

HUMAN
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Language Learning, Discourse and Cognition

Edited by
Lucy Pickering
Vyvyan Evans

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Language Learning, Discourse and Cognition

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Volume 64

Language Learning, Discourse and Cognition
Studies in the tradition of Andrea Tyler
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Lucy Pickering and Vyvyan Evans

INTRODUCTION

Discourse and cognitive perspectives on language learning

Lucy Pickering and Vyvyan Evans

This volume is a new addition to Benjamin's *Human Cognitive Processing: Cognitive Foundations of Language Structure and Use* series. An extension of Andrea Tyler's pioneering research program over the past three decades, it constitutes a collection of original, thematically related studies at the nexus of discourse analysis, cognitive linguistics, and second language learning. The volume is organized into three parts: (1) Discourse perspectives, (2) Cognitive perspectives, and (3) Applications to L2 learning and teaching. The chapters comprising this volume constitute both empirically and theoretically motivated studies that probe the connections between these subfields, set within, and informed by Tyler's work. An Afterword by Salvatore Attardo and Lucy Pickering further explores the links among the three sections and synthesizes the theoretical and applied foundations of Tyler's work.

Professor Tyler's research has received increasing recognition as an important reference point for viewing language as a complex, dynamic system that requires approaches that integrate multiple contexts (social, psychological and cognitive). This is in contrast to approaches that undervalue the communicative value of language by focusing almost exclusively on decontextualized syntactic and lexical patterns. At the broadest level, Tyler's work begins with meaning as opposed to the narrow investigation of formal properties. More specifically, she has focused on three areas that are also reflected in the chapters collected here:

1. the way language in context allows us to tease apart the multiple layers of interpretation that we engage in when we communicate;
2. the relationship between how we conceptualize or make meaning using language, in conjunction with non-linguistic knowledge representation, and our embodied experience in the world;
3. the way in which studying language in use has consequences for approaches to second language in terms of the development of broader theories of language and language learning, as well as the cognitive underpinnings of language structure and organization.

Andrea Tyler's influence in these areas has been considerable, both on individual scholars such as the ones included in this volume and on the directions that the field has taken overall.

Our intention in this volume is to showcase the intellectual tradition that has emerged from Tyler's work, which spans theoretical, analytical and pedagogical concerns. We anticipate that this volume will be informative for a broad academic readership that will include graduate students, researchers and teachers who are engaging in similar concerns to those addressed here.

Part I. Discourse perspectives

The first two chapters of this part of the volume chart a direct course from the original interactional sociolinguistics studies in cross-cultural communication undertaken by Andrea Tyler and her colleagues for over two decades in university settings and grounded in the work of Dell Hymes and John Gumperz (Tyler 1992a, 1992b, 1995; Tyler and Davies 1990; Tyler, Jefferies and Davies 1988). Further seminal work in this area includes collaboration with University of Florida colleague Catherine Evans Davies (see Tapper et al. in this volume; Davies and Tyler 2005).

In Chapter 1, "Culture, gender, ethnicity, identity in discourse: Exploring cross-cultural communicative competence in American university contexts", **Catherine Evans Davies** continues this tradition with a case study that explores the development of cross-cultural communicative competence in interactions between a Chinese teaching assistant and an African-American undergraduate student. She employs pragmatic role-play (Davies and Tyler 1994) to explore the different discourse styles that each participant enacts with a focus on the particular power relations that pertain in this context. Through her analysis of the guided feedback, repeated role-plays and reverse role-plays, Davies demonstrates that both participants are able to use the process to broaden their rhetorical skills and gain insight into each other's culturally established presentation of self.

Chapter 2, "Discourse management strategies revisited: Building on Tyler's early insights regarding international teaching assistant comprehensibility", by **Gordon Tapper, Grazyna Drzazga, Maria Mendoza and Jennifer Grill** replicates Tyler's early work investigating evidence of discourse management strategies or a lack thereof, in the discourse of international teaching assistants (ITAs). As the authors note, Tyler pioneered a highly productive analytical framework within which it is possible to examine how discourse-structuring devices contribute to perceptions of the comprehensibility of ITA lectures and interactions (Tyler 1992a, 1992b, 1994a, 1994b; Tyler and Bro 1992; Tyler, Jefferies and Davies 1988). Tapper et al. expand Tyler's original analyses with the inclusion of more participants and a larger

data set. Their findings with regard to discourse management strategies (DMSs) are similar to those in Tyler's original work. ITAs were less able than their native speaker (NS) counterparts to use discourse markers or repetition (e.g. synonyms and repeated mention) to cue the logical progression of ideas and to foreground or background prominence relationships between utterances. Unlike Tyler's original studies, however, ITAs were not consistently rated lower for comprehensibility than NS TAs by expert content raters suggesting that there are additional factors to consider. As Porte (2012: 2) notes, replication studies are "an essential element in the self-correcting, cumulative style of acquiring empirical knowledge," and this is achieved here.

The final chapter in this section, "Senior confessions: Narratives of self-disclosure", is contributed by **Diana Boxer**. Like Davies and Tapper, Boxer was an early collaborator of Tyler's in research projects based on the ITA program at University of Florida referencing the work of Dell Hymes. In this chapter, she revisits the type of narrative-based ethnographic study that she began with ITAs and their students, but with a different population described as "the new old". The narrators are men and women in their sixties, and the focus is stories of self-disclosure (e.g. "confession" narratives). Underpinning the analysis is the theoretical identity concept of Relational Identity (RID) (Boxer and Cortes-Conde 1997). RID is defined as "the negotiation of an identity with others and through others" (p. 283) and crucially, it is co-constructed within talk-in-interaction at a given point in time. Boxer's analysis of the telling of stories involving past transgressions (e.g. uninvolved or careless parenting) highlights the participants' use of humor to form a 'circle of trust' among the group. Unlike much previous work in both self-disclosure talk and elderly narratives, Boxer offers insights into the different ways in which each sex approaches self-disclosure (SD) talk within a mixed-sex group, and the ways in which these elders resist the perceptions of weakness or debilitation that might be typically associated with this group.

Part II. Cognitive perspectives

Part II, Cognitive perspectives, comprises four chapters that respond to Tyler and Evans' work on polysemous networks and embodied cognition (2001, 2003). Chapter 4, "The speech went on (and on) as Kerry dozed off (*and off): A conceptual grammar approach to *on* and *off*", by **Susan Strauss**, **Heesun Chang** and **Jungwan Yoon** consider the lexemes "on" and "off" using a semantic network inspired by the principled polysemy network (Tyler and Evans 2003), in which the various meanings of the prepositions are connected to a central "primary" meaning (contact/no-contact). Their approach combines cognitive grammar, corpus-assisted

analyses and discourse considerations, all with an eye toward the possible pedagogical applications that are suggested by these results. Consonant with the cognitive linguistics tradition of visual representations of meanings, the authors develop a complex system of representations for the various meanings of “on” and “off”.

In Chapter 5, “The role of embodiment in the semantic analysis of phrasal verbs: A corpus-based study”, **Narges Mahpeykar** also uses Tyler and Evans’ (2003) principled polysemy approach to account for frequency distributions of particles (the preposition-like parts in phrasal verbs). Specifically, she stresses the embodied nature of the semantics of particles and prepositions. She notes that the metaphorical schema of up/down is motivated by the anatomy and ambulatory stance of the human body: we stand (up) to walk and our heads are in the upper part of the body. Like Strauss, Chang and Yoon, she adopts a corpus-assisted methodology to determine frequency counts for the particles. The ten most frequent spatial prepositions are compared to the less frequent ones. The frequency counts show, for example, that particles involving a HIGH position on the vertical axis are more frequent than those with a LOW position. Mahpeykar argues that objects located in a higher position are more accessible to us, and this explains the higher frequency of HIGH particles. Overall, Mahpeykar concludes that there is a correlation between frequency and embodiment: higher frequency and greater number of meanings are motivated by a greater number of embodied experiences.

Chapter 6, “Synesthetic metaphors of sound: An analysis of the semantics of English and Japanese adjectives”, by **Mari Tsujita**, considers a special class of metaphors that involve synesthesia (the association of sensory data across senses, e.g. sound and color). Synesthetic metaphors are defined as the conceptualization of one sensory concept in terms of another sensory concept. Tsujita focuses on sound-based metaphors and in particular on the relationship between sound quality and the adjectives used to describe it in English and Japanese. Using both a corpus-assisted and experimental methodology, Tsujita finds that while there is overall agreement across the two languages, the agreement is greater for music sounds. The synesthetic metaphors are motivated not just through frequency of co-occurrence and perceived similarities, as in Grady (1999), but also through correlations and resemblances mediated by inter-sensory phenomena. For example, a “high” sound is high because it requires a high amount of energy to produce (e.g. muscle tension in the vocal tract, pulmonary egression, etc.). Tsujita concludes that further analysis of the polysemy of synesthetic metaphors should utilize a semantic network approach, after Tyler and Evans (2003).

The final chapter in Part II is by **Vyvyan Evans**. Chapter 7, “Conceptual vs. inter-lexical polysemy: An LCCM theory approach”, represents an evolution of the polysemy approach in the theory of Lexical Concepts and Cognitive Models (LCCM). Evans distinguishes inter-lexical polysemy and conceptual polysemy. The

former is exemplified by the polysemy of the preposition “in”, which may take a spatial meaning (*We are in the kitchen*) and a more abstract one: *Mary majored in chemistry*. The latter is exemplified by the polysemy inherent in the word *book* (physical object vs. conceptual entity). Evans states that in order to effectively account for the phenomenon of polysemy, we must account for both the nature of semantic structure as it is represented within language and conceptual structure that is non-linguistic in nature. Thus Evans proposes a unified, and hence theoretically more powerful, account of inter-lexical and conceptual polysemy in terms of cognitive models and lexical concepts in which the former result in conceptual polysemy while the latter in inter-lexical polysemy.

Part III. Applications to L2 teaching and learning

The third and final section of this volume brings together both cognitive and discourse perspectives in applications to L2 teaching and learning (Tyler 2012a, 2012b; Tyler and Evans 2004).

In Chapter 8, “Formulaicity and context in second language pragmatics”, Kathleen Bardovi-Harlig teases apart the difference between conventional expressions (e.g. *nice to meet you*) and pragmatic routines (e.g. *that’s right, you’re right, I agree*). She observes that “pragmatic routines are linked to the realization of certain speech acts, and conventional expressions are linked to speech acts in very specific contexts, and moreover are the favorite realization of the speech act in that context” (p. 198). Bardovi-Harlig investigates the distributional differences among these kinds of formulaic language uses by relying on corpus analysis and draws examples from large-scale studies that investigated learner acquisition (see Bardovi-Harlig 2009 and Bardovi-Harlig, Mossman and Vellanga 2015a). The results of these studies suggest that learners require a sophisticated alignment of speech acts, pragmatic strategy, content, meaning, form and context in their acquisition of conventional language. The more particular the context within which pragmatic routines predictably appear, the more learnability increases. Thus, for classroom applications, she suggests that the most productive route to acquiring these forms is by controlling context and allowing for free production.

Lourdes Ortega, Sang-Ki Lee and Munehiko Miyata (Chapter 9, “*What is happened? Your amazon.com order has shipped: Overpassivization and unaccusativity as L2 construction learning*”) study overpassivization in light of discourse meaning as opposed to the syntax and semantics of verb classes. There is considerable evidence that language learners tend to attribute passive morphology to unaccusative verbs, e.g. **My mother was died when I was just a baby*. In this experimental study, the authors focus on non-alternating (i.e. intransitive only, such as “The ghost

appeared”) and alternating unaccusatives (i.e. verbs that may have transitive and intransitive construals, such as, “The deficit decreased” vs. “The company decreased its investments”). In the latter, the two alternative constructions can be seen to indicate two different construals of the same event. Using a six-point Likert-like scale, the authors elicited acceptability judgments of unaccusative constructions from L2 learners from a number of different L1 backgrounds. They hypothesized that learners will more accurately judge constructions involving high frequency verbs and non-alternating verbs, and less accurately judge unaccusatives that could be interpreted as having an external causation construal. Their findings supported the first two hypotheses as learners performed best with high-frequency verbs and with non-alternating verbs. Although the third hypothesis was not confirmed, learners were most accurate when judging non-alternating verbs with an available internal causation construal. These findings are used to propose initial pedagogical guidelines in the teaching of unaccusative constructions.

The study by Yuko Nakahama reported in Chapter 10, “Effects of L2 exposure on the use of discourse devices in L2 storytelling”, builds on Nakahama, Tyler and Lier (2001), which argues that conversational exchanges may be more effective than other interactional tasks in prompting meaning-based negotiation in NS-NNS discourse. Nakahama is concerned with the differences between English as a second language (ESL) learners and English as a foreign language (EFL) learners engaging in storytelling within conversations with native speakers and the pedagogical significance of these differences. Her focus is on discourse markers and the negotiation of meaning. In a quasi-experimental setting, five ESL and five EFL learners were paired with a native speaker interlocutor in dyadic conversations. ESL speakers produced more words and more discourse markers than their EFL counterparts. In addition, ESL speakers involved their audience in the telling of their narratives (dialogic telling), whereas EFL learners were monologic. Although both groups engaged in negotiation of meaning throughout their interactions, native speakers only recast errors from the EFL group. Nakahama emphasizes the importance of learners’ engagement in real-time, interactive discourse in order to acquire discourse markers as opposed to explicit instruction of these forms.

In the final chapter of Part III (Chapter 11, “The use of hedging devices in L2 legal writing: A cognitive functional perspective”) Natalia Dolgova addresses the topic of hedging in legal memos produced by L2 speakers using a broad cognitive approach. Hedging is the process of diminishing the force of a written utterance through the use of syntactic or lexical devices. In the legal memo genre, there exists a fundamental divide between the established facts of the legal precedent and/or statutes, and the hoped for outcome of the given case, which Dolgova conceptualizes as a *realis/irrealis* opposition. She states that “hedging devices allow the writer to exhibit how much s/he had considered the existing possibilities in regard to each outcome” (p. 280) and therefore adopt the required authoritative stance. The mixed

method study examines the hedges in two drafts of a memo, by seven L2 students, both qualitatively and quantitatively. Most writers increased their use of hedges from the first to the last draft and increased their use of clusters of hedges (double and triple hedges), regardless of their performance in the class overall. This suggests that the instruction that they received was beneficial. Academically more successful writers used more triple hedges and were judged to be more discourse-appropriate. From a functional perspective, the more successful writers used hedges to compare and contrast cases and to introduce counterarguments.

To round out the volume **Salvatore Attardo** and **Lucy Pickering** provide an Afterword, “The theoretical and applied foundations of Andrea Tyler’s approach to the study of language”, in which they explore the links among the works distributed across the three parts of the volume and synthesize the theoretical and applied foundations of Tyler’s work. Attardo and Pickering focus on the Hymes-Gumperz interactional sociolinguistic method and the assumption that language is grounded in usage. In addition, it is meaning-based and that meaning is negotiated among the speakers, since language underdetermines the reality that it refers to. They also reflect on the semiotic function of language, which is mediated by conceptual structure and is embodied. The implications of Tyler’s work can be seen throughout the applications of cognitive linguistics to language learning and teaching. The exploration of embodied aspects of semantics and pragmatics promises exciting new developments, and we can expect Tyler’s work to reverberate in these fields for a long time to come.

