût-on</i>	<i>yágûta-giyen</i>
D6	<i>yéte</i>	<i>*yét-on</i>	<i>yéte-giyen</i>

D1 = proximal/coinciding, D2 = medial/visible, D3 = intermediate/invisible, D4 = distal I/invisible, D5 = distal II/invisible, D6 = distal III/invisible

[AM-16] Guaraní, Paraguay (Tupian, Tupi-Guarani)

[GRN1913]

	Place	Goal	Source
S1	<i>mamôpa</i> <i>mamo</i>	<i>mamôpa</i>	<i>mamóguipa</i> <i>mamógui</i>
D1	<i>ape</i>	<i>ape</i>	<i>coágui</i>
D2	<i>upepe</i>	<i>upepe</i>	<i>upegui</i>

D1 = proximal, D2 = distal

[AM-17] Hualapai (Cochimi-Yuman, Yuman)

[Watahomigie et al. 1982; ¹Winter 1966]

	Place	Goal	Source
S1	<i>ge</i>	<i>ge</i>	<i>ge</i> <i>nyi-ge</i>
D1	<i>va</i> <i>ve</i>	<i>va-k</i>	<i>va-m</i>
D2	<i>nyu</i>	<i>nyu-k</i>	¹ <i>nu-m</i>
D3	<i>ha</i> <i>he</i>	<i>há-k</i> <i>nyi-há-k</i>	<i>ha-m</i>

⁹ This additionally cited verb form is not included in the statistical evaluations in Chapter 5.

¹⁰ This form is possibly an ORIGIN marker.

¹¹ This form is reconstructed on the basis of *jaliaginésan* (cf. CABNT Rev 7:13).

	Place	Goal	Source
D4	<i>ya</i> <i>ye</i>	<i>ya-k</i>	¹ <i>ya:-m</i>
D5	<i>wa</i> <i>we</i>	<i>wa-k</i>	NA
D6	<i>tha</i> <i>the</i>	<i>tha-k</i> <i>nyi-tha-k</i>	¹ <i>thā-m</i>

D1 = proximal, D2 = medial I, D3 = medial II/*anaphoric, D4 = distal I, D5 = distal II, D6 = distal III/invisible

[AM-18] Inuktitut, Western Canadian (Eskimo-Aleut, Eskimo)

[Denny 1982; 1985]

	Place	Goal	Source
S1	<i>na-uk</i>	<i>na-mut</i>	<i>na-ket</i>
D1	<i>uv-ani</i>	<i>uv-unga</i>	<i>uv-anngat</i>
D2	<i>ma-ani</i>	<i>ma-unga</i>	<i>ma-anngat</i>
D3	<i>ik-ani</i>	<i>ik-unga</i>	<i>ik-anngat</i>
D4	<i>av-ani</i>	<i>av-unga</i>	<i>av-anngat</i>

D1 = proximal/restricted, D2 = proximal/extended, D3 = distal/restricted, D4 = distal/extended

[AM-19] Kamaiura (Tupian, Tupi-Guarani)

[Seki 2000]

	Place	Goal	Source
S1	<i>ma-m(e)</i> <i>u-ma(m)</i>	<i>ma-m</i> <i>ma-rupi</i> <i>ma-ŋaty</i>	<i>ma-wi</i>
D1	<i>'aŋ</i> <i>'am(e)</i> <i>'aŋ-uwe</i>	<i>'akati</i> {'aŋ+kati} <i>'am(e)</i>	<i>'aŋ(-a) wi</i>
D2	<i>a'ep(e)</i> {a'e+ip}	<i>a'e katy</i>	<i>a'ea wi</i>

D1 = proximal, D2 = distal

[AM-20] Klamath (Penutian, Klamath-Modoc)

[Barker 1963]

	Place	Goal	Source
S1	<i>da(t)</i> <i>da(t)</i>	<i>da(t)</i> <i>do-stdal</i>	<i>datkni·</i>
D1	<i>git</i> <i>gida(·)</i> <i>gidaḡat</i>	<i>gidal</i> <i>-ebg-</i>	<i>gidakni</i> <i>gida·kni</i> <i>gida-tantkni·</i>

	Place	Goal	Source
D2	<i>hi·</i> <i>ge·t</i> <i>hadakt</i>	<i>hi·tdal</i>	<i>hadaktkni·</i>
D3	<i>do(-)</i> <i>do·ksi</i>	<i>do·dal</i>	<i>do·kni·</i>
D4	<i>ge·t'i·t</i> <i>ge·fi·t</i> <i>rege·t'i·t</i> <i>gege·fi·t</i> <i>ge·tant'i·t</i> <i>ge·tanfi·t</i>	NA	<i>ge·tkni·</i>

D1 = proximal, D2 = distal I, D3 = distal II, D4 = distal III

[AM-21] Kodiak Alutiiq (Eskimo-Aleut, Aleut)

[Leer 1978]

	Place	Goal	Source
S1	<i>nani</i>	<i>nat'en</i> <i>natmen</i>	<i>naken</i>
D1	<i>gwaa'i</i>	* <i>gwaa'ut</i>	<i>gwaken</i>
D2	<i>maa'i</i>	<i>maa'ut</i>	<i>maaken</i>
D3	<i>tawa'i</i>	<i>tawa'ut</i>	<i>tawaken</i>
D4	<i>tamaa'i</i>	<i>tamaa'ut</i>	<i>tamaaken</i>

D1 = proximal/restricted, D2 = proximal/extended, D3 = general distal, D4 = distal/extended

[AM-22] Kumeyaay (Cochimi-Yuman, Yuman)

[Langdon 1970]

	Place	Goal	Source
S1	<i>ma·y</i> <i>ma·yvi</i>	<i>ma·yəm</i>	<i>ma·yk</i>
D1	<i>puy</i>	<i>=(və)k</i>	<i>=(və)m</i>
D2	<i>puyi</i> <i>pa·v</i>	<i>pu·m</i> <i>pam_v</i>	<i>pu·k</i> <i>=(və)k</i> <i>=(və)m</i>

D1 = proximal, D2 = distal

[AM-23] Kuna, Border (Chibchan, Core Chibchan)

[Forster 2011]

	Place	Goal	Source
SI	<i>pia</i>	<i>pia</i> <i>pia-je</i>	<i>pia akar</i>
D1	<i>iti-gin</i> _{spec} <i>iti-bal</i> _{unspec}	<i>iti-gin</i> <i>iti-bal</i>	<i>iti-akar</i>
D2	<i>we-gin</i> _{spec} <i>we-bal</i> _{unspec}	<i>we-gin</i> <i>we-bal</i>	<i>we-akar</i>
D3	<i>a-gin</i> _{spec} <i>a-gal</i> _{unspec}	<i>*a-gin</i> <i>*a-gal</i>	<i>*a-akar</i>
D4	<i>te-gin</i> <i>tenal</i>	<i>te-gin</i> <i>tenal</i>	<i>te-akar</i>

D1 = proximal, D2 = medial, D3 = distal, D4 = anaphoric

[AM-24] Lakota (Siouan, Core Siouan)

[<http://www.lakotadictionary.org>]

	Place	Goal	Source
SI	<i>tuktél</i>	<i>tótkhiya</i>	<i>tuktétanhaŋ</i> <i>tuktétan</i> <i>tótkhiyatanhaŋ</i> <i>tótkhiyatan</i>
D1	<i>lél</i>	<i>léčiya</i> <i>létkiya</i> <i>tháhéna</i>	<i>léčiyatanhaŋ</i> <i>letáŋni</i>
D2	<i>hél</i> <i>hěčhiya</i>	<i>hétkiya</i> <i>hěčhiya</i>	<i>hěčhiyatanhaŋ</i> <i>hěčhiyatan</i> <i>hetáŋni</i>
D3	<i>ká(l)</i>	<i>káktiya</i>	NA

D1 = proximal, D2 = distal (specific), D3 = distal (unspecific/indefinite)

[AM-25] Lenca, Honduran (reconstructed) (Lencan)

[Alan R. King, p.c.]

	Place	Goal	Source
SI	<i>kap</i>	<i>kap</i>	<i>kap nam</i>
D1	<i>nap</i>	<i>nap</i>	<i>*nap nam</i>
D2	<i>inap</i>	<i>inap</i>	<i>inap nam</i>
D3	<i>anap</i>	<i>anap</i>	<i>anap nam</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AM-26] Mapudungun (Araucanian)

[ARNNT, ¹Smeets 2008]

	Place	Goal	Source
S1	<i>chew</i>	<i>chew</i>	<i>chew</i>
D1	<i>tüfa (mew)</i>	<i>tüfa mew</i> ¹ <i>tüfá pülé</i> ¹²	<i>tüfa mew</i>
D2	<i>üyew</i> ¹ <i>fey-mew</i>	<i>üyew</i>	<i>üyew püle</i>
D3	<i>tüyew</i> ¹ <i>tüye-mew</i> <i>tüfey mew</i>	<i>tüfey mew</i>	<i>tüyew püle</i> <i>tüfey mew</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AM-27] Movima (Movima)

[Haude 2006]

	Place	Goal	Source
S1	<i>naya'</i>	<i>naya'</i>	<i>naya'</i>
D1	<i>ney</i> <i>neyru</i>	<i>ney</i> <i>neyru</i>	<i>ney</i> <i>neyru</i>
D2	<i>nosde:</i>	<i>nosde:</i>	<i>nosde:</i>
D3	<i>nakal</i> <i>no-ko(l)de:</i>	<i>nakal</i>	<i>nakal</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AM-28] Musqueam (Salishan, Central Salish)

[Suttles 2004]

	Place	Goal	Source
S1	<i>ʔəncə</i> <i>ʔə́nəcə</i> <i>x^wcél_v</i>	<i>x^wə-ʔə́nəcə</i> <i>x^wcél_v</i>	<i>təl-ʔə́nəcə</i>
D1	<i>teʔí</i> <i>ʔí_v</i>	<i>ʔə́mí_v</i> <i>téca_v</i> <i>x^wə-ʔí_v</i>	<i>[təl-íʔ_v (ʔə_{OBJ}) tənə_{DEM}]</i>
D2	<i>təníʔ</i> <i>niʔ_v</i>	<i>némi</i> <i>tás_v</i> <i>x^wə-níʔ_v</i>	<i>*[təl-íʔ_v (ʔə_{OBJ}) tənə_{DEM}]</i>
D3	<i>tənánə</i>	<i>x^wtéʔ_v</i>	<i>[təl-íʔ_v (ʔə_{OBJ}) tənə_{DEM}]</i>
D4	<i>k^wənánə</i>	<i>NA</i>	<i>*[təl-íʔ_v (ʔə_{OBJ}) k^wənə_{DEM}]</i>

D1 = proximal, D2 = distal I, D3 = distal II, D4 = distal III

¹² The form *püle/pulé* encodes 'side', so that e.g. *tüfá pülé* translates roughly to 'to this side, to here' (cf. Section 3.5.2.1).

[AM-29] Mutsun (Penutian, Costanoan) [Warner et al. 2016]

	Place	Goal	Source
SI	<i>hista</i> <i>hanni</i>	<i>hista</i> <i>hanni</i>	<i>hannitum</i>
D1	<i>ni</i>	<i>ni</i>	<i>niitum</i> <i>niyaatum</i>
D2	<i>pina</i>	<i>pina</i>	<i>pinaatum</i>
D3	<i>tina</i>	<i>tina</i>	<i>tinatum</i>
D4	<i>nahan</i> <i>nuhu</i> <i>iti</i>	<i>nahan</i> <i>nuhu</i>	<i>nahantum</i> <i>nuhuutum</i>

D1 = proximal, D2 = medial I, D3 = medial II, D4 = distal

[AM-30] Nahuatl, Guerrero (Uto-Aztecan, Aztec) [NGU]

	Place	Goal	Source
SI	<i>canon</i>	<i>canon</i>	<i>canon</i>
D1	<i>nican</i>	<i>nican</i>	<i>nican</i>
D2	<i>ompa</i>	<i>ompa</i>	<i>ompa</i>

D1 = proximal, D2 = distal

[AM-31] Navajo (Athabaskan-Eyak-Tlingit, Athabaskan) [Reichard 1951]

	Place	Goal	Source
SI	<i>xa-di</i>	<i>xa-gó'</i> <i>xa-dji'</i>	<i>xa-dó'</i>
D1	<i>'a-di</i>	<i>'a-dji'</i>	<i>'a-dó'</i>
D2	<i>'a-di</i>	<i>'a-dji'</i>	<i>'a-dó'</i>
D3	<i>'á-di</i>	<i>'á-dji'</i>	<i>'á-dó'</i>

D1 = proximal/near speaker, D2 = medial/near hearer, D3 = distal

[AM-32] Nez Perce (Penutian, Sahaptian) [Aoki 1994]

	Place	Goal	Source
SI	<i>míne</i>	<i>míne·px</i>	<i>mínix</i>
D1	<i>kíne</i> <i>kinímpe</i>	<i>kíne·px</i> <i>kinímpx</i>	<i>kíne·me</i> <i>kínix</i>
D2	<i>koná</i> <i>konapki</i> <i>konímpe</i>	<i>koná·px</i> <i>konímpx</i>	<i>konamá</i> <i>koní·x</i>

D1 = proximal, D2 = distal

[AM-33] Osage (Siouan, Core Siouan)

[La Flesche 1932]

	Place	Goal	Source
S1	<i>ho'-wa-in-ge</i> <i>a'-gu-di</i>	<i>*ho'-wa-in-ge</i> ¹³	<i>ho'-wa-gi-ʔon</i>
D1	<i>the-ga</i>	<i>the-ga</i>	<i>thé-ga-ʔon</i>
D2	<i>dsi</i> <i>kshe-dsi</i>	<i>dsi</i> <i>e-ʔa'</i>	<i>e-dsi'-ʔon</i>

D1 = proximal, D2 = distal

[AM-34] Otomí, Sierra (Oto-Manguenan, Otomian)

[Voigtlander and Echegoyen 1985]

	Place	Goal	Source
S1	<i>hapɬ</i>	<i>hapɬ</i>	<i>hapɬ</i>
D1	<i>ua (ja)</i> <i>gua</i> <i>cua</i>	<i>ua (ja)</i> <i>gua</i> <i>cua</i>	<i>ua (ja)</i> <i>gua</i> <i>cua</i>
D2	<i>nɬ (ja)</i> <i>yɬ</i>	<i>nɬ (ja)</i> <i>yɬ</i>	<i>nɬ (ja)</i> <i>yɬ</i>
D3	<i>bɬ (ja)</i> <i>pɬ</i>	<i>bɬ (ja)</i> <i>pɬ</i>	<i>bɬ (ja)</i> <i>pɬ</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AM-35] Parecís (Arawakan, Central Maipuran)

[PABNT, ¹Burgess and Rowan 2008]

	Place	Goal	Source
S1	¹ <i>aliyo</i> <i>alyako</i>	¹ <i>aliyo</i> <i>alyako</i>	¹ <i>aliyo-ta</i>
D1	<i>ali</i>	<i>ali</i>	<i>ali-ta</i>
D2	<i>nali</i>	<i>nali</i>	<i>nali-ta</i>

D1 = proximal, D2 = distal

¹³ The P=G syncretism of S1s is not evident in La Flesche (1932) but can tentatively be reconstructed on the basis of Quintero (2004).

[AM-36] Pipil¹⁴ (Uto-Aztecan, Aztecan) [NBTN, Alan R. King, p.c.]

	Place	Goal	Source
S1	<i>kan(ka)</i>	<i>kan(ka)</i>	<i>kan(ka)</i>
D1	<i>(ka) nikan</i>	<i>(ka) nikan</i> <i>(w)al-</i>	<i>(ka) nikan</i>
D2	<i>(ka) né</i>	<i>(ka) né</i>	<i>(ka) né</i>
D3	<i>(ka) ikuni</i>	<i>(ka) ikuni</i>	<i>(ka) ikuni</i>

D1 = proximal, D2 = medial/anaphoric, D3 = distal

[AM-37] Popoluca, Highland (Mixe-Zoque) [POINT]

	Place	Goal	Source
S1	<i>juʃ</i>	<i>juʃ</i>	<i>juʃ</i>
D1	<i>yʃim</i>	<i>yʃim</i>	<i>de yʃim</i>
D2	<i>jem</i>	<i>jem</i>	<i>de jem</i>
D3	<i>jeexic</i>	<i>jeexic</i>	NA

D1 = proximal, D2 = medial, D3 = distal

[AM-38] Quechua, Yauyos (Quechuan, Central Quechua I) [Shimelman 2017]

	Place	Goal	Source
S1	<i>may-pi</i> <i>may-pa</i>	<i>may-man</i>	<i>may-paq</i>
D1	<i>kay-pi</i> <i>kay-pa</i>	<i>kay-man</i> <i>kay-kama</i> <i>asta kay-kama</i>	<i>kay-paq</i>
D2	<i>chay-pi</i> <i>chay-pa</i>	<i>chay-man</i>	<i>chay-paq</i>
D3	<i>wak-pi</i> <i>wak-pa</i>	<i>wak-man</i>	<i>wak-paq</i>

D1 = proximal, D2 = distal I, D3 = distal II

¹⁴ The occurrence of the bracketed elements increases from Place via Goal to Source contexts (cf. Section 3.4.2) but is grammatical in all cells.

[AM-39] Sahaptin, Yakima Ichishkíin (Penutian)

[Jansen 2010]

	Place	Goal	Source
S1	<i>mi-nán</i>	<i>miin</i> <i>ímin</i>	<i>mí-ník</i>
D1	<i>í-ch-na</i> <i>í-ch-nak</i>	<i>í-chii-ni</i> <i>í-chi-n</i>	<i>chí-ník</i>
D2	<i>í-kw-na</i> <i>í-kw-nak</i> <i>kw-nak</i>	<i>í-kuu-ni</i> <i>í-kuu-nik</i> <i>íkwín</i>	<i>kwí-ník</i>

D1 = proximal, D2 = distal

[AM-40] Shipibo-Konibo (Pano-Tacanan, Panoan)

[Valenzuela 2003]

	Place	Goal	Source
S1	<i>jawerano<X>-ki</i>	<i>jawerano<X>-ki</i>	<i>jawerano-a<X>-ki</i>
D1	<i>ne-no</i>	<i>ne-no</i>	<i>ne-no-a</i> <i>ní-no-a</i>
D2	<i>jai-n(o)</i>	<i>jai-n(o)</i>	<i>jai-no-a</i>
D3	<i>o-no</i>	<i>*o-no</i>	<i>o-no-a</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AM-41] Tohono O'odham (Uto-Aztecán, Tepiman)

[Saxton and Saxton 1969]

	Place	Goal	Source
S1	<i>bah</i> <i>heb-ai i</i> <i>heb-ai</i>	<i>heb-ai i</i> <i>heb-ai</i>	<i>heb-ai-jeD</i>
D1	<i>iia</i> <i>ihya</i> <i>ihna</i> <i>im</i> <i>ihma</i>	<i>'ia'i</i>	<i>i'a-jeD</i>
D2	<i>am(ai)</i> <i>ab(ai)</i> <i>an(ai)</i>	<i>am(ai)</i> <i>ab(ai)</i> <i>an(ai)</i>	<i>am-jeD</i>
D3	<i>gam(ai)</i> <i>ga'ab(ai)</i> <i>gan(ai)</i>	<i>gam(ai)</i> <i>ga'ab(ai)</i> <i>gan(ai)</i>	<i>ga'a-jeD</i> <i>ga'aga-jeD</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AM-42] Totonac, Filomeno Mata (Totonacan, Totonac)

[José Santiago Francisco, p.c.; ¹McFarland 2009]

	Place	Goal	Source
SI	<i>lhaa</i>	<i>lhaa</i>	<i>lhaa</i>
D1	<i>atsá</i>	<i>a-</i> <i>¹čj-</i>	ʘ
D2	<i>tsanú</i>	<i>tša- ~ ¹čša-/-čša</i>	<i>tsanú</i>
D3	<i>anu</i>	<i>anu</i>	<i>anu</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AM-43] Totonac, Upper Necaxa (Totonacan, Totonac)

[David Beck and Porfirio Sampayo Macín, p.c.]

	Place	Goal	Source
SI	<i>ja:'</i>	<i>ja:'</i>	<i>ja:'</i>
D1	<i>wa:</i> <i>wa:tzá:</i>	<i>wa:</i> <i>wa:tzá:</i>	ʘ
D2	<i>wa'n</i> <i>a'ntzá:</i> <i>a:nanú:</i> <i>wa:nanú: [+ pointing]</i>	<i>wa'n</i> <i>a'ntzá:</i>	<i>a'ntza:</i>
D3	<i>wa:'j</i> <i>wa:'jnanú:</i> <i>a:'jnanú:</i>	<i>wa:'j</i> <i>wa:'jtzá:</i>	NA

D1 = proximal, D2 = medial, D3 = distal

[AM-44] Trio (Cariban, Guianan)

[Carlin 2004]

	Place	Goal	Source
SI	<i>a-n-po</i>	<i>a-ja</i> <i>a-n-pona</i>	<i>a-(i)n-je</i> <i>a-n-pëe</i>
D1	<i>sarë</i> <i>serë-po</i> <i>sen-po</i>	<i>sarë</i> <i>serë-pona</i> <i>sen-pona</i>	<i>serë-npë-pëe</i> <i>sen-pëe</i>
D2		<i>mijarë</i> <i>mijaja</i>	
	<i>mërë-po</i>	<i>mërë-pona</i>	<i>mërë-pëe</i>
D3	<i>ooni-po</i>	<i>ooni-pona</i>	<i>ooni-pëe</i>
D4	<i>irë-po</i>	<i>irë-pona</i>	<i>irë-pëe</i> <i>irë-npë-pëe</i>
D5	<i>tëërë</i>		

D1 = proximal, D2 = medial, D3 = distal, D4 = anaphoric, D5 = invisible

[AM-45] Tzotzil, Zinacantán (Mayan, Cholan-Tzeltalan) [TZOT, Laughlin 1975]

	Place	Goal	Source
S1	<i>bu</i>	<i>bu</i>	<i>bu</i>
D1	<i>li'-</i>	<i>li'-</i>	<i>li'-</i>
D2	<i>te(y)-</i>	<i>te(y)-</i>	<i>te(y)-</i>
D3	<i>le'-</i>	<i>le'-</i>	<i>le'-</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AM-46] Wapishana (Arawakan, Northern Maipurean) [Gomes dos Santos 2006]

	Place	Goal	Source
S1	<i>naʔ-ia-m (dʒi)</i> <i>naʔ-iaʔuʒa-m</i> <i>naʔi: dʒi:</i>	<i>naʔ-iti-m</i>	<i>naʔ-iki-m</i>
D1	<i>dʒaʔa:</i>	<i>dʒaʔa:-ʔ-ati:</i>	<i>*dʒaʔa:-ik(i)</i>
D2	<i>naʔi:</i>	<i>dʒi-ʔ-iti</i>	<i>dʒi-ik</i> <i>dʒi-ʔ-iki</i>

D1 = proximal, D2 = distal

[AM-47] Yaqui (Uto-Aztecán, Cahitan) [Dedrick and Casad 1999]

	Place	Goal	Source
S1	<i>háka=sa</i> <i>hakún=sa</i>	<i>haú=sa</i> <i>hákun-bičáa=sa</i>	<i>hakú'ubo=sa</i>
D1	<i>'ím</i> <i>'íním</i> <i>'ími'i_{spec}</i> <i>íními'i</i>	<i>'ím</i> <i>'íním</i> <i>'ími'i</i> <i>*íními'i</i>	<i>*'ím</i> <i>'íním</i> <i>*'ími'i</i> <i>*íními'i</i>
D2	<i>húm</i> <i>húmu'u_{spec}</i>	<i>húm</i> <i>hunúm</i>	<i>* húm</i> <i>* hunúm</i>
D3	<i>'áma</i> <i>'áman</i> <i>'ámman</i>	<i>*'áma</i> <i>'áman</i> <i>*'ámman</i>	<i>*'áma</i> <i>*'áman</i> <i>*'ámman</i>
D4	<i>hunáma</i> <i>hunáma'a_{unspec}</i> <i>hunámani</i> <i>hunáman</i>	<i>*hunáma</i> <i>*hunáma'a</i> <i>*hunámani</i> <i>*hunáman</i>	<i>hunáma</i> <i>*hunáma'a</i> <i>*hunámani</i> <i>*hunáman</i>

D1 = proximal, D2 = distal I, D3 = distal II, D4 = distal III

[AM-48] Yine (Arawakan, Purus)

[Hanson 2010]

	Place	Goal	Source
SI	<i>hinaka</i>	<i>hinaka</i>	<i>hinaka</i>
D1	<i>hewi</i>	<i>hewi</i>	<i>hewi</i>
D2	<i>wane</i>	<i>wane</i>	<i>wane</i>
D3	<i>hawla</i>	NA	NA

D1 = proximal, D2 = anaphoric (distal), D3 = distal

[AM-49] Yucatec Maya (Mayan, Yucatecan)

[MAYABI, ¹Hanks 2005]

	Place	Goal	Source
SI	<i>tu'ux</i>	<i>tu'ux</i>	<i>tu'ux</i>
D1	<i>way</i>	<i>way</i>	<i>way</i>
	¹ <i>way-e</i>	<i>way-e</i>	<i>way-e</i>
D2	<i>te'(e)l</i>	<i>te'(e)l</i>	<i>te'(e)l</i>
	¹ <i>te'(e)l-a</i>	<i>te'(e)l-a</i>	<i>te'(e)l-a</i>
	¹ <i>te'(e)l-o</i>	<i>te'(e)l-o</i>	<i>te'(e)l-o</i>
D3	<i>ti'</i>	<i>ti'</i>	<i>ti'</i>
	¹ <i>ti'-i</i>	<i>ti'-i</i>	<i>ti'-i</i>
	¹ <i>tol-o'</i>	<i>tol-o'</i>	<i>tol-o'</i>

D1 = proximal, D2 = distal, D3 = anaphoric

[AM-50] Yuracaré (Yuracaré)

[van Gijn 2006]

	Place	Goal	Source
SI	<i>ama=ti</i> <i>amti</i>	<i>am=chi</i>	<i>ama=jsha</i>
D1	<i>ani</i>	<i>ani</i> <i>an=chi</i>	<i>ana=jsha</i>
D2	<i>ati</i>	<i>at=chi</i>	<i>ati=jsha</i>
D3	<i>na=y</i>	<i>na=chi</i>	<i>na=jsha</i>

D1 = proximal, D2 = distal I, D3 = distal II

Appendix III: Asia

[AS-1] Ainu (Ainu)

[Tamura 2000]

	Place	Goal	Source
SI	<i>hunak ta</i> <i>hinak ta</i>	<i>hunak un</i> <i>hinak un</i>	<i>hunak wa</i> <i>hinak wa</i>
D1	<i>te ta</i>	<i>te un</i>	<i>te wa</i>
D2	<i>taan ta</i>	<i>taaní un</i>	<i>taaní wa</i>
D3	<i>toaan ta</i>	<i>toaní un</i>	<i>toaní wa</i>
D4	<i>toon ta</i>	<i>tooní un</i>	<i>tooní wa</i>

D1 = proximal I, D2 = proximal II, D3 = distal I, D4 = distal II

[AS-2] Apatani (Sino-Tibetan, Macro-Tani)

[APAT-BSI]

	Place	Goal	Source
SI	<i>no</i> <i>noh</i> <i>nohna</i>	<i>noh</i>	<i>nohkii</i>
D1	<i>so</i>	<i>so</i>	<i>sokii</i>
D2	<i>ho</i>	<i>ho</i>	<i>hokii</i>

D1 = proximal, D2 = distal

[AS-3] Arabic, Modern Standard (Afro-Asiatic, Semitic)

[Ryding 2005; ¹Lalli 2014]

	Place	Goal	Source
SI	<i>'ayn-a</i>	<i>'ilaa 'ayn-a</i>	<i>min 'ayn-a</i>
D1	<i>hunaa</i>	<i>'ilaa hunaa</i>	<i>¹min hunaa</i>
D2	<i>hunaaka</i>	<i>'ilaa hunaaka</i>	<i>¹min hunaaka</i>
D3	<i>hunaalika</i>	<i>*'ilaa hunaalika</i>	<i>*min hunaalika</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AS-4] Atong (Sino-Tibetan, Brahmaputran)

[van Breugel 2008, p.c.]

	Place	Goal	Source
SI	<i>bie</i> <i>bi=ci</i>	<i>bi=saŋ</i> <i>bi=saŋ=na</i>	<i>bi=saŋ</i> <i>bi=saŋ=mi</i> <i>bi=mi</i>

<https://doi.org/10.1515/9783110672640-016>

	Place	Goal	Source
D1	<i>i=ci</i>	<i>i=ci=na</i> <i>i=sarŋ</i> <i>i=sarŋ=na</i>	<i>i=mi</i> <i>i=sarŋ</i> <i>i=sarŋ=mi</i>
D2	<i>u=ci</i>	<i>u=ci=na</i> <i>u=sarŋ</i> <i>u=sarŋ=na</i>	<i>u=mi</i> <i>u=sarŋ</i> <i>u=sarŋ=mi</i>
D3	<i>haw=ci</i>	<i>haw=ci=na</i>	<i>haw=sarŋ</i> <i>haw=sarŋ=mi</i>
D4	<i>həyaw=chi</i>	<i>həyaw=ci=na</i>	<i>həyaw=san</i> <i>həyaw=sarŋ=mi</i>
D5	<i>hawtəy</i>	<i>hawtəy</i>	∅

D1 = proximal, D2 = distal I, D3 = distal II, D4 = distal III, D5 = invisible

[AS-5] Baba Malay (Austronesian, Malayo-Sumbawan) [Thian Hock 2006]

	Place	Goal	Source
S1	<i>mana</i> <i>di-mana</i>	<i>mana</i> <i>di-mana</i>	<i>dari mana</i>
D1	<i>sini</i> <i>di-sini</i>	<i>sini</i> <i>di-sini</i>	<i>dari sini</i>
D2	<i>sana</i> <i>di-sana</i>	<i>sana</i> <i>di-sana</i>	<i>dari sana</i>
D3	<i>situ</i> <i>di-situ</i>	<i>situ</i> <i>di-situ</i>	<i>dari situ</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AS-6] Bantawa (Sino-Tibetan, Kiranti) [Doornenbal 2009; ¹Winter 2003]

	Place	Goal	Source
S1	<i>k^ha-da</i>	<i>k^ha-tni</i>	<i>k^ha-da-ŋka</i>
D1	<i>o-da</i>	<i>o-d^ha-tni</i> <i>o-tni</i>	<i>¹o-da-ŋka</i>
D2	<i>mo-da</i>	<i>mo-d^ha-tni</i> <i>mo-tni</i>	<i>mo-da-ŋka</i>
D3	<i>k^ho-da</i>	<i>k^ho-d^ha-tni</i> <i>k^ho-tni</i>	<i>k^ho-da-ŋka</i>

D1 = proximal, neutral, D2 = distal, neutral, D3 = anaphoric, neutral

[AS-7] Bengali (Indo-European, Indo-Iranian)

[Thompson 2012]

	Place	Goal	Source
S1	<i>kôî</i> <i>kothaÿ</i> <i>kotha</i>	<i>kothaÿ</i>	<i>kotha theke</i>
D1	<i>ekhane</i> <i>otrô</i>	<i>ekhane</i>	<i>ekhan theke</i>
D2	<i>sekhane</i> <i>totrô</i> <i>tôtha</i>	<i>sekhane</i>	* <i>sekhan theke</i>
D3	<i>okhane</i>	<i>okhane</i>	<i>okhan theke</i>

D1 = proximal, D2 = neutral, D3 = distal

[AS-8] Burmese (Tibeto-Burmese, Burmish)

[Soe 1999]

	Place	Goal	Source
S1	<i>be hma</i>	<i>be</i> <i>be k<u>ou</u></i>	<i>be k<u>a</u>.</i>
D1	<i>di hma</i>	<i>di</i> <i>di k<u>ou</u></i>	<i>di k<u>a</u>.</i>
D2	<i>hou hma</i>	<i>hou</i> <i>hou k<u>ou</u></i>	<i>hou k<u>a</u>.</i>

D1 = proximal, D2 = distal

[AS-9] Burushaski, Yasin (Burushaski)

[Berger 1974]

	Place	Goal	Source
S1	<i>án</i> <i>áne</i>	<i>ána</i>	<i>ánum</i>
D1	<i>akhó</i> <i>kho</i> <i>khít</i>	<i>akhó</i> <i>kho</i> <i>akhóla</i> <i>akhíta</i> <i>khíta</i>	<i>akhólum</i> <i>khólum</i>
D2	<i>ít</i> <i>íti</i>	<i>íta</i>	<i>ítum</i>
D3	<i>to</i> <i>tóle</i>	<i>tóla</i>	<i>tólum</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AS-10] Cantonese (Sino-Tibetan, Sinitic) [Yip and Matthews 2000]

	Place	Goal	Source
SI	<i>bīndouh</i>	<i>bīndouh</i>	<i>yàuh bīndouh</i>
D1	<i>nīdouh</i> <i>nīsyu</i>	<i>nīdouh</i>	<i>yàuh nīdouh</i>
D2	<i>gódouh</i> <i>gósyu</i>	<i>gódouh</i>	<i>yàuh gódouh</i>

D1 = proximal, D2 = distal

[AS-11] Chinese (Sino-Tibetan, Sinitic)
[Yip and Rimmington 2004, 2006; ¹Ross and Sheng Ma 2006; ²CCB]

	Place	Goal	Source
SI	<i>nǎr</i> <i>nǎlǐ</i> <i>zài nǎr</i> <i>zài nǎlǐ</i> <i>shénme dìfang</i>	<i>nǎr</i> <i>nǎlǐ</i> ¹ <i>dào nǎr</i> <i>dào nǎlǐ</i> ¹ <i>shàng nǎr</i> <i>shàng nǎlǐ</i>	<i>cóng nǎr</i> ² <i>cóng nǎlǐ</i>
D1	¹ <i>zhèr</i> <i>zhèlǐ</i> ² <i>zài zhèr</i> <i>zài zhèlǐ</i>	<i>zhèr</i> <i>zhèlǐ</i> <i>dào zhèr</i> ² <i>dào zhèlǐ</i>	¹ <i>cóng zhèr</i> <i>cóng zhèlǐ</i>
D2	¹ <i>nàr</i> <i>nàlǐ</i> ¹ <i>zài nàr</i> <i>zài nàlǐ</i>	<i>nàr</i> <i>nàlǐ</i> <i>dào nàr</i> ² <i>dào nàlǐ</i>	<i>cóng nàr</i> <i>cóng nàlǐ</i>

D1 = proximal, D2 = distal

[AS-12] Chukchi (Chukotko-Kamchatkan) [Dunn 1999]

	Place	Goal	Source
SI	<i>miŋ-kə</i>	<i>miŋ-kəri</i>	<i>meŋ-qo</i> <i>meŋ-qo-rə</i>
D1	<i>ən-kə</i>	<i>waj-ən-re</i> <i>waj-ən-relə</i>	<i>ən-qo</i> <i>ən-qo-rə</i>
D2	<i>ŋut-ku</i>	<i>ŋut-kəri</i> <i>ŋut-ri</i> <i>ŋut-rilə</i>	<i>ŋot-ro</i> <i>ŋot-ro-rə</i>
D3	<i>ŋen-ku</i>	<i>ŋen-ri</i> <i>ŋen-rilə</i>	<i>nan-qo</i> <i>nan-qo-rə</i>

	Place	Goal	Source
D4	<i>ɲaan-kə</i> <i>ɲoon-kə</i>	<i>ɲaan-re</i> <i>naan-relə</i>	<i>ɲaan-qo</i> <i>ɲaan-qo-rə</i> <i>ɲoon-qo</i>

D1 = unspecified, D2 = proximal, D3 = distal I, D4 = distal II

[AS-13] Dhimal (Sino-Tibetan, Dhimalish) [King 2009; ¹DHIB]

	Place	Goal	Source
S1	<i>heta</i> <i>hiso</i>	<i>heta</i> <i>hiso</i>	<i>hiso-so</i>
D1	<i>ita</i> <i>iso</i>	<i>ita</i> <i>iso</i>	¹ <i>ita-so</i>
D2	<i>inta</i> <i>inso</i>	<i>inta</i> <i>inso</i>	<i>inta-so</i>
D3	<i>ota</i> <i>oso</i>	<i>ota</i> <i>oso</i>	<i>ota-so</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AS-14] Evenki (Tungusic) [Nedjalkov 1997]

	Place	Goal	Source
S1	<i>idu</i>	<i>ile</i> <i>irtyki</i>	<i>iduk</i> <i>ekunduk</i>
D1	<i>edu</i>	<i>edu</i> <i>ertyki</i> <i>ele</i> <i>eli</i>	<i>eduk</i> <i>ergit</i>
D2	<i>tadu</i>	<i>tadu</i> <i>tartyki</i> <i>tala</i> <i>tali</i>	<i>taduk</i> <i>target</i>

D1 = proximal, D2 = distal

[AS-15] Galo (Sino-Tibetan, Tani) [Post 2007]

	Place	Goal	Source
S1	<i>jòolo</i>	<i>jòolo</i>	<i>jòolokā</i>
D1	<i>hogò</i>	<i>hogò</i>	<i>hokā</i>
D2	<i>ogò</i>	<i>ogò</i>	<i>okā</i>

	Place	Goal	Source
D3	<i>alò</i>	<i>alò</i>	<i>akà</i> <i>alokà</i>
D4	<i>allòo</i>	<i>allòo</i>	<i>allòokà</i>
D5	<i>allûu</i>	<i>allûu</i>	<i>allûukà</i>

D1 = near speaker, D2 = near hearer, D3 = distal I, same level, D4 = distal II, same level, D5 = distal III, same level

[AS-16] Hebrew (Afro-Asiatic, Semitic) [Lavy 1991]

	Place	Goal	Source
S1	<i>'ejfo</i> <i>hexan</i>	<i>le'an</i> <i>lehexan</i>	<i>me'ain</i> <i>menain</i> <i>mehexan</i>
D1	<i>po</i> <i>kan</i>	<i>lexan</i>	<i>mikan</i>
D2	<i>šam</i>	<i>lešam</i> <i>šama</i>	<i>mišam</i>

D1 = proximal, D2 = distal

[AS-17] Hiligaynon (Austronesian, Greater Central Philippine) [Peace Corps 1990; ¹HLGN]

	Place	Goal	Source
S1	<i>diin</i> <i>sa diin</i>	<i>diin</i> <i>sa diin</i>	¹ <i>diin</i> <i>taga-diin</i>
D1	<i>ari</i> <i>diri</i>	¹ <i>diri</i>	<i>diri</i> <i>taga-diri</i>
D2	<i>ara</i> <i>dira</i>	¹ <i>dira</i>	¹ <i>dira</i> <i>*taga-dira</i>
D3	<i>ato</i> <i>didto</i>	<i>didto</i>	¹ <i>didto</i> ¹ <i>taga-didto</i>

D1 = near speaker, D2 = near hearer, D3 = away from both

[AS-18] Hindi (Indo-European, Indo-Iranian) [Kachru 2006]

	Place	Goal	Source
S1	<i>kəhā</i>	<i>kəhā</i> <i>kid^hər</i>	<i>kəhā se</i>
D1	<i>yəhā</i>	<i>yəhā</i> <i>id^hər</i>	<i>yəhā se</i>

	Place	Goal	Source
D2	<i>vəhã</i>	<i>vəhã</i> <i>ud^hər</i>	<i>vəhã se</i>

D1 = proximal, D2 = distal

[AS-19] Hmong Njua (Hmong-Mien, Chuanqiandian)

[Taweesak 1984; ¹HMOBSV]

	Place	Goal	Source
S1	<i>hǎo tǔw</i> <i>tǔw</i>	<i>hǎo tǔw</i> <i>tǔw</i>	<i>hǎo tǔw</i> ¹ <i>tǔw</i>
D1	<i>ndǎw nǔa</i> <i>nǔa</i>	<i>ndǎw nǔa</i> <i>nǔa</i>	¹ <i>ndǎw nǔa</i> ¹ <i>nǔa</i>
D2	¹ <i>hǎo ndǎw</i> ¹ <i>ndǎw</i>	¹ <i>hǎo ndǎw</i> ¹ <i>ndǎw</i>	¹ <i>hǎo ndǎw</i> ¹ <i>ndǎw</i>

D1 = proximal, D2 = distal

[AS-20] Iloko (Austronesian, Northern Luzon)

[Rubino 1997; ¹RIPV]

	Place	Goal	Source
S1	<i>sadino</i> <i>ayan</i>	<i>sadino</i>	<i>sadino</i>
D1	<i>ditoy</i>	<i>ditoy</i>	¹ <i>ditoy</i> ¹ <i>manipud ditoy</i>
D2	<i>dita</i>	¹ <i>dita</i>	¹ <i>dita</i> ¹ <i>manipud dita</i>
D3	¹ <i>sadiay</i> <i>idiay</i>	¹ <i>sadiay</i> <i>idiay</i>	¹ <i>sadiay</i> ¹ <i>idiay</i> ¹ <i>manipud sadiay</i> ¹ <i>manipud idiay</i>

D1 = near speaker, D2 = near hearer, D3 = away from both

[AS-21] Japanese (Japonic)

[Hitomi Otsuka, p.c.]

	Place	Goal	Source
S1	<i>doko</i> <i>doko ni</i> <i>doko de</i> <i>dochira</i> <i>dochira ni</i> <i>dochira de</i>	<i>doko e</i> <i>doko ni</i> <i>dochira e</i> <i>dochira ni</i>	<i>doko kara</i> <i>dochira kara</i>

	Place	Goal	Source
D1	<i>koko</i>	<i>koko e</i>	<i>koko kara</i>
	<i>koko ni</i>	<i>koko ni</i>	
	<i>koko de</i>		
	<i>kochira</i>	<i>kochira e</i>	<i>kochira kara</i>
	<i>kochira ni</i>	<i>kochira ni</i>	
D2	<i>soko</i>	<i>soko e</i>	<i>soko kara</i>
	<i>soko ni</i>	<i>soko ni</i>	
	<i>soko de</i>		
	<i>sochira</i>	<i>sochira e</i>	<i>sochira kara</i>
	<i>sochira ni</i>	<i>sochira ni</i>	
D3	<i>asoko</i>	<i>asoko e</i>	<i>asoko kara</i>
	<i>asoko ni</i>	<i>asoko ni</i>	
	<i>asoko de</i>		
	<i>achira</i>	<i>achira e</i>	<i>achira kara</i>
	<i>achira ni</i>	<i>achira ni</i>	
	<i>achira de</i>		

D1 = near speaker, D2 = near hearer, D3 = away from both

[AS-22] Khasi (Austroasiatic, Khasi-Palaung)

[KHASICL-BSI]

	Place	Goal	Source
SI	<i>hangno</i>	<i>shano</i>	<i>nangno</i>
	<i>haei</i>	<i>shaei</i>	<i>naei</i>
	<i>shano</i>		
	<i>shaei</i>		
D1	<i>hangne</i>	<i>hangne</i> <i>shane</i>	<i>nangne</i>
D2	<i>hangto</i>	<i>*hangto</i> <i>*shato</i>	<i>nangto</i>
D3	<i>hangtai</i>	<i>hangtai</i> <i>shatai</i>	<i>nangtai</i>
D4	<i>hangta</i>	<i>hangta</i> <i>shata</i>	<i>nangta</i>

D1 = proximal, D2 = visible, D3 = distal, D4 = invisible

[AS-23] Khmer (Austroasiatic, Khmeric)

[Haiman 2011, p.c.]

	Place	Goal	Source
S1	<i>na:</i> <i>aena:</i>	<i>na:</i> <i>aena:</i>	<i>pi: na:</i> <i>pi: ae na:</i>
D1	<i>nih</i> <i>ae nih</i> <i>ti: nih</i>	<i>nih</i> <i>ae nih</i> <i>ti: nih</i>	<i>pi: nih</i> <i>pi: ae nih</i> <i>pi: ti: nih</i>
D2	<i>nuh</i> <i>ae nuh</i> <i>ti: nuh</i>	<i>nuh</i> <i>ae nuh</i> <i>ti: nuh</i>	<i>pi: nuh</i> <i>pi: ae nuh</i> <i>pi: ti: nuh</i>

D1 = proximal, D2 = distal

[AS-24] Koḍava (Dravidian)

[Ebert 1996]

	Place	Goal	Source
S1	<i>elli</i>	<i>etti</i> <i>ettati</i>	<i>ellinji</i>
D1	<i>illi</i>	<i>itti</i> <i>ittati</i>	<i>illinji</i>
D2	<i>alli</i>	<i>atti</i> <i>attati</i>	<i>allinji</i>

D1 = proximal, D2 = distal

[AS-25] Korean (Koreanic)

[RNKSV; ¹KLB;]⁴

	Place	Goal	Source
S1	¹ <i>ōdi</i> <i>ōdi-e</i>	¹ <i>ōdi-ro</i> <i>ōdi-e</i>	¹ <i>ōdi-esō</i>
D1	<i>yōgi</i> <i>yōgi-e</i>	<i>yōgi-ro</i> <i>yōgi-e</i>	<i>yōgi-esō</i>
D2	<i>kōgi</i> <i>kōgi-e</i>	<i>kōgi-ro</i> <i>kōgi-e</i>	<i>kōgi-esō</i>
D3	<i>chōgi</i> <i>chōgi-e</i>	<i>chōgi-ro</i> <i>chōgi-e</i>	<i>chōgi-esō</i>

D1 = proximal, D2 = distal I, D3 = distal II

⁴ The Roman transcription is based on Lewin and Tschong Dae (1997).

[AS-26] Lamut (Tungusic)

[Benzing 1955]

	Place	Goal	Source
S1	<i>awug</i>	<i>awuskī</i>	<i>awgīc</i>
D1	<i>əl̄</i>	<i>əwaski</i> <i>ərtaki</i>	<i>ərgic</i>
D2	<i>tala</i>	<i>tawaski</i> <i>tartaki</i>	<i>targic</i>

D1 = proximal, D2 = distal

[AS-27] Lao (Tai-Kadai, Daic)

[Enfield 2007; ¹RLV15]

	Place	Goal	Source
S1	<i>saj3</i>	<i>saj3</i>	<i>tèè1 saj3</i>
D1	<i>nii4</i>	<i>nii4</i>	<i>¹tèè1 nii4</i>
D2	<i>phi4</i>	<i>phi4</i>	<i>*tèè1 phi4</i>
D3	<i>nan4</i>	<i>*nan4</i>	<i>¹tèè1 nan4</i>
D4	<i>han5</i>	<i>han5</i>	<i>*tèè1 han5</i>
D5	<i>phun5</i>	<i>phun5</i>	<i>tèè1 phun5</i>

D1 = unmarked, D2 = proximal, D3 = non-proximal, D4 = distal I, D5 = distal II

[AS-28] Limbu (Sino-Tibetan, Kiranti)

[van Driem 1987]

	Place	Goal	Source
S1	<i>a·tto·</i>	<i>a·tto·</i>	<i>a·tto·-nu</i> <i>a·tto·-lam</i>
D1	<i>kɔʔo·</i>	<i>kɔʔo·</i> <i>kɔtna</i>	<i>kɔʔo·-nu</i> <i>*kɔʔo·-lam</i>
D2	<i>khɛʔo·</i>	<i>khɛʔo·</i> <i>khetna</i>	<i>khɛʔo·-nu</i> <i>khɛʔo·-lam</i>
D3	<i>na·</i>	<i>na·</i>	<i>na·-nu</i>

D1 = proximal, D2 = non-proximal, D3 = distal

[AS-29] Malayalam (Dravidian)

[BCS 2017]

	Place	Goal	Source
S1	<i>eviTe</i>	<i>eviTe</i>	<i>eviTe ninnE</i>
D1	<i>iviTe</i>	<i>iviTe</i>	<i>iviTe ninnE</i>
D2	<i>aviTe</i>	<i>aviTe</i>	<i>aviTe ninnE</i>

D1 = proximal, D2 = distal

[AS-30] Manchu (Tungusic)

[Roth Li 2000; ¹Gorelova 2002]

	Place	Goal	Source
SI	¹ <i>aibade</i> <i>aibide</i> ¹ <i>aide</i> ¹ <i>ya de</i> <i>yabade</i>	¹ <i>aibade</i> <i>aibide</i> ¹ <i>aide</i> ¹ <i>ya de</i> <i>yabade</i> <i>absi</i> <i>yabaci</i>	¹ <i>aibaci</i> <i>aibici</i> ¹ <i>aibideri</i> ¹ <i>yaci</i>
D1	<i>ubade</i>	<i>ubade</i> <i>ebsi</i>	<i>ubaci</i>
D2	<i>tubade</i>	<i>tubade</i> ¹ <i>casi</i>	<i>tubaci</i>

D1 = proximal, D2 = distal

[AS-31] Mualang (Austronesian, Malayo-Sumbawan)

[Tjia 2007]

	Place	Goal	Source
SI	<i>dini</i>	<i>kikay</i>	<i>ari ni</i> <i>reni</i>
D1	<i>ditu'</i>	<i>kitu'</i>	<i>ari tu'</i>
D2	<i>dia'</i>	<i>kia'</i>	<i>ari nya'</i> <i>ari ia'</i> <i>ari dia'</i>
D3	<i>din</i>	<i>kin</i>	<i>ari nyin</i>

D1 = proximal, D2 = medial, D3 = distal

[AS-32] Muna (Austronesian, Celebic)

[van den Berg 1989, 1997, p.c.]