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PART I

Discourse perspectives

Culture, gender, ethnicity, identity in discourse

Exploring cross-cultural communicative competence in American university contexts

Catherine Evans Davies

International teaching assistants in charge of undergraduate classes in American universities present the anomalous situation of the non-native speaker in the role of higher authority, but the native-speaker having greater communicative resources and cultural knowledge. This interactional sociolinguistic case study of a facilitated negotiation of discourse style in conversations between a Chinese teaching assistant and an African-American undergraduate explores the situated enactment and interpretation of identity in relation to culture, gender, and ethnicity. A multilayered analysis involves videotaped role-plays based on a prototypical teacher/student interaction with conflicting goals, guided feedback, repeat enactments, playback sessions, and reverse role-plays. It explores the situated presentation of self and the attempt to exercise power, and reveals difficulties in the development of cross-cultural communicative competence when a discourse style is associated with values incompatible with presentation of self and thus emotionally unacceptable (in this case, to the African-American undergraduate).

Keywords: American university discourse, international teaching assistants, pragmatics, role-plays

1. Introduction

Processes of globalization have created an anomalous situation in American research universities. International teaching assistants in charge of undergraduate classes in American universities are non-native speakers in the role of higher authority and institutional status, but the American native-speaker undergraduates have greater communicative resources and institutional and/or local cultural knowledge. At the time this research was conducted, at a major public research university in a southern American state, of slightly over 3,000 graduate students,

180 were Chinese: 170 from PROC, 5 from Hong Kong, and 7 from Taiwan. The majority of these graduate students were in math and science, and many had teaching assistantships. Undergraduates taking introductory classes in math and science often were taught by these Chinese graduate students. The majority of the undergraduate students, as would be expected at a state university, were drawn from the state and from neighboring states. The population of the southern American state was about 30% African-American, with the student body at the university being about 10% African-American.

This study builds on a research orientation to this institutional situation with International Teaching Assistants and American undergraduates (Davies, Tyler and Koran 1989; Davies and Tyler 1994; Davies and Tyler 2005; Tyler 1994; Tyler 1995; Tyler and Davies 1990; Tyler, Jefferies and Davies 1988) that uses a teaching/research methodology for collaboratively discovering sources of cross-cultural miscommunication (inspired by Gumperz and Roberts 1980). The enactment of typical cross-cultural encounters in an American institutional context provides an opportunity not only to analyze cross-cultural communicative competence but also to explore how it could be enhanced for both groups. The participants in this case study were volunteers who wanted to improve their communication skills. Unlike the earlier work just cited in this research orientation, however, this research was not an official part of the ITA Training program at the institution, but rather was presented to ITAs and undergraduates as an opportunity to learn about and improve their own cross-cultural communication skills through participation in the research. The African-American undergraduate, who was intending to become a teacher in the public schools, responded to an opportunity to participate that was extended to all students in an introductory linguistics course. The Chinese graduate student (from the PROC) was in the physics program. She had a TOEFL score of 597 and had received a conditional pass (with a SPEAK test score of 190 and a slightly higher video rating of her teaching) in the international teaching assistant preparation program at the university. Her instructor's comments were that she was quiet and shy, that she needed to develop more confidence, and that she needed to be more aggressive.

In this chapter I am interested in showing the different kinds of insights that emerged from three phases of the methodology, the final of which was unplanned and emerged naturally from the research process. In the case of the first role-play, we see insights from guided feedback oriented to pragmatics when the participants are simply reflecting on what they have just done (and then re-doing the role-play and reflecting), without watching themselves on video. In the case of the second role-play we see insights that emerged when they watched a video of the role-play and controlled the playback to provide commentary oriented to pragmatics,

facilitated by the researcher. In the case of the final, unplanned reverse role-plays we see deeper levels of insight that get to the core of ethnicity and identity for the African American student in her presentation of self.

As Hymes pointed out long ago (1972), communicative competence involves more than increasing grammatical accuracy. But even if we incorporate into our teaching sociolinguistic, discourse, and strategic competence (Canale and Swain 1980; Celce-Murcia 1995), expanding to include “interactional competence” and moving toward a notion of language socialization, we are still confronted with the problem of how to enhance communicative competence across cultures (Davies 2004). As established first in Gumperz’s work on conversational inference (1982), the core problem is the implicit and out-of-awareness nature of communication, which is of course grounded in culture. Implicit cultural knowledge relevant to this study includes cultural models of university teacher and student, institutional practices related to the roles of teacher and student, gender roles, assumptions about behavior linked to ethnicity and attitudes toward (or stereotypes about) the social category that the other person represents. Interlocutors tend to automatically attribute motive and intention in conversation based on their own cultural conventions. Thus the challenge is to develop metapragmatic awareness of cultural differences in such things as the cognitive frames through which interlocutors are interpreting the interaction, appropriate behavior associated with particular institutional roles and the enactment of identity, the expected schema for the unfolding of any particular interaction, and discourse management strategies by which they make their interactional moves and respond to those of others in the process of trying to achieve their interactional goals. Potentially affecting all of these aspects of interaction are what Gumperz has called “contextualization cues”, constellations of aspects of the linguistic code (prosodic, nonverbal, lexical, syntactic, etc.) that are implicit and culturally significant in triggering interpretations of interaction.

Whereas each participant may operate out of her own cultural assumptions while at the same time be aware that she is dealing with someone who is culturally different from herself (without necessarily knowing exactly how), it is also important to recognize that cross-cultural encounters create what Kramsch (1993) has called “third places” that may not be predictable based on the cultural patterns of either participant (see Davies and Tyler 2005 and Tyler and Davies 1990, for an analysis of such an encounter). Thus, even if both participants had extensive cultural knowledge of the typical behavior in particular situations for each other, the ability to engage in situated interpretation is still necessary, because direct transfer of patterns may not occur. From the perspective of cross-cultural communicative competence, therefore, the language socialization involved is not some sort of shaping toward cultural conformity on either side, but ideally rather is an emergent

process in which each person expands her interpretive and productive repertoire through an increasing awareness of the nature of third places and her possible roles and actions within them.

The challenge is to create the right conditions for this to occur, i.e. a situation in which people can actually give each other feedback oriented to pragmatics, to facilitate a conscious language socialization process from the perspective of each participant. In the data to be discussed, the participants were attempting to achieve particular goals that had been defined by the role-play instructions (for which each participant knew only her goal and not the goal of the other). This interactional sociolinguistic case study of a facilitated negotiation of discourse style in conversations between a Chinese teaching assistant and an African-American undergraduate explores attempts to exercise power and the situated enactment and interpretation of identity in relation to culture, gender, and ethnicity. The methodology allows us both to uncover sources of cross-cultural misunderstanding and also to develop the ability in participants to analyze situated interaction – to become ethnographers of their own communication

2. Methodology and data

Whereas this study uses the playback methodology that was followed in the earlier studies cited, with these data a multi-layered process emerged: a videotaped role-play based on a prototypical teacher/student interaction with conflicting goals, guided feedback, another videotaped role-play involving a more conflictual situation between teacher/student, playback sessions, reverse role-plays (which emerged as part of the process), and further playback commentary.

Ideally, of course, the data would come from actual institutional interactions, but logistics of research and the realities of IRB constraints make it extremely difficult to gather such data. The Academic Spoken English program developed by Andrea Tyler at the University of Florida was a program that managed to gather some data of this type by building it into the training process. On the other hand, because cross-cultural differences in communication are typically below the level of awareness, they are not controlled by interlocutors and will be displayed in role-plays. Whereas a role-play situation lacks the emotional intensity or real investment of actual institutional interactions, it may allow interactants to relax enough to display a wider range of skills (as we see in the second role-play below). But perhaps the most important advantages of role-plays are first, that they can be crafted in various ways such as to increase the level of conflict, and second, that they present a situation where the context and goals of the interlocutors are known

to the researcher. In this study the role-plays are adapted from Tyler (1994) and are based on typical real-world problematic situations that the participants have faced or will likely face.

To provide some detail about the methodology as a form of ethnographic interviewing, this technique has been used by interactional sociolinguists (e.g. Bremer and Roberts 1996; Tannen 1984) who come out of an anthropological linguistic tradition. Forms of it have also been carried over into the study of second language learning under the general heading of introspective methods, where it has been called “stimulated recall” (Gass and Mackey 2015). The basic methodology has two orientations: one is to the actual speakers, to try to get at their motivations and rhetorical strategies, and how they interpreted what the interlocutor was trying to communicate; the other is to consultants representing the same speech community/sociocultural group as the participants, to try to get at more general cultural patterns, i.e. how someone from the same general background as the Chinese TA, and from the same general background as the American undergraduate, might interpret what was going on – attribute motivations, analyze rhetorical strategies, and interpret the communications of the participant from the other cultural background. In this case I elicited commentary from the actual participants, and then later on from consultants representing the same speech communities as the participants. I had several Chinese students from the PROC in a graduate program in TESOL watch the role-plays and comment on how they would have reacted and interpreted the interaction in order to balance my native American intuitions about the American student and as a check on my interpretation of the interaction from the Chinese student’s point of view. I also had other Americans, including African-Americans, look at the interaction and check my interpretations. Thus the discussions below are based on the videotaped data with the participants and other interview data, constituting triangulation in informing the analysis.

The facilitating role of the researcher is important, and is oriented toward a number of things. The first is to encourage an awareness of multiple perspectives on discourse. In contrast with simple reflection based on memory of what had just occurred in an interaction, the technology itself provides an additional perspective: participants are put in the position of observing themselves interacting on tape. As they are encouraged to virtually observe themselves, they are also helped to analyze their own discourse in terms of rhetorical strategy and to metacommunicate about it. This has to do not only with the discourse analysis itself, but also with lexicalizing their own intent, and with communicating about their discourse to the researcher but also to the interlocutor. Everyone learns what each one was trying to do, and how she was trying to do it, subject only to limitations on English proficiency. Each also learns how the other interpreted the communications. Thus any illusions about

a single shared perspective on the world are challenged, although ethnocentrism can persist in the belief that one's particular view is the only correct one. Linked to the awareness of multiple perspectives is the second focus of the researcher's facilitation: creating a dialogic perspective. Ideally, the facilitator can gradually change the orientation of the participants from responding to the researcher in the presence of the interlocutor to direct metacommunication with each other. We see this in the feedback on the first role-play below.

The researcher as facilitator is also focused on leading the interlocutors to an awareness of the role of implicit cultural knowledge in their behavior and interpretations. Ideally, the researcher can facilitate a transition from providing paraphrasing and simply commenting on rhetorical strategies, etc., in the immediate feedback sessions, to helping to conceptualize and frame differences as cultural in the playback sessions where they can observe and reflect on video of their own interactions. In this case, cultural behavior generated negative judgments that could be explored. Such awareness of implicit cultural knowledge can then allow further participant-generated interaction to emerge as data for analysis, as interlocutors begin to consider alternative ways of interacting. In this case, what emerged were role reversals that allowed the expression of more difficult feelings related to the enactment of identity that were not revealed in the earlier stages.

Finally, the facilitating role of the researcher ideally involves shifting control of the playback session to the participants literally and symbolically through handing over the remote control and asking them to decide when to stop the video and comment. Such a process is designed to empower them as discourse analysts and ethnographers of their own communication. For the convenience of the reader, Table 1 lays out the sequence of the methodology

Table 1. The methodological sequence

The first role-play	First enactment of the role-play
	Guided feedback on the first enactment (without looking at video)
	Second enactment of the first role-play
	Guided feedback on second enactment (with video)
The second role-play	Enactment of role-play
	Guided feedback with video (playback controlled by student)
The first reverse role-play	Enactment of role-play
	Guided feedback with video
The second reverse role-play	Enactment of role-play
	Guided feedback with video

3. The first role-play

In this situation we see an example of what can emerge from role-plays when participants enact, reflect, and then re-enact and reflect (without actually watching the videotapes of the role-plays). This role-play was done in the researcher's office in her presence while being videotaped, with immediate videotaped guided reflection on the role-play facilitated by the researcher. This was followed immediately by a videotaped re-enactment reflecting the feedback received, followed by a second round of videotaped guided feedback.

In the first role-play, we have a prototypical teacher/student interaction with conflicting goals at the low end of a continuum of emotional intensity as laid out in Tyler (1994). This role-play involved arranging an appointment to talk but without any sort of grade negotiation, and without the presence of other students. The instructions were as follows, given to each separately to read:

Instructions for Teacher:

You have just finished teaching your class. Earlier in the class you handed back a homework assignment. Some of the students earned a lower grade than usual. A big assignment is due the next time class meets. You have a regular office hour scheduled between now and the next class meeting. You have an important test in your major class, which starts in 15 minutes. The class is in a building located across campus. You need to get to the exam on time.

Instructions for Student:

Class is just ending. You are a fairly conscientious student, although you are not at the top of this particular class (which is somewhat frustrating for you). Earlier in the period you got back a homework assignment on which you received a lower grade than usual. You are concerned about this. The next time class meets, you have an important assignment due and you want to check on several points so that you can get maximum credit. You feel under time pressure, so you want to talk to the instructor as soon as possible. The instructor has a regular office hour scheduled between now and the next class meeting, but you have a conflict. You would really like to talk to him/her right now, i.e. as soon as this class is over.

3.1 The first enactment of the first role-play

The first enactment of the first role-play is shown in the following transcription. What is not conveyed through the written form is a dramatic difference in voice volume between the two speakers, with the TA speaking softly and the student speaking in a much louder voice. The transcription format attempts to show the

flow of the conversation visually, and especially the latching and interruptions by the student. The student interrupts the teacher a number of times, twice with “no” to begin her utterances. The student is unsuccessful in achieving her goal of meeting right then after class, although she does succeed in scheduling a meeting for the next day (i.e. before the next class meeting). The student also creates a situation in which the teacher volunteers to check her own grading to make sure that there has been no mistake.

(1) C = Chinese TA, A = American UG student

A: Miss Chan

C: mmm

A: I would like to speak with you about my grade on the last test

C: OK...mmm...but now..you see I have something urgent to do..so can you meet me...in my office- during my office

A: /no I I need to speak with you right now because it's really important that I talk to you about my grade because I didn't do as well as I thought I would do on it and I need to talk to you about what I can do to make it up or something and it's very important that I talk to you right now because I have another class and I won't be able to come back and talk to you

C: OK... let me see I quite understand your situation but you know I have a test to run now and uh

A: /but it it would only take a minute or two and I won't take much of your time up I mean walk with you over to the class and talk to you...if you want me to..

C: /OK

A: /but I have to talk with you now

C: /but my class is not close it is quite distant

A: /No but you don't understand if I don't pass this course I won't graduate and I I really need to talk to you about it. It's VERY important.

C: I see...I don't mean I don't think about you...you know toMORrow at uh,, we...I will consider about it and how I graded...and if it's really MY mistake OK?

A: OK

C: so and then we'll meet tomorrow at two o'clock?

A: OK...thank you

3.2 Guided feedback on the first enactment

Immediately after this first enactment of the role-play, while the participants were still standing in front of the camera, they were asked a series of basic questions to provide guided pragmatic feedback:

1. What were you trying to communicate to X?/Is that the message you got?
2. Were there any moments when you felt uncomfortable or confused?

3. Was there anything you wanted to hear from X that you did not?
4. Is there any other feedback you wanted to give X?

In the feedback session after this initial role-play, the responses were minimal beyond saying what their goals were as given on the separate instructions. The Chinese TA said that she wasn't talking loud enough and that she felt overwhelmed by the volubility of the student. The American student described herself as aggressive and commented that desperation can create a tone of voice that sounds aggressive. Immediately after receiving guided feedback from each other they then did a second enactment of the first role-play.