	Place	Goal	Source
SI	<i>hamai</i> <i>hamadi</i> <i>ne hamai</i> <i>ne hamadi</i>	<i>hamai</i> <i>hamadi</i> <i>ne hamai</i> <i>ne hamadi</i>	<i>hamai</i> <i>hamadi</i> <i>ne hamai</i> <i>ne hamadi</i>
D1	<i>ne ini</i>	<i>ne ini</i>	<i>ne ini</i>
D2	<i>we ini</i>	<i>we ini</i>	<i>we ini</i>
D3	<i>ne itu</i>	<i>ne itu</i>	<i>ne itu</i>
D4	<i>ne maitu</i>	<i>ne maitu</i>	<i>ne maitu</i>
D5	<i>ne watu</i>	<i>ne watu</i>	<i>ne watu</i>
D6	<i>ne nagha</i>	<i>ne nagha</i>	<i>ne nagha</i>

	Place	Goal	Source
D7	<i>ne waghaitu</i>	<i>ne waghaitu</i>	<i>ne waghaitu</i>

D1 = near speaker, unmarked, D2 = near speaker, neutral, D3 = near hearer, D4 = away from both, proximal, D5 = away from both, distal, neutral, D6 = away from both, invisible, D7 = away from both, past visible

[AS-33] Mundari (Austroasiatic, Mundaic) [Cook 1965]

	Place	Goal	Source
SI	<i>okore</i>	<i>okote</i>	<i>okoate</i>
D1	<i>nerē</i>	<i>nete</i>	<i>neate</i>
D2	<i>enre</i>	<i>ente</i>	<i>enate</i>
D3	<i>hanre</i>	<i>hante</i>	<i>hanete</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AS-34] Nicobarese, Car (Austroasiatic, Nicobaric) [NBRE]

	Place	Goal	Source
SI	<i>isuh</i>	<i>yih</i>	<i>añ yih</i> <i>ĩā-ang yih</i> <i>ĩēū-eung yih</i> <i>ĩama-ang yih</i>
D1	<i>(i)hih</i>	<i>(i)hih</i>	<i>(i)hih</i> <i>ĩā-ang (i)hih</i> <i>ĩēū-eung (i)hih</i> <i>ĩama-ang (i)hih</i>
D2	<i>(u)muh</i>	<i>(u)muh</i>	<i>(u)muh</i> <i>ĩā-ang (u)muh</i> <i>ĩēū-eung (u)muh</i> <i>ĩama-ang (u)muh</i>

D1 = proximal, D2 = distal

[AS-35] Ostyak (Uralic, Khantyic) [Gulyá 1966]

	Place	Goal	Source
SI	<i>kot</i>	<i>kōl</i> <i>kōlāpa</i>	<i>kol't'āy</i>
D1	<i>tāt</i> <i>tīm tāȳinā</i>	<i>tāy</i> <i>tāk</i> <i>tāyapā</i>	<i>*tālpilt</i> <i>tāltōy</i>

	Place	Goal	Source
D2	<i>ta</i> <i>tat</i>	<i>tayāpa</i> <i>tōy</i> <i>tōyāpa</i>	<i>taltāy</i> <i>taltōy</i> <i>tōltāy</i>

D1 = proximal, D2 = distal

[AS-36] Panjabi (Indo-European, Indo-Iranian)[Gill and Gleason 2013; ¹POV-BSI]

	Place	Goal	Source
S1	<i>kithē</i>	<i>kithē</i> <i>kidhara</i>	<i>kithōm</i>
D1	¹ <i>aithē</i> <i>ēthē</i>	¹ <i>aithē</i> ¹ <i>ēthē</i> ¹ <i>aidhara</i> <i>ēdhara</i>	¹ <i>aithōm</i> <i>ēthōm</i>
D2	<i>uthē</i>	<i>uthē</i> <i>ōdhara</i>	<i>uthōm</i>

D1 = proximal, D2 = distal

[AS-37] Persian (Indo-European, Indo-Iranian)

[Mahootian 1997; ¹Alawī and Lorenz 1993; ²Tisdall 1923]⁵

	Place	Goal	Source
S1	<i>koja</i>	<i>koja</i> ¹ <i>be koja</i>	<i>æz koja</i>
D1	<i>inja</i>	<i>inja</i> ¹ <i>be inja</i>	² <i>æz inja</i>
D2	<i>unja</i>	<i>unja</i> ² <i>be unja</i>	² <i>æz unja</i>

D1 = proximal, D2 = distal

[AS-38] Santali (Austroasiatic, Mundaic)

[SCLNT]

	Place	Goal	Source
S1	<i>okare(-<X>)</i>	<i>okate(-<X>)</i>	<i>oka khon(-<X>)</i>
D1	<i>nonḍe(-<X>)</i>	<i>nonḍe(-<X>)</i>	<i>nonḍe khon(-<X>)</i>
D2	<i>onḍe(-<X>)</i>	<i>onḍe(-<X>)</i>	<i>onḍe khon(-<X>)</i>

⁵ The transcription is taken from Mahootian (1997).

	Place	Goal	Source
D3	<i>hanḁ(-<X>)</i>	<i>hanḁ(-<X>)</i>	<i>*hanḁ khon(-<X>)</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AS-39] Tagalog (Austronesian, Greater Central Philippine)

[Werner Drossard, p.c.]

	Place		Goal		Source
	DEM	ADV	DEM	V	DEM
SI	<i>saan</i>	<i>nasaan</i> <i>saan naroon</i>	<i>saan</i>	ʌ	<i>saan</i> <i>buhat saan</i> <i>mula saan</i> <i>taga-saan</i>
D1	<i>dito</i> <i>rito</i>	<i>nandito</i> <i>narito</i> <i>naririto nandidito</i>	<i>dito</i> <i>rito</i>	<i>pumarito</i>	<i>dito</i> <i>buhat dito</i> <i>mula dito</i> <i>rito</i> <i>buhat rito</i> <i>mula rito</i>
D2	<i>diyan</i> <i>riyan</i>	<i>nandiyan</i> <i>nariyan</i> <i>naririyán</i> <i>nandidiyan</i>	<i>diyan</i> <i>riyan</i>	<i>pumariyan</i>	<i>diyan</i> <i>buhat diyan</i> <i>mula diyan</i> <i>riyan</i> <i>buhat riyan</i> <i>mula riyan</i>
D3	<i>doon</i> <i>roon</i>	<i>nandoon</i> <i>naroon</i> <i>naruroon</i>	<i>doon</i> <i>roon</i>	<i>pumaroon</i>	<i>doon</i> <i>buhat doon</i> <i>mula doon</i> <i>roon</i> <i>buhat roon</i> <i>mula roon</i>

D1 = near speaker, D2 = near hearer, D3 = away from both

[AS-40] Tamil (Dravidian)

[Schiffman 1999; ¹TAMILOV-BSI]

	Place	Goal	Source
SI	<i>engee</i>	<i>engee</i>	¹ <i>engeyrundu</i>
D1	<i>ingee</i>	<i>ingee</i>	¹ <i>ingeyrundu</i>
D2	<i>angee</i>	<i>angee</i>	<i>angeyrundu</i>

D1 = proximal, D2 = distal

[AS-41] Telugu (Dravidian) [Krishnamurti and Gwynn 1985; ¹TELOV-BSI]

	Place	Goal	Source
S1	<i>ekkaDa</i>	<i>ekkaDiki</i>	<i>ekkaDinunci</i> ¹ <i>ekkaDanunDi</i>
D1	<i>ikkaDa</i>	<i>ikkaDiki</i>	<i>ikkaDinunci</i> ¹ <i>ikkaDanunDi</i>
D2	<i>akkaDa</i>	<i>akkaDiki</i>	<i>akkaDanunci</i> ¹ <i>akkaDanunDi</i>

D1 = proximal, D2 = distal

[AS-42] Temiar (Austroasiatic, Aslian) [Benjamin 1976, 2016]

	Place	Goal	Source
S1	<i>lɔʔ</i> <i>ʔɛn-lɔʔ</i>	<i>ma-lɔʔ</i>	<i>num-lɔʔ</i>
D1	<i>doh</i> <i>ʔɛn-doh</i>	<i>ma-doh</i>	<i>num-doh</i>
D2	<i>naʔ</i> <i>ʔɛn-naʔ</i>	<i>ma-naʔ</i>	<i>num-naʔ</i>

D1 = proximal, D2 = distal

[AS-43] Thai (Tai-Kadai, Daic) [Smyth 2002]

	Place	Goal	Source
S1	<i>nǎy</i> <i>thīi nǎy</i>	<i>nǎy</i> <i>thīi nǎy</i>	<i>càak nǎy</i>
D1	<i>thīi nīi</i>	<i>thīi nīi</i>	<i>càak nīi</i>
D2	<i>thīi nân</i>	<i>thīi nân</i>	<i>càak thīi nân</i>
D3	<i>thīi nōon</i>	<i>*thīi nōon</i>	<i>*càak thīi nōon</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AS-44] Tuvinian (Turkic) [Anderson and Harrison 1999]

	Place	Goal	Source
S1	<i>kayda</i>	<i>kayaa</i> <i>kaynaar</i>	<i>kayiin</i> <i>kayiiirtan</i>
D1	<i>minda</i> <i>bortta</i>	<i>minaar</i> <i>bortta</i>	<i>moon</i>
D2	<i>inda</i> <i>oortta</i>	<i>inaar</i>	<i>oon</i> <i>oortan</i>

	Place	Goal	Source
D3	<i>döö inda</i> <i>döönde</i> <i>duunda</i>	NA	<i>döön</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AS-45] Udihe (Tungusic)

[Nikolaeva and Tolskaya 2001]

	Place	Goal	Source
SI	<i>j'e-du</i> <i>j'e-le</i>	<i>j'e-uxi</i>	<i>j'e-digi</i>
D1	<i>o-du</i> <i>o-lo</i> <i>te:ti-le</i>	<i>a-uxi</i> <i>i-tigi</i>	<i>o-digi</i>
D2	<i>(u)ta-du</i> <i>(u)ta-la</i> <i>ta:ti-le</i>	<i>(u)ta-uxi</i> <i>(u)ta-tigi</i>	<i>(u)ta-digi</i>

D1 = proximal, D2 = distal

[AS-46] Vietnamese (Austroasiatic, Vietic)

[Thompson 1965; ¹Vũ 1983; ²Nguyen-Dingh-Hoa 1966]

	Place	Goal	Source
SI	<i>đâu</i> <i>ở đâu</i> ¹ <i>tại đâu</i>	<i>đâu</i>	¹ <i>từ đâu</i>
D1	<i>đây</i> <i>ở đây</i> ¹ <i>tại đây</i>	<i>đây</i>	<i>từ đây</i>
D2	<i>đấy</i> ¹ <i>ở đấy</i> ¹ <i>tại đấy</i> <i>đó</i> <i>ở đó</i> ¹ <i>tại đó</i> ¹ <i>kia</i> ¹ <i>ở kia</i> ¹ <i>tại kia</i>	<i>đấy</i> <i>*đó</i> ² <i>kia</i>	¹ <i>từ đấy</i> ¹ <i>từ đó</i> ¹ <i>từ kia</i>

D1 = proximal, D2 = distal

[AS-47] Vogul (Uralic, Mansi)

[Kálmán 1965]

	Place	Goal	Source
S1	<i>χōt</i>	<i>χotal'</i>	<i>χotal</i>
D1	<i>tīt</i>	<i>tīj</i>	<i>tījł</i>
D2	<i>tot</i>	<i>tuw</i> <i>tuwl'e</i>	<i>tuwl</i>

D1 = proximal, D2 = distal

[AS-48] Wa (Austroasiatic, Palaungic)

[WCL]

	Place	Goal	Source
S1	<i>dee mawx</i>	<i>dee mawx</i>	<i>khaing dee mawx</i>
D1	<i>tin</i>	<i>tin</i>	<i>khaing tin</i>
D2	<i>tan</i>	<i>tan</i>	<i>khaing tan</i>
D3	<i>tio</i> <i>tε</i>	<i>tio</i> <i>tε</i>	<i>khaing tio</i> <i>khaing tε</i>

D1 = proximal, D2 = distal I, D3 = distal II

[AS-49] Yugh (Yeniseian)

[Werner 1997]

	Place	Goal	Source
S1	<i>bisa^h:ŋ</i>	<i>bire^h:š</i>	<i>biri:r</i> <i>birə:r</i>
D1	<i>kidagej</i> <i>¹kin'</i>	<i>kin^h:š</i> <i>ŋgej</i>	<i>kin^h:r</i> <i>kin^h:ə:r</i>
D2	<i>¹tun'</i>	<i>tun^h:š</i>	<i>tun^h:r</i>
D3	<i>kadagej</i> <i>¹kan</i>	<i>kan^h:š</i>	<i>kan^h:r</i> <i>kan^h:ə:r</i>

D1 = proximal, D2 = medial, D3 = distal

[AS-50] Yukaghir, Kolyma (Yukaghir)

[Maslova 2003]

	Place	Goal	Source
S1	<i>qo-n</i> <i>qaduon-ge</i>	<i>qa-ŋide</i> <i>qajde</i>	<i>qo-t</i> <i>qadōn-get</i>
D1	<i>tī</i>	<i>ti-ŋide</i>	<i>tī-t</i>
D2	<i>adā</i>	<i>ada-ŋide</i> <i>adi-ŋide</i>	<i>adā-t</i>
D3	<i>tā</i>	<i>tā-ŋide</i>	<i>tā-t</i>

D1 = proximal, D2 = distal, separated, D3 = distal, invisible

Appendix IV: Europe

[EU-1] Adyghe(Abkhaz-Adyge)

[Jakolev and Aschamaf 1941]

	Place	Goal	Source
SI	<i>tə-dǎ</i>	<i>tə-dǎ</i>	<i>tə-dǎ</i>
D1	<i>mə-dǎ</i>	<i>mə-dǎ</i>	<i>mə-dǎ</i>
D2	<i>mo-dǎ</i>	<i>mo-dǎ</i>	<i>mo-dǎ</i>
D3	<i>ā-dǎ</i>	<i>ā-dǎ</i>	<i>ā-dǎ</i>

D1 = proximal, D2 = distal, visible, D3 = distal, invisible

[EU-2] Albanian (Indo-European, Albanian)

[Buchholz and Fiedler 1987; ¹Newmark et al. 1982; ²ALB]

	Place	Goal	Source
SI	<i>ku</i>	¹ <i>ku</i> <i>nga</i>	<i>nga</i>
D1 A	<i>këtu</i>	<i>këtu</i>	<i>prej këtu</i> ² <i>nga këtu</i>
D1 B	<i>këtej</i>	<i>këtej</i>	<i>së këtejmi</i> <i>që këtej</i> ² <i>prej këtej</i>
D2 A	<i>atje</i>	<i>atje</i>	<i>prej atje</i> ² <i>nga atje</i>
D2 B	<i>andej</i>	<i>andej</i>	<i>së andejmi</i> <i>që andej</i> ² <i>prej andej</i>

D1 A = proximal, specific, D1 B = proximal, unspecific, D2 A = distal, specific, D2 B = distal, unspecific

[EU-3] Basque (Basque)

[Alan R. King, p.c.; ¹Bendel 2006]

	Place	Goal	Source
SI	<i>no(-)n</i>	<i>no-ra</i>	<i>non-dik</i>
D1	<i>heme(-)n</i>	<i>hon-a</i>	<i>hemen-dik</i>
D2	<i>hor</i>	¹ <i>hor-ra</i>	<i>hor-tik</i>
D3	<i>ha-n</i>	<i>ha-ra</i>	<i>han-dik</i>

D1 = proximal, D2 = distal I, D3 = distal II

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[EU-4] Belarusian (Indo-European, Slavic) [Kolas et al. 1953]

	Place	Goal	Source
S1	<i>dze</i>	<i>kudy</i>	<i>adkul'</i> <i>skul'</i>
D1	<i>tut</i>	<i>sjudy</i>	<i>adsjul'</i> <i>adgêtul'</i>
D2	<i>tam</i>	<i>tudy</i>	<i>adtjul'</i>

D1 = proximal, D2 = distal

[EU-5] Bulgarian (Indo-European, Slavic) [Arnaudov 1984; ¹Bontcheva 1999]

	Place	Goal	Source
S1	<i>kāde</i> <i>gde</i>	<i>kāde</i> <i>nakāde</i>	<i>otkāde</i>
D1	<i>tuk</i>	¹ <i>tuk</i> <i>nasam</i>	<i>ottuk</i>
D2	<i>tam</i>	¹ <i>tam</i> <i>natam</i>	<i>ottam</i>

D1 = proximal, D2 = distal

[EU-6] Catalan (Indo-European, Romance) [BCI]

	Place	Goal	Source
S1	<i>on</i>	<i>on</i>	<i>d'on</i>
D1	<i>aquí</i>	<i>aquí</i> <i>cap aquí</i>	<i>d'aquí</i>
D2	<i>allí</i>	<i>allí</i> <i>cap allí</i>	<i>d'allí</i>
D3	<i>allà</i>	<i>allà</i> <i>cap allà</i>	<i>d'allà</i>

D1 = proximal, D2 = distal I, D3 = distal II

[EU-7] Croatian (Indo-European, Slavic) [Petra Novina, p.c.; Uroić and Hurm 1993]

	Place	Goal	Source
S1	<i>gdje</i>	<i>gdje</i> <i>kamo</i> <i>kud(a)</i>	<i>odakle</i> <i>otkud(a)</i>
D1	<i>ovdje</i> <i>tu</i>	<i>ovdje</i> <i>ovamo</i>	<i>odavde</i>

	Place	Goal	Source
D2	<i>ondje</i> <i>tamo</i>	<i>tamo</i> <i>onamo</i>	<i>odande</i>

D1 = proximal, D2 = distal

[EU-8] Czech (Indo-European, Slavic)

[DeBray 1980; ¹CESKMS]

	Place	Goal	Source
S1	<i>kde</i>	<i>kam</i>	<i>odkud</i>
D1	<i>zde</i> <i>tu</i> <i>tady</i>	<i>sem</i>	<i>odsud</i> ¹ <i>odtud</i>
D2	<i>tam</i>	<i>tam</i>	¹ <i>odtamtud</i> ¹ <i>odtud</i>

D1 = proximal, D2 = distal

[EU-9] Danish (Indo-European, Germanic)

[Andrese 2007]

	Place	Goal	Source
S1	<i>hvor</i> <i>hvorhenne</i>	<i>hvorhen</i>	<i>hvorfra</i>
D1	<i>her</i> <i>herhenne</i>	<i>herhen</i> <i>herhid</i>	<i>herfra</i>
D2	<i>der</i> <i>derhenne</i>	<i>derhen</i>	<i>derfra</i>

D1 = proximal, D2 = distal

[EU-10] Dutch (Indo-European, Germanic)

[van Dam 1970; ¹Donaldson 1981]

	Place	Goal	Source
S1	<i>waar</i>	<i>warheen</i> <i>waarnaartoe</i>	<i>waarvandaan</i>
D1	<i>hier</i>	<i>hierheen</i> <i>hiernaartoe</i>	<i>hiervandaan</i> <i>van hier</i>
D2	<i>daar</i> ¹ <i>er</i>	<i>daarheen</i> <i>daarnaartoe</i> ¹ <i>ernaartoe</i>	<i>daarvandaan</i> <i>van daar</i> ¹ <i>ervandaan</i>

D1 = proximal, D2 = distal

[EU-11] English (Indo-European, Germanic) [Eastwood 1994]

	Place	Goal	Source
S1	<i>where</i>	<i>where</i>	<i>where from</i>
D1	<i>here</i>	<i>here</i>	<i>from here</i>
D2	<i>there</i>	<i>there</i>	<i>from there</i>

D1 = proximal, D2 = distal

[EU-12] Estonian (Uralic) [Hasselblatt 1995]

	Place	Goal	Source
S1	<i>kus</i>	<i>kuhu</i>	<i>kust</i>
D1	<i>siin</i>	<i>siia</i>	<i>siit</i>
D2	<i>seal</i>	<i>sinna</i>	<i>sealt</i>

D1 = proximal, D2 = distal

[EU-13] Faroese (Indo-European, Germanic) [Timmermann 2013]

	Place	Goal	Source
S1	<i>hvar</i>	<i>hvar</i> <i>hvagar</i>	<i>hvaðan</i> <i>hvaðani</i> <i>hvar frá</i>
D1	<i>her</i>	<i>her</i> <i>higar</i>	<i>hiðan</i> <i>hiðani</i> <i>hiðanifrá</i>
D2	<i>har</i>	<i>*har</i> <i>hagar</i>	<i>haðan</i> <i>haðani</i> <i>haðanifrá</i>

D1 = proximal, D2 = distal

[EU-14] Finnish (Uralic) [White 2006]

	Place	Goal	Source
S1	<i>missä</i>	<i>mihin</i>	<i>mistä</i>
D1	<i>täällä</i>	<i>tänne</i>	<i>täältä</i>
D2	<i>siellä</i>	<i>sinne</i>	<i>sieltä</i>
D3	<i>tuolla</i>	<i>tuonne</i>	<i>tuolta</i>

D1 = proximal, D2 = distal I, D3 = distal II

[EU-15] French (Indo-European, Romance) [Arleville 1798; 'BDS]

	Place	Goal	Source
S1	<i>où</i>	<i>où</i>	<i>d'où</i>
D1	<i>ici</i>	<i>ici</i>	<i>d'ici</i>
D2	<i>là</i>	<i>là</i>	<i>de là</i>
D3	<i>là-bas</i>	¹ <i>là-bas</i>	¹ <i>de là[-bas]</i>

D1 = proximal, D2 = distal I, D3 = distal II

[EU-16] Georgian (Kartvelian) [Tamar Reseck, p.c.]