3.3 The second enactment of the first role-play

(2) C = Chinese TA, A = American UG student

- A: Miss Chan I need to speak with you about my grade. I know I've been doing pretty well in the class up to this point but the last test was very hard and I didn't do as well as I thought I could do. I was wondering if I could talk to you about my grade seeing if there was anything I could do
- C: Well I think you have done [really] good except this time and actually you can do better and...I will explain it later and I have something urgent to do.
- A: I understand that but it's very important that I find out as soon as possible what I can do to make a better grade on it. If.. this is going to affect my grade in any way because it's very VERY important that I make a good grade in this class. I understand that you have something else to do right now but um if we can schedule an appointment and talk about this I will be very grateful.
- C: Yeah. that's great. How about tomorrow during my office hour
- A: um tomorrow I have another class
- C: OK uh then how about just before next uh lab...next lab is 12:00 how about just before uh twenty minutes
- A: OK I can make it. All right. Thank you.

3.4 Immediate guided feedback after second enactment of first role-play

(3) F facilitator, C = Chinese TA, A = American UG student

- F: OK now what did- what did you do differently in this circumstance?
- C: She uh seems like she quite understandable uh considerate so she let me go
[LAUGHTER] and then nothing difficult to complete
- F: OK
- A: I tried not to be as aggressive this time
- F: uh huh

- A: just to let her know what my problem was and then leave it up to her since she's the one with the power [LAUGHTER] she's the teacher leave it up to her to arrange it at her convenience to meet with me an- and talk about it
- F: uh huh
- A: I didn't want to put her on the spot and you know make her seem defensive so this time I tried to try a different approach
- F: uh huh
- C: It made me more comfortable
- F: you felt more comfortable...this time?
- C: uh HUH
- F: and what was it that she did that made you feel more comfortable?
- C: She just ah say...not..not I say um let make appointment next time but she say, so...it gave me a chance this time
- F: uh huh OK
- C: that shows her very considerate
- F: uh huh OK
- A: [**turns to C and addresses her directly**] so you would be more willing to talk to me with me being considerate as in the prior case when I was more aggressive you would be less willing to talk to me
- C: uh...actually aggressive or considerate doesn't matter how [] I talk to...it's my job to explain things and help you so I don't think it's actually made me feel more- more..easy to deal with it...but you know I think it's the same if I talk to []
- F: OK but I think maybe what Alberta's getting at is that if you feel more comfortable that's better for you when you're talking with her right? Even though you would talk with her under either either circumstance
- C: and also better for her
- F: better for her too right...OK

3.5 Discussion of the first role-play

As noted above, the discussion is based both on later sessions in which the participants watched these videos, and also on additional interviews with participants and with members of the speech communities represented by the participants. Notice that in simply reflecting on a role-play that they had just done and then re-enacting it and reflecting again, they expressed awareness of relative volume of their voices, self-described “aggressiveness”, feelings of relative comfort in the interaction, the teacher’s concept of her role in relation to benevolent duty, and the student’s perception of the operation of power in the situation.

In enacting and re-enacting this role-play, which itself provides a participant framework, both participants start out with cultural notions of institutional role and appropriate behavior for the roles of “dedicated teacher” and “serious student”, which serve as schemas for each in crafting their discourse strategies. The Chinese TA said that she experienced the American student as more “considerate” of her

situation in the second enactment, and that this approach made her feel more “comfortable” and gave her a “chance” to propose the possible meeting times. When she was probed about whether this approach made her more willing to talk with the student, she emphasized the idea that feeling comfortable would make it easier for both of them, but she also emphasized a sense of duty associated with her role as teacher. What she is expressing is consistent with Scollon and Scollon’s (1991) analysis of the Asian teacher as in the role of “authoritative person” in relation to the student (e.g., she proposes the meeting times) but with the key dimension of benevolence (*jen*). She seems to be saying that no matter how the student behaves, it is her responsibility (her “job”) to help the student by explaining things. In a Chinese context, a student might behave in a way designed to elicit sympathy: act humble, express concern about the situation and then wait for the teacher to propose the solution. Scollon and Scollon characterize this approach on the part of the student as “inductive” and typical of Asian cultural patterns in such situations; Tyler and Davies (1990) had noticed this sort of pattern and labeled it “inductive/collaborative”; Davies and Tyler (2005) elaborate and complexify the 1990 analysis.

The American student, on the other hand, is enacting an American “serious student” presentation of self, which involves showing that she is urgently interested in making an appointment; an assertive self-presentation is essential here to signal degree of concern and her commitment to self-improvement. She simply asserts the importance of her concerns rather than explaining her situation to the teacher (even though she hints at graduation issues), and she also talks in terms of her own agency in the situation (“what I can do”). This mode of self-presentation as contextualization cue works against her in the first enactment because it doesn’t signal the intended student identity to the Chinese TA (for whom such an identity would be conveyed by a different self-presentation involving humility and deference), and also because she overdoes it and tries to exert too much control in the situation. By proposing a meeting time and trying to exert power to get a meeting right then she is displaying a strategy typical of Western cultural patterns that Tyler and Davies (1990) called “deductive/assertive” and Scollon and Scollon (1991) called “deductive”. After her strategy is unsuccessful in the first enactment, she comments explicitly in relation to the second enactment, “I tried not to be as aggressive this time”. She displays awareness of interpersonal dynamics and the potential effects of her behavior on the teacher, saying that she didn’t want to “put her on the spot and you know make her seem defensive”. She is still unsuccessful, however, even though she retreated from the deductive/assertive approach of proposing the meeting times and followed a more inductive approach by leaving it up to the teacher to propose options. While it’s true that she shifts to an inductive strategy in one aspect of her approach, she retains elements of a “deductive/assertive” approach in

that she continues to talk in terms of her own agency, i.e. what she, the student, can do to help herself. This is consistent with the “responsible student” role; she’s not asking the teacher to do things for her, but rather offering to do things herself to improve her grade.

Whereas the Chinese TA is apparently thinking mainly of how she can act in terms of benevolent duty in her teacher role, the American student is explicitly thinking in terms of power. In the feedback after the second enactment she describes her strategy as “just to let her know what my problem was and then leave it up to her since she’s the one with the power [LAUGHTER] she’s the teacher leave it up to her to arrange it at her convenience to meet with me an- and talk about it”. Her own words here describe perfectly what an inductive strategy would be, even though she didn’t enact it effectively: she didn’t elaborate on her problem to elicit sympathy and she continued to talk in terms of her own agency, although this time without trying to propose options.

Gender and ethnicity also figure in the interaction because each approached the interaction with stereotypes and assumptions about the other. This only emerged in later playback and explained an emergent strategic assessment. The American student said that she approached the interaction with a prior stereotype of Chinese women as submissive, and that this was reinforced by the Chinese teacher’s apparent lack of confidence as indicated to the American student by her soft voice, lack of proficiency in English, hesitancy, and non-verbal behavior. This constellation of cues led the American student to believe that she could be intimidated, so she escalated her assertive serious American student strategy and this resulted in the “aggressive” self-presentation – as defined by the American student – to see how far she could get and to push the boundaries. This was a clear attempt at exercise of power in the situation. Interviews with the Chinese consultants also revealed stereotypes of Americans and African-Americans in particular, generally negative assumptions about African-Americans from American popular culture that they had brought with them to the US.

In discussion of the first role-play we have seen what participants could be aware of in simply reflecting immediately on a role-play and its re-enactment. The triangulated analysis has revealed the complex relationships in the discourse of frames, schemas, discourse management strategies, and contextualization cues. In light of what was discussed in the explication of the playback methodology concerning agency of the participants as they begin to learn how to become ethnographers of their own interactions, it is important that A turns to C in the playback commentary (as explicitly noted in the transcription) and asks her directly about her receptivity as a teacher to different approaches from a student. With the help of this structured context with guided feedback, she is beginning to feel comfortable metacommunicating directly with her interlocutor.

4. The second role-play

The second role-play was more emotionally intense on the conflictual scale in the array of role-plays as described in Tyler (1994) because of the higher stakes involving a grade. In this case the student is finding university classes demanding, knows that she currently has a C in this class, and is worried about getting a grade in the class that will allow her to maintain a 3.5 GPA to keep her scholarship. The teacher feels constrained to operate within the guidelines for grades as she understands them.

In contrast with the first role-play, the second role-play was videotaped and then watched immediately by the participants. This strategy was adopted in the moment by the researcher because it seemed clear that the American student had elicited very negative judgments from the Chinese TA by her interactional moves during the role-play and the researcher wanted to give the American student a good opportunity to explain herself and thereby help the Chinese TA to understand more about institutional practices. The researcher offered the remote control to the American student so that she could comment on her own discourse.

In this situation we see an example of a detailed rhetorical analysis by the student of what she was attempting to do, move by move. In the transcript below I have indented the commentary where the student stopped the tape and explained. In each case I have capitalized either her explicit characterization of her rhetorical move (e.g. “sweet-talk”), or a significant moment that she is stopping to discuss (e.g. “point of recognizing that her strategy isn’t working”).

(4) F facilitator, C = Chinese TA, A = American UG student

- A: Hi...OK I need to talk to you about my grade in this class
 C: um hm
 A: I really LIKE the class but I haven't been doing as well as I should 've been doing
 C: um hm
 [SWEET-TALK]
 A: at this point I'm trying to sweet-talk her [LAUGHTER]
 F: sweet-talk huh
 A: and ah you know letting her know that I really really really enjoyed the class and I really want an A and I'm setting her up you know to tell her that I really want to do something to get the A and hopefully she'll agree with me but we'll find out
 F: OK but you're trying to convey that you're willing to work
 A: right
 F: to get it
 A: right
 F: OK
 C: I didn't feel like when she said she like the class made me feel more comfortable I- I didn't cause I know what she wants- is going to say... the wrong things
 F: that's []
 C: it's after the sweet words you know

- A: uh huh OK
 C: so I didn't notice even [LAUGHTER]
- A: I really want to make an A and I was wondering if there's anything I can do for extra credit
- C: Extra credit? So far I think you have done pretty well but to get A your chances is
 [POINT OF RECOGNIZING THAT HER STRATEGY WASN'T WORKING]
- A: OK at this point I had a C in the course so when you made that statement that I had done pretty well I could tell that you weren't going to listen to anything I had to say... you were like well you know... you're doing pretty well and the best that you could get would probably be a B but...
- C: / [laughs]
- A: /now there's no way you can get an A
- C: I see
- A: you know...and you were already were- were ah suggesting other options about you know but []
- C: / [laughs]
- F: OK so that was your point of deciding [that it wasn't working]
- A: yeah
- A: Well I mean I can write another paper or do a research project or something to get ten or twenty extra points and get an A
 [PROPOSING OTHER OPTIONS THAT ARE PART OF AMERICAN STUDENT'S LOCAL CULTURAL AND INSTITUTIONAL KNOWLEDGE BUT APPARENTLY NOT PART OF CHINESE TEACHER'S]
- A: OK I'm used to classes where you can do that for extra credit you know teachers tell you even though the policy is supposedly set in stone in the beginning if you're borderline if you've been...participating in class the teacher will say well you know if you do this for me or this for me maybe then I can you know help you to []
- C: oh
- A: that was my point
- C: Yeah, I would like to do but it's uh the policy of the college that the grade just depend on 50% two tests and 25% final and um []
 [NEXT POINT FOR AMERICAN STUDENT OF RECOGNIZING THAT HER STRATEGY ISN'T WORKING]
- A: OK she knew exactly what percentage [laughs] everything was she was telling me that you know all these things equal up to one hundred percent and there's no way you can get any more points out of that you know
- F: um hm
- A: so she was very clear about that
- A: Yeah but I mean as the teacher you can do really do whatever you want to do I mean nobody else would know about if you would just you know let me do it 'cause basically it's up to you
- C: [laughter]
- A: to do what you want to do.
 [APPEALING TO HER SENSE OF POWER]
- A: OK I was trying to appeal to her pow- sense of power she's the- head of the class and she can do whatever she wants to do
- C: but I think that's wrong you know [LAUGHTER] obviously
- A: OK
- C: [laughter] but you know it's impossible

- A: Why? I mean nobody else would know about it I wouldn't tell anybody else
[LETTING TEACHER KNOW THAT STUDENT CAN BE TRUSTED TO KEEP SECRETS ABOUT ANY ARRANGEMENT THEY COME TO]
- A: OK...when I said I wouldn't tell anybody else that may...may make you think that it's something dishonest that I wouldn't want to know...you know that I wouldn't want anyone else to know that we were doing
- C: mm hm
- A: so is that what you were thinking when I was- said I wouldn't tell anybody if you tell anybody
- C: mmm
- A: it could be our little secret
- C: mmm
- A: OK
- C: if you didn't say that probably I will thinking about it ["If you hadn't said that, I might have considered what you were proposing"]
- A: oh OK
- C: but if you say that kind of words...
- A: uh huh
- C: then it's bad
- A: OK
- F: OK and what did you mean by that Alberta?
- A: What did I mean by I wouldn't tell anybody?
- F: yeah
- A: well I guess if she thought that she would get in trouble by doing that I was going to let her know she- that- no one would find out about it from me
- C: mmm
- A: you know
- F: that you could be trusted to be quiet about it
- A: right
- C: That's dishonest you know
- A: No it's not I mean if you decide that you think I can do better and and I do a paper for you and you decide that you can give me some extra points I mean that's--- you're helping me that's your job
- C: [laughter]
- A: You're trying to help me...
- C: um I'm sorry
- A: get a better grade
[TRYING TO MAKE HER FEEL GUILTY]
- A: Now I'm trying to make her feel guilty [laughs] [LAUGHTER]
I'm saying your job is to try and help me make an- get an A no matter what means I have to go by to get an A
- C: mmm
- A: but you still weren't listening to me [LAUGHTER]
- C: I'm afraid I can't do that
- A: PLEASE
[BEGGING]
- A: Now I'm trying the old begging routine [LAUGHTER] it's like if you don't help me I'll flunk out of class- out of school but you still weren't listening
- C: [slight laugh]

- A: I mean I need a good grade on this- in this class and and
 C: /I---I
 quite understand what your situation
- A: I mean the last test WAS really hard you know I might have gotten an A or a B you know but I didn't really understand everything you were saying so
 [TRYING TO PUT THE BLAME ON THE TEACHER]
- A: OK [laughs] now I'm trying to put the blame on her because I didn't do as well on the test [laughs] if she had taught me better [LAUGHTER] or if the questions hadn't been so ambiguous maybe you know I would have done better but...
- F: OK that was the indirect message
- A: right
- F: is that how you interpreted that?
- C: mm hm
- F: OK [LAUGHTER]
- C: Oh if you have ANY problem with your courses I think I can help you with any hard question or or I [] I can't help you with extra work or something else
- A: SURE you can
- C: I'm afraid I can't
- A: Yes you can
- C: [laughter]

4.1 Discussion of the second role-play

We might have assumed, from her performance and explicit articulation of a more inductive strategy in the second enactment of the first role-play, that the American student had added that strategy to her repertoire in such interactions. In this more conflictual situation, however, she goes back to her aggressive tone of voice and stance (called “straight” by the Chinese TA, “bold” by the American UG, and “direct” by the facilitator). She fails to frame the situation as one that would elicit the teacher’s sympathy (e.g., she fails to mention the 3.5 GPA required for her scholarship) and goes directly to a typical deductive strategy by proposing extra credit. The student’s failure to use the scholarship argument could be seen as consistent with a self-reliant presentation in which she is willing to work hard herself rather than try to get the teacher to accommodate. She talks in terms of her desires (“I really want to make an A”) rather than her needs. She also fails to provide a concrete example of another teacher who allows extra credit, but simply asserts the reality of that institutional practice. As she realizes that her strategy is not working she tries all of her rhetorical moves in dealing with authority figures, feeling freer to try everything since it was a role-play situation. One Chinese graduate student commented that he was impressed with the rhetorical range displayed by the American student.

Here we have a case of differential local cultural knowledge of the institution: both participants know that extra credit arrangements are officially forbidden, but the American student knows that it's actually a common arrangement when there is a borderline grade, i.e., the American student has more situated local knowledge of institutional practice. In playback the American student said that she didn't realize that the Chinese TA didn't know of this possibility and assumed that she was simply afraid to actually exercise the option; the student said that she thought that maybe she could talk her into it. Here the student is operating within the kind of American university teacher/student relation identified in Shaw and Bailey (1990) as relatively flexible, compared with other cultures, in terms of negotiation of power.

Because the Chinese TA lacks the local institutional knowledge about extra credit and has a different schema for the exercise of power in teacher/student roles, when the American student proposes extra credit and tries to tell her that it's common practice and up to her as teacher, she reacts strongly with negative moral judgments, using words like "wrong" and "dishonest". In further playback she commented that, "I emotionally feel bad to her personality". The American student's attempt to form an alliance with the TA (over against the department or university) is symbolic and violates role definition and values. There is hierarchy here and even though they are both students, the primary allegiance of the TA is not to her student status and solidarity with other students but rather to her role as TA, on the bottom rung of the ladder of the institutional role of teacher.

In Bateson's formulation (1972), we have an emergent process of "complementary schizmogogenesis" based on different cultural assumptions reinforced both by differing discourse management strategies and different contextualization cues. The American student pursues her deductive/assertive strategy and escalates her attempts at persuasion because of the Chinese TA's apparent lack of confidence and submissiveness. She also interprets the Chinese TA's laughter at key points as indicating that she wasn't seriously saying no. In fact the laughter was, for the Chinese TA, a manifestation of discomfort and embarrassment at being in the situation, but the American student was not able to interpret this contextualization cue correctly. The American student pulls out all the stops, as we've seen, in her persuasive repertoire, from "sweet talking" to "appealing to her sense of power" to "begging" to "trying to make her feel guilty". With an American teacher, especially one who valued verbal expertise, such behavior could possibly either eventually be successful or at least win points for the student for being so persistent and resourceful or creative. Ethnicity also figures here in that sociolinguistic research has documented the value placed on verbal expertise in African American culture (e.g. Smitherman 2006). The Chinese TA, meanwhile, based on her expectations concerning an appropriate student role, is forming negative value judgments about the character of

the student and is refusing to move toward any sort of accommodation with the student beyond her own definition of the teacher's role.

It might appear that we had reached a very awkward impasse in the research process, but the idea emerged in the playback session to try reversing roles. The following is the Chinese TA doing the typical role of a Chinese student to the American student in the teacher role (assuming the same role-play instructions as in the second role-play).

5. The reverse role-plays

5.1 Reverse role-play with Chinese TA playing role of student

(5) C = Chinese TA, A = American UG student

C: Miss Jones?

A: Hi

C: Um...there's something I wanted to discuss about my grade 'cause you know so far I've got average C on my grade

A: um hm

C: and I REALLY work hard from the beginning of the semester to now. Do you think there is any way to improve my grade? I'm willing to do anything I could. I really want to get an A you know

A: OK it's POSSible if you do very well in the final to pull your grade up to a B but I don't really think that you can make an A in this course

C: I see so that's all you can help me... I really want...you know I got a problem. I am applying for a scholarship and the...the average GPA should be more than three point five

A: um hm

C: and if I wouldn't get A on this course...then I can't get it...You know I really want

A: uh huh I understand but if you remember the first day of class I told you that fifty percent of your grade will be based on two tests and twenty-five percent homework twenty-five percent final. You've done very well on your homework...and you messed up on the last test but if you do very well you may be able to pull it up to a B and uh...I'm sure you've done well in your other classes so I'm sure you'd have the three point five that you need to get your scholarship but you know I'd be willing to stay with you after class and help you as much as I can and if you continue to do well on your homework and study hard for the final you may be able to pull it up to a B

C: is there any way you can give any extra examination or something else to drop the lowest point 'cause another class some professor []

A: /OK...if you can write a very good paper for me I would be willing to drop your lowest homework grade and that would help you bring it up and if you do very well...

C: um hm
 A: and [that'd be] very close to an A then I'll do everything I can
 C: OK
 A: to help you get that A
 C: Oh I see. Thank you so much I appreciate it.
 A: OK

The Chinese TA models the inductive/collaborative strategy, and she is successful with the American student in the teacher role. Even though she had rejected with negative moral judgment the local institutional knowledge about “extra credit” in her first encounter with it in the second role-play, in this case she incorporates that cultural knowledge into her inductive strategy. She begins with a vague initial clause and then moves to her current grade. She emphasizes her consistent hard work in the class and then moves to her topic in the form of a question posed to the teacher to provide solutions (“Do you think there is any way to improve my grade?”). She doesn’t propose anything but says that she is willing to do anything she could. Then she expresses her desire for an A, rather than her need for one. After the teacher’s response, the student starts again with her statement of desire, but then seems to suddenly remember the GPA situation of the role-play instructions and breaks off to frame her situation as a “problem”. After the teacher responds by restating the grading policy and doesn’t offer to help beyond giving her extra time after class, the student then proposes an “extra” examination and begins to cite an example of another teacher who had made such an accommodation. Unlike in the American student’s performance in the second role-play, this provided experiential evidence of a teacher making accommodations. The American student in the role of TA doesn’t even let her finish her example of another teacher, but actually interrupts to propose an extra paper to substitute for the lowest grade on homework. The teacher is not promising anything, but talks in terms of “help” and says “I’ll do everything I can to help you get that A”.

5.2 Immediate feedback on reverse role-play with Chinese ITA playing role of student

(6) F = facilitator, C = Chinese TA, A = American UG student

F: OK tell me about that
 A: I felt a lot of pressure when she brought the scholarship thing into it
 F: OK
 A: that you know she was working very hard to keep her grades up and she needed to keep a three point five and...
 C: [laughs]
 A: I was willing to do everything I could to help her get a B and if push came to shove and she was like only one or two points away from an A

- F: OK
A: then I'd be willing to you know...
F: OK
A: to help her.
C: I get my goal.
F: You got your what?
C: My aim to get an A and I think it's possible that I can
A She was very sincere too she came to me in a very... in a humble manner
F: uh huh
A and I felt you know I was willing to help her
C: [laughs]
A: because I felt like you know she needed my help and so [laughs] I was very compassionate towards her because of what she said and I was like OK
[LAUGHTER]
F: OK but you still put her in a position where she had to mention extra credit [laughs]
C: but but you know I didn't do request at beginning just go gradually little by little
F: OK that's right that's right
C: so at last there's no way...but is there any further way? so I think she can accept it
F: uh huh
A: her persistence paid off
F: OK all right OK so the Chinese way was to be more humble and not present it at the beginning and you get her sympathy
C: yeah

The American student in the teacher role was trying to be tough, but responded to the Chinese TA in the student role in terms of her sincerity, humility, and persistence. The student had very effectively conveyed that she needed the teacher's help and had enlisted that help. The teacher never mentions that the student "wanted" an A; her feedback focuses on the "need" in terms of the scholarship. The student had succeeded in arousing compassion and benevolence in the American teacher so that she wanted to help her. The student comments that she achieved her goal, not in terms of an explicit agreement or arrangement but rather a favorable disposition toward her as a student. She also points out that whereas she had introduced the idea of extra credit, she had not done it at the beginning of the interaction but "just go gradually little by little". She had also given an example of another teacher allowing extra credit to legitimate her suggestion. The American student copies her in the next reverse role-play in which she tries to enact the role of a student in the Chinese way:

5.3 Reverse role-play with American student playing Chinese student role

(7) C = Chinese TA, A = American UG student

A: Miss Chan?

C: Uh huh

A: I need to talk to you about my grade. Umm I've been doing pretty well in this class but I don't think I'm going to be able to get the grade that I wanted and I was wondering if there is anything that you could do help me to pull my grades up.

C: uh...if you finish every homework excellent I mean [] and uh we have another test around corner and you have done very good I think you probably will get a B

A: OK...well.the-the problem is that I'm on a scholarship [LAUGHTER FROM ALL] and I..and I have to get an A in this class to be able to maintain my scholarship and I was wondering...the teacher in my other class told me that since I was doing so well that if I could write an extra paper for him he would be able to help me and I really...I really DO need to get a good grade in this class and I'm willing to do anything you know I wish you could help me in some way

C: OK...is that so serious...if you got - get B on this course...if you got B in this course?

A: well if I get a B my scholarship will be threatened I mean I don't know how well I'm going to do in my other classes and so I need to have a secure A in this class [] to be sure of keeping my scholarship and I was just wondering if there's anything any way at all that you could help me

C: mmm I guess I can say yes [] so far [] if your grade is at--- near to A [] I'm willing to help you to get A [] I can't say you for sure it's probably []

A: I would really...I would really appreciate it if you could do ANYthing you could see ANY way at all of helping me

C: That's OK

A: Thank you

The American student in the Chinese student role did a good job of following what the Chinese student had modeled, even waiting for the same second slot in the interaction to bring up the “problem” of the scholarship GPA. She is not successful, however, in negotiating anything as concrete as the “extra paper” that she proposes, based on what had occurred in the previous reverse role-play. In her laying out of the concept of the “secure A” she seems to revert back to a version of the deductive strategy. Overall, however, she appears to have engaged the teacher’s benevolence, as we see in the transcript of the feedback below.

5.4 Immediate feedback on reverse role-play with American student playing Chinese student role

(8) F = facilitator, C = Chinese TA, A = American UG student

- F: OK OK so how was that? what was that like?
 C: It works.
 F: did it work? now...did she...was she really doing it in the Chinese style?
 C: Mm hm
 F: she really did huh? [laughs] [LAUGHTER FROM ALL]
 C: she was so MISERABLE [LAUGHTER FROM ALL]
 F: now but- was she- one thing I was wondering was when she said...I need the A... I might be put off
 C: /she- she want
 F: /if somebody said to me that she needed
 C: /for security A you know
 F: right
 C: that's that's one I can't agree with
 F: OK
 C: but
 F: OK
 C: I didn't say I can...I- I will see
 F: right
 C: give me more flexible
 F: OK but you were...you were more...you were willing to help her though... she had engaged your sympathy
 C: yeah but I'm not sure you know...and at last she say oh whatever you do she appreciate it and []
 F: /right
 C: it made me feel comfortable
 F: ah hah OK
 A: it felt strange for me to be that humble [LAUGHTER] I was like yeah I almost had to hang my head. I felt like a puppy dog [LAUGHTER] I don't like the Chinese way [LAUGHTER]
 C: really?
 A: no

During the role-play the Chinese TA in the role of teacher was laughing, she said, because the American student's portrayal of the Chinese style was "too much". The American student, for her part, comments at the end "I almost had to hang my head....I felt like a puppy dog...I don't like the Chinese way". Even though she realizes that she has probably been successful in this role-play, the student knows that she was uncomfortable, and it's striking that she rephrases three times and even metacommunicates about the strategy, making a negative judgment about "the Chinese way". She had commented favorably on C's having been "humble" in the earlier role-play, but when she tried that extreme of humble behavior here it felt very uncomfortable to her. I was a bit puzzled at the African-American student's

strong negative reaction to the role of the exaggerated but typical Chinese student until I got feedback on the interaction from a colleague in African-American literature. He pointed out that there is a terrible irony here for the African-American female student, given the history of African Americans in the United States (and particularly in the American South). The student is conveying indirectly that she doesn't like to have to express extreme deference in order to try to get what she wants. She is rejecting the humble and self-effacing stereotype of the inferior, which invokes a power hierarchy very explicit. My consultant pointed out that this interactional situation evokes the contrast in American history between the images of Booker T. Washington and W. E. B. Dubois, the former representing the "humble" self-presentation and the latter the "new Negro" image of self-determination and self-assertion that was articulated in the Harlem Renaissance. He also pointed out the African-American tradition of strong and assertive women. For this student to act in the "Chinese way" thus felt as if she were compromising her self-respect, and this emerged in the playback sessions. Since this is a well-educated African-American student, it's highly likely that further probing would have revealed that she could make the link between her discomfort and the history of African-Americans in the American South, but in the four iterations of her discomfort it does not come forward as in her awareness. The Chinese ITA does not realize how the ethnicity and gender of the African-American student have affected her behavior.

6. Conclusions

In this case study we have seen the different kinds of insights, both for participants and for analysts, that can emerge through this teaching/research methodology that analyzes the situated interpretation of the interplay of cultural knowledge in cross-cultural communication in the form of frames, schemas, discourse management strategies, and contextualization cues. The insights included a further exploration of the inductive/collaborative and deductive/assertive rhetorical patterns (Tyler and Davies 1990; Scollon and Scollon 1991; Davies and Tyler 2005) associated with cross-cultural misunderstanding in situations such as this. The analysis revealed that for the American student "leaving it up to the teacher", described in her own words as a classic inductive strategy, "just to let her know what my problem was and then leave it up to her since she's the one with the power [LAUGHTER] she's the teacher", inevitably included elements of a deductive strategy in the form of proposals for what the teacher could do. Thus it appeared that even though the student explicitly ascribed "the power" in the situation to the teacher, the student's cultural presentation of self did not allow her to completely

cede power. The American student's role was shaped partly by general American patterns of self-presentation, by local institutional knowledge of unofficial grading practices in universities, by expectations concerning a more flexible relationship between teacher and student in which power can be negotiated, and by ethnic subcultural patterns that included gender roles. In this exploration of her situated presentation of self and attempt to achieve her goals, it appeared that it was particularly the ethnic subcultural patterns also associated with gender that led to difficulties in the development of cross-cultural communicative competence when a discourse style is associated with values incompatible with presentation of self and thus emotionally unacceptable.

The Chinese TA demonstrated the capacity of a non-native speaker of English with limited linguistic skills to stand her ground against an articulate student, but also to use rhetoric effectively to model an inductive strategy for the student. This TA had been characterized by her ITA instructor as "quiet and shy", and his advice had been that "she needed to develop more confidence, and that she needed to be more aggressive". Conventional wisdom, reinforced by such early work as Thomas (1984) and everyday experience, suggests that limited linguistic ability of non-native speakers typically puts them at a disadvantage with native speakers of English, but in this case the Chinese TA was able to use the power inherent in her position as teacher to help her to achieve her goals. In contrast with the initial characterization by her ITA trainer, it is also striking that in the final feedback session above she does not allow the researcher/facilitator to interrupt her as she is making her point and then challenges the formulation proposed by the facilitator.

In terms of the value of such an approach as a teaching methodology, it would appear that both participants benefitted. The Chinese TA apparently gained confidence and increased her assertiveness in interaction. She also moved from rejecting the local institutional knowledge about "extra credit" to using it effectively in her own role as student. The American student gained more insight into what "leaving it up to the teacher" could mean from a rhetorical point of view, but also realized that a style of self-presentation that felt too "humble" was emotionally unacceptable in terms of her own self-respect. Both participants gained greater awareness of cultural differences and the complexity of interaction in "third places". It should also be clear however, that this teaching/research methodology is labor-intensive and requires a level of trust and a safe environment to explore potentially sensitive issues.

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Discourse management strategies revisited

Building on Tyler's early insights regarding international teaching assistant comprehensibility

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This chapter revisits Tyler's early research on ITA comprehensibility while also considering recent work on instructional discourse. The purpose of the study is to explore Tyler's early conclusions regarding the sources of listeners' perception of incoherence in ITA classroom discourse. Following Tyler's methodology, the data collected consists of videotapes of the same lab session taught by four different TAs, two native speakers and two non-native speakers. The transcripts of the lab sessions are analyzed in terms of the use of discourse management strategies to determine the differences between native speaker and non-native speaker TAs. Finally, we discuss how those differences may affect ITA comprehensibility as well as implications for ITA training.