	Place	Goal	Source
S1	<i>sad</i>	<i>sad</i> <i>sait</i>	<i>saidan</i>
D1	<i>ak</i> <i>ager</i>	<i>ak</i> <i>akit</i> <i>aketken</i>	<i>akedan</i>
D2	<i>mand</i>	<i>mand</i> <i>maket</i> <i>maketken</i>	<i>makedan</i>
D3	<i>ik</i>	<i>ik</i> <i>ikit</i> <i>ikitken</i>	<i>ikidan</i>

D1 = near speaker, D2 = near hearer, D3 = away from both

[EU-17] German (Indo-European, Germanic) [own native speaker competence]

	Place	Goal	Source
S1	<i>wo</i>	<i>wohin</i>	<i>woher</i> <i>von wo</i>
D1	<i>hier</i>	<i>hierhin</i> <i>hierher</i> <i>nach hier</i>	<i>hierher</i> <i>von hier</i>
D2	<i>da</i>	<i>dahin</i> <i>nach da</i>	<i>daher</i> <i>von da</i>
D3	<i>dort</i>	<i>dorthin</i> <i>nach dort</i>	<i>dorthier</i> <i>von dort</i>

D1 = proximal, D2 = neutral, D3 = distal

[EU-18] Greek, Modern (Indo-European, Graeco-Phrygian)

[Holton et al. 2004; ¹FPB]

	Place	Goal	Source
S1	<i>poú</i>	<i>poú</i>	<i>apó poú</i>
D1	<i>edó</i>	¹ <i>edó</i> <i>do</i>	¹ <i>apó edó</i> <i>apó do</i>
D2	<i>ekeí</i>	<i>ekeí</i>	¹ <i>apó ekeí</i>

D1 = proximal, D2 = distal

[EU-19] Hungarian (Uralic)

[Ragoncsa 2010]

	Place	Goal	Source
S1	<i>hol</i>	<i>hova</i>	<i>honnan</i>
D1	<i>itt</i>	<i>ide</i>	<i>innen</i>
D2	<i>ott</i>	<i>oda</i>	<i>onnan</i>

D1 = proximal, D2 = distal

[EU-20] Icelandic (Indo-European, Germanic)

[Cleasby et al. 1992]

	Place	Goal	Source
S1	<i>hvar</i>	<i>hvert</i>	<i>hvaðan</i>
D1	<i>hér</i> <i>hérna</i>	<i>hér</i> <i>hingað</i>	<i>hérna</i>
D2	<i>þar</i> <i>þarna</i>	<i>þar</i> <i>þangað</i>	<i>þaðan</i>

D1 = proximal, D2 = distal

[EU-21] Irish (Indo-European, Celtic)

[Ó Siadhail 1988; ¹ABN]

	Place	Goal	Source
S1	¹ <i>cá</i>	¹ <i>cá</i>	¹ <i>cá has</i> ¹ <i>cad as</i>
D1	<i>anseo</i>	<i>anseo</i>	<i>as seo</i>
D2	¹ <i>ann</i> <i>ansín</i>	¹ <i>ann</i> <i>ansín</i>	¹ <i>as sin</i>
D3	<i>ansiúd</i>	¹ <i>ansiúd</i>	¹ <i>as siúd</i>

D1 = proximal, D2 = distal I, D3 = distal II

[EU-22] Italian (Indo-European, Romance) [Dardano and Trifone 1995]

	Place	Goal	Source
SI	<i>dove</i>	<i>dove</i>	<i>da dove</i>
D1 A	<i>qui</i>	<i>qui</i>	<i>di qui</i> <i>da qui</i>
D1 B	<i>qua</i>	<i>qua</i>	<i>di qua</i> <i>da qua</i>
D2 A	<i>lì</i>	<i>lì</i>	<i>di lì</i> <i>da lì</i>
D2 B	<i>là</i>	<i>là</i>	<i>di là</i> <i>da là</i>

D1 A = proximal, D1 B = proximal, expanded, D2 A = distal, D2 B = distal, expanded

[EU-23] Khwarshi (Nakh-Daghestanian, Tsezic) [Khalilova 2009]

	Place	Goal	Source
SI	<i>na</i>	<i>na-l</i> <i>na-yul</i>	<i>na-z</i>
D1	<i>ide</i>	<i>ide-l</i> <i>ide-yul</i>	<i>ide-zi</i>
D2	<i>a<X>de</i> <i>a<X>e</i>	<i>a<X>de-l</i> <i>a<X>de-yul</i>	<i>a<X>de-zi</i>
D3	<i>hobode</i>	<i>hobode-l</i> <i>hobode-yul</i>	<i>hobode-zi</i>
D4	<i>ono</i>	<i>ono-l</i> <i>ono-yul</i>	<i>ono-z</i>
D5	<i>o<X>ne</i> <i>o<X>e</i>	<i>o<X>ne-l</i> <i>o<X>ne-yul</i>	<i>o<X>ne-zi</i>
D6	<i>homone</i>	<i>homone-l</i> <i>homone-yul</i>	<i>homone-zi</i>

D1 = proximal, D2 = near speaker, D3 = near hearer, D4 = distal, D5 = far from speaker, D6 = far from hearer

[EU-24] Latvian (Indo-European, Baltic) [Aina Urdze, p.c.]

	Place	Goal	Source
SI	<i>kur</i>	<i>kur</i> <i>kurp</i> <i>uz kurieni</i>	<i>no kurienes</i>
D1	<i>šeit</i>	<i>šurp</i> <i>uz šejieni</i>	<i>no šejienes</i>

	Place	Goal	Source
D2	<i>tur</i>	<i>tur</i> <i>turp</i> <i>uz turieni</i>	<i>no turienes</i>

D1 = proximal, D2 = distal

[EU-25] Lezgian (Nakh-Daghestanian, Daghestanian) [Haspelmath 1993]

	Place	Goal	Source
S1	<i>hina</i> <i>hinal</i>	<i>hiniz</i>	<i>hinaj</i>
D1	<i>ina</i> <i>inal</i>	<i>iniz</i> <i>íniq^h</i>	<i>inaj</i> <i>inlaj</i>
D2	<i>ana</i> <i>anal</i> <i>hana</i> <i>hanal</i>	<i>aniz</i> <i>aniq^h</i> <i>haniz</i>	<i>anaj</i> <i>anlaj</i> <i>hanlaj</i>

D1 = proximal, D2 = distal

[EU-26] Lithuanian (Indo-European, Baltic) [Ambrasas 2006]

	Place	Goal	Source
S1	<i>kuř</i>	<i>kuř</i> <i>į kuř</i>	<i>iř kuř</i> <i>nuo kuř</i>
D1	<i>čią</i>	<i>čia</i> <i>į čią</i>	<i>iř čią</i> <i>nuo čią</i>
D2	<i>teñ</i>	<i>teñ</i> <i>į teñ</i>	<i>iř teñ</i> <i>nuo teñ</i>

D1 = proximal, D2 = distal

[EU-27] Low German (Indo-European, Germanic) [Kevin Behrens, p.c.]

	Place	Goal	Source
S1	<i>wo</i> <i>woneem</i> <i>neem</i>	<i>wo=hen</i> <i>woneem [...] hen</i> <i>neem [...] hen</i> <i>na wo=hen</i> <i>na woneem [...] hen</i> <i>wo=up to</i> <i>woneem [...] up to</i> <i>neem [...] up to</i> <i>wo=na to</i>	<i>wo=her</i> <i>woneem [...] her</i> <i>neem [...] her</i> <i>vun wo</i> <i>vun wo [...] weg</i> <i>vun wo=her</i> <i>wo=vun</i> <i>woneem [...] vun</i> <i>neem [...] vun</i>

	Place	Goal	Source
		<i>woneem [...] na to</i> <i>neem [...] na to</i> <i>na wo</i> <i>na woneem</i> <i>na wo [...] to</i> <i>na woneem [...] to</i> <i>na wo=up [...] to</i> <i>na woneem [...] up to</i> <i>up wo to</i> <i>up woneem to</i>	<i>wo=vun af</i> <i>woneem [...] vun af</i> <i>neem [...] vun af</i> <i>wo [...] weg</i> <i>woneem [...] weg</i> <i>neem [...] weg</i>
D1	<i>hier</i>	<i>hierher</i> <i>hierhen</i> <i>na hier</i> <i>na hierhen</i> <i>hier up to</i> <i>hier na to</i> <i>na hier to</i> <i>na hier up to</i> <i>up hier to</i>	<i>hierher</i> <i>vun hier</i> <i>hiervun</i> <i>hiervun af</i> <i>hier weg</i> <i>vun hier weg</i>
D2	<i>daar</i>	<i>daarhen</i> <i>na daar</i> <i>daar up to</i> <i>daar na to</i> <i>na daar to</i> <i>na daar up to</i> <i>up daar to</i>	<i>daarher</i> <i>vun daar</i> <i>daarvun</i> <i>daarvun af</i> <i>daar weg</i> <i>vun dar af</i>

D1 = proximal, D2 = distal

[EU-28] Macedonian (Indo-European, Slavic)

[Elena Lüke, p.c., ¹Friedman 2002, ²LPP Macedonian]

	Place	Goal	Source
SI	<i>kade</i> <i>kaj</i>	<i>(na) kade</i> ² <i>kaj</i>	<i>otkade</i>
D1	<i>ovde(ka)</i> <i>tuka</i>	<i>ovde(ka)</i> <i>tuka</i> <i>(na) vamu</i>	<i>odovde</i> <i>od tuka</i>
D2	<i>tamu</i>	<i>(na) tamu</i>	<i>ottamu</i> ¹ <i>otade</i>
D3	<i>onamu</i>	<i>natamu</i>	<i>od onamu</i> <i>ottamu</i>

D1 = proximal, D2 = distal, D3 = far distal

[EU-29] Maltese (Afro-Asiatic, Semitic)

[Thomas Stolz, p.c.]

	Place	Goal	Source
S1	<i>fejn</i>	<i>fejn</i>	<i>minn fejn</i> <i>mnejn</i>
D1	<i>hawn</i>	<i>hawn</i>	<i>minn hawn</i>
D2	<i>hemm</i>	<i>hemm</i>	<i>minn hemm</i>

D1 = proximal, D2 = distal

[EU-30] Norwegian (Indo-European, Germanic)

[Schirmer 2011]

	Place	Goal	Source
S1	<i>hvor</i>	<i>hvorhen</i>	<i>hvorfra</i>
D1	<i>her</i>	<i>hit</i>	<i>herfra</i>
D2	<i>der</i>	<i>dit</i>	<i>derfra</i>

D1 = proximal, D2 = distal

[EU-31] Old Church Slavonic (Indo-European, Slavic)

[Lunt 2001]

	Place	Goal	Source
S1	<i>къде</i>	<i>kamo</i> <i>къдѣ</i>	<i>къду</i> <i>къдѣ</i> <i>отъ къду</i>
D1	<i>съде</i>	<i>сѣмо</i>	<i>съду</i> <i>съдѣ</i> <i>сотъ къду</i>
D2	<i>ту</i>	<i>tamo</i>	<i>тѣду</i> <i>тѣдѣ</i> <i>отъ къду</i>
D3	<i>онѣде</i>	<i>ovamo</i>	<i>ovѣду</i>
D4	<i>онѣде</i>	<i>onamo</i>	<i>onѣду</i>

D1 = proximal, D2 = distal, D3 = indifferent here=there, D4 = far distal

[EU-32] Polish (Indo-European, Slavic)

[Kovaleva and Mitronova 2001]

	Place	Goal	Source
S1	<i>gdzie</i>	<i>gdzie</i> <i>dokąd</i>	<i>skąd</i>
D1	<i>tu</i> <i>tutaj</i>	<i>tu</i> <i>tutaj</i>	<i>stąd</i>

	Place	Goal	Source
D2	<i>tam</i>	<i>tam</i>	<i>stamtqđ</i>

D1 = proximal, D2 = distal

[EU-33] Portuguese (Indo-European, Romance)

[Dicionário de alemão português 1995]

	Place	Goal	Source
S1	<i>onde</i>	<i>para onde</i> <i>aonde</i>	<i>donde</i> <i>de onde</i>
D1	<i>aqui</i> <i>cá</i>	<i>para aqui</i> <i>cá</i> <i>para cá</i>	<i>daqui</i> <i>de cá</i>
D2	<i>aí</i>	<i>aí</i> <i>para aí</i>	<i>daí</i>
D3	<i>ali</i>	<i>ali</i> <i>para ali</i>	<i>dali</i>
D4	<i>lá</i>	<i>lá</i> <i>para lá</i>	<i>de lá</i>
D5	<i>acolá</i>	<i>acolá</i>	<i>dacolá</i>

D1 = proximal, D2 = near hearer/medial I, D3 = away from both/medial II, D4 = distal I, D5 = distal II

[EU-34] Romani, Moldovan (Indo-European, Indo-Iranian)

[Oslon 2018]

	Place	Goal	Source
S1	<i>kâj</i>	<i>kâj</i> <i>karîng</i>	<i>katâr</i>
D1	<i>kaçê</i> <i>katkâ</i>	<i>ordê</i>	<i>kathâr</i> <i>kacâr</i> <i>katkâr</i> <i>katkâl</i>
D2	<i>(k)ocê</i>	<i>int'â</i>	<i>(k)othâr</i> <i>(k)ocâr</i> <i>int'â</i>

D1 = proximal, D2 = distal

[EU-35] Romanian (Indo-European, Romance)

[Gönczöl-Davies 2008; ¹Stolz et al. 2017 ; ²NTLR, ³Iliescu 1981]

	Place	Goal	Source
S1	<i>unde</i>	<i>unde</i> <i>încotro</i>	<i>de unde</i> ¹ <i>dincotro</i> ¹ <i>dincolo</i>
D1	<i>aici</i>	<i>aici</i> ³ <i>încoace</i>	<i>de aici</i>
D2	<i>acolo</i>	² <i>acolo</i> ³ <i>întracolo</i>	² <i>de acolo</i>

D1 = proximal, D2 = distal

[EU-36] Rumantsch (Indo-European, Romance)

[<http://www.pledarigrond.ch/rumantschgrischun/>]

	Place	Goal	Source
S1	<i>nua</i>	<i>nua</i>	<i>danunder</i>
D1	<i>qua</i>	<i>qua</i> <i>nâ qua</i> <i>fin qua</i>	<i>da qua</i> <i>da qua nâ</i>
D2	<i>là</i>	<i>là</i> <i>vi là</i> <i>da là vi</i>	<i>da là</i> <i>da là nâ</i>

D1 = proximal, D2 = distal

[EU-37] Russian (Indo-European, Slavic)

[Nataliya Levkovych, p.c.]

	Place	Goal	Source
S1	<i>gde</i>	<i>kuda</i>	<i>otkuda</i>
D1	<i>zdes'</i>	<i>sjuda</i>	<i>otsjuda</i>
D2	<i>tam</i>	<i>tuda</i>	<i>ottuda</i>

D1 = proximal, D2 = distal

[EU-38] Saami, Skolt (Uralic)

[Feist 2010]

	Place	Goal	Source
S1	<i>ko'st</i>	<i>koozz</i>	<i>ko'st</i>
D1	<i>tääi'b</i> <i>tääi'ben</i>	<i>tii'k̄</i>	<i>tääi'b</i> <i>tääi'ben</i>
D2	<i>to'b</i> <i>to'ben</i>	<i>tok</i>	<i>to'b</i> <i>to'ben</i>

	Place	Goal	Source
D3	<i>ku'k̃ken</i>	<i>kookkas</i>	<i>ku'k̃ken</i>

D1 = proximal, D2 = distal I, D3 = distal II

[EU-39] Scots-Gaelic (Indo-European, Celtic) [Gillies 2010; ¹ABIG]

	Place	Goal	Source
SI	<i>càit(e)</i>	¹ <i>càit(e)</i>	¹ <i>có as</i> ¹ <i>cia as</i>
D1	<i>an seo</i>	<i>an seo</i>	¹ <i>à seo</i> ¹ <i>as a seo</i>
D2	<i>an sin</i> <i>ann</i>	<i>an sin</i> <i>ann</i>	¹ <i>à sin</i> ¹ <i>as a sin</i>
D3	<i>an siud</i>	<i>an siud</i>	* ¹ <i>à siud</i> * ¹ <i>as a siud</i>

D1 = proximal, D2 = distal I, D3 = distal II

[EU-40] Serbian (Indo-European, Slavic) [DeBray 1980; ¹Hammond 2005]

	Place	Goal	Source
SI	<i>gde</i>	¹ <i>gde</i> <i>kud(a)</i>	<i>otkud(a)</i> <i>odakle</i>
D1	¹ <i>tu</i> <i>ovde</i>	<i>ovamo</i>	<i>odavde</i>
D2	<i>tamo</i> ¹ <i>onde</i>	<i>tamo</i> <i>onamo</i>	¹ <i>odande</i>

D1 = proximal, D2 = distal

[EU-41] Slavomolisano (Indo-European, Slavic) [Breu and Piccoli 2000]

	Place	Goal	Source
SI	<i>di</i>	<i>di</i> <i>kuda</i>	<i>jiskla</i>
D1	<i>oda</i>	<i>vuda</i>	<i>zoda</i> <i>zoma</i>
D2	<i>tama</i> <i>tota</i>	<i>nakonama</i> <i>onama</i>	<i>znonda</i>

D1 = proximal, D2 = distal

[EU-42] Slovak (Indo-European, Slavic) [DeBray 1980; ¹Short 1993]

	Place	Goal	Source
SI	<i>kde</i>	<i>kde</i> <i>kam</i>	<i>odk(ad)ial'</i> ¹ <i>skadial</i> ¹ <i>odkade</i> ¹ <i>skade</i>
D1	<i>tu</i> <i>tuna</i>	<i>sem</i>	¹ <i>odsud</i> <i>odtiaľto</i>
D2	<i>tam</i> ¹ <i>tamto</i>	<i>ta</i> ¹ <i>tam</i> <i>tadial'</i>	<i>odtiaľ'</i>

D1 = proximal, D2 = distal

[EU-43] Slovenian (Indo-European, Slavic) [Tomšič 1974]

	Place	Goal	Source
SI	<i>kje</i> <i>kod</i>	<i>kam</i> <i>kamor</i>	<i>odkod</i> <i>od koder</i>
D1	<i>tu</i> <i>tukaj</i> <i>tod</i>	<i>tu</i> <i>sem</i>	<i>od tukaj</i> <i>odtod</i>
D2	<i>tam</i>	<i>tja</i>	<i>odondod</i> <i>od tam</i>

D1 = proximal, D2 = distal

[EU-44] Sorbian, Lower (Indo-European, Slavic) [DeBray 1980]

	Place	Goal	Source
SI	<i>žo</i>	<i>hdže</i>	<i>zwotkel</i>
D1	<i>tudy</i> <i>how</i>	<i>sem</i> <i>how</i>	<i>wotsal</i>
D2	<i>tam</i>	<i>dotam</i>	<i>wottudy</i> <i>z tudy</i>

D1 = proximal, D2 = distal

[EU-45] Sorbian, Upper (Indo-European, Slavic) [DeBray 1980]

	Place	Goal	Source
SI	<i>hdže</i>	<i>hdže</i>	<i>zwotkel</i>
D1	<i>tu</i> <i>jow</i>	<i>sem</i> <i>jow</i>	<i>wotsal</i>

	Place	Goal	Source
D2	<i>tam</i>	<i>dotam</i>	<i>wottudy</i> <i>z tudy</i>

D1 = proximal, D2 = distal

[EU-46] Spanish (Indo-European, Romance) [Lüdtke 2015]

	Place	Goal	Source
SI	<i>dónde</i>	<i>adónde</i>	<i>de dónde</i>
D1	<i>aquí</i>	<i>(hacia) aquí</i>	<i>de aquí</i>
D2	<i>ahí</i>	<i>hacia ahí</i>	<i>de ahí</i>
D3	<i>allí</i>	<i>allí</i>	<i>de allí</i>
D4	<i>acá</i>	<i>para acá</i>	<i>de acá</i>
D5	<i>allá</i>	<i>para allá</i>	<i>de allá</i>

D1 = proximal I/near speaker, D2 = proximal II, D3 = medial I/near hearer, D4 = medial II/diffuse, D5 = distal

[EU-47] Swedish (Indo-European, Germanic) [Engbrandt-Heider 2007]

	Place	Goal	Source
SI	<i>var</i>	<i>vart</i>	<i>varifrån</i>
D1	<i>här</i>	<i>hit</i>	<i>härifrån</i>
D2	<i>där</i>	<i>dit</i>	<i>därifrån</i>

D1 = proximal, D2 = distal

[EU-48] Turkish (Turkic) [Lewis 1967]

	Place	Goal	Source
SI	<i>nerede</i>	<i>nereye</i>	<i>nereden</i>
D1	<i>burada</i>	<i>buraya</i>	<i>buradan</i>
D2	<i>şurada</i>	<i>şuraya</i>	<i>şuradan</i>
D3	<i>orada</i>	<i>oraya</i>	<i>oradan</i>

D1 = proximal, D2 = medial, D3 = distal

[EU-49] Ukrainian (Indo-European, Slavic)

[Nataliya Levkovych, p.c.]

	Place	Goal	Source
S1	<i>de</i>	<i>kudy</i>	<i>zvidky</i>
D1	<i>tut</i>	<i>sjudy</i>	<i>zvidsy</i>
D2	<i>tam</i>	<i>tudy</i>	<i>zvidty</i>

D1 = proximal, D2 = distal

[EU-50] Welsh (Indo-European, Celtic)

[Uned Iaith Genedlaethol Cymru 1998; ¹BCND]

	Place	Goal	Source
S1	<i>ble</i>	<i>ble</i> <i>i ble</i>	<i>o ble</i>
D1	<i>yma</i>	<i>yma</i>	¹ <i>oddi yma</i>
D2	<i>yna</i>	<i>yna</i>	¹ <i>oddi yna</i>

D1 = proximal, D2 = distal

Appendix V: Oceania

[OC-1] Abau (Sepik, Upper) [Lock 2011; ¹AAUNT]

	Place	Goal	Source
SI	<i>perey</i>	<i>perey</i>	¹ <i>perey suko</i>
D1	<i>erey</i>	* <i>erey</i>	¹ <i>erey</i>
	<i>o-</i>	¹ <i>so-</i> ¹ <i>o-</i>	<i>so-</i> * <i>o-</i>
D2	<i>serey</i>	<i>so-</i> ¹ <i>serey</i>	<i>so-</i> ¹ <i>serey</i>

D1 = proximal, D2 = distal

[OC-2] Abui (Timor-Alor-Pantar, Alor) [Kratochvíl 2007]

	Place	Goal	Source
SI	<i>te</i> <i>te mai</i>	<i>te=ng</i>	<i>te</i> <i>te mai</i>
D1	<i>do</i> (speaker) <i>to</i> (hearer) <i>ma_v</i> ‘be.prox (speaker)’ <i>ta_v</i> ‘be.prox (hearer)’	<i>me_v</i> ‘come’	NA
D2	<i>o</i> (‘ <i>ô</i> ‘low’, ‘ <i>ó</i> ‘high’) <i>lo</i> (speaker) <i>yo</i> (hearer) <i>la_v</i> ‘be.med (speaker)’ <i>fa_v</i> ‘be.med (hearer)’	<i>o</i> [<i>he-n</i> + static V] [= <i>n(g)</i> + motion V] [motion V + <i>mi-a</i>] <i>la_v</i> <i>la=ng</i> <i>me_v</i>	[[<i>(he-n)</i> + static V (+ motion V)]
D3	<i>oro</i> (speaker + hearer) <i>wo</i> ‘over there’ (<i>wô</i> ‘low’, <i>wó</i> ‘high’) <i>ya_v</i> (speaker + hearer)	[<i>he-n</i> + static V] [= <i>n(g)</i> + motion V] [motion V + <i>mi-a</i>] <i>me_v</i> ‘come’	[static V + motion V]

D1 = proximal, D2 = medial, D3 = distal

[OC-3] Arrernte, Eastern (Pama-Nyungan, Aranda) [Green 1994; ¹AERNTOTPO]

	Place	Goal	Source
SI	<i>nthenhe</i> <i>nthenhe-le</i> <i>nthenhe-ke-ame</i> ¹ <i>nthenhele-ame</i>	<i>nthenhe-werne</i>	<i>nthenhe+nge</i> <i>nthenhe-ntyeye</i>

<https://doi.org/10.1515/9783110672640-018>

	Place	Goal	Source
D1	<i>nhenhe</i> <i>nhenhe-le</i>	¹ <i>nhenhe-werne</i>	¹ <i>nhenhe-ngentyele</i>
D2	<i>yanhe</i> <i>yanhe-le</i>	¹ <i>yanhe-arteke</i>	¹ <i>yanhe-ngentyele</i>
D3	<i>nhakwe</i> <i>nhakwe-le</i>	¹ <i>nhakwe-werne</i>	<i>nhakwe+nge</i>

D1 = proximal, D2 = medial, D3 = distal

[OC-4] Awtuw (Sepik, Ram)

[Feldman 1986]

	Place	Goal	Source
SI	<i>yipe</i> <i>yipke</i> <i>yiperke</i>	<i>yipke</i> <i>yiperke</i>	<i>yipke</i> <i>yiperke</i>
D1	<i>ade</i> <i>tə</i> <i>(t)ade</i>	[Goal Vs]	[Source Vs]
D2	<i>opo</i> <i>rey(ke)</i> <i>(t)opo</i>	[Goal Vs]	[Source Vs] <i>rey(ke)</i>