Keywords: intelligibility, international teaching assistants, instructional discourse

1. Introduction

In the late 1980s, with the rapid growth of international teaching assistants (ITAs) in the US, and against the national backdrop of vocal student and parental disgruntlement, Dr. Andrea Tyler was tasked at the University of Florida with the challenge of making ITAs more intelligible to their US students. Between 1988 and 1992, to answer the question "what aspects of ITA discourse contribute to a lack of comprehensibility?" Tyler and her colleagues undertook a series of research projects using data from the real-classroom teaching of ITAs. In a 1992 article published in the journal *Text*, Tyler analyzed ITA discourse focusing on differences in the ways that ITAs used lexical markers and discourse strategies in their English communication that complicated listener understanding of "logical and prominence relationships

among ideas.” (Tyler 1992a: 1). Currently, research related to ITAs is experiencing a renaissance. The publication of Greta Gorsuch’s edited volumes, *Working Theories for Teaching Assistant Development* (2012) and *Talking Matters* (2015), have rekindled scholarly interest in understanding the challenges confronting the growing number of ITAs in US universities. Several scholars have contributed significantly to our understanding of discourse marker (DM) utilization among international graduate students, most notably Liao (2009), Levis, Muller Levis, and Slater (2012), Haan (2015) and Looney (2015).

Twenty-four years after Tyler’s insights regarding the role of discourse management strategies and the lexicalization of relations in ITA intelligibility, and in light of the resurgence of research interest focused on ITAs, we are revisiting Tyler’s work to investigate the continuing relevance of her conclusions regarding the crucial role of DMs in perceptions of ITA comprehensibility. In this chapter we explore the following research questions: (1) What discourse management strategies do native speaker and non-native speaker TAs use to organize their instructional discourse? (2) How do these strategies differ? and (3) How do the strategies used by ITAs affect their comprehensibility?

2. Theoretical assumptions

Tyler’s early work contributed not only to the expanding body of knowledge in discourse studies, but also provided a contrastive discourse analytical framework of academic English between ITAs and native English speakers. Tyler also focused her work on the role of the listener in academic discourse: How does the use, or absence, of particular discourse management strategies, such as discourse markers (DMs), repetition, and other forms of discourse organization, influence the native speaker’s understanding of non-native speech? Tyler, in her independent and collaborative publications, based her analytical framework heavily on the work of Gumperz (1982) and on the work of Grice (1975) as interpreted by Green and Morgan (1981). The combination of these perspectives offered a more holistic understanding of the complex nature of cross-cultural interaction. Gumperz postulates that every language and culture uses certain linguistic forms that provide cues to the listener about how to make sense of discourse. Essentially, listeners have culturally and linguistically based expectations about how they should be led to understand instances of discourse. For example, the use of certain discourse management strategies can express logical ordering or relationships within a chunk of discourse; other strategies can express prominence so that listeners know which information is most or least important.

And yet these strategies are not always easily navigated, and much less so for non-native speakers (NNSs). Green and Morgan's Gricean perspective explains that in conversation, people are constantly guessing about their partner's intentions; however, these guesses are informed and limited by our expectations of, among other things, certain patterns of linguistic code. As native speakers (NS), particularly native-speakers privy to a specific speech community's patterns, we can more readily ascertain the implied meanings that may be communicated through a combination of linguistic features – grammatical, lexical, pragmatic, phonetic and so on. As our purpose in this research is to revisit an earlier study of Tyler's earlier methods, we have chosen to remain within the same analytical framework.

Discourse competence for ITAs refers specifically to the discourse needed for the university classroom, "...this means being able to connect examples to definitions, transition from one topic to another, or explain logical connections between points in such a manner so as to help undergraduates understand the course content" (Haan 2015: 142). In our study, our focus is to examine some of the ways in which ITAs express discourse competence in a university classroom setting. Thus, we examine the perceived comprehensibility of their language production. When we break down ITA speech, we may find that ITAs are using what many NSs would consider adequate grammar, vocabulary, and pronunciation, but when we put all of these components together, they may still be lacking in terms of discourse competence. The flip side also seems to hold true, even when one element of an ITA's speech contributes to incomprehensibility, strengths in other areas do not necessarily add up to discourse competence. To be perceived as comprehensible, ITAs need to exhibit both coherent and cohesive discourse. Coherence is a general sense of connectedness within a text or chunk of discourse (Haan 2015). Cohesion is created through the use of specific lexical items and grammatical structures in order show connections and transitions between sentences (Halliday and Hasan 1976). For example, cohesion can be created and expressed through the use of DMs. While the use of words like *so*, *and*, and *okay* might not seem of great importance, when used strategically as DMs, they can signal logical progressions in an explanation and thus, they enable the listener to easily comprehend and follow the speaker (Liao 2009). Research shows that when DMs and other discourse management strategies are not used, or are not used in the expected manner, the intended message may seem unorganized and hard to understand (Flowerdew and Tauroza 1995; Jung 2006; Levis et al. 2012; Looney 2015; Rounds 1987; Tyler 1992a, 1992b, 1994b; Tyler, Jefferies and Davies 1988; Williams 1992).

3. Tyler's early work on discourse management strategies of ITAs

In the past few decades, there have been a number of studies on the use of discourse management strategies by ITAs. Tyler et al. (1988) analyzed the discourse produced by 18 Korean and Chinese graduate students who were chosen because of the reported difficulties with their speech comprehension. While the pronunciation of these participants clearly contributed to their incomprehensibility, Tyler et al. (1988) controlled for this feature by analyzing written transcripts and found that even without pronunciation playing a role, these ITAs would still be difficult to understand for American English listeners (p. 102). They concluded that the perceived incomprehensibility stemmed from the fact that the ITAs did not employ the same discourse management strategies that NSs would use, such as topicalization, to draw the listener's attention to foreground and background information. The ITAs either used DMs in ways that violated listener expectations (e.g. the same DM used repetitively, DMs used to mark hesitation, etc.) or not at all. Additionally, logical relations between ideas were not properly signaled, and the ITAs relied heavily on parataxis (e.g. a lack of use of subordinating clauses). The authors found that the resulting discourse was unfocused, flat, and choppy, and this rendered it difficult to comprehend. Most significantly, they found their original claim to be supported: it was the cumulative effects of these various miscues, not a single factor, which created a lack of comprehensibility.

In a follow up study, Tyler (1992b) had native speaking listeners rate the comprehensibility of two presentations, one given by a native speaker TA (NSTA) and one by a Chinese speaking ITA. The participants were asked to give a short lecture, suitable for undergraduates, on a topic within their area of expertise. The transcripts of both presentations were read to the raters by a native English speaker. The ITA was judged to be difficult to follow. Tyler's analysis pointed to DM usage that would be perceived as unusual for English listeners. For example, while the NSTA and ITA both used a numerical strategy to organize their presentations (e.g. first, second, another way), the ITA abandoned this pattern at one point and never returned to it. Other issues were noted such as a lack of repetition or repetition that did not successfully express levels of prominence.

In another study which carried out a closer comparison of instructional discourse, and the one on which this current study is based, Tyler (1992a) had an American NSTA and a Korean ITA present a lecture on botany. Both participants were botanists and had similar levels of teaching experience. They presented using the same set of slides. The transcripts were then read by several botany professors. Again, the NSTA was perceived as easier to follow than the ITA. The ITA did not use as much repeated mention, which meant that prominence was not well established

for certain terms. Both participants used the DM *and*, but only the English speaking TA used *and then*. The NSTA also had specific uses for both markers (e.g. *and then* could show chronological ordering, but also a sense of drilling down into detail). The ITA only used *and* to show both main idea and detail; the result was that “his discourse has a flat, listlike organization” (1992a: 7). In terms of discourse management strategies, the NSTA used a specific to general pattern in presenting the material and this created more prominence. He also provided more mention of materials from previous lectures. The ITA used a general to specific strategy and used little previous mention. Finally, Tyler noted that in terms of interpretive frame, the NSTA was direct and explicit (e.g., while naming objects in the slides he used demonstratives, “*this* is a close up of that same plant”) to create further continuity and prominence. The ITA does not do this. When Tyler shared her findings with the Korean ITA, he saw no reason to be so explicit nor to cover previously mentioned information. He found the American TA’s use of these strategies to be “less elegant and childish” (1992a: 15). Tyler directs our attention to the role of culture and explains that what counts as enough repetition and specificity is what a particular language/culture deems to be enough. She adds that several researchers (Hinds 1987; Lakoff 1984; Scollon and Scollon 1981) have put forth the notion that, “... [the] degree of listener/speaker responsibility for specifying connections between ideas may be an important pragmatic parameter along which languages/cultures differ” (Tyler, 1992a: 4).

In her early work, Tyler (1992a, 1992b; Tyler and Bro 1992) uses the term *lexical specificity* as an overarching concept to mean that “the referent in the discourse should be sufficiently identified to avoid confusion for the audience” (1992b: 719). Lexical specificity can be achieved in a number of ways: the use of pronouns, article usage, adjectival modification, and repetition (Tyler 1992b; Tyler and Bro 1992). In this case, *specificity* means that when NSs use these devices they do so within the bounds of a particular genre of discourse. While the term lexical specificity is useful, it also limits itself to particular instances of linguistic code use. Tyler refines her approach to discourse analysis in later studies (Davies and Tyler 2005; Tyler 1995) and uses the term *discourse management strategies*, “purposeful linguistic maneuvers that provide both an overall ordering to the shape of an extended stretch of discourse, as well as more local stratagems for accomplishing a particular communicative goal in spoken interaction” (Davies and Tyler 2005: 136). The strength of this term is that it reflects an interactional sociolinguistic approach that recognizes the various and simultaneous dimensions of discourse. In other words, all forms of linguistic choice and organization, i.e. *strategies*, contribute to discourse and are shaped by the contexts and speech communities in which they take place.

Table 1. Discourse management strategies examined in this study

Features	Definition	Examples (from the data)
Repetition	Repeated mention of key words, use of synonyms, and paraphrase to create prominence	“what they do is allow a reaction to occur at a <u>lower energy</u> , so they <u>lower the activation energy</u> that is required for the reaction to be carried out”
Discourse Markers – Micro	Use of words or phrases to show relationship among ideas (cause and effect, comparison, sequence), e.g. <i>and, so, and then...</i>	“You won’t be able to remove everything just stopping at the first stage, <u>so</u> press it really hard. <u>And then</u> if you want to remove the pipette tip, press the, uh, ejector.”
Discourse Markers – Macro	Use of words or phrases that indicate the organization of ideas, e.g. <i>first, also, we’re going to...</i>	“ <u>First of all</u> , you need to know, what a structure of a protein is like.” “So <u>what we’re going to do is</u> that we want to find out, how this temperature and pH really affects, an enzyme.”

3.1 Repetition

Researchers have debated the kind of contribution that repetition makes to discourse (Green and Morgan 1981; Halliday and Hasan 1976; Hatch 1992; Tyler and Davies 1990). One critique of repetition is that its use, in and of itself, does not necessarily create coherence (Tyler 1994a); however, when certain patterns of repetition are used in order to create a more effective and efficient interpretation of discourse, then it does create an easier path to coherence for the listener. Thus, for the purposes of this study, we accept Tyler’s (1994a) view that, “certain patterns of repetition can act as one set of meta-discoursal markers which signal the listener how to incorporate new information into ongoing discourse” (p. 672).

Tyler explored the use of intentional repeated mention and argued that its use, either as a directly repeated term or phrase or used as an anaphoric reference, created prominence for the term or phrase being mentioned (1992a, 1994a). In other words, the more a particular term or phrase is used, the easier the term is for the listener to remember. Tyler cites Chafe’s work (1987), which explains that repeated mention facilitates the activation of lexicalized topics that, over time, become entrenched in the listener’s awareness. Furthermore, within a specific context, such as a math class, certain lexical items may be identified as synonyms that will be used for math-specific concepts. When introducing a synonym, a speaker can signal to the audience that the synonym refers back to the target concept. And thus, by repeating the synonym, the speaker establishes greater prominence of the target concept (Tyler 1992a, 1994a).

3.2 Discourse markers

Another discourse strategy is the use of DMs as “sequentially dependent elements that bracket units of talk” (Schiffrin 1987: 31). Tyler notes that DMs represent the “lexicalization of relations” (1992a: 6) because DMs are word or phrase choices used to create prominence and to express relationships between ideas. There are a number of ways in which DMs can be classified; for example, Halliday and Hasan (1976: 26) refer to DMs as cohesive ties, and classify them as relating to reference, substitution, ellipsis, conjunction, or lexical cohesion (see Haan 2015 for a recent discussion). Chaudron and Richards (1986) divide DMs more broadly as macro-markers, which structure discourse in a global way (e.g. *Today we’re going to look at...*), versus micro-markers which provide cohesion at the clause or sentence level or act as fillers (e.g. *so, okay, well*). While we find these ways of categorizing DMs useful, additional research tells us that the role of a particular DM depends on a number of linguistic, sociocultural, and pragmatic factors. For example, regarding the use of macro-markers, Williams (1992) examined the role of planned versus unplanned use of macro discourse markers (e.g., *for example, now I’d like to give you the definition*) in ITA and NSTA presentations. Her results showed that when ITAs planned their explanations, they used more explicit discourse marking, and this improved their comprehensibility.

A number of studies have reported on the use and function of specific micro-markers. In examining the use of *okay* and *oh* as pragmatic markers in NS-NNS information gap activities, Nakahama, Tyler, and Van Lier (2001) found that NSs used both DMs more frequently than NNSs and that *okay* communicated understanding, as well as functioned as a way to signal closure to a discourse episode. Liao (2009) looked at DMs (specifically, *yeah, oh, you know, like, well, I mean, ok, right, and actually*) within the lectures of Chinese ITAs and reported that while they used some DMs frequently, the ways in which they used them and their frequency differed from NSTAs. For example, the ITAs rarely used *well*, but they used *yeah* more often than NSs and used it to mark topic shifts and as a repair strategy (p. 1323). Recent work by Looney (2015) carefully examines the uses of *okay, so, and okay so* in ITA-led lab sessions comparing the usage of these DMs with an ITA and NS undergraduates. The results showed that both the ITA and NSs used these DMs similarly and that their use was significant in co-constructing meaning. These DMs were used in locating and correcting misunderstandings and in displaying and demonstrating understanding in the physics lab setting.

Jung (2006) took a different perspective and explored the use of micro- and macro-markers on L2 speakers’ perceptions of academic English. Jung divided 80 Korean university students into two groups. One group listened to an academic lecture in English that used various DMs (e.g. *because, so, okay, in the third stage, for*

example, etc.); the other group heard the same lecture without DMs. Jung assessed their understanding with either a summary or a recall task. She found that even for NNSs, the use of DMs significantly improved their ability to recall and summarize the lecture material. Our review of the literature indicates that, regardless of whether they are functioning as global organizers of discourse or intersentential connectors, DMs are dynamic linguistic devices that contribute to comprehensibility.

4. Methodology

The purpose of this study was to examine comparable sets of NS and NNS discourse, following the methodology used in previous studies by Tyler (1992a, 1992b, 1994a). Tyler's studies used a qualitative discourse-analytic framework to explore native speakers' perceptions of incoherence when comparing the spoken language of NSTAs and ITAs. Her studies were small, comparing an American English speaking TA and an ITA (e.g. a Korean speaker in Tyler 1992a and a Chinese speaker in Tyler 1992b and 1994a). A native English speaking audience either read (Tyler 1992a) or listened to readings (Tyler 1992b and 1994a) of the resulting transcripts. Our study revisits Tyler's methodology, but we have expanded our comparison by using four participants. Our sample comprised biology TAs, two NSs and two NNSs. The videotaped lessons were transcribed and analyzed by the researchers to identify discourse features that may affect comprehensibility. The transcripts were also reviewed and rated by two biology professors as well as three ESL training faculty. In addition, unstructured interviews with the lab supervisor and the TAs were conducted.

4.1 Data collection

To ensure the discourse samples were comparable, four sections of the same lesson were videotaped. The participants were four graduate students in biology who were TAs at a university in the southeastern United States and had limited teaching experience. None of the TAs had taught this particular course before. Two of the participants were NS of American English. The other two were NNSs, one Chinese and one Thai, with the same score on the speaking proficiency test used at the institution, a score of 50 on the SPEAK Test, which indicated that their communication is generally effective. Both ITAs were enrolled in an ITA training course. Table 2 summarizes information about the participants and length of each class.

Table 2. Participant information and data collected

Participant	Gender	L1	Audience (# of students in lab)	Length of pre-lab lecture (min:sec)	Total # of words in pre-lab lecture
NS1	Female	English	30	7:41	1098
NS2	Female	English	30	10:42	1812
NNS1	Female	Chinese	15	17:55	2396
NNS2	Male	Thai	30	15:16	2003

In lab sessions, the TAs generally present material to students before completing the experiment. For the purpose of this study, this segment of the lab was labeled “pre-lab lecture”. Even though each lab was recorded in its entirety, we focused on the pre-lab lecture segment of the lesson, during which the TAs were to explain the lab topic using the slides provided by the lab coordinator. Thus, the content of the speech samples compared were parallel. In the session recorded, the TAs were explaining “enzyme kinetics” and were provided with the same set of 16 slides to present the material to the class. However, the TAs had the freedom to choose which slides to show and how to present the information. For the purpose of this study, only the segments in which the speakers referred to the same information were analyzed.

4.2 Data analysis

All four lessons were transcribed by two of the researchers using the same conventions to ensure the transcripts were consistent. However, the analysis was conducted by all of the researchers, who identified and analyzed discourse management features, specifically the use of *repetition* and *discourse markers*. We identified characteristics of the NS samples and the NNS samples in order to compare the discourse of the NS participants to that of NNS TAs and address the first and second research question.

In order to address the third research question, we shared the transcripts with two biology professors and three ESL faculty. The use of transcripts eliminates the effect of mispronunciation in comprehensibility. The identity of the speakers was not included in the transcripts. Tyler (1992a, 1992b) asked the professors to read the two transcripts and determine which one was easier to follow. Because the sample of the present study included four speakers, we developed a rating scale to facilitate the analysis. The present study expanded on Tyler’s methodology by asking the reviewers to provide a score for each transcript as well as reasons for the

rating (see Table 3). In addition, as in Tyler (1994a), the transcripts were reviewed by ESL training faculty using the same form. By having reviewers rate how easy it is to follow each TA, we are able to focus on the discourse management strategies.

Table 3. Rating table completed by reviewers

	How “easy to follow” is the excerpt?					Reason for rating
	Not easy			Very easy		
Transcript 1	1	2	3	4	5	
Transcript 2	1	2	3	4	5	
Transcript 3	1	2	3	4	5	
Transcript 4	1	2	3	4	5	

5. Analysis and discussion

Research Questions 1 and 2: What discourse management strategies do NS and NNS TAs use to organize their instructional discourse? How do these strategies differ?

5.1 Repetition

Tyler (1992a, 1992b) found that repeated mention aided comprehensibility by creating prominence of key concepts. In our study, we observed that both NS and ITAs used repetition to create prominence by repeating key terms and ideas when communicating ideas. Prominence can be achieved by repeating important words or using synonyms in the same sentence, and by repeating or rephrasing a sentence. Excerpts (1) and (2) illustrate the use of repetition by NS1 and ITA2 to create prominence.

Excerpt 1. (NS1)

Um, what kind of environmental factors may, influence the enzyme’s function or structure? I kind already gave you a hint earlier. Temperature and pH [repeating student’s answer], yeah, yeah. Very good. So, um, what these environmental factors do actually is, um, they do influence the enzyme structure, um, because when they react it will actually break and re-structure those chemical bonds of the enzyme.

Excerpt 2. (ITA2)

So there are so many, um, factors that can affect rates of, of enzymatic reactions. So the first two of them is going to be, we are going to study today, ok? It’s called, um, they are temperature and pH. Mainly today we are studying the effect of pH and temperature in, um, in rates of enzyme reactions.

Both excerpts refer to environmental factors and exhibit the use of repetition to create prominence. In Excerpt (1), the TA repeats *environmental factors*, *enzyme* and *structure*. The TA also uses the expression “these environmental factors” to refer to *temperature* and *pH*. Another form of repetition is observed when the TA confirms a student’s answer. In Excerpt (2), the TA repeats the key terms *enzyme reaction*, *temperature* and *pH*.

However, there are also differences in the use of repeated mention between NSTAs and ITAs. Tyler (1992a) noted that the NSTA used repeated mention more effectively than the ITA. In our analysis, we were able to observe how ITAs used repetition, but failed to create prominence. For example, a NSTA and an ITA warned the students about the staining properties of iodine, but they did it in different ways (see Excerpts (3) and (4)).

Excerpt 3. (NS1)

And, um, just as a heads up we are going to be working with iodine today, um, I personally don’t wear gloves with it, but if you would like to, there’s gloves back there. Um, do bear in mind, yeah it will stain your skin and, your clothing and stuff. So it’s up to you, just, uh, bear in mind that if you do wear gloves, try not to, if you have to leave the classroom, wear em outside the classroom and touch doorknobs and everything like that, look take your gloves off.

Excerpt 4. (ITA2)

Then, iodine as I told you before you should use gloves in this lab. And if you use gloves before you, before you go out to restrooms or you go up on elevator or something, take your glove out before you go out. Before you touch a knob or place that elevation button to go up or down.

In Excerpt (3), NS1 uses the expressions *heads up* and *bear in mind* to indicate that iodine has staining properties. ITA2, on the other hand, communicates the same message with no indication of its prominence, focusing on places students will go (restroom, elevator) and objects they can touch (knob, button). He never says iodine will stain things; he only implies it, perhaps assuming students already know that. NS1 achieved the goal of emphasizing the importance of the message more successfully. In general, NSTAs seems to be better at using synonyms and paraphrase to create prominence (as seen in Excerpts (1) and (3)), whereas ITAs are more liable to use repetition without achieving prominence. For example, in Excerpt (5), the ITA repeats a student answer without including the key word. In another example, the ITA repeats instructions using the same words and grammatical structure (see Excerpt (6)). In Excerpts (6) and (7), the ITAs’ use of repetition is part of a repair strategy, due to lack of fluency.

Excerpt 5. (ITA1)

What is an enzyme? Anyone know about anything about enzyme, raise your hand, tell us a little bit more about that? [student name], thank you. Speed up the reactions [repeating student answer]

Excerpt 6. (ITA2)

And, um, make sure that before you, use that machine, turn the knob into 560, nanometer. Zero it and blank it before you use. Remember. I will repeat this one, one, one more time. Zero it and blank it, before you use it.

Excerpt 7. (ITA2)

Enzymes are proteins, ok? So, many, of, um, of protein, uh, protein properties are transferred to enzymes.

In Excerpt (5), when repeating the student's answer, the ITA does not use the word *enzyme* as the subject, just the phrase "speed up reactions." Additionally, the ITA also uses the word *about* several times in ways that are both correct and incorrect, and uses *about* in quick succession in the same sentence. The use of repetition without the key word *enzyme* creates a movement away from prominence. In Excerpt (6), in order to emphasize the importance of a step in the experiment, the ITA repeats the sentence three times using the same words and sentence structure. While the instructions to zero and blank are clear and could be considered an effective example of prominence, the repetition of *one* in a sentence meant to highlight the importance of this step, serves instead to highlight the ITA's lack of fluency. In Excerpt (7), the word *protein* is repeated as a repair strategy, creating distraction for the listener, and placing more burden on the listener to figure out the ITA's intended meaning.

Perhaps NSTAs are more successful because they have a larger repertoire of lexicon and syntax they can use to perform the function of creating prominence (Williams 1992). However, the issue may go beyond language proficiency. It could reflect a lack of familiarity with the communication style of instructional discourse in the American classroom and effective ways to create prominence in speech. In a study that focused on the role of repetition, Tyler (1994a) concluded that ITAs sometimes use repetition in a way that is distracting and can lead to confusion because they do not establish "a mutual interpretation" of key terms, i.e., instead of actually creating prominence or bringing the listener closer to the intended meaning, the listener is led away from it. Students expect the TA to provide certain contextualization cues to guide their understanding; they are not, as Tyler (1994a) points out, fully aware of what or where these cues should be, only that cues should happen. When this does not happen, the listeners' expectations are violated, and the listener realizes that something is missing or unclear.

5.2 Discourse markers

While we found a number of interesting DMs in our transcripts, we chose to focus on *and*, *and then*, and *so*. In her study, Tyler (1992a) noted that both the American and Korean TAs used *and* frequently at the start of clauses, but the American TA also used *and then*, while the Korean TA never did. Tyler argued that the American TA had specific uses for these DMs, which supported the perception of more effectively organized discourse “in which levels of prominence and shifts in focus” (1992a: 7) were indicated. In contrast, the Korean TA’s use of only *and* made his discourse harder to follow. Our data shows that both NSTAs and ITAs used *and* frequently and all four used *and then* (see Table 4). The number of DMs in each transcript is shown as well as the percentages (i.e. raw count/the total number of words). Based on the counts, it seems like the ITAs use *and* more, and the NSs use *so* more. However, the pre-lab lectures had different lengths, which is why it is important to look at the percentages.

Table 4. Frequency of selected discourse markers

Participant	<i>And</i>	<i>And then</i>	<i>So</i>
NS1	35 (3.18%)	5 (0.45%)	22 (2.003%)
NS2	58 (3.20%)	3 (0.16%)	68 (3.75%)
ITA1	68 (2.83%)	7 (0.22%)	49 (2.04%)
ITA2	54 (2.69%)	11 (0.54%)	43 (2.14%)

Taking into account the percentages, the use of *and* is similar across the board, but *and then* was not used that much. *So* is used by all TAs, but more often by NS2. In addition to the frequency, it is important to consider the purpose and effectiveness of the use of the DMs. In the next section, we examine the use of each one of the DMs.

5.2.1 *The use of and*

In our analysis, we found that NSTAs and ITAs used *and* more than the other two selected markers. This is not surprising because *and* is very flexible and has a wide range of uses, as Celce-Murcia and Larsen-Freeman (1999) note. Both NSTAs and ITAs used *and* to perform a variety of functions, often in clause initial position (see Table 5).

Table 5. Clause initial usage of *and*

Participant	<i>and</i>	Clause initial	Percent initial
TA1 NS1	35	15	43%
TA2 NS2	58	29	50%
TA3 ITA1	68	48	70%
TA4 ITA2	54	29	53%

Both NSTAs and ITAs used *and* to signal additional related information or signal chronological sequencing (e.g. Excerpt (8)), but sometimes it was used as a filler or in combination with fillers (Excerpt (9)). The latter may not be effective in signaling organization.

Excerpt 8. (NS1)

...we're gonna put all our data together at the end, to hopefully create some sort of curve that looks like this. And we can determine the optimum temperature and pH that this enzyme reacts at.

Excerpt 9. (NS1)

Alright, and, um, I will also show you how to use the spectrophotometers, and also keep in mind, um, proper graph instruction throughout, um, your lab notes.

We could argue that *and* may be overused by both NSs and NNSs. ITA1 uses *and* often at the beginning of sentences, which seems to be an idiosyncratic way for her to start sentences. In such cases, this can prevent the TAs from communicating ideas clearly, as it can create a “choppy” rhythm (Tyler et al. 1988). In Excerpt (10), we found instances in which *and* did not assist ITA1 in creating more effective organization.

Excerpt 10. (ITA1)

(1) And whenever you have amino acids being binded together by pepi, uh, peptide bonds, it form a really long chain. (2) And that chain, because it has negative or positive charges will twist itself, (3) and into, either a long string or it could be a globular, structure. (4) And, uh, that we call is the primary structure, of a protein. No, sorry, primary structure is, what is the sequence of the amino acids. (5) And , uh, as for a second, structure of the protein, secondary protein, uh, structure, that means you will have those amino acids being attracted to each other or repelled to each other because of their charges or their hydrophobicity or hydrophilic. (6) And, uh, that will form some kind of, like, uh, swirl structure. (7) Or some could be like folded papers, and that's secondary. (8) And if you fold it more, that's tetry, tetry structure...

In Excerpt (10), ITA1 is describing the structure of a protein; we see that *and* happens mostly in a clause initial position. We also see that the speaker does not use many other conjunctions to connect ideas; *and* is used in places where another conjunction might be more effective. For example, in (2) the speaker could just as easily start with *so* to provide a reason why the long chain of amino acids will twist. The uses of *and*, however, are varied. Celce-Murcia and Larsen-Freeman (1999) explain that the “marker of many meanings” approach to understanding *and* means that it can work as a logical connector and can also communicate a causal relationship, “In principle, the meanings of *and* shade into one another in such a way that they could become too numerous to list; this is not a problem we encounter with ordinary lexical ambiguity” (p. 474). Thus, ITA1’s use of *and* in (2) is not necessarily unusual.

ITAs also use *and* a lot due to lack of fluency, not necessarily a lack of transitions. They may not be able to create different constructions to describe relationships concisely, like the NSTAs do. NSTAs also use *and* in places where another conjunction might work, but as Celce-Murcia and Larsen-Freeman (1999) note, *and* is very flexible and can even have contradictory meanings. More importantly, however, the speaker’s use of *and*, while possibly distracting, is not the most problematic issue in this chunk of discourse. In virtually every sentence we find linguistic instances that render the message difficult to understand. In (1) there is a false start with peptide bonds and an incorrect verb form, in (3) an unnecessary use of *and*, in (4) a word order error and a repair strategy, and in (5) a confusing lexical choice with “repelled to each other”. In this case, it could be the cumulative effect of organization and syntax flaws that leads the audience away from the message, as was noted in past studies (Tyler et al. 1988; Tyler 1992a).

5.2.2 *The use of and then*

All participants in our study used *and then*, and ITAs used it more than NSTAs. This finding was not surprising because the TAs are providing instructions to complete the lab. Thus, our results differ from Tyler’s study (1992a), in which the NSTA was using *and then* to signal movement from main point to detail. Our transcripts also show an additional use of this DM. ITA2, who used *and then* the most, used it to organize the groups and assign tasks before starting the experiment, not as a way to show the sequence in the steps (see Excerpt (11)).

Excerpt 11. (ITA2)

Ok, you two and then, you four together, and then you four and four. [...] your group at 55 and pH 5 and then your group of four right here, 65 and pH 5.5.

5.2.3 *The use of so*

Tyler (1992a) noted that the Korean speaker in her study used more general to specific organizational patterns, while the NSTA moved from specific to general. In our data, we noticed analogous differences between NS and ITAs in the order in which they present information (see Excerpts (12) and (13)).

Excerpt 12. (NS2)

So it's a protein catalyst, and it is used to lower the activation, energy necessary for the chemical reaction to occur.

Excerpt 13. (ITA1)

So whenever you want to have a reaction, you have to an activation energy, in order for this to happen. So usually, we plot, a reaction, energy change. It will have to go up, it absorbs, amount, some amount of energy, and then, changes to something else. If you have your substrate here, give it some energy, it will change to something else, as a product. And usually, this amount of energy, is called the activation energy.