D1 = proximal, D2 = distal

[OC-5] Bardi (Nyulnyulan, Western)

[Bowern 2012]

	Place	Goal	Source
SI	<i>jan</i> <i>jana</i> <i>jana(m)booroo</i>	<i>jan</i> <i>jana-ngan</i> <i>jana(m)-booroo-ngan</i>	<i>jana-boor(oo)-go</i>
D1	<i>bijiiba</i> <i>balab(oo)</i> <i>nyalab(oo)</i> <i>nyoonoo</i> <i>jarr-on booroo</i>	<i>jiiiba booroo</i> <i>balab(oo)</i> <i>nyalab(oo)</i> <i>[nyalab V jarr-on booroo]</i>	<i>bolob-o</i>
D2	<i>nyoon</i> <i>nyalab</i> <i>nyin</i> <i>nyoonoo</i> <i>nyiinba booroo</i> <i>nyoonoomboo</i> <i>nyoonoo=amba</i> <i>nyoonoo=jamb</i>	<i>nyoon-onyi-ngan</i> <i>nyalab(oo)</i>	<i>ginyingg-o</i> <i>bijorr-o</i> <i>boonoo</i> <i>jorr-o</i>

	Place	Goal	Source
D3	<i>mara</i> (Javi dialect)	<i>mara-ngan</i> (Javi dialect)	

D1 = proximal, D2 = distal I, D3 = distal II

[OC-6] Bunaq (Timor-Alor-Pantar, East Timor-Bunaq) [Schapper 2009]

	Place	Goal	Source
SI	<i>teo no</i> <i>teo gene</i>	<i>teo no</i> <i>*teo gene</i>	<i>teo no</i> <i>*teo gene</i>
D1	<i>huqe</i> <i>huqe gene</i>	<i>*huqe</i> <i>*huqe gene</i>	<i>huqe</i> <i>huqe gene</i>
D2	<i>haqe</i> <i>*haqe gene</i>	<i>haqe</i> <i>haqe gene</i>	<i>haqe</i> <i>*haqe gene</i>
D3	<i>hoqe</i>	<i>*hoqe</i>	<i>*hoqe</i>

D1 = proximal, D2 = distal, D3 = specific/distance neutral

[OC-7] Chamorro (Austronesian, Malayo-Polynesian) [YSB]

	Place	Goal	Source
SI	<i>manu nai</i> <i>mangge</i>	<i>para manu</i>	<i>ginen manu</i>
D1	<i>guini</i>	<i>guini</i>	<i>guini</i>
D2	<i>guenao</i>	<i>guatu</i>	<i>guihi</i>
D3	<i>guihi</i>	<i>guihi</i>	<i>guihi</i>

D1 = proximal, D2 = medial, D3 = distal

[OC-8] Djapu (Pama-Nyungan, Yuulngu) [Morphy 1983]

	Place	Goal	Source
SI	<i>wanha</i> <i>wanha-ka</i> <i>wanha-(ŋu)mi</i>	<i>wanha-(ŋu)mal</i> <i>wanha-(ŋu)lil</i>	<i>wanha-ŋur</i>
D1	<i>dhuwal</i> <i>dhiyal</i> <i>dhiyal(a(ŋu)mi)</i>	<i>dhipal</i>	<i>dhipu-ŋur</i>
D2	<i>dhuwali</i> <i>dhiyal(i(ŋu)mi)</i> <i>ŋunhi</i> <i>ŋunhili((ŋu)mi)</i>	<i>dhipali</i> <i>ŋunhiwal</i>	<i>ŋuli-ŋur</i>

	Place	Goal	Source
D3	<i>ηunha</i> <i>ηunhal (a(ηu)mi)</i>	<i>ηunhawal</i>	<i>ηula-ηur</i>

D1 = proximal, D2 = distal I, D3 = distal II

[OC-9] Doromu-Koki (Trans-New Guinea, Manubaran) [Bradshaw 2012; ¹KQC]

	Place	Goal	Source
S1	<i>goini</i>	<i>goidu</i> ¹ <i>goina=ri</i>	<i>goina gutuna=ri</i> ¹ <i>goina=ri gutuna</i>
D1	<i>(yo^{-SPEC})mini</i>	<i>mina=ri</i>	¹ <i>mina=ri</i>
D2	<i>mironi</i>	<i>mironi</i> ¹ <i>mirona=ri</i>	¹ <i>mina=ri</i>
D3	<i>soroni</i> <i>(yo^{-SPEC})mirodu</i>	NA	NA
D4	<i>isefu</i>	NA	<i>isefu ro</i>

D1 = proximal, D2 = medial/distal I, D3 = distal II, D4 = distal III

[OC-10] Dyirbal (Pama-Nyungan) [Dixon 1972]

	Place	Goal	Source
S1	<i>wuŋɟay</i>	<i>wuŋɟaru</i> <i>wuŋɟari</i>	<i>wuŋɟaŋum</i>
D1	<i>yalay</i>	<i>yalu</i> <i>yali</i>	<i>yaŋum</i>
D2	<i>balay</i>	<i>balu</i> <i>bali</i>	<i>baŋum</i>

D1 = proximal, D2 = distal

[OC-11] Fijian (Austronesian, Oceanic) [Milner 1972]

	Place	Goal	Source
S1	<i>evei</i>	<i>kivei</i>	<i>maivei</i>
D1	<i>e kē</i>	<i>ki kē</i> <i>mai</i>	<i>mai kē</i> <i>yani</i>
D2	<i>e keri</i>	<i>ki keri</i>	<i>mai keri</i>
D3	<i>e keā</i>	<i>ki keā</i>	<i>mai keā</i>

D1 = proximal, D2 = distal I, D3 = distal II

[OC-12] Futuna-Aniwa (Austronesian, Oceanic) [Dougherty 1983; ¹ANIGEN]

	Place	Goal	Source
SI	<i>uafe</i> <i>uahe</i> <i>uehe</i> <i>i</i> <i>tehe</i>	<i>ki</i>	<i>i</i> <i>¹wehe (~ uehe)</i>
D1	<i>i-ku-nei</i> <i>i-ku</i>	<i>ki-ku-nei</i> <i>ki-ku</i> <i>-mai</i>	<i>¹i-ku-nei</i> <i>i-ku</i>
D2	<i>i ai</i>	<i>ki ai</i>	<i>¹i ai (~-iai)</i>
D3	<i>i-ko-na</i>	<i>i-ko-na</i> <i>ki-ko-na</i> <i>-(k)atu</i>	[motion Vs]
D4	<i>i-ko-ra</i>	<i>ki-ko-ra</i> <i>-(k)age</i>	[motion Vs]

D1 = proximal/near speaker, D2 = neutral/anaphoric, D3 = medial/near hearer, D4 = distal

[OC-13] Garrwa, Western (Garrwan) [Mushin 2012]

	Place	Goal	Source
SI	<i>winjawa</i> <i>wanjawa</i> <i>wanyi-na</i>	<i>wanjawa</i> <i>wanyi-nkurri</i> <i>yangka</i>	<i>wanyi-nkurri</i>
D1	<i>na</i> ^{-root} <i>na-yi/na-ngi</i> ^{stem} <i>na-yi-n-da</i> ^{abs} <i>na-ngi-ni</i> ^{erg} <i>na-ngi-n-kanyi</i> ^{dat} <i>na(ngi)-nyina</i> ^{loc}	<i>nangi-n-kurri</i> <i>nayi-nkurri</i> <i>nayi-wa</i> ^{dir}	<i>nangi-nbu-nanyi</i> <i>*nayi-nbu-nanyi</i>
D2	<i>nana</i> ^{-root} <i>nana</i> ^{-stem} <i>na-nda</i> ^{abs} <i>nana-ngi-ni</i> ^{erg} <i>nana-wanyi</i> ^{erg} <i>nana-n-kanyi</i> ^{dat} <i>nana-nyina</i> ^{loc}	<i>nana-n-kurri</i> <i>nana-wa</i> ^{dir}	<i>nana-mu-nanyi</i> <i>nana-nkadi</i>

D1 = proximal, D2 = distal

[OC-14] Guugu Yimidhirr (Pama-Nyungan, Yimidhirr-Yalanji-Yidinic)

[Haviland 1979; 1998]

	Place	Goal	Source
S1	<i>wanhdhaa</i> <i>wanhdhaal-bi</i>	<i>wanhdhaal-ga</i> <i>wanhdhaal-bi</i>	<i>wanhdhaal-nganh</i>
D1	<i>yii (yiyi)</i> <i>yiway</i> <i>yuway</i> <i>yiiimu</i>	<i>yii (yiyi)</i> <i>yiway</i> <i>yuway</i> <i>yiiimu</i>	<i>yiima-nganh</i>
D2	<i>nhaa</i> <i>nhaway</i> <i>nhaamu</i>	<i>nhaa</i> <i>nhaway</i> <i>nhaamu</i>	<i>nhaamu-nganh</i> <i>nhaawamun</i>
D3	<i>yarra</i> <i>yarrba</i>	NA	NA

D1 = proximal, D2 = distal I, D3 = distal II

[OC-15] Hawaiian (Austronesian, Oceanic)

[Elbert and Pukui 1979]

	Place	Goal	Source
S1	<i>hea</i> <i>auhea</i> <i>i hea</i> <i>ma hea</i>	<i>i hea</i> <i>no hea</i>	<i>mai hea</i> <i>no hea</i>
D1	<i>ne'i</i> <i>'ane'i</i> <i>'one'i</i> <i>ma-'ane'i</i> <i>eia</i>	<i>mai</i> <i>maila</i> <i>ma-'ane'i</i>	<i>aku</i> ¹⁷
D2	<i>'ō</i> <i>laila</i> <i>mā-laila_N</i> <i>lā</i> <i>i laila_{INDEF}</i>	<i>aku</i> <i>i laila_{INDEF}</i>	<i>mai laila</i>

D1 = proximal, D2 = distal

¹⁷ This form is likely an atelic directional morpheme which gains Source meaning if combined with an adequate Source verb.

[OC-16] Imonda (Border, Waris) [Seiler 1985]

	Place	Goal	Source
SI	<i>ah-ia</i>	<i>ah-ia-m</i> <i>ah-la-m</i>	<i>ah-ia-néi</i>
D1	<i>ōh-ia</i>	<i>ōsm</i> <i>ōh-ia-m</i>	<i>ōh-ia-néi</i>
D2	<i>ed-ia</i>	<i>esm</i> <i>ed-ia-m</i>	<i>ed-ia-néi</i>

D1 = proximal, D2 = distal

[OC-17] Jingulu (Mirndi) [Pensalfini 1997]

	Place	Goal	Source
SI	<i>(w)aju-wa</i> <i>(w)aju-wara</i> <i>nyamba-mbili</i>	<i>(w)aju-wa</i> <i>(w)aju-wara</i>	<i>(w)aju-wa-ngkami</i> <i>(w)aju-waru-ngkami</i> <i>(w)aju-ngkami</i>
D1	<i>ngini-mbili</i> <i>nyini-mbili</i>	<i>ngarlarlɪ</i> ¹⁸ <i>ngini-ngka</i> <i>nyini-ngka</i>	<i>ngini-ngkami</i> <i>nyini-ngkami</i>
D2	<i>jimi-</i>	<i>jimi-ngka</i>	<i>jimi-ngkami</i>
D3	<i>ngunu-mbili</i>	<i>nguna-ngka</i> <i>ina-ngka</i>	<i>ngunu-ngkami</i> <i>nginuwa-ngkami</i> ¹⁹ <i>nginduwu-ngkami</i>
D4	<i>kuyu-mbili</i>	<i>kuyu-ngka</i>	<i>kuyu-ngkami</i>

D1 = proximal, D2 = medial, D3 = distal, D4 = anaphoric

[OC-18] Kilivila²⁰ (Austronesian, Oceanic) [Senft 1986; ¹KIJPNG]

	Place	Goal	Source
SI	<i>ambeya</i> <i>ambe</i> <i>ambesa</i>	<i>ambeya</i> <i>ambe</i> <i>ambesa</i>	<i>ambeya</i> <i>ambe</i> <i>ambesa</i>
D1	<i>beya</i> (Biga galawala variety) <i>besa</i> (Biga besagala variety) <i>baisa</i> <i>beaka</i>	<i>emema</i>	¹ <i>metoya baisa</i>

18 This form is a lexicalized demonstrative indicating HITHER (Pensalfini 2003: 235).

19 Without the ablative suffix, *nginuwa* indicates PATH or DIRECTION (Pensalfini 2003: 235).

20 For Kilivila, forms valid for both varieties discussed in Senft (1986) as well as variety-specific forms are counted in the statistical evaluations in Chapter 5.

	Place	Goal	Source
D2	<i>beya</i> (Biga galawala variety) <i>besa</i> (Biga besagala variety) <i>baisa</i> <i>beaka</i>	<i>eveva</i>	¹ <i>metoya baisa</i>
D3	<i>oveva</i>	NA	NA

D1 = proximal, D2 = distal I, D3 = distal II

[OC-19] Komnzo (Morehead-Wasur, Eastern Tonda) [Döhler 2016a; 2016b]

	Place	Goal	Source
S1	<i>m-ä</i>	<i>mo-bo</i>	<i>mo-ba</i>
D1	<i>z-ä</i>	<i>z-bo</i>	<i>z-ba</i>
D2	<i>b-ä</i>	<i>bo-bo</i>	<i>bo-ba</i>
D3	<i>f-ä</i>	<i>fo-bo</i>	<i>fo-ba</i>

D1 = proximal, D2 = medial, D3 = distal

[OC-20] Manambu (Sepik, Ndu) [Aikhenvald 2008]

	Place ²¹	Goal	Source ²²
S1	<i>akə(-)</i> <i>akə-lf.SG</i> <i>akə+mF.SG+LOC</i>	<i>akrəl</i>	<i>akəm tə-ku_v</i> <i>akəm tə-lə-k_v</i>
D1	<i>akā</i> <i>ata</i> <i>(h)akā_{f.SG}</i> <i>klay</i> <i>kləm_{f.SG}</i> <i>kə(-)_{f.SG;ANAPH}</i> <i>kəkā_{f.SG}</i> <i>kənan_{ANAPH}</i> <i>kə-lə-m_{f.SG}</i>	<i>krəl_{f.SG+ALL}</i> <i>kə-lə-r_{f.SG+ALL}</i>	complex/various
D2	<i>wə-lə-m_{f.SG}</i> <i>wə-l-ay_{f.SG-DIST}</i>	NA	complex/various

²¹ Manambu SDDs are gender-sensitive (cf. Section 6.2), the paradigm OC-20 contains only the default feminine SDDs.

²² For a discussion of the constructional complexity of Source in Manambu, cf. Section 6.3.

	Place ²¹	Goal	Source ²²
D3	<i>a(-)</i> _{F.SG;ANAPH} <i>a-l-ə-m</i> _{F.SG}	<i>a-l-əʔ</i> _{F.SG-ALL} <i>a-l-ayir</i> _{F.SG-DIST+LK+ALL}	<i>a-l-ə-m</i> (+ [V])

D1 = proximal, D2 = medial/near hearer/anaphoric, D3 = distal

[OC-21] Maori, Southern Cook Islands (Austronesian, Oceanic)

[Nicholas 2016; ¹CIMRNT]

	Place	Goal	Source
S1	<i>ki 'ea</i> <i>tei 'ea</i>	<i>ki 'ea</i>	<i>mei 'ea</i>
D1	<i>i konei</i>	<i>ki konei</i> <i>mai</i>	¹ <i>mei konei</i>
D2	<i>i kō</i>	<i>ki kō</i>	¹ <i>mei kō</i>
D3	<i>i reira</i>	<i>ki reira</i>	<i>mei reira</i>

D1 = proximal, D2 = distal, D3 = anaphoric

[OC-22] Marquesan (Austronesian, Oceanic)

[Cablitz 2006]

	Place	Goal	Source
S1	<i>hea,</i> <i>'i hea</i> <i>'i sea</i>	<i>'i hea</i>	<i>mei hea</i>
D1	<i>'inei</i> <i>nei</i> <i>'ina</i>	<i>mai</i>	<i>mei 'inei</i>
D2	<i>ko</i> _{UNSPEC} <i>'i'a</i>	<i>ko atu</i> <i>atu</i> <i>atu i'a'</i> <i>(mai) 'i'a</i>	
D3	<i>'ei'a</i> [+pointing gesture]	NA	<i>mei 'ei'a'</i>

D1 = proximal/near speaker, D2 = distal I, D3 = anaphoric, D4 = distal II

[OC-23] Martuthunira (Pama-Nyungan, Pilbara)

[Dench 1994]

	Place	Goal	Source
S1	<i>wantha</i> <i>wanthala</i> _{UNSPEC}	<i>wantha-a</i>	<i>wantha-nguru</i> <i>wanthala-nguru</i>
D1	<i>yilangu</i> <i>yilarla</i> _{UNSPEC} <i>yilarni</i> _{INV}	<i>yilangu</i>	<i>yilangu-nguru</i>

	Place	Goal	Source
D2	<i>ngulangu</i> <i>ngularla</i> _{UNSPEC} <i>ngularni</i> _{INV}	<i>ngulangu</i> <i>ngulangu-mulyarra</i>	<i>ngulangu-nguru</i> <i>ngula-nguru</i> <i>ngularni</i>

D1 = proximal, D2 = distal

[OC-24] Mauwake (Trans-New Guinea, Madang) [Berghäll 2015; ¹MHLNT]

	Place	Goal	Source
S1	<i>ka-an</i> <i>kaan=eke</i> _{CF}	<i>ka-an</i> <i>kaan=eke</i> _{CF}	<i>ka-an</i> ¹ <i>kaan=eke</i> _{CF}
D1	<i>fa-an</i> <i>fa-eke</i> (<i>feeke</i>) _{CF}	<i>fa-an</i> <i>fa-eke</i> _{CF}	<i>fa-an</i> <i>fa-eke</i> _{CF}
D2	<i>eef-an</i> <i>eef-eke</i> _{CF}	NA	NA
D3	<i>na-an</i> <i>na-eke</i> (<i>neeke</i>) _{CF}	<i>na-an</i> <i>na-eke</i> _{CF}	<i>na-an</i> <i>na-eke</i> _{CF}
D4	<i>een-an</i> <i>een-eke</i> _{CF}	<i>een-eke</i>	NA

D1 = proximal I/close to speaker/visible, D2 = proximal II/'rather close'/'usually visible', D3 = distal I/away from the speaker/generic, D4 = distal II/'usually not visible'

[OC-25] Maybrat (Maybrat-Karon) [Dol 2007]

	Place	Goal	Source
S1	<i>to-yo</i> _{SPEC} <i>wo-yo</i> <i>mi-yo</i>	<i>to-yo</i> _{SPEC} <i>wo-yo</i> <i>mi-yo</i>	<X>- <i>pat</i> ²³ <i>toyo</i>
D1	<i>me-f-o</i> <i>we-f-o</i> <i>wo-f-o</i> <i>te-f-o</i> <i>to-f-o</i> <i>re-f-o</i>	<i>pe-f-o</i> <i>wo-f-o</i> <i>to-f-o</i>	<X>- <i>pat we-f-o</i>
D2	<i>me-t-o</i> <i>te-t-o</i>	NA	<i>ro-t-o</i>
D3	<i>we-au</i> <i>to-au</i>	<i>me-au</i> <i>to-au</i> <i>re-au</i>	<i>ro-t-o</i>

²³ The form *-pat* must be preceded by a person prefix (Dol 2007: 87).

	Place	Goal	Source
D4	<i>to <X></i> <i>to-n-o</i> <i>po-n-o</i> <i>wo-n-o</i> <i>m-n-o</i>	<i>to <X></i> <i>to-n-o</i>	NA

D1 = proximal I, D2 = proximal II, D3 = distal I, D4 = distal II

[OC-26] Menya (Trans-New Guinea, Angan) [Whitehead 2004]

	Place	Goal	Source
SI	<i>ängi=wä</i> <i>ängi=i</i> <i>ängi=kä</i>	<i>ängi=ηqä=wä</i> <i>ängi=ηqä=i</i> <i>ängi=ηqä=kä</i>	<i>ängi=ta=wä</i> <i>ängi=ta=i</i> <i>ängi=ta=kä</i> <i>äki=ta<X>=kä</i>
D1	<i>tä=qi_{SPEC}</i> <i>tä=u_{UNSPEC}</i>	<i>tä=qi=ηqä</i>	<i>tä=qi=ta(=ηji)</i>
D2	<i>i=qi_{SPEC}</i>	<i>i=qi=ηqä</i>	<i>i=qi=ta</i> <i>i=ta=ηji</i>

D1 = proximal, D2 = distal

[OC-27] Motuna (South Bougainville) [Onishi 1994]

	Place	Goal	Source
SI	<i>woo</i> <i>woo-ki_{ERG}</i>	<i>woo</i> <i>woo-ki_{ERG}</i>	<i>woo-ki-tee</i>
D1	<i>owo</i> <i>ongi_{ERG}</i>	<i>owo</i>	<i>ongi-tee</i>
D2	<i>owo</i> <i>tii</i> <i>ti-ki_{ERG}</i> <i>ongi_{ERG}</i>	<i>owo</i> <i>tii</i> <i>ongi</i>	<i>ti-ki-tee</i> <i>ongi-tee</i>
D3	<i>ho-ko</i>	NA	NA

D1 = proximal, D2 = distal I, D3 = distal II

[OC-28] Ngan'gityemerri (Southern Daly) [Hoddinott and Kofod 1988; ¹Reid 1990; ²ngangi.net]

	Place	Goal	Source
SI	<i>kide</i> <i>tyen-de</i>	<i>kide-pefi</i>	<i>kide-nimbi</i>

	Place	Goal	Source
D1	<i>kinyi</i> <i>kinta</i> _{EMPH}	<i>kinyi-pagu</i> <i>kinyi</i> <i>kinyi-pefi</i>	¹ <i>kin-nimbi(-pefi)</i> ² <i>kinyi pefi</i>
D2	<i>(w)uni</i>	<i>wunu-pefi</i>	<i>wunu pagu</i> ²⁴ <i>wu-nimbi</i> ² <i>wunu pagu nimbi</i>
D3	<i>nyin(in)</i>	NA	<i>nyin-nide-nimbi</i> ² <i>nyinnimbi</i> ² <i>nyin pefi nimbi</i> ² <i>nyin pagu</i>
D4	<i>yaga</i>	NA	NA

D1 = proximal, D2 = medial, D3 = distal I, D4 = distal II

[OC-29] Nii (Trans-New Guinea, Wahgic) [NII; 'Stucky and Stucky 1976]

	Place	Goal	Source
S1	<i>jili</i>	<i>jili</i>	<i>jili</i> <i>jili orung</i>
D1	<i>ya</i> <i>ya ete</i> ∅ ¹ <i>konu</i> ²⁵ <i>ei</i> ¹ <i>ya konu ete</i>	<i>ya</i> <i>ya konu</i>	<i>konu ete</i> [_V] <i>orung ete</i>
D2	<i>*konu</i> <i>*et</i> ∅	<i>konu ete</i>	<i>konu ete</i> <i>ete</i>

D1 = proximal, D2 = distal

24 This form is a specialized Source item including a 'towards speaker' component.

25 *Konu* translates to 'place' in Stucky and Stucky (1976).

[OC-30] Orokaiva (Trans-New Guinea, Binanderean)

[Larsen 1977; Larsen and Larsen 1985, ¹OKV]

	Place	Goal	Source
SI	<i>nainge</i> <i>naingere</i> <i>nainge ta</i> <i>naingetare</i> <i>deita(re)</i> <i>davo(re)</i> <i>nainge eto</i>	<i>nainge</i> <i>nainge ta</i> <i>naingetare</i> <i>deita</i> <i>deitare</i> ¹ <i>degi neinge</i>	<i>nainge eto</i> <i>deita eto</i> <i>davo</i> <i>davo eto</i>
D1	<i>ei</i> <i>ei ta</i> <i>erevira</i> ¹ <i>ere</i>	<i>ei ta</i>	¹ <i>degi erevi</i> ¹ <i>ai ta</i>
D2	<i>ai</i> <i>ai ta</i> ¹ <i>ari</i> <i>orovira</i>	¹ <i>ai ta</i>	¹ <i>ta</i> ¹ <i>ai ta</i>
D3	<i>oi</i>	NA	NA

D1 = proximal, D2 = distal I, D3 = distal II

[OC-31] Palauan (Austronesian, Malayo-Polynesian)

[Josephs 1975]

	Place	Goal	Source
SI	<i>er ker</i>	<i>er ker</i>	<i>er ker</i>
D1	<i>er tiang</i> <i>er tiei</i>	<i>er tiang</i> <i>er tiei</i>	<i>er tiang</i> <i>er tiei</i>
D2	<i>er tilechang</i>	<i>er tilechang</i>	<i>er tilechang</i>
D3	<i>er sei</i>	<i>er sei</i>	<i>er sei</i>

D1 = proximal, D2 = medial/near hearer, D3 = distal

[OC-32] Pitjantjatjara (Pama-Nyungan, Wati)

[Goddard 1992]

	Place	Goal	Source
SI	<i>yaaltji</i> <i>ngana-la</i> <i>yaaltjingka</i>	<i>yaaltji-kutu</i> <i>ngana-kutu</i>	<i>yaaltji-nguru</i>
D1	<i>nyanga-tja</i> <i>nyangangka</i>	<i>*nyanga-kutu</i>	<i>nyanga-nguru</i>
D2	<i>nyara-tja</i> <i>nyara-ngka</i>	<i>*nyara-kutu</i>	<i>palula-nguru</i>

D1 = proximal, D2 = distal

[OC-33] Ponapean (Austronesian, Oceanic)

[Rehg 1981]

	Place	Goal	Source
SI	<i>ia</i>	<i>ia</i>	<i>ia</i>
D1	<i>met</i>	<i>met</i> [V]-do	* <i>met</i>
D2	<i>men</i>	<i>men</i>	* <i>men</i>
D3	<i>mwo</i>	* <i>mwo</i>	<i>mwo</i>

D1 = proximal/near speaker, D2 = medial/near hearer, D3 = distal/away from both

[OC-34] Rapanui (Austronesian, Oceanic)

[Steven R. Fischer, p.c.; Steve Pagel, p.c.]

	Place	Goal	Source
SI	<i>'i hē</i>	<i>ki hē</i>	<i>mai hē</i>
D1	<i>'i nei</i>	(<i>mai <X></i>) <i>ki nei</i>	(<i>mai <X></i>) <i>mai nei</i>
D2	<i>'i nā</i>	(<i>atu <X></i>) <i>ki nā</i>	(<i>mai <X></i>) <i>mai nā</i>
D3	<i>'i rā</i>	(<i>atu <X></i>) <i>ki rā</i>	(<i>mai <X></i>) <i>mai rā</i>

D1 = proximal/near speaker, D2 = medial/near hearer, D3 = distal/away from both

[OC-35] Rawa, Karo (Trans-New Guinea, Finisterre-Huon)

[Toland and Toland 1991; ¹RWORNT]

	Place	Goal	Source
SI	<i>nda</i> <i>nda-no</i>	<i>nda</i> ¹ <i>nda-sina</i>	¹ <i>nda-no-nggo</i> ¹ <i>nda-sina-nggo</i>
D1	<i>nga</i> <i>nga-no</i>	<i>nga-no</i> <i>nga-sina</i>	<i>nga-no-nggo</i>
D2	<i>ngu</i> <i>ngu-no</i>	<i>ngu-no</i> <i>ngu-sina</i>	<i>ngu-no-nggo</i> <i>ngu-sina-nggo</i>

D1 = proximal, D2 = distal

[OC-36] Rotokas (North Bougainville)

[Robinson 2011; ¹ROO]

	Place	Goal	Source
SI	<i>ovu</i> ¹ <i>ovu-ia</i>	<i>ovu</i> <i>ovu=re</i> ¹ <i>ovu-a</i>	¹ <i>ovu-va</i>

	Place	Goal	Source
D1	<i>vo(o)</i> <i>vo(a)</i> <i>voo=ia</i>	<i>voo</i> <i>vo(o)=re</i>	<i>voo=va</i> <i>voo=va</i>
D2	<i>evoa</i> <i>vavo(iso)</i> <i>vavo(isio)</i> <i>vavao</i>	<i>vavo=re</i>	<i>vavo=va</i>

D1 = proximal, D2 = distal

[OC-37] Sa'a (Austronesian, Oceanic)

[Ivens 1918; 'APBNT]

	Place	Goal	Source
SI	<i>itei</i> <i>ihei</i> <i>lehuna</i> <i>le'une</i>	<i>'i tei</i>	<i>'urei tei</i> <i>e kei hei</i>
D1	<i>'ie</i> <i>ilehu</i> <i>ile'u</i> <i>inihou</i>	<i>māi</i>	<i>keikei ilehu</i> <i>mwaani ilehu</i> <i>'ure ile'u</i>
D2	<i>ileune</i> <i>ilehuna</i> <i>ile'une</i> <i>wāu</i>	<i>ileune</i> <i>ileune ta'e</i> <i>ileune hao</i>	<i>mwaanie ile'une</i> <i>'urei ile'une</i>

D1 = proximal, D2 = distal

[OC-38] Savosavo (Solomon Islands)

[Wegener 2008; 2012]

	Place	Goal	Source
SI	<i>ala</i> <i>alati_{PROX}</i>	<i>ala</i>	<i>*ala=tu</i>
D1	<i>ata</i> <i>atati_{PROX}</i>	<i>ata</i>	<i>*ata=tu</i>
D2	<i>ota</i> <i>otati_{PROX}</i>	<i>ota</i>	<i>ota=tu</i>

D1 = proximal, D2 = distal

[OC-39] South Efate (Austronesian, Oceanic) [Thieberger 2006; ¹Thieberger 2011]

	Place	Goal	Source
SI	(e)swa(=n) _{DIST}	(e)swa	eswa=n mai
D1	kia _{DEM} (e)sa _N	mai _{PART} ¹ (mai _{PART} pak _v) esa(n) _N	pa _{PART} ¹ esa _N (pa=n _v)
D3	(e)sa(=n) _N (e)sa-go _{DEM} sani _{DEM} sanpe _{DEM} pen _{PART}	pa(n) _{PART} pa=n _v pak _{PREP} sanpe _{DEM} sanpe=n _{DEM}	kai _{ES} pan _v ¹ [sanpe=n _{DEM} mai _{PART}]

D1 = proximal, D2 = distal

[OC-40] Tidore (West Papuan, North Halmahera) [van Staden 2000]

	Place	Goal	Source
SI	ka-be =be	ka-be	ka-be
D1	ka-re	ka-re ino(=re)	ka-re
D2	ka-ge	ka-ge ia(=ge)	ka-ge
D3	ka-ta	ka-ta ia(=ta)	ka-ta

D1 = proximal, D2 = distal I, D3 = distal II

[OC-41] Tinrin (Austronesian, Oceanic) [Osumi 1995]

	Place	Goal	Source
SI	ruu-e âe _{base} hae [+NP] ²⁶ [V]-e ²⁷	pwere-e were-e were âe [V]-ae ²⁸	ghe-e fi _v ghe-e ²⁹

²⁶ This form requires a nominal to form a WHERE SI, e.g. *hae erre* 'Q place'. It is left out of the statistical evaluations in Chapter 5.

²⁷ This verbal construction is left out of the statistical evaluations in Chapter 5.

²⁸ This verbal construction is left out of the statistical evaluations in Chapter 5.

²⁹ This verbal construction is left out of the statistical evaluations in Chapter 5.

	Place	Goal	Source
D1	<i>ha</i> _{base} <i>ânrâ-ha</i> (Lafoa variety) <i>ru ânrâha</i> <i>nrâ-ha</i> (Ile Des Pins variety) <i>haro</i> <i>âro-ha</i> <i>âroa-ha</i> <i>hava</i> <i>nroorre</i> _N ³⁰	<i>ânrâ-ha</i> <i>were ânrâ-ha</i> <i>ru ânrâ-ha</i> <i>siro_v mê_v</i> ³¹	<i>ghe ânrâ-ha</i>
D2	<i>âro</i> <i>amwairrû</i> <i>âro-mwâ</i> <i>mwâ</i> <i>ânrâ-mwâ</i> (Ile Des Pins variety) <i>dri-ânrâ-mwâ</i> <i>anrî</i> <i>nrî</i> _{PRON} <i>ru nrî</i> <i>anrî-mwâ</i> <i>mwâro-mwâ</i> <i>âroa-mwâ</i>	<i>pwere ânrâ-mwâ</i> <i>pwere âro</i> <i>pwere nrî</i> <i>ruu nrî</i> _{PRON}	<i>ghe ânrâ-mwâ</i> (Ile Des Pins variety) <i>ghe ru nrî</i> _{PRON}
D3	<i>rra</i> <i>ânrâ-rra</i> <i>ârijù</i>	<i>pwere ânrâ-rra</i>	NA

D1 = proximal, D2 = near hearer, D3 = mid-distant/anaphoric, D4 = distal

[OC-42] Tok Pisin (Indo-European, Pacific Creole English)

[Craig Alan Volker, p.c.]

	Place	Goal	Source
S1	<i>we</i>	<i>we</i>	<i>(long) we</i>
D1	<i>hia</i>	<i>long hia</i>	<i>long hia</i>
D2	<i>long hap</i>	<i>long hap</i>	<i>(long) hap</i>
D3	<i>longwe liklik</i> <i>longwe</i>	<i>longwe liklik</i> <i>longwe</i>	<i>longwe liklik</i> <i>longwe</i>

D1 = proximal, D2 = distal I, D3 = distal II

30 This nominal ('place') form is left out of the statistical evaluations in Chapter 5.

31 This verbal construction is left out of the statistical evaluations in Chapter 5.

[OC-43] Tongan (Austronesian, Oceanic) [Churchward 1959; ¹Bennardo 2009]

	Place	Goal	Source
S1	'i fē	ki fē	mei fē
D1	'i heni	ki heni ¹ mai	mei heni atu ³²
D2	ai 'i ai 'i hē 'i hena	ki ai atu ¹ ange	mei ai

D1 = proximal, D2 = distal

[OC-44] Wambaya (Mirndi, Ngurlun) [Nordlinger 1998]

	Place	Goal	Source
S1	inja-ni	inja-ni	inja-nnga
D1	gi-li	bangar-ni(ga) gi-nmanji	gi-nngana
D2	gili-yaga gili-ya gi-nki	gi-nki	*gi-nnga

D1 = proximal, D2 = distal

[OC-45] Wardaman (Yangmanic) [Merlan 1994]

	Place	Goal	Source
S1	guda guda-ni guda-nya	guda guda-rlan	gudang-ba
D1	damin jewe dan-ya	dami-rlan ³³ jewe-warr ³⁴ dan-garr borri-rlan ³⁵	dami-ba dan-ba

³² This form is likely an atelic 'away'-morpheme which indicates Source in combination with Source verbs.

³³ '(back to) here-ALL'

³⁴ 'close-ALL'

³⁵ 'this way-ALL'

	Place	Goal	Source
D2	<i>darni</i> <i>baraj</i> <i>nan-ya</i>	<i>baraj-garr</i> ³⁶ <i>numbu-lan</i> ³⁷ <i>nan-garr</i>	<i>baraj-ba</i> <i>nan-ba</i>
D3	<i>dawu</i> ³⁸	<i>dawu-rlan</i>	<i>dawung-ba</i>

D1 = proximal, D2 = distal I, D3 = distal II

[OC-46] Warrongo (Pama-Nyungan, Maric) [Tsunoda 2011]

	Place	Goal	Source
SI	<i>wanyja</i> <i>wanyja-rro</i>	<i>wanyja</i> <i>wanyja-rro</i> <i>wanyja-ngal</i> <i>wanyja-rri-ngal</i>	<i>wanyja-bara</i> <i>wanyja-y-mo</i> <i>wanyja-mo</i> <i>wanyja-ngomay</i>
D1	<i>yarro-n-da</i>	<i>yarro-wo</i> <i>yarro-ngal</i>	<i>yarro-ngomay</i>
D2	<i>ngoni-n-da</i> <i>ngona-n-da</i>	<i>ngoni-wo</i> <i>ngoni=wa</i>	<i>ngoni-ngomay</i> <i>ngona-ngomay</i> ³⁹

D1 = proximal, D2 = distal

[OC-47] Yawuru (Nyulnyulan, Eastern) [Hosokawa 1991]

	Place	Goal	Source
SI	<i>dyana</i> <i>dyana-gun</i>	<i>dyana-di</i> <i>dyana-la</i> _{DIR} <i>dyana-ngarn</i>	<i>dyana-gap</i>
D1	<i>nyamba</i> <i>yamba</i> <i>dyamba</i> <i>nyamba-gun</i>	<i>nya-gap</i> <i>nyamba-ngarn</i>	<i>nyamba-gap</i> <i>nyambgap</i> <i>nyamgap</i> <i>nyammagap</i> <i>nya-gap</i>
D2	<i>kamba</i> <i>kamba-gun</i>	<i>ka-gap-layin</i> ⁴⁰ <i>kamma-ngarn</i>	<i>kambgap</i> <i>kammagap</i> <i>karda</i>

³⁶ 'far-ALL'

³⁷ 'that way-ALL'

³⁸ 'that way'

³⁹ This form is possibly restricted to temporal contexts.

⁴⁰ 'towards there, to that side'

	Place	Goal	Source
D3	<i>karda</i> <i>karda-gun</i>	<i>karda</i> <i>karda-ngarn</i>	NA

D1 = proximal, D2 = medial, D3 = distal

[OC-48] Yidj (Pama-Nyungan, Yimidhirr-Yalanji-Yidinic) [Dixon 1977]

	Place	Goal	Source
S1	<i>wajḏa</i>	<i>wajḏa-:l</i> <i>wajḏa-:gu</i>	<i>wajḏa-m</i>
D1	<i>yḱngu</i>	<i>yḱngu-:gu</i> <i>yḱngu-:ruḱ</i> <i>yḱ:luy</i>	<i>yḱngu-m</i>
D2	<i>ḱḱngu</i>	<i>ḱḱngu-:gu</i>	<i>ḱḱngu-m</i>
D3	<i>yungu</i>	<i>yungu-:gu</i>	<i>yungu-m</i>

D1 = proximal, D2 = distal I, D3 = distal II

[OC-49] Yindjibarndi (Pama-Nyungan, Pilbara) [Wordick 1982]

	Place	Goal	Source
S1	<i>wanhthi-la</i>	<i>wanhthi-la</i> <i>wanhtha-rni</i>	<i>wanhthi-la-ngu</i>
D1	<i>nhu-la</i> <i>murna</i> ⁴¹ <i>nhaa</i>	<i>murna-kurru</i>	<i>nhula-ngu</i> <i>murna-ngu</i>
D2	<i>ngu-la</i>	<i>ngunhu-ngu</i> <i>ngunhu-nguwarta</i>	<i>ngula-ngu</i>
D3	<i>ngunhthi</i>	<i>ngunhthi-urru</i>	NA

D1 = proximal, D2 = distal I, D3 = distal II

[OC-50] Yuwaalaraay (Pama-Nyungan, Wiradhuric) [Giacon 2014]

	Place	Goal	Source
S1	<i>minyaya</i>	<i>minyarru</i>	<i>minyayai</i> <i>minyayai dhaay</i> <i>minyaya</i> <i>minyaya dhaay</i>

⁴¹ 'close'

	Place	Goal	Source
D1	<i>Nhalay nguwa nguwalay</i>	<i>marra-dhaay dhaay</i>	<i>ngii-lay</i>
D2	<i>nhama ngiyarrma⁴²</i>	<i>nhama-dhaay</i>	<i>ngii-ma</i>
D3	<i>ngaarri</i>	<i>ngaarri-gu ngaama-dhaay</i>	<i>ngii-ma nyii-ma</i>
D4	<i>marra</i>	<i>marra-gu</i>	<i>NA</i>
D5	<i>ngaama</i>	<i>ngaama-dhaay</i>	<i>NA</i>

D1 = proximal I, D2 = proximal II/medial, D3 = distal I, D4 = distal II

⁴² This form is a 'discourse deictic'.

Appendix VI: Overview of the distribution of patterns over the five macro areas

The Roman numeration represents the five syncretism patterns as follows:

- I → Place≠Goal≠Source
- II → (Place=Goal)≠Source
- III → Place≠(Goal=Source)
- IV → (Place=Source)≠Goal
- V → Place=Goal=Source

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Language	Appendix	Affiliation	SI					ND					FD					
			I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V	
Afar	AF-1	Afro-Asiatic			X					X							X	
Amharic	AF-2	Afro-Asiatic	X	X				X	X						X	X		
Angolar	AF-3	Indo-European			X			X						X				X
Balese	AF-4	Central Sudanic			X				X							X		
Bambara	AF-5	Mande			X				X								X	
Bangime	AF-6	Bangime			X				X								X	
Bunoge	AF-7	Dogon			X				X						X			X
Dii	AF-8	Atlantic-Congo			X				X									X
Dime	AF-9	South Omotic			X				X							X		
Ekoti	AF-10	Atlantic-Congo			X				X									X
Ewe	AF-11	Atlantic-Congo			X				X									X
Fon	AF-12	Atlantic-Congo			X				X									X
Fulfulde (Adamawa)	AF-13	Atlantic-Congo			X				X						X			X
Gidar	AF-14	Afro-Asiatic	X	X					X						X			
Gonja	AF-15	Atlantic-Congo			X				X									X
Hamar	AF-16	South Omotic	X					X						X	X			
Hausa	AF-17	Afro-Asiatic	X	X				X	X					X	X			
Kaba	AF-18	Central Sudanic			X				X									X
Kabiyé	AF-19	Atlantic-Congo			X				X									X
Khoekhoe (Nama)	AF-20	Khoe-Kwadi	X	X				X	X					X	X			

Language	Appendix	Affiliation	SI					ND					FD							
			I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V			
Kikuyu	AF-21	Atlantic-Congo	X					X						X						X
Koyra Chiini	AF-22	Songhay						X						X						X
Koyraboro Senni	AF-23	Songhay						X						X						X
Lango	AF-24	Nilotic			X				X						X					X
Loma	AF-25	Mande				X								X						X
Luo	AF-26	Nilotic						X						X						X
Maale	AF-27	Ta-Ne-Omotic	X						X						X					
Ma'di	AF-28	Central Sudanic			X					X					X					
Malagasy	AF-29	Austronesian												X						X
Mambay	AF-30	Atlantic-Congo											X							X
Miya	AF-31	Afro-Asiatic			X									X						X
Munukutuba	AF-32	Atlantic-Congo				X								X						X
Ngizim	AF-33	Afro-Asiatic	X							X										
Nobiin	AF-34	Nubian			X									X						
Ọ̀kọ	AF-35	Atlantic-Congo			X									X						X
Ọ̀nìchà Igbo	AF-36	Atlantic-Congo				X								X						X
Pamue	AF-37	Atlantic-Congo				X								X						X
Penange	AF-38	Dogon				X								X						X
Sango	AF-39	Atlantic-Congo				X								X						X
Somali	AF-40	Afro-Asiatic	X	X											X					X

Language	Appendix	Affiliation	SI					ND					FD								
			I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V				
Cree	AM-11	Algic	X	X				X								X					
Crow	AM-12	Siouan	X					X								X					
Cubeo	AM-13	Tucanoan			X			X								X					X
Dakota	AM-14	Siouan	X	X				X								X					
Garifuna	AM-15	Arawakan	X					X								X					
Guaraní	AM-16	Tupian	X	X					X											X	
Hualapai	AM-17	Cochimi-Yuman			X			X								X					
Inuktitut	AM-18	Eskimo-Aleut	X					X								X					
Kamaiura	AM-19	Tupian	X	X				X	X												
Klamath	AM-20	Penutian	X	X				X								X					
Kodiak Alutiiq	AM-21	Eskimo-Aleut	X					X								X					
Kumeyaay	AM-22	Cochimi-Yuman	X					X								X					
Kuna	AM-23	Chibchan	X	X					X											X	
Lakota	AM-24	Siouan	X					X								X				X	
Lenca	AM-25	Lencan			X				X												X
Mapudungun	AM-26	Araucanian						X	X	X					X	X	X				
Movima	AM-27	Movima						X							X						X
Musqueam	AM-28	Salishan	X	X				X								X					
Mutsun	AM-29	Penutian			X				X							X				X	
Nahuatl	AM-30	Uto-Aztecan						X							X						X

Language	Appendix	Affiliation	SI					ND					FD				
			I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V
Navajo	AM-31	Athabaskan-Eyak-Tlingit	X					X									X
Nez Perce	AM-32	Penutian	X					X					X				
Osage	AM-33	Siouan	X	X					X				X	X			
Otomí	AM-34	Oto-Manguean				X					X					X	
Parecís	AM-35	Arawakan			X				X					X			
Pipil	AM-36	Uto-Aztecan				X					X						X
Popoluca	AM-37	Mixe-Zoque				X			X					X			
Quechua	AM-38	Quechuan	X						X				X				
Sahaptin	AM-39	Penutian	X						X				X				
Shipibo-Konibo	AM-40	Pano-Tacanan			X					X					X		
Tohono O'odham	AM-41	Uto-Aztecan	X	X					X					X			
Totonac, Filomeno Mata	AM-42	Totonacan			X						X						X
Totonac, Upper Necaxa	AM-43	Totonacan			X						X		X	X	X	X	X
Trio	AM-44	Cariban	X						X	X				X			
Tzotzil	AM-45	Mayan				X					X						X
Wapishana	AM-46	Arawakan	X						X				X				
Yaqui	AM-47	Uto-Aztecan	X								X					X	
Yine	AM-48	Arawakan				X				X			X	X		X	X
Yucatec Maya	AM-49	Mayan				X				X			X	X		X	X
Yuracaré	AM-50	Yuracaré	X						X	X				X			

Language	Appendix	Affiliation	SI					ND					FD						
			I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V		
Japanese	AS-21	Japonic	X	X				X	X						X	X			
Khasi	AS-22	Austroasiatic	X	X				X	X						X	X			
Khmer	AS-23	Dravidian			X				X							X			
Koçava	AS-24	Dravidian	X					X							X				
Korean	AS-25	Koreanic	X	X				X	X						X	X			
Lamut	AS-26	Tungusic	X					X							X				
Lao	AS-27	Tai-Kadai			X				X							X			
Limbu	AS-28	Sino-Tibetan			X			X	X					X	X				
Malayalam	AS-29	Dravidian			X				X						X				
Manchu	AS-30	Tungusic	X	X				X	X						X	X			
Mualang	AS-31	Austronesian	X					X							X				
Muna	AS-32	Austronesian						X						X					X
Mundari	AS-33	Austroasiatic	X					X						X					
Nicobarese (Car)	AS-34	Austroasiatic	X						X					X					X
Ostyak	AS-35	Uralic	X					X						X					
Panjabi	AS-36	Indo-European	X	X				X	X					X	X				
Persian	AS-37	Indo-European	X	X				X	X					X	X				
Santali	AS-38	Austroasiatic	X						X						X				
Tagalog	AS-39	Austronesian	X	X	X			X	X	X			X	X	X	X	X	X	X
Tamil	AS-40	Dravidian			X				X						X				X

Language	Appendix	Affiliation	SI					ND					FD							
			I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V			
Telugu	AS-41	Dravidian	X					X								X				
Temiar	AS-42	Austroasiatic	X					X								X				
Thai	AS-43	Tai-Kadai		X					X								X			
Tuvinian	AS-44	Turkic	X					X	X							X				
Udihe	AS-45	Tungusic	X					X								X				
Vietnamese	AS-46	Austroasiatic	X	X				X	X						X	X				
Vogul	AS-47	Uralic	X					X							X					
Wa	AS-48	Austroasiatic		X					X							X				
Yugh	AS-49	Yeniseian	X					X							X					
Yukaghir, Kolyma	AS-50	Yukaghir	X					X							X					
Adyghe	EU-1	Abkhaz-Adyghe							X						X					X
Albanian	EU-2	Albanian		X	X					X						X				
Basque	EU-3	Basque	X					X							X					
Belarusian	EU-4	Slavic	X					X							X					
Bulgarian	EU-5	Slavic	X	X				X	X						X	X				
Catalan	EU-6	Romance		X				X	X						X	X				
Croatian	EU-7	Slavic	X	X				X	X						X	X				
Czech	EU-8	Slavic	X					X							X					X
Danish	EU-9	Germanic	X					X							X					X
Dutch	EU-10	Germanic	X					X							X					X