Both excerpts show how the TAs introduce a new concept: activation energy. However, the NSTA provides a short definition immediately after mentioning the concept: *energy necessary for the chemical reaction to occur*. The ITA, in contrast, first mentions the concept, then gives a description, before concluding that this is actually the definition of the concept.

Another difference in the use of *so* is its placement in the sentence. A raw count of its frequency in our transcripts does not suggest any meaningful distinctions between NSTAs and ITAs (see Table 6). However, when the location of *so* in a sentence is considered, some potential distinctions emerge. NSTAs spread *so* throughout a sentence; while ITAs tend to put *so* at the beginning of a sentence.

Table 6. The frequency and placement of *so*

Participant	Total <i>so</i>	Sentence initial	Percent initial
NS1	22	14	64%
NS2	68	46	67%
ITA1	49	47	96%
ITA2	43	32	75%

For both NSTAs and ITAs in our data the preferred location of “so” is sentence initial. The growing usage of “so” sentence initially has been the subject of recent scholarly speculation. Bolden (2009) notes that in addition to its traditional role of “indexing inferential or causal connections”, *so* is being used to advance an “interactional agenda”. The almost exclusive use of *so* sentence initially by ITA1

(96% of the time) may indicate her attempt to advance an interactional agenda. Alternatively, ITA1 may be imitating the growing interactional usage of *so* that she has observed in her NS colleagues/instructors. By restricting her use of *so*, however, to its sentence initial position, she is not benefiting from its role as indicating cause and effect relationships. In his analysis of the use of *so*, Looney (2015) explains it can be used to manage turns in conversation, to signal a question, and to draw conclusions. Thus, it becomes an important tool in classroom discourse to clarify ideas and display understanding.

5.2.4 Macro-level discourse markers

Even though the lessons were short (between 7 and 17 minutes), we identified DMs that show the organization of the presentation, such as *first of all*, *also*, *before*, etc. We found that these words were used in a similar way by all TAs. There is some variation in the terms of the frequency of macro-level DMs, but there seemed to be consensus regarding their use (e.g. using *first* to introduce a topic or initial step, using *now* to move to the next topic or step, etc.). If we consider the total count, it seems that ITAs are using more of these DMs. However, we need to keep in mind the ITAs had longer “pre-lab lectures”, which is why we also include the percentage (see Table 7).

Table 7. Frequency of organizational DMs

Participant	First (of all)	Then	Also	(Right) Now	After	Before	Once	TOTAL	Percentage (based on total words)
NS1	1	6	3	1	0	0	2	13	1.18%
NS2	1	5	3	0	0	1	3	13	0.71%
ITA1	10	8	3	5	2	0	0	28	1.16%
ITA2	1	13	1	4	0	3	2	24	1.19%

The percentages based on the total number of words are similar for all TAs. In our analysis we also identified other language that showed how NSTAs were organizing their presentations. We found that NSTAs used other expressions (e.g. “I’m gonna explain...” or “we’re gonna look at...”) to perform those functions. Excerpts (14) and (15) illustrate the use of these strategies by NSs.

Excerpt 14. (NS1)

Ok, we’re gonna get started. I’m gonna just give you guys a brief overview of kind of what we’re doing today and, kind of connect the dots for you in terms of what was in your reading.

Excerpt 15. (NS2)

OK, we're gonna get everything set up. So you need to pay attention so you know what you're doing.

Our transcripts show that NSTAs used these expressions 10 times, but ITA1 and ITA2 only used them 4 or 5 times, respectively. If we take into account that the NSTAs pre-lab lectures were shorter, it is obvious that they relied on these expressions more. As mentioned earlier, NSs have a repertoire of lexicon and syntax that they use to communicate their organization and intentions to the listener that goes beyond single words, such as *first*, *next*, *after*. We also believe this finding may also relate to the overall organization and content of the pre-lab lectures and the instructors' perception of the purpose of the lab. Both ITAs spent more time explaining the concepts (e.g. enzyme kinetics, protein structures, etc.) than explaining the experiments (see Table 8).

Table 8. Length of each section

Participant	Total length (min:sec)	Length of conceptual knowledge	Length of directions
NS1	7:41	3:15	4:26
NS2	10:42	2:51	7:51
ITA1	17:55	9:02	7:00
ITA2	15:16	10:45	4:31

All the transcripts contain some amount of lecturing related to the lab concepts followed by lab directions, but the NSTAs only spent about 3 minutes on the concepts. Thus, the choice of expressions such as “we're gonna” may be related to the fact that NSTAs seem to focus on leading the students to complete the experiment. NSTAs may recognize that many of their students are not initially prepared to listen to a lengthy discussion of theory at the start of a lab. NSTAs seem to perceive their role more as guides for successful lab completion, which is supported by NSTA2's assertion that her job was to “keep things moving along and get her students thinking”.

The structure and purpose of the lesson was discussed with the lab supervisor and the TAs in informal interviews. When asked to describe his intentions for the pre-lab lecture, the lab supervisor commented that “if students did the reading, the instructor should be able to query them to make sure they know the concepts, and then instruct them on the protocols, procedures, where things are or should go, etc”. These comments are important because they relate to the expectations of a NS audience. In a lab session the students may not be expecting a lecture. The choices that ITAs make in how they structure the content of their presentations may be reflective of cultural norms related to a speaker's responsibility in organizing

discourse and a listener's responsibility in making sense of it. They may also affect overall comprehensibility. In English, the task of clearly articulating whatever the point may be is mostly the burden of the speaker (Tyler and Bro 1992).

Research Question #3: How do the discourse management strategies used by ITAs affect their comprehensibility?

We analyzed the differences between NS and ITA samples and identified issues that may lead to the perception of incoherence as they relate to discourse management. ITAs, for example, use repetition, but often fail to create prominence effectively. In addition, ITAs use the same DMs as NSs for a more limited number of places and functions (as in the case of *so*) or a different function (as in the case of *and then*). We believe that these factors can affect ITA classroom discourse comprehensibility, and we agree with the claim from past research that it is the combination of these miscues that creates difficulty for the listener (Tyler et al. 1988; Tyler 1992a). Like Tyler (1992a), we also gathered ratings from content experts and ESL training faculty. These reviewers read the transcripts and rated each one based on how easy it was to follow the TA (Table 3). By analyzing the transcripts and using these ratings, we are able to focus on the discourse management strategies.

According to our raters, on average the ITAs were less comprehensible than NSTAs, but our results were more varied than Tyler's (1992a) (see Table 9). We compare the NSTA results first and then the ITAs'; we conclude with some analysis on the length of transcript sections (conceptual portion versus lab directions).

Table 9. Reviewers' scores and average ratings

Participant	Expert 1	Expert 2	ESL 1	ESL 2	ESL 3	Average
NS1	3	3	4	4	5	3.8
NS2	4	4	4	5	2	3.8
ITA1	2	5	3	2	1	2.6
ITA2	3	3.5	1	1	3	2.3

NS1 received higher scores from the ESL faculty. ESL3, who gave the highest rating, noted that, "There was clear organization of ideas and cohesion". This rater also pointed out that the NS1 had a good introduction and used transition language well. The other ESL raters had similar comments. ESL 2 appreciated the introduction to the lab and noted that NS1 provided an overview of and objectives for the lab; the rater explained that NS1 also, "connects the points well". ESL1 felt that a "clear description of the lab assignment" had been provided, and that, although there were many fillers, NS1 was "fairly easy to follow". Both ESL 1 and 2 noted that the TA did not spend a lot of time on background information, but both indicated that this was not problematic.

The expert raters, on the other hand, found NS1's performance to be somewhat lacking. Expert 1 found "problems with terminology" and felt that while "some organization was present", more was needed. What Expert 1 means by "more" is not clear. However, ESL 2 explained that her rating (4), was not higher because NS1 did not provide "further explanation about the procedures and how to use the equipment/chemicals safely". Expert 2, the lab supervisor, noted that NS1 was American, and seemed "unpracticed and unprepared". Expert 2 found NS1 to be "very informal and laid back". His evidence for this was the TA's use of the words "gonna," "you guys," and "kind of". Expert 2 allowed that NS1 knew the lab information, but explained that the TA did not present it "clearly or efficiently".

NS2 had the same average rating as NS1 (3.8) and received high ratings for comprehensibility from all raters with the exception of ESL3. However, even with the higher ratings, the comments were mixed. Expert 1 found this TA "better organized" but noted "some problems with sentence structure". Expert 2, who correctly identified the TA as American, commented that NS2 lacked experience and seemed "unpracticed for this lab...a bit uncertain and scattered". But Expert 2 deemed this TA as "good, interactive, lively...essentially understandable". ESL raters 1 and 2 also found NS2 energetic. ESL2 noted that this TA explained the focus of the lab, and provided useful details regarding student groups and lab procedures. ESL1, however, felt that while NS2 "was a bit more detailed about measurements of the pipettors", the TA also seemed "a bit unorganized at times". ESL3 had a stronger reaction and explained that "This transcript was challenging to follow" due to "distracting" fillers and hesitations, along with vocabulary use that was "inaccurate".

Having the NSTAs for comparison purposes was helpful in analyzing the reviews of the ITAs. We assumed that NSTAs would probably be easier to understand, and generally this was true. However, while the ratings for native speaker TAs were higher, they were not significantly higher than those for the ITAs. Neither expert rater gave scores of 5 to either of the NSTAs. Expert 1, whose comments were brief for all TAs, noticed content issues (NS1) and organization problems (NS2). Expert 2, the lab supervisor, seems to be looking in the transcripts for what he is expecting to see in a lab. In fact, his comments, for all of the TAs, focus on how well each one knows the material covered in this lab. Expert 2 found both NSTAs to be somewhat unorganized. In the case of NS1, this may be due to the TA's use of reduced forms and colloquial expressions. Expert 2's lack of experience with reading transcripts may have resulted in a critical assessment of spoken language, which, while very typical in the classroom, may seem inappropriately informal when viewed in written form. In fact, NS2 used "gonna" more than NS1, and all of the TAs used some of the same colloquial expressions as NS1, yet these were not mentioned by Expert 2. The ESL raters, all of whom are classroom teachers and unfamiliar with biology,

were less focused on the content and terminology of lab and more focused on the role of instructional language and teaching strategies. All three felt that NS1 was clear and easy to follow because the TA used effective transitions and cohesion strategies. However, for NS2, they were divided in their ratings. Thus, the raters' comments provide a useful reality check by reminding us that even native speakers can have difficulties in meeting the linguistic expectations of other native speakers.

Turning now to the ITA results, we found that ITA1 had unusual scores from the raters (see Table 9). Expert 1 and all of the ESL raters gave scores of 3 and lower, in fact the average score for these four reviewers was a 2. Surprisingly, Expert 2 gave this TA a 5, the highest possible score. Expert 2 noted that the TA was international. He commented that he found this TA to be "experienced", "mostly accurate", and "completely understandable". And he noted that while there were some language errors (e.g. incorrect use of articles, incorrect verb tenses, incorrect use of -s endings, and some mispronounced words), he felt that ITA1 "knows [the] lab material [and] covers essentials well".

The other raters disagreed. Expert 1 explained that ITA1 "had some facts wrong" and "mixed up terms". This rater noticed sentence structure problems, too, and felt that ITA1 "skipped around" and was not well prepared for the lab. All three ESL raters commented that ITA1's organization was weak. ESL1 wrote, "there were times when the speaker jumped around from one topic to the next without any clear transitions". ESL2 gave detailed comments on the lack of organization, pointing out that the lecture had no introduction and little detail regarding the objectives of the lesson. This rater felt that grammar errors impacted comprehensibility, explaining that she had to re-read parts of the transcript many times. In terms of organization, she noted, "The lecture does not move in a linear fashion from logical point to logical point". She goes on to explain that a possible reason for this is that some of ITA1's explanations were unclear, causing the TA to retract and/or correct what had been said (e.g. "...raise it slowly. Not really slowly, a little bit slowly"); this pattern added to the confusion. Similarly, ESL3 found the lecture to be lacking in organization causing her "considerable reader effort".

ITA2 also had varied scores, with two ratings of 1, the lowest score possible, from ESL1 and ESL2 (see Table 9). And while both expert raters felt that ITA2 was comprehensible, their comments focused on weaknesses in the lecture. Expert 1 expressed that the TA had "problems making complete sentences" and wanted the TA to use technical terms when providing explanations. Expert 2, noted that the TA was international and seemed to be experienced. Expert 2 mentioned language errors such as "broken sentences", repetition, and errors in tense. He felt that the TA had difficulty "coming up with words", which could be related to what Expert 1 meant by a lack of technical terms. He also noted the TA asked few questions and spent a lot of time lecturing, a point that we discuss in more detail.

ESL2 also noticed a large amount of lecturing and found it boring and ineffective. The main reasons for this rater's low score, however, have more to do with a lack of organization. ESL2 points out that this TA provides no introduction or goals for the lab, used distracting fillers (e.g. "um"), and gave contradictory information, saying at one point, for example, that a substance was very toxic and then saying it was not. ESL1 also found the transcript "very difficult to follow" and found that the TA "jumped around a lot" and did not explain things. ESL3, however, found the transcript "somewhat easy to follow", but she also noted that "fillers and hesitations" required "more reader effort". ESL3 gave a rating of 3, similar to that of the expert raters.

Perhaps the most relevant comment of the reviewers pertaining to discourse management strategies is that the ITA presentations lacked cohesion. Four of the reviewers described ITA1 as "jumping" or "skipping" around throughout the lesson. This TA, however, received a score of 5 from Expert 2, the lab supervisor. As mentioned previously, this reviewer seemed to pay more attention to certain content being covered. While only one reviewer noted "jumping around a lot" for ITA2, other raters mentioned distracting repetition, hesitations, and fillers, which contributed to lower levels of comprehensibility. This perception could be due to the failure to create prominence on the part of the ITAs, as shown in Excerpts (4), (5), (6), and (7). If the ITA omits a key word or fails to paraphrase a key concept or idea, he/she may be perceived as moving too quickly from one point to the next. Additionally, ineffective use of a DM can also be perceived as unorganized, as seen in Excerpt (10) where the repeated use of *and* could also create a lack of prominence.

6. Limitations

There are several limitations to this study. The five-point scale that we used to rate comprehensibility yielded widely varying scores in some cases. And in some cases, it seemed that the reviewer comments provided more reliable information than the scores. It might have been helpful to have interviewed reviewers about their comments, particularly since some reviewers provided very little detail. Additionally, raters had quite a bit of reading to do with four transcripts. ESL reviewers, for example, might be predisposed to rate the first transcript as less comprehensible than the fourth. In other words, because they were unfamiliar with the topic, their first transcript might have been the most difficult to understand. The content experts may be predisposed to reading for key words, definitions, or certain procedural language. They may be less focused on comprehensibility and more focused on language that pertains to the lab objectives.

The ITAs who participated in this study come from only two linguistic and cultural backgrounds. Therefore, the findings should be approached with caution when applied to different ITA populations. In the future, it would be valuable to investigate a larger number of ITAs from more diverse backgrounds to obtain more conclusive results. Or, a larger number of ITAs from one particular language group could be used. Such a sample might also allow for additional analysis of first language interference with the use of DMs. Finally, studying transcripts offers a more controlled way to drill down into spoken language and examine DM usage; the actual language, however, was spoken, and other linguistic features (chief among them, pronunciation) can also influence how DMs are perceived by listeners. Regardless of these limitations, our study assisted us in better understanding what factors affect ITA comprehensibility in instructional discourse.