Language	Appendix	Affiliation	SI					ND					FD							
			I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V			
English	EU-11	Germanic			X					X										X
Estonian	EU-12	Uralic	X					X												X
Faroese	EU-13	Germanic	X	X				X	X											X
Finnish	EU-14	Uralic	X					X												X
French	EU-15	Romance			X					X										X
Georgian	EU-16	Kartvelian	X	X				X	X											X
German	EU-17	Germanic	X					X		X										X
Greek	EU-18	Graeco-Phrygian			X			X	X											X
Hungarian	EU-19	Uralic	X					X												X
Icelandic	EU-20	Germanic	X					X	X											X
Irish	EU-21	Celtic			X					X										X
Italian	EU-22	Romance			X					X										X
Khwarshi	EU-23	Nakh-Daghestanian	X					X												X
Latvian	EU-24	Baltic	X	X				X	X											X
Lezgian	EU-25	Nakh-Daghestanian	X					X												X
Lithuanian	EU-26	Baltic	X	X				X	X											X
Low German	EU-27	Germanic	X					X		X										X
Macedonian	EU-28	Slavic	X	X				X	X											X
Maltese	EU-29	Afro-Asiatic			X					X										X
Norwegian	EU-30	Germanic	X					X												X

Language	Appendix	Affiliation	SI					ND					FD							
			I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V			
Maori	OC-21	Austronesian	X	X				X												
Marquesan	OC-22	Austronesian	X	X				X												
Martuthunira	OC-23	Pama-Nyungan	X					X	X						X	X				X
Mauwake	OC-24	Trans-New Guinea					X							X						X
Maybrat	OC-25	Maybrat-Karon						X	X					X	X					
Menya	OC-26	Trans-New Guinea	X					X						X						
Motuna	OC-27	South Bougainville					X	X	X					X	X					
Ngan'gityemerri	OC-28	Southern Daly	X					X	X	X			X							
Nii	OC-29	Trans-New Guinea					X	X	X					X						X
Orokaiva	OC-30	Trans-New Guinea	X	X				X	X	X				X	X					X
Palauan	OC-31	Austronesian						X						X						X
Pitjantjatjara	OC-32	Pama-Nyungan	X					X						X						
Ponapean	OC-33	Austronesian					X							X						X
Rapanui	OC-34	Austronesian	X					X						X						
Rawa	OC-35	Trans-New Guinea	X	X				X	X					X	X					
Rotokas	OC-36	North Bougainville	X	X				X	X					X						
Sa'a	OC-37	Austronesian	X	X				X						X	X					
Savosavo	OC-38	Solomon Islands	X	X				X	X					X	X					
South Efate	OC-39	Austronesian	X	X				X						X						
Tidore	OC-40	West Papuan					X		X				X	X					X	X

Language	Appendix	Affiliation	SI					ND					FD							
			I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V			
Tinrin	OC-41	Austronesian	X					X	X						X					
Tok Pisin	OC-42	Indo-European							X										X	
Tongan	OC-43	Austronesian	X							X										
Wambaya	OC-44	Mirindi							X											
Wardaman	OC-45	Yangmanic	X							X										
Warrongo	OC-46	Pama-Nyungan	X						X											
Yawuru	OC-47	Nyulnyulan	X							X										
Yidjij	OC-48	Pama-Nyungan	X							X										
Yindjibarndi	OC-49	Pama-Nyungan	X						X											
Yuwaalaraay	OC-50	Pama-Nyungan	X							X										

Appendix VII: Calculation on how often languages employ the same pattern in the SDDs as in the SIs

Africa

	Number of languages that employ a certain pattern in the SIs	Number of languages that employ a certain pattern in the SIs and the ND SDDs	Number of languages that employ a certain pattern in the SIs and the ND SDDs
Pattern I	13	11	10
Pattern II	18	18	17
Pattern III	4	3	2
Pattern IV	2	2	2
Pattern V	31	30	30
Total	68	64	61
Percentage	–	94.1%	89.7%

The Americas

	Number of languages that employ a certain pattern in the SIs	Number of languages that employ a certain pattern in the SIs and the ND SDDs	Number of languages that employ a certain pattern in the SIs and the ND SDDs
Pattern I	29	25	25
Pattern II	17	9	10
Pattern III	4	3	2
Pattern IV	0	–	–
Pattern V	16	11	12
Total	66	48	49
Percentage	–	70.7%	74.2%

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Asia

	Number of languages that employ a certain pattern in the SIs	Number of languages that employ a certain pattern in the SIs and the ND SDDs	Number of languages that employ a certain pattern in the SIs and the ND SDDs
Pattern I	35	32	31
Pattern II	24	24	24
Pattern III	3	2	2
Pattern IV	0	–	–
Pattern V	5	5	5
Total	67	63	62
Percentage	–	94.0%	92.5%

Europe

	Number of languages that employ a certain pattern in the SIs	Number of languages that employ a certain pattern in the SIs and the ND SDDs	Number of languages that employ a certain pattern in the SIs and the ND SDDs
Pattern I	37	35	34
Pattern II	25	20	23
Pattern III	2	0	0
Pattern IV	1	1	1
Pattern V	1	1	1
Total	66	57	59
Percentage	–	86.4%	89.4%

Oceania

	Number of languages that employ a certain pattern in the SIs	Number of languages that employ a certain pattern in the SIs and the ND SDDs	Number of languages that employ a certain pattern in the SIs and the ND SDDs
Pattern I	37	32	32
Pattern II	21	9	11
Pattern III	3	0	0
Pattern IV	2	1	1
Pattern V	9	5	6
Total	72	47	50
Percentage	–	55.6%	66.7%

The world

	Number of languages that employ a certain pattern in the SIs	Number of languages that employ a certain pattern in the SIs and the ND SDDs	Number of languages that employ a certain pattern in the SIs and the ND SDDs
Pattern I	151	135	132
Pattern II	105	80	85
Pattern III	16	8	6
Pattern IV	5	4	4
Pattern V	62	52	54
Total	339	279	281
Percentage	–	82.3%	82.9%

Index of Authors

- Abdoulaye, Mahamane L. 429
Abinal, Antoine 376
Aburto, Pascual 227
Aikhenvald, Alexandra Y. 356ff., 363f., 498
‘Alawī, Buzurg 470
Alcina Franch, Juan 70
Alexander, Ronelle 82ff., 155
Ambrazas, Vytautas 482
Amha, Azeb 339f., 433
Anderson, Gregory D. S. 472
Andrese, Jutta 477
Andresen, Julie Tetel 264, 295
Andrews, Avery 11, 13
Andrews, J. Richard 225
Anonby, Erik J. 189f., 434
Aoki, Haruo 451
Arleville, Bridel 479
Armagost, James 123f., 175f., 444
Arnaudov, Jan 476
Aschamaf, D. 245, 475
Atoyebi, Joseph Dele 365f., 435
Awde, Nicholas 214
- Babaev, Kirill 205f., 440
Baerman, Matthew 27
Barker, Muhammad Abd-Al-Rahman 447
Beck, David 233ff., 455
Behrens, Kevin 482
Bělič, Jaromir 79
Belloro, Valeria A. 228f.
Bendel, Christiane 22, 475
Benjamin, Geoffrey 472
Bennardo, Giovanni 508
Benzing, Johannes 467
Berg, René van den 239, 468
Bergenholtz, Henning 376, 433
Berger, Hermann 460
Berghäll, Liisa 500
Blackings, Mairi 112f., 433
Blake, Barry J. 11, 17f.
Bleuca, José Manuel 70
Bliese, Loren F. 425
Bloom-Ström, Eva-Marie 348f.
Blust, Robert 88
- Bohnemeyer, Jürgen 94, 126, 226, 378f.
Bohnhoff, Lee E. 427
Bontcheva, Katina 476
Bornemann, Eduard 21
Bosisio, Roberta 149
Bowern, Claire Louise 102f., 492
Bradshaw, Robert L. 99ff., 494
Brandão, Ana Paula Barros 120ff.
Breu, Walter 487
Breugel, Seino van 178ff., 458
Broadwell, George Aaron 361ff., 443
Buchholz, Oda 182, 475
Bugaeva, Anna 59
Burgess, Eunice 121, 452
Buscha, Joachim 183
- Cablitz, Gabriele H. 499
Campbell, Lyle 191ff.
Carlin, Eithne B. 455
Carling, Gerd 26
Carlson, Robert Joel 437
Carter, Phillip M. 264, 295
Casad, Eugene H. 228f., 456
Chacon, Thiago Costa 176f., 219, 445
Charney, Jean Ormsbee 123, 176, 444
Christiansen-Bolli, Regula 31
Churchward, C. Maxwell 508
Clark, Ross 88
Cleasby, Richard 480
Cole, Desmond T. 350, 438
Cook, Walter Anthony 26, 469
Corbett, Greville G. 12, 17, 25
Cowell, Andrew 383f., 441
Creissels, Denis 10, 13, 17, 32, 296, 394
Crystal, David 21
Cysouw, Michael 31
- Dabbs, Jack A. 31f.
Dam, Jan van 477
Dardano, Maurizio 148f., 481
De Jong Boudreault, Lynda J. 124f.
De Reuse, Willem J. 49f., 441
DeBray, Reginald George A. 477, 487f.
Dedrick, John M. 228f., 456

<https://doi.org/10.1515/9783110672640-021>

- Dench, Alan 167ff., 499
 Denny, Peter 211f., 334f., 447
 Diessel, Holger 2, 5ff., 17, 257, 333, 401f.
 Dixon, R. M. W. 33f., 109f., 398, 494, 510
 Döhler, Christian 498
 Dol, Philomena 500
 Donaldson, Bruce C. 477
 Donaldson, Tamsin 7
 Doornenbal, Marius Albert 336ff., 459
 Dougherty, Janet W. D. 198ff., 495
 Driem, George van 27, 338f., 467
 Drossard, Werner 372f., 471
 Dunn, Michael John 461
- Eastwood, John 478
 Ebert, Karen H. 466
 Echegoyen, Artemisa 452
 Elbert, Samuel H. 496
 Elias-Bursać, Ellen 82ff., 155
 Elson, Benjamin F. 124
 Elspaß, Stephan 32
 Enfield, N. J. 467
 Engbrandt-Heider, Eleonor 489
- Fabb, Nigel 112f., 433
 Fedden, Sebastian Olcher 346ff.
 Feist, Timothy 195f., 486
 Feldman, Harry 184f., 368f., 492
 Fiedler, Wilfried 182, 475
 Fillmore, Charles 6f., 9, 17
 Fischer, Steven Roger 89f., 504
 Foley, William A. 340
 Forster, D. Keith 126ff., 449
 Frajzyngier, Zygmunt 387
 Francisco, José Santiago 230ff., 455
 Frantz, Donald G. 384f., 442
 Friedländer, Marianne 208, 437
 Friedman, Victor A. 154ff., 483
 Froman, Frances 8
 Furby, Christine 103
 Furby, Edward 103
- García Matzar, Pedro 381f.
 Gecaga, B. Mareka 212
 Giacon, John 104, 107ff., 510
 Gijn, Rik van 457
 Gill, Harjeet Singh 470
- Gillies, William 160ff., 487
 Gleason, Henry A. Jr. 470
 Goddard, Clifff 503
 Gomes dos Santos, Manoel 456
 Gönczöl-Davies, Ramona 486
 Good, Jeff 31
 Gorelova, Liliya M. 468
 Graczyk, Randolph 50ff., 444
 Green, Jenny 103, 491
 Greenhill, Simon J. 295
 Griffiths, David 377
 Groen, Bernardus Maria 156
 Guerrero, Lilián 218, 226, 228f.
 Guillaume, Antoine 443
 Gulyá, János 469
 Gutiérrez, Donaciano 124
 Gwynn, John Peter L. 472
- Hai, Tran Trong 138, 250
 Haiman, John 466
 Hallonsten Halling, Pernilla 403
 Hammarström, Harald 37, 261
 Hammond, Lila 85, 487
 Hanks, William F. 457
 Hanson, Rebecca 220ff., 457
 Hantgan-Soko, Abbie 4, 426
 Harrison, K. David 472
 Hartmann, Josef 425
 Hasegawa, Yoko 65
 Haspelmath, Martin 12, 17, 22, 301, 398, 482
 Hasselblatt, Cornelius 478
 Haude, Katharina 220, 334, 450
 Haurholm-Larsen, Steffen 54f., 351ff., 446
 Haviland, John B. 104, 171, 378ff., 496
 Heath, Jeffrey 42ff., 46, 204, 215ff., 426, 431, 436, 438
 Heine, Bernd 6, 293
 Helbig, Gerhard 183
 Henry, Reginald 443
 Hernández Sallés, Arturo 222
 Hill, Jane H. 226
 Hill, Kenneth C. 226
 Himmelmann, Nikolaus P. 6f., 9, 17, 23
 Hober, Nicole 94, 125f., 227, 293, 362, 378, 382
 Hoddinott, Wiliam G. 501
 Holton, David 480

- Hosokawa, Komei 104, 509
 Huffman, Franklin E. 138
 Hurm, Antun 476
- Iliescu, Maria 486
 Ivens, Walter George 505
- Jackendoff, Ray 1, 5, 402
 Jakolev, Nikolaj N. 245, 475
 Janda, Laura A. 79f.
 Jansen, Joana 454
 Johansson, Niklas 26
 Josephs, Lewis S. 503
- Kabata, Kaori 11, 17f.
 Kachru, Yamuna 463
 Kaiser, Stefan 390
 Kálmán, Béla 474
 Kastenholz, Raimund 207, 426
 Kejonen, Olle 197
 Khalilova, Zaira 8, 353ff., 481
 Kieviet, Paulus 88ff.
 King, Alan R. 161, 191ff., 449, 453, 475
 King, John T. 136ff., 462
 Kirkaldy-Willis, W. H. 212
 Kofod, Frances M. 501
 Kolas, Ja. 476
 Kovaleva, G. V. 484
 Kratochvíl, František 197f., 364, 491
 Krifka, Manfred 348
 Krishnamurti, Bhadriraju 472
 Kuteva, Tania 293
- La Flesche, Francis 132f., 386, 452
 Lalli, Esa 458
 Langacker, Ronald W. 5, 402
 Langdon, Margaret H. 448
 Larsen, Bud 503
 Larsen, Marllys 503
 Larsen, Robert 503
 Laughlin, Robert M. 456
 Launey, Michel 225
 Lavy, Jaacov 463
 Leer, Jeff 49, 448
 Leslau, Wolf 425
 Lestrade, Sander 10ff., 17f., 301, 395, 398
 Levinson, Stephen C. 5, 7ff., 17, 35
- Levkovych, Nataliya 246, 486, 490
 Lewin, Bruno 466
 Lewis, Geoffrey 489
 Li, Charles N. 140ff.
 Lock, Arnold 249ff., 491
 Lorenz, Manfred 470
 Lorient, James 129
 Lüdtke, Jens 70, 489
 Lunt, Horace C. 80, 484
- Ma, Seng Mai 111, 134f., 140
 MacKay, Carolyn J. 231, 236
 Mahootian, Shahrzad 470
 Malau, Catriona 88, 341ff.
 Mark, Colin 161f.
 Maslova, Elena 66f., 474
 Mason, David 227
 Mason, J. Alden 122
 Matthews, Stephen 461
 Maurer, Philippe 425
 Mayerthaler, Willi 13
 McFarland, Teresa A. 230f., 455
 Meinhof, Carl 350
 Merlan, Francesca C. 508
 Meyer, Ronny 39f., 440
 Mfoutou, Jean-Alexis 186f., 434
 Michaelis, Susanne 398
 Milner, George Bertram 33f., 494
 Mithun, Marianne 443
 Mitronova, I. N. 484
 Möller, Robert 32
 Montgomery, William B. 132f.
 Morphy, Frances 493
 Moser, Rosmarie 430
 Moss, Sr. Alonzo 383f., 441
 Mucanheia, Francisco U. 209f., 350, 427
 Mushin, Ilana 103, 495
- Ndongo Esono, Salvador 210f., 436
 Nedjalkov, Igor 462
 Nettle, Daniel 295
 Newmark, Leonard 181f., 475
 Nicholas, Sally Akevai Te Namu 499
 Nikitina, Tatiana 11f.
 Nikolaeva, Irina 473
 Nintemann, Julia 30, 102, 172, 183f., 198, 204
 Noonan, Michael 11, 17f., 30
 Nordlinger, Rachel 170f., 508

- Ó Baoill, Dónall P. 160
 Ó Siadhail, Mícheál 160, 480
 Okoth-Okombo, Duncan 432
 Olpp, Johannes 41, 430
 Onishi, Masayuki 166f., 501
 Orkaydo, Ongaye Oda 35
 Oslon, Mikhail V. 485
 Osorio May, José del Carmen 378
 Osumi, Midori 95ff., 506
 Otanes, Fe T. 194, 372f.
 Otsuka, Hitomi 64f., 464
- Pagel, Steve 89f., 504
 Pantcheva, Marina 10ff., 17f., 27, 196f., 395, 398
 Pawley, Andrew 198
 Pensalfini, Rob 104ff., 171
 Pensalfini, Robert 497
 Pérez Báez, Gabriela 379
 Petrollino, Sara 113ff., 429
 Piccoli, Giovanni 487
 Post, Mark William 462
 Priestly, Tom M. S. 155
 Pukui, Mary Kawena 496
- Quintero, Carolyn 130ff., 385f., 452
- Ragoncsa, László 480
 Rasoloson, Janie Noëlle 375ff.
 Rehg, Kenneth 504
 Reichard, Gladys A. 50, 451
 Reid, Nicholas J. 501
 Reseck, Tamar 479
 Rice, Sally 11, 17f.
 Rimmington, Don 142f., 461
 Risch, Ernst 21
 Robbers, Maja 30, 94, 102, 125f., 172, 183f., 198, 204, 227, 362, 378
 Roberts, H. 61f.
 Robinson, Stuart 504
 Rodríguez Guaján, José Obispo 381f.
 Ross, Claudia 140f., 461
 Ross, Malcolm 88
 Roth Li, Gertraude 468
 Rowan, Orland 121, 452
 Rowlands, Evan Colyn 115, 439
 Rubino, Carl R. G. 240ff., 464
 Ryding, Karin C. 458
- Saaed, John 436
 Sadler, Wesley 206, 432
 Saint-Exupéry, Antoine de 18
 Samarin, William J. 22, 436
 Sasaki, Mitsuya 225f.
 Saxton, Dean 122f., 454
 Saxton, Lucille 122, 454
 Schachter, Paul 194, 372f.
 Schadeberg, Thilo C. 209f., 350, 427
 Schapper, Antoinette 9, 247f., 333, 341, 493
 Schiffman, Harold F. 471
 Schirmer, Randi Rosevinge 484
 Schuh, Russel G. 434f.
 Seiler, Hansjakob 442
 Seiler, Walter 497
 Seki, Lucy 447
 Senft, Gunter 497
 Seyoum, Mulugeta 427
 Sheng Ma, Jing-heng 140f., 461
 Sherzer, Joel 128
 Shimelman, Aviva 52f., 453
 Short, David 81, 488
 Silva, Manuel 229
 Sims, Andrea D. 17
 Skrefsrud, Lars Olsen 361
 Smeets, Ineke 222, 450
 Smith, Wikaliler Daniel 128f.
 Smyth, David 472
 Soe, Myint 59f., 460
 Staden, Miriam van 251ff., 506
 Stennes, Leslie H. 428
 Stolz, Christel 378
 Stolz, Thomas 1f., 5, 10ff., 21f., 25f., 28ff., 38, 47, 49, 56f., 67, 69, 71ff., 77, 79, 86, 107, 111, 119, 133, 139, 145, 151f., 163f., 172, 185ff., 194ff., 203, 218, 226, 238, 244ff., 257, 259, 260, 267, 275, 280f., 286, 292, 294f., 298, 301f., 307, 309, 319, 330f., 389f., 392, 394ff., 400f., 403, 484, 486
 Stucky, Alfred 502
 Stucky, Dellene 502
 Sudlow, David 42ff., 438
 Suttles, Wayne 370f., 450
 Swan, Oscar 151ff.
 Sylak-Glassman, John 354

- Talmy, Leonard 5, 402
 Tamura, Suzuko 59, 458
 Taweesak, Kunyot 243f., 464
 Teclé, Zemicael 438
 Thian Hock, William G. 459
 Thieberger, Nicolas 506
 Thiesen, Wesley 56, 442
 Thompson, Hanne-Ruth 32, 460
 Thompson, Laurence C. 138f., 473
 Thompson, Sandra A. 140ff.
 Thorne, David A. 163
 Timmermann, Ulf 478
 Tisdall, W. St. Clair 470
 Tjia, Jonny 468
 Toland, Donald 91ff., 504
 Toland, Norma 91ff., 504
 Tolskaya, Maria 473
 Tomšič, France 488
 Townsend, Charles E. 79f.
 Trifone, Pietro 148f., 481
 Tschong Dae, Kim 466
 Tsunoda, Tasaku 102f., 509
- Ultan, Russell 1
 Urdze, Aina 481
 Uroić, Marija 476
- Valentine, J. Randolph 383
 Valenzuela, Crescencio Buitimea 228
 Valenzuela, Pilar M. 129f., 454
 van den Berg, René 240
 Vázquez Álvarez, Juan Jesús 225
 Voigtlander, Katherine 452
 Volker, Craig Alan 507
- Vorbichler, P. Anton 174f., 426
 Vü, Duy-Từ 139, 473
- Wade, Terence 77ff.
 Wakasa, Motomichi 359, 439
 Wälchli, Bernhard 32, 94, 126, 222, 227
 Warburton, Irene 427
 Warner, Natasha 451
 Watahomigie, Lucille J. 446
 Weber, David 56, 442
 Wegener, Claudia U. 505
 Werner, Heinrich 474
 Werner, Roland 435
 White, Leila 478
 Whitehead, Carl R. 343ff., 501
 Wilbur, Joshua 196
 Wiliam, Uriel 163
 Williams, Corinne J. 107
 Williams, Stephen J. 163
 Williamson, John P. 445
 Williamson, Kay 24, 435
 Winter, Werner 336, 446, 459
 Wistrand-Robinson, Lila 123f., 175f., 444
 Wordick, Frank J. F. 510
 Wurm, Stephen Adolphe 107
- Yip, Po-Ching 141ff., 461
 Yip, Virginia 461
- Zavala Maldonado, Roberto 382
 Zerbian, Sabine 348
 Zifonun, Gisela 183
 Zúñiga, Fernando 32, 94, 126, 222f., 227

Index of Languages

- Abau 86, 173, 247, 249ff., 289f., 356, 491
Abui 86, 164, 186, 197f., 289f., 306, 364, 491
Adamawa Fulfulde 37
Adyghe 245f., 280f., 399, 475
Afar 111, 425
Afrikaans 264
Ainu 57ff., 63, 458
Akatek 381f.
Albanian 145f., 173, 181ff., 246, 281, 283, 475
Amharic 38, 111, 425
Angolar 172, 203f., 265, 425
Apache, San Carlos 48ff., 119, 272, 306, 441
Apatani 57, 133, 278, 458
Arabic, Modern Standard 57, 458
Arapaho 48, 119, 383ff., 441
Ardeşen-Laz 395
Arrernte, Eastern 86, 103, 491
Atong 57, 173, 177ff., 458
Awtuw 86, 173, 184f., 247, 289f., 306, 367ff.,
371, 492
Aztec, Classical 268
- Baba Malay 133, 459
Balese 172ff., 395, 426
Bambara 203, 207f., 426
Bangime 3ff., 203f., 426
Bantawa 57, 336f., 459
Bardi 86, 102f., 164, 492
Basque 22, 67, 69, 475
Belarusian 67, 476
Bengali 31, 57, 133, 278, 460
Blackfoot 48, 306, 384f., 442
Bora 48, 55f., 442
Bosnian 82, 85
Bulgarian 67, 146, 159, 476
Bunaq 9, 247ff., 341, 493
Bunoge Dogon 173, 203f., 265, 426
Burmese 40, 57, 59ff., 460
Burushaski, Yasin 57, 133, 278, 460
- Cahuilla 48, 269, 442
Cantonese 57, 133, 278, 461
Catalan 67, 146, 283, 476
Cavineña 48, 119, 129, 272, 443
Cayuga 8, 173, 218, 272, 306, 443
- Ch'ol, Tila 218, 224f., 444
Chamorro 86, 247, 289f., 493
Chinese, Mandarin 34, 57, 133, 141ff., 461
Choctaw 48, 218, 271, 306, 361ff., 443
Chontal 227
Chuj 381
Chukchi 57, 461
Comanche 48, 119, 122f., 173, 175f., 269,
271f., 444
Cree 48, 119, 272, 444
Croatian 67, 82ff., 146, 155, 158, 476
Crow 48, 50ff., 444
Cubeo 173, 176f., 184, 218f., 272, 445
Czech 67, 79ff., 146, 283f., 299, 477
- Dakota 48, 119, 272, 445
Danish 68, 73f., 76, 477
Dhimal 133, 136ff., 462
Dii 173, 203, 265, 427
Dime 111, 427
Djapu 86, 493
Doromu-Koki 86, 98ff., 164, 173, 289f., 494
Dutch 68, 477
Dyirbal 86, 494
- Ekoti 203, 209ff., 213, 348, 350f., 427
English 2, 6f., 19f., 22, 24, 26, 61, 69, 71ff.,
75, 87, 94, 125, 127, 139, 141, 146, 165,
173, 209, 215, 250, 254, 362, 374, 391,
398, 402, 478
– Early Modern ~ 2, 71ff., 75
Estonian 68, 478
Evenki 57, 133, 278, 462
Ewe 203, 427
- Faroese 68, 75f., 146, 478
Fijian 32f., 86, 494
– Bau ~ 34
– Boumaa ~ 33f.
– Ca'udrove ~ 33
Finnish 68, 478
Fon 203, 428
French 7, 146f., 186, 479
Fulfulde, Adamawa 37, 111, 203, 428
Futuna-Aniwa 86, 186, 197ff., 289, 495

<https://doi.org/10.1515/9783110672640-022>

- Galo 133, 462
 Garifuna 48, 54f., 351ff., 446
 Garrwa, Western 86, 103, 165, 289, 495
 Georgian 68, 145f., 479
 German 2ff., 68, 173, 183, 283, 306, 317, 390f., 479
 – Low ~ 68, 173, 184, 283, 482
 Gidar 38, 111, 265, 387f., 428
 Gonja 203, 429
 Greek 145
 – Modern ~ 68, 145f., 283, 480
 – Ancient ~ 21
 Guaraní, Paraguay 48, 120, 272, 446
 Guugu Yimidhirr 86, 101, 104, 165, 171, 289, 496
- Hamar 38, 111, 113ff., 265, 399, 429
 Hausa 38, 111, 429
 Hawaiian 86, 165, 173, 184, 289f., 496
 Hebrew 57, 463
 Hiligaynon 57, 133, 144f., 173, 239, 278, 463
 Hindi 57, 133, 463
 Hmong Njua 239, 243f., 277, 464
 Hualapai 48, 120, 218, 271ff., 446
 Hungarian 68, 480
 Hupa 49
- Icelandic 68, 75f., 146, 283, 480
 Iloko 133, 173, 239ff., 278, 464
 Imonda 86, 497
 Inuktitut, W. Canadian 48, 334ff., 447
 Irish 146, 160, 480
 Isthmus Zapotec 14
 Italian 146ff., 481
- Japanese 6, 57, 63ff., 133, 389f., 464
 Jingulu 86, 104ff., 165, 171, 289, 497
- Kaba 203, 430
 Kabiyé 203, 430
 Kamaiura 48, 120, 272, 447
 Kaqchikel 381f.
 Khasi 57, 61f., 133, 194f., 465
 Khmer 133, 466
 Khoekhoe, Nama 38, 40, 111, 430
 Khwarshi 8, 68, 353ff., 358, 360, 481
 Kichwa 268
- Kikuyu 111, 203, 211ff., 348, 430
 Kilivila 86, 247, 289f., 497
 Klamath 48, 120, 272, 447
 Koçava 57, 466
 Kodiak Alutiiq 48, 448
 Komnzo 87, 498
 Konso 35
 Korean 57, 133, 466
 Koyra Chiini 203, 215ff., 431
 Koyraboro Senni 203, 217, 431
 Kumeyaay 48, 448
 Kuna 48, 120, 126ff., 272, 449
 Kuna
 – Border 48, 120, 126ff., 272, 449
 – San Blas 128
- Lakota 48, 449
 Lamut 57, 467
 Lango 111, 432
 Lao 134, 467
 Latvian 68, 146, 283, 481
 Lenca, Honduran 120, 449
 Lezgian 68, 482
 Limbu 27f., 57, 134, 278, 338, 467
 Lithuanian 68, 146, 482
 Loma 203, 206f., 432
 Luo 203, 432
- Ma'di 112f., 433
 Maale 38, 111, 265, 339f., 433
 Macedonian 68, 146, 151, 154ff., 483
 Malagasy 173, 203f., 265, 375ff., 433
 Malayalam 134, 467
 Maltese 145f., 484
 Mam 381
 Mambay 186, 188ff., 203f., 265, 434
 Manambu 87, 186, 197, 249, 289, 306, 356ff., 363f., 498
 Manchu 57, 134, 468
 Maori, Southern Cook Islands 87, 165, 289, 499
 Mapudungun 48, 120, 126, 218, 222ff., 271ff., 298, 450
 Marquesan 87, 165, 288, 499
 Martuthunira 87, 165, 167ff., 186, 197, 289, 499
 Mauwake 247, 500

- Maybrat 87, 165, 289, 500
 Menya 87, 343ff., 501
 Mexicanero 227
 Mian 346ff.
 Miya 111, 434
 Mopan 378
 Motuna 87, 165ff., 289, 501
 Movima 218ff., 334, 450
 Mualang 57, 468
 Muna 239f., 468
 Mundari 26, 57f., 469
 Munukutuba 111, 186ff., 190, 203, 264f., 434
 Musqueam 48, 120, 272, 306, 370f., 450
 Mutsun 48, 120, 272, 451
- Nahuatl 193, 225ff., 268f.
 – Acaxochitlán ~ 227, 268
 – Guerrero ~ 122, 191, 193, 218, 225ff., 269, 451
 – Pajapan ~ 268
 Navajo 48ff., 451
 Nez Perce 48, 451
 Ngan'gityemmerri 87, 165, 173, 290, 501
 Ngiyambaa 7
 Ngizim 38, 399, 435
 Nicobarese, Car 57, 134, 239, 276, 278, 469
 Nii 87, 165, 173, 247, 289f., 502
 Nishnaabemwin 383
 Nobiin 111, 435
 Norwegian 68, 73f., 76, 484
- Òkọ 111, 203, 365f., 435
 Old Church Slavonic 68, 78ff., 83, 151f., 158, 173, 283, 484
 Ònìchà Igbo 24, 204, 435
 Orokaiva 87, 165, 173, 247, 289, 503
 Osage 48, 120, 130ff., 273, 385f., 452
 Ostyak 57, 469
 Otomí, Sierra 218, 227, 452
- Palauan 247, 503
 Pamue 204, 210f., 436
 Panjabi 58, 134, 470
 Parecís 120ff., 452
 Penange 204, 436
 Persian 58, 134, 470
- Pipil 122, 186, 191ff., 219, 224, 227, 269, 273, 453
 Pitjantjatjara 87, 503
 Polish 68, 83, 146, 151ff., 155, 159, 283, 484
 Ponapean 247, 504
 Popoluca
 – Highland ~ 120, 124ff., 219, 272f., 453
 – Sierra ~ 124
 – Texistepec ~ 268
 Portuguese 68, 121, 146, 283, 485
- Quechua 453
 – Ayacuchano ~ 268
 – Cuzqueño ~ 268
 – Yauyos ~ 48, 52ff., 453
- Rapanui 87ff., 504
 Raw, Karo 87, 91ff., 165, 504
 Romani, Moldovan 68, 146, 173, 283, 485
 Romanian 68, 146, 486
 Rotokas 87, 165, 289, 504
 Rumantsch 68, 146, 283, 486
 Russian 34, 68, 76ff., 486
- Sa'a 87, 165, 290, 505
 Saami 197, 395
 – Akkala ~ 197
 – Inari ~ 196
 – Kildin ~ 197
 – Lule ~ 197
 – North ~ 196, 395
 – Pite ~ 196
 – Skolt ~ 186, 195ff., 399, 486
 – South ~ 197
 – Ter ~ 197
 – Ume ~ 197
 Sahaptin 48, 454
 Sango 22, 204, 436
 Santali 58, 134, 278, 359ff., 470
 Savosavo 87, 165, 505
 Scots-Gaelic 146, 160ff., 487
 Serbian 68, 83, 85, 146, 156, 158, 284, 487
 Shipibo-Konibo 120, 129f., 454
 Slavomolisano 68, 146, 158, 283, 487
 Slovak 68, 146, 284, 488
 Slovenian 68, 146, 155, 284, 488
 Somali 38, 111, 265, 436

- Sorbian
 – Lower ~ 68, 146, 284, 488
 – Upper ~ 68, 146, 283f., 299, 488
 South Efate 87, 165, 289, 307, 506
 Spanish 53, 68ff., 124ff., 146, 193, 227, 284, 317, 489
 Supyire Senoufo 204, 437
 Susu 204, 208f., 437
 Swahili 111, 204, 213f., 348ff., 437
 Swedish 68, 71ff., 489
- Tabasco Chontal 378
 Tabassaran 354
 Tadaksahak 31
 Tadraḡ Tamasheḡ 42, 46f.
 Tagalog 58, 134, 173, 186, 193f., 239, 278, 372ff., 471
 Tamasheḡ 38, 42ff., 111, 265, 399, 438
 – Tadraḡ ~ 42, 46f., 438
 Tamil 134, 471
 Tanacross 35, 49
 Telugu 58, 472
 Temiar 58, 472
 Thai 134, 472
 Tidore 87, 173, 186, 247, 251ff., 287, 289, 506
 Tigrinya 38, 399, 438
 Tila Ch'ol 379
 Tinrin 87, 95ff., 165, 290, 506
 Tohono O'odham 48, 120, 122f., 269, 272f., 454
 Tok Pisin 87, 165, 173, 247, 287, 290, 507
 Tongan 87, 184, 508
 Totonac
 – Filomeno Mata ~ 8, 186, 219, 230ff., 236, 238, 273, 455
 – Misantla ~ 231, 236, 238, 268
 – Papantla ~ 238, 268
 – Upper Necaxa ~ 48, 120, 173, 186, 219, 232ff., 268, 271, 455
- Trio 48, 120, 273, 455
 Tsez 354
 Tswana 204, 350f., 438
 Turkish 68, 489
 Tuvinian 58, 134, 278, 472
 Tzotzil, Zinancantán 219, 379ff., 456
- Udihe 58, 473
 Ukrainian 68, 246, 281, 490
- Vietnamese 58, 134, 138ff., 473
 Vogul 58, 474
 Vurës 88, 341f.
- Wa 132, 134f., 138, 474
 Wambaya 87, 165, 170f., 289f., 508
 Wapishana 48, 456
 Wardaman 87, 165, 289, 508
 Warrongo 87, 102f., 165, 172, 289, 509
 Welsh 68, 146, 162ff., 283, 490
 Wolaytta 38, 111, 265, 358f., 399, 439
- Yaqui 48, 122, 219, 227ff., 269, 272f., 298, 456
 Yawuru 87, 103f., 509
 Yidij 87, 109f., 510
 Yindjibarndi 87, 165, 289, 510
 Yine 219ff., 457
 Yoruba 38, 111, 115ff., 173, 186, 204, 264, 439
 Yucatec Maya 126, 219, 226, 378f., 457
 Yugh 58, 474
 Yukaghir, Kolyma 58, 66f., 474
 Yuracaré 48, 120, 273, 457
 Yuwaalaraay 87, 104, 106ff., 510
- Zay 38ff., 399, 440
 Zialo 204ff., 440
 Zoque 120, 124, 219, 227

Index of Subjects

- ablative/ablative 8, 22, 31, 33f., 44, 55, 60, 78, 81ff., 88, 94, 96, 101, 103, 107, 109, 123f., 129, 153, 167, 176, 180, 217, 231f., 245, 337, 339, 363, 369, 378, 380, 398
- ~ morpheme 25f., 77, 123
- ~ marker 40, 55, 91, 103, 121, 126, 129f., 170f., 337, 361
- ~ suffix 66f., 103f., 109, 113, 115, 166f., 170, 337, 339, 354, 497
- ~ prefix 77, 79
- ~ postposition 101, 176
- ~ preposition 159, 3432
- adjective 86, 163, 372f., 380
- accusative 52, 168, 359
- adposition 23, 32, 120, 160f., 214, 217, 226, 296, 362, 365, 398
- adverb/adverbial 1, 6, 8f., 22, 32, 35, 55f., 61, 70f., 81, 92, 102, 121, 123, 130, 153, 156, 160, 162, 164, 167, 171, 181ff., 185, 191, 215, 221f., 237, 334, 337, 340, 342, 351, 372, 375, 377f., 403
- spatial ~ 8, 55f., 69f., 102, 171, 192, 195, 197, 217, 225f., 232f., 249, 251, 334f., 351ff., 377, 401, 403
- demonstrative ~/adverbial demonstrative 1, 6ff, 12, 22f., 33, 99, 101, 120ff., 198, 217, 220, 235, 334, 353f., 357, 401
- locative/locational/directional ~ 50, 84, 99, 122, 124, 167, 182, 188ff., 240, 340, 3432, 350f., 372, 380f.
- deictic ~ 54, 69, 112, 152, 205, 215ff., 221, 233, 249, 351
- affix/affixation 23, 32, 49, 52ff., 92, 106, 120, 226, 236f., 296, 353, 364, 373, 379, 381f.
- allative 8, 22, 25f., 30f., 40f., 55f., 60ff., 64ff., 70, 77f., 81ff., 92, 96ff., 102f., 108f., 112ff., 121ff., 136, 151ff., 167ff., 201, 217, 229ff., 245, 264, 285, 337f., 361ff., 378ff., 394, 398
- animate 132, 353
- aspect 55, 60, 131, 198, 202, 378f., 382
- asymmetry 12, 22, 28, 397f.
- canon 12, 17, 20, 22, 25f., 39ff., 49f., 58ff., 63f., 71, 76ff., 88, 90, 97, 99, 110, 248, 343, 345, 348, 351, 367, 371, 377, 379, 382, 390, 401
- canonical paradigm 12, 25f., 33, 37, 49f., 52, 58, 61f., 71, 79, 94f., 193, 333, 346, 397, 403
- clitic/cliticisation 3, 5, 8, 43ff., 96f., 99ff., 163, 183, 228, 343ff., 379, 382, 391
- complement 9, 139, 199, 387
- complexity 13f., 16f., 20, 30, 49, 55, 90, 227, 232, 255, 301ff., 331, 356, 361, 371, 389, 398, 400, 402f.
- constraint 126, 294
- Creole 22, 87, 186, 204, 287
- dative 102f., 178f., 359
- declarative 1, 5, 9, 13ff., 20ff., 38, 46, 49, 78f., 84f., 92, 94f., 97ff., 105, 119, 123, 132f., 152ff., 164, 197, 207f., 226, 229f., 248f., 301, 305, 319, 331, 378, 380f., 387ff., 396f., 401, 403
- definite 6, 81, 108, 161, 217, 228, 391
- demonstrative 1, 5ff., 22f., 33, 39f., 52, 54ff., 66, 88, 91ff., 120ff., 160ff., 198ff., 206, 209, 217, 220, 232ff., 243ff., 334ff., 369ff., 387, 389f., 401ff.
- derivation/derivational 53, 77f., 81, 84, 131, 159, 352, 401
- destination 10, 141f., 179, 195, 244, 254
- diachronic 12, 17, 29, 73, 77, 133, 151f., 163, 220, 264, 296, 334, 395
- dialectal difference/variation 32f., 140, 246, 372
- directional/directionality 3, 6, 11, 14, 24, 32ff., 43f, 55, 70f., 74, 84, 88ff., 96ff., 103, 107f., 112, 127ff, 137ff., 167, 171, 174ff., 183, 188ff., 201, 206f., 216, 225ff., 240, 252ff., 264, 293, 307, 333, 341, 344ff., 354ff., 361ff., 369, 378ff., 402
- directive 6, 112, 129
- distance 5, 8f., 15, 18ff., 30ff., 52ff., 58, 61f., 69, 78ff., 92, 96f., 102, 108, 114, 136f.,

<https://doi.org/10.1515/9783110672640-023>

- 143f., 158, 170, 178, 184, 200, 209, 216,
218, 231f., 239f., 248, 257, 265, 296,
333ff., 342ff., 350f., 357, 365ff., 370f.,
375f., 392f., 397, 402
- dual 171, 359f.
- dynamic motion/movement 52, 107, 127,
223, 381
- dynamic relations 4, 31, 39f., 95, 101, 120,
124, 135, 175, 192f., 204f., 249, 333, 365,
380
- dynamic SDDs 55, 159, 227, 352
- dynamic SIs 77, 96, 208
- dynamic spatial deixis 94, 192ff., 223, 225,
227, 247, 249, 333, 341, 357, 363, 367
- dynamic verb 43, 96, 118, 135f., 147, 149,
163, 181, 185, 188f., 206, 208ff., 240f.,
244f., 342, 366f., 373ff., 382
- elative 95, 103, 136f., 197, 222
- enclitic 23, 49f., 95ff., 102, 128, 178ff., 183f.,
191, 241, 251ff., 380
- existential 4, 42, 141, 160, 199, 221, 230,
232, 347, 352, 382
- Frame of Reference FoR 35, 252
- fused exponence 26, 28
- gender 7f., 55, 105, 127f., 167, 222, 249f.,
251, 346, 353f., 357f., 360f.
- genitive 39, 65, 77, 180, 359f.
- grammaticalization/grammaticalized 6, 22,
24, 33, 77, 88, 139, 155, 190, 214, 225,
264, 293, 334, 367, 377ff., 403
- ground 22, 24, 33, 44, 46, 89, 94, 97, 101,
125, 131f., 141, 193, 198, 206, 225, 238,
247, 249, 361ff., 391, 396, 403
- heterogeneous/heterogeneity 20, 257, 265,
272f., 278, 283f., 288ff., 294, 296ff.,
381, 395ff.
- homogeneous/homogeneity 2, 134, 278,
292, 296ff., 390, 393, 395ff.
- illative 195
- inanimate 131, 136, 353
- infix 353f.
- inflectional 8, 26, 29, 53, 55, 105, 113, 167,
198, 214, 237, 306, 333, 335, 352ff., 380,
382, 385
- instrumental 222, 384, 442
- interiority 348ff
- language contact 126, 393
- lative 8, 103, 354
- landscape oriented 35, 126, 167, 252f., 333,
341f.
- location 1f., 7f., 10f., 23, 31, 43, 45f., 49ff.,
56, 64, 84, 91, 94ff., 105f., 112ff., 121,
124ff., 134ff., 163, 167, 174, 177, 184f.,
191, 195, 206, 209, 211, 215f., 222, 225,
240f., 248, 250ff., 282, 335ff., 357f.,
361, 363, 368, 373, 375f., 381, 383f.,
390, 395, 402
- locative 1, 6f., 11, 22, 25f., 30f., 35, 40ff,
50ff., 55, 59f., 62ff., 92, 95, 97ff., 168ff.,
188ff., 195, 199ff., 213, 217ff., 225f.,
239ff., 336f., 348ff., 357, 362ff., 378ff.,
387f.
- marker chaining 40, 55f., 91, 129, 343
- mismatch(es) 12, 14, 26, 28f., 40, 58, 76, 298
- motion event 125, 223, 251, 362, 369, 381
- motion verb 33, 43, 46, 52f., 56, 60, 70f., 78,
91ff., 96ff., 108, 114, 118, 123ff., 142,
153, 160, 168ff., 174, 181, 183f., 198,
202, 211, 213f., 216, 219, 225, 230f., 233,
237, 242, 244, 247ff., 264, 293, 342,
356, 361ff., 377ff., 402
- morphosyntactic 1, 5, 7f., 50, 126, 335
- nominative 65, 359f.
- noun 6, 14, 22f., 46, 77, 99, 101, 121, 161,
163, 174, 189, 195, 199, 201, 209, 211f.,
215, 217, 220, 348ff., 357f., 385
- number 7f., 55, 160, 346, 353f., 357ff., 365
- overabundance 26, 28, 32, 49, 58, 77, 80,
82ff., 103, 151ff., 172, 194, 238, 268, 271,
352
- overdifferentiation 28, 103

- postposition 41f., 49f., 59ff., 75, 99ff., 112f.,
 123f., 129ff., 136, 174, 176, 197, 215ff.,
 222, 228, 232, 247ff., 345, 360
- predicate 126, 185, 221, 244, 335, 351ff., 359,
 370
- prefix 8, 26, 35, 39f., 61, 77ff., 81, 83f., 92,
 99, 112f., 118, 122, 157f., 160, 191, 193,
 209, 211f., 220, 226, 230, 249, 334, 350,
 353, 362, 371ff., 381, 387
- preposition 33, 46, 53, 69ff., 77, 90f., 94ff.,
 118, 125f., 135f., 138ff., 145, 147ff., 152,
 155ff., 182, 184, 188f., 192f., 212ff., 227,
 239, 242f., 342, 366, 370, 374, 387, 391,
 402
- preverb 8, 23, 130, 142f., 293, 367, 383ff.,
 441
- proclitic 191, 383
- pronominal 6ff., 121, 200, 220, 233, 334, 350
- pronoun 6f., 32, 40, 45, 54ff., 72, 81, 97,
 99ff., 112, 130f., 134ff., 160ff., 182, 206,
 213, 228, 241, 243f., 336, 342ff., 350f.,
 364, 368, 381
- segment(s) 12, 26, 29, 72, 228, 302ff., 331,
 335, 398
- semantics 4ff., 24, 52f., 60, 66, 92, 94, 97,
 108, 168, 193, 198f., 221ff., 247, 293,
 361, 367f., 380f., 401f.,
- sentence modality 301, 305, 319, 397
- spatial case 31, 72, 106, 295
- spatial deixis 5f., 14, 17, 83, 120, 123, 125,
 159, 191, 193, 224, 227, 249, 333, 341,
 357, 378f.
- spatial interrogative(s) 1ff., 9, 12ff., 67, 72ff.,
 98, 113, 116ff., 132, 152, 172, 175, 181,
 185f., 195f., 198, 207, 217, 227, 245, 259,
 269, 280, 294, 301ff., 335, 362, 377,
 389f., 394, 396ff., 401, 403
- spatial relation(s) 1ff., 9f., 14ff., 25, 31, 35,
 37, 47, 50, 52, 102, 122, 126ff., 193, 196,
 202, 221f., 233, 247, 276, 305, 333, 346,
 362, 369f., 378, 385, 389ff., 397f., 401ff.
- static 3f., 7f., 39, 49, 51f., 55f., 78, 85, 91ff.,
 99, 105ff., 114, 122ff., 127f., 131, 136,
 153, 175, 193, 198, 202, 204f., 209, 217,
 222, 224f., 227, 230, 232, 240, 243, 245,
 251, 333ff., 351, 361ff., 377ff., 380, 382,
 401
- stative 4, 30, 43, 55, 81f., 114, 118, 131, 135,
 147ff., 153, 159, 163, 175, 181, 188f., 206,
 208ff., 241f., 252f., 387
- suppletion/suppletive 26, 28f., 49, 73ff.,
 104, 106, 120, 193, 226ff., 285, 296, 311,
 357
- suffix 26, 40ff, 50ff., 66f., 73ff., 91f., 94,
 102ff., 113, 121ff., 126, 129, 132, 136f.,
 156, 166ff., 174ff, 190, 217, 219, 222,
 225, 227, 230ff., 236ff., 334, 337, 339f.,
 352ff., 363f., 368, 380, 383, 387f., 497
- syntax 50, 66, 188, 251, 363
- tense 55, 71, 128, 150, 156, 171, 202, 352,
 377f.
- univerbation 160, 163
- universal 1, 5, 8, 301, 397
- zero-marking 28ff, 54f., 61, 66f., 109f., 140,
 168, 302f.