7. Recommendations for future research

We believe future studies could focus more on ratings, through more detailed scales and questions as well as more structured interviews with the raters. It would provide an opportunity to understand what the raters choose to focus on as they examine the samples. In addition, student ratings could be collected to get an idea of their perception of TA comprehensibility. Those ratings can be compared to those of content expert and non-content expert instructors. Another area of potential interest is syntax. Most reviewers made comments about grammar problems in the ITA transcripts. They noted that both ITAs struggled with sentence structure, i.e. making complete sentences. Some studies by Tyler and colleagues have also focused on syntax issues (Tyler 1994b; Tyler and Bro 1992; Tyler et al. 1988). Another comment about the ITAs was related to the frequent use of repair strategies, i.e. pauses, word repetitions, and fillers. This observation was also found by Tyler et al. (1988) and certainly warrants additional investigation. Finally, because ITAs can be found in many non-STEM fields, it would be useful to examine ITA teaching transcripts from the humanities, arts, and social sciences, as well as from other contexts (e.g. a discussion-based class rather than a lab class).

8. Implications for ITA training

1. Repetition: ITA training can address effective use of repetition to create prominence through the use of synonyms and paraphrase.
2. Micro-level DMs: By teaching ITAs to use *and* and *so* for a wider range of functions, we could help them enhance the overall coherence of their instructional discourse and, therefore, their comprehensibility.
3. Macro-level DMs: ITAs need to be made aware of the use of other macro-level discourse markers (e.g. *before we do this; we're gonna look at*, etc.) that they can incorporate in their repertoire to enhance their discourse management strategies.

9. Conclusion

Many years after Tyler's research on ITA comprehensibility, our analysis of the differences between NSTA and ITA instructional discourse supports many of Tyler's conclusions. NSTAs and ITAs use discourse management strategies differently in terms of how they establish prominence and organize discourse, and it is the cumulative effect of ineffective strategies that makes the ITAs discourse more difficult to understand.

Our findings differed from Tyler's, however, in that the ITAs' comprehensibility was not consistently rated lower than the NSTAs' by reviewers. Thus, we believe that additional research should be done to explore the goals of instructional discourse and the use of discourse conventions within specific academic speech communities (e.g. biology departments, etc.). Additionally, knowing more about the role of language proficiency versus teaching experience would be useful for ITA trainers in terms of supporting our students as they develop in both of these areas.

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Senior confessions

Narratives of self-disclosure

Diana Boxer

This study is an ethnographic analysis of narratives of self-disclosure in the context of recurring happy hour events among “the new old” – people in their sixties who are recently retired or who are about to do so. The storytellers herein share recollections that divulge past transgressions, disclosing identities that are sometimes conflicting. In so doing, they reveal identities of foolishness at a younger age that they claim to have “remedied” through maturation. Revealing personal information is, in general, perceived as a risky business. For the conversations observed here, these groups form a ‘temporary’ bond that seeks common ground and accepts a ‘temporary’ understanding of what this personal information means and how it is to be evaluated.

Keywords: discourse analysis, narrative, relational identity

1. Introduction

This chapter is a tribute to the qualitative work of Andrea Tyler on discourse analysis within and across cultural groups. Tyler and I collaborated some twenty years ago on projects centered on International Teaching Assistants and their (mis) communication with undergraduates who complain about ITAs’ inability to interact appropriately with them. Part of that study consisted of quasi-ethnographic analysis of narratives produced by both undergraduates and ITAs of varying cultural backgrounds on problematic situations dealing with possible perceptions of sexual harassment. Like these earlier studies, the current study is also quasi-ethnographic. However, unlike the former work on the ITA cultural group, this chapter focuses on the communicative resources of a very different speech community: senior citizens in the U.S. from different social and ethnic groups.

While ITAs in the US form what is known as an “academic discourse community” (e.g. Spack 1988) that is a temporary community of practice (Eckert and McConnell-Ginet 1992; Lave and Wenger 1991), the individuals studied here also

comprise a temporary but more random community of practice serving as volunteers in a campground setting. In the process of being thrown together to do this service, the seniors, all from different ethnic and social backgrounds, make an attempt to socialize regularly during a two-month stint in carrying out their assigned roles as volunteers.

The speech behavior here is commonly known as “confession.” The data emerged from fifteen hours of audiotaped conversations among the group in a speech event commonly referred to as “happy hour”, known, in North America at least, as a period of time in the day, typically in the late afternoon/early evening, in which people gather to socialize while consuming alcoholic beverages. The purpose of the study is principally to understand and demonstrate how people deal with aging, within and through narrative, in a culture that values youthfulness.

The research ensued as I became a volunteer at a state park in the Florida Keys several years ago. At any one time in most of these parks, six to ten volunteers assist paid park rangers in keeping the park running smoothly, answering questions from the campers, and generally aiding in the smooth functioning of the organization. The volunteers tend to be retired people, mostly couples, who have the freedom and leisure to spend the required amount of time serving in exchange for free campsites and, if they have boats, free docking in the marina. After a week of becoming familiar with the tasks required, the particular cohort studied in this data decided to get together regularly for social time in the early evening. We rotated locations every day. The two-month recurring event involved ordinary social conversations that naturally began with disclosing and displaying our identities to each other through narratives of life events. As is typical of people getting to know each other, these began with demographic information such as family information and geographic origins, and subsequently proceeded to longer narratives of important occurrences in the individuals’ and couples’ lived histories. An important part of the identity display and development was the use of humor in the retellings of past events. As the two months progressed, it became increasingly clear that the talk consisted largely of narratives in which the participants confessed past transgressions remedied in maturity. Humor was predominant in these retellings, and the discourse analysis of how humor figured into the narratives serves as one of the foci of this study.

The principal research questions that emerged from the audiotaped conversations are: (1) How and to what end are confessions realized as the main narrative acts among this group of elders?, (2) How do self-disclosure stories function to resist socially imposed roles of being elderly?, (3) How and to what end is humor instantiated in hindsight retellings?, and (4) What, if any, are the gender differences evident in the narratives?

2. Method and data

Over the two-month time period during the summer sojourn I audiotaped approximately fifteen hours of ordinary social conversations (two to three times weekly) among the group. At any one happy hour the participants ranged in number from six to ten (three to five married/partnered couples), depending on the day. All were between the ages of 60 and 69 at the time, and all but one (myself) was already retired from their respective jobs. As volunteer campground hosts, the volunteers spent approximately two hours per day in various duties indicated above.

The total number of participants during this period was evenly divided between women (five) and men (five). After a week of settling in, the host couples spontaneously starting getting together for the happy hour. During this time and over the two-month period, we are able to see how the participants developed a relational identity (Boxer and Cortés-Conde 1997). The progression of the conversations went from initial identity display disclosures such as where they lived, what they used to do for a living, how many children and grandchildren they had, and such information telling each other “who they are”. By the end of the period, they were disclosing a great deal of intimate, personal information about their lived histories. The data demonstrates how these North American seniors, whom I refer to as the “young old”, use their stories of past events as catharsis that take the form of confessions. These confessions function in a number of ways and at times are accomplished using humor in the telling of sometimes painful events that in hindsight served to make them into better people with the advent of wisdom. Other narratives disclosed more current transgressions that sought to be “excused”, given that they are “seniors” with a fixed income. Still other disclosures focused on actions that would be considered transgressions in the present time, but referred back to an earlier time in history in which the actions would not have been considered transgressions. Thus, the narratives become confessional disclosures that are sometimes funny in hindsight (c.f. Boxer and Matsumoto 2015) in that they often tell of a past in which either (1) foolishness of youth predominated, (2) society was more innocent, or (3) current minor transgressions are confessed and excused by the interlocutors.

3. Literature review

Most research on self-disclosure (SD) has been carried out in the field of social psychology. This research has focused on the multiple uses of SD: its effectiveness (e.g. Derlega and Grzelak 1979), its usefulness in exploring self-concept (e.g. Archer and Earle 1983), and how it functions in relationship development (e.g. Altman and Taylor 1973). Fewer studies have been carried out from a linguistic perspective

(for exceptions see: Ervin-Tripp 2001; Ervin-Tripp and Lampert 1992; Ervin-Tripp, Lampert, Escalera and Reyes 2004; Lampert and Ervin-Tripp 2006; Matsumoto 2009). These have examined how disclosures are carried out, with whom, and how humor is employed in the realization of SD.

I use here a definition of SD from social psychology and expand upon it to better serve sociolinguistic analysis: “Self disclosure [is] the process of revealing personal information about oneself to another” (Chelune 1987: 9). In this definition, the *process* is valued as well as what is shared. Because of this, for the present analysis I define SD in the following way: Self-disclosure as a process is not only how one reveals personal information about oneself in the instances in which the revelation takes place. It goes beyond the utterance that introduces the self-revealing information to include the context and the manner in which the information is revealed. That is to say, SD includes and subsumes the larger narrative that makes the disclosure clear, relevant, and, most importantly, intimate; humor minimizes possible value judgments the disclosure might provoke (Cortés-Conde and Boxer 2010). Given this working definition, analyzed here are instances of SD that are made freely in ordinary social conversation and which have the potential to place the speaker in a vulnerable position.

Self-disclosure can occur among groups that are already well established or are in the process of developing a Relational Identity (RID). The notion of relational identity was put forth many years ago in an analysis of conversational joking (Boxer and Cortés-Conde 1997). At that time we defined RID as the negotiation of an identity with others and through others. RID entails the dynamic, socially constructed, socially situated nature of identity. It is compatible with “the fundamental observation that speakers’ identities emerge from discourse”, and with the notion that identity is a “local production rather than an enduring category” (Bucholtz, Liang and Sutton 1999: 4). RID differs from individual and social identity, in that it is quintessentially co-constructed based on talk-in-interaction. It encompasses identity display as well as identity development. As Blommaert (2005: 203) would have it:

The ‘who and what you are’ is dependent on context, occasion, and purpose, and it almost invariably involves a semiotic process of representation: symbols, narratives, textual genres such as standard forms and the CV.

Indeed, RID entails an agreed-upon intimacy, a ‘circle of trust’ that makes for safety, allowing disclosures of discrepancies between what we think and what we do, between social identities and personal stories. Revealing personal information is, in general, perceived as a risky business. For the conversations observed for this study, the group forms a ‘temporary’ bond that seeks common ground and accepts

a 'temporary' understanding of what this personal information means and how it is to be evaluated. In this sense, the 'relationships' are fluid, and the understanding of that information can change as well. Identity as a process is both contextual and fleeting; that is, it exists for that moment in that context. In this sense, relational identity is one that is created for that configuration of individuals at that point in time, in the conversations and narratives they utter. It is not internal and does not 'belong' to any one of the speakers in that conversation.

In social psychology research in general, self-disclosure has been associated with female speech behavior. (e.g. Dindia and Allen 1992; Rubin 1983). Not only have women been found to disclose the most information with other women, their disclosures tend to reflect their interlocutors' disclosures. As Rubin (1983) concluded, maintenance of close personal connections for females is a basic need in interpersonal relationships. However, in mixed sex groups, women have been found to do less humorous self-disclosure than in all female groups (Lampert and Ervin-Tripp 2006). Some researchers equate SD with self-directed humor (e.g. Schnurr and Holmes 2007; Takanashi 2007).

Matsumoto's (2011) analysis of SDs amongst elderly Japanese women is consistent with the present analysis about these types of judgments. In her data, she analyses the disclosures of the participants as a reframing of the actual events into the "quotidian". In her view, the quotidian reframing is used to "decrease psychological intensity and to reground participants' sense of self" (Matsumoto 2011). Indeed, in that data as well as the data for the present study, the retellings incite laughter in "talk about troubles" (Jefferson 1984). A previous study carried out by Cortés-Conde and Boxer (2010) analyzed all women's talk in the US. That study found that humor in troubles talk served to resist socially imposed gender roles. In the current study the resistance is to roles of what is entailed in "growing or being old".

The present data demonstrates how confessions work in a mixed-sex group, highlighting the predominance of male disclosures cast in a humorous light. Women's narratives are more serious and empathetic; men's are more boastful and grandstanding, often displaying a remedied identity from what they "used to be". Prior studies on elderly narrative have focused on the reconstruction of identity among older people via telling of past experiences. Following Bamberg (1997 and others), Matsumoto (2008) and Norrick (2009), these past identities are multiple and sometimes conflicting. The majority of the studies have looked at individuals over the age of 80. In contrast, the present study focuses on people who are two decades younger, in their sixties, who are recently retired or who are about to do so.

4. The study

The storytelling that is described here are narratives of self-disclosure, or confessions that create “identity dilemmas” (cf. Bamberg 1997). These seniors share past transgressions that reveal identities of foolishness at a younger age or behavior consistent and accepted in times gone by. The interlocutors sometimes claim to have “remedied” their actions through maturation. The transgressions are sometimes resolved in actions of later years, excused as appropriate actions at the time they occurred, or excused given their current status as “elders”, at least in the minds of the tellers.

The short time in which the participants have to display and develop their identities to each other serves to intensify and accelerate the confessions of past transgressions in their lived histories. The sociolinguistic variable of “age” has a strong effect on their revealing distant past events of a life-altering nature. In the unfolding narratives principal themes that emerged include (1) stories of re-connecting with illegitimate children in the tellers’ adulthood, (2) recollections of youthful actions that would not be tolerated in today’s society, reflecting changing of societal mores, (3) confessions of not adequately attending to the needs of children, (4) all work and no play resulting in missing the growing years of children, and (5) transgressions of petty crimes.

4.1 Out of “wedlock”

Out of the fifteen hours of recorded natural conversations in these happy hour sessions, two lengthy sequences focus on having children out of wedlock (this expression is currently somewhat archaic). These narratives serve as examples of how one’s identity is remedied from a youthful foolish identity. Bert and Barb are a couple who fit into the social class category of “working class”, or what is ordinarily referred to as “blue/pink collar” – Bert is a retired electrician and Barb a retired licensed practical nurse. Both of them reveal narratives of having had “illegitimate” babies as youth. These personal disclosures occurred during the second half of the group’s delimited two-month stay as hosts. This fact is noteworthy, since the stories reveal painful reminiscences that would not have been shared before a relational identity was in place; in other words, a circle of trust had already been established:

(1) Interlocutors are Bert, the storyteller; his partner, Barb; Debbie

Bert: I have an illegitimate daughter, but...

Debbie: that's such an obsolete concept

Barb: yeah

Bert: well I was twenty years old at the time when her mother was eighteen-seventeen, eighteen, I think she was eighteen, and hopefully she was, but anyways *I denied everything that (xxx) stupid kid, but I (xxx) everything. And I totally denied the fact that I had a child.* And I (xxx) her mother, I ended up (xxx) child (xxx) until her mother got married and her husband adopted my daughter

Debbie: no D-N-A testing back then, huh?

Bert: no D-N-A, it was blood test. And my lawyer told me "all you have to do, Bert" I know the judge says just deny you have a relationship with the girl. I couldn't-- I couldn't lie, that was one thing my parents wouldn't allow me to do is to lie. So I said "yes I did." And the fact- well I don't- well, it doesn't matter. You had a relationship with the girl, you know, so... and the blood test proved that I was the father, well I had nothing to do (xxx) I lost and all this. About what? four years ago, five years ago, four years ago [Barb: four], four years ago I got an email from this girl "did you have a- a daughter in 1966?" and I said "yes, your mother's name is (xxx) and I'm the father" I knew immediately

Debbie: how did she find you?

Bert: through the Internet

Bert: she found- well her- her mother knew that I was- knew that I was the father, (xxx) told her all the time that I was you know (xxx) her mother was pregnant, her mother totally denied it, her mother was really mad, her mother wouldn't speak to her when she found out that she contacted me. ...she said my mother doesn't want me to contact you at all. I say "I can understand." *I says "I was the biggest asshole (xxx)", I said "I called your mother every name (xxx) I denied that I was your father" I said "I made her life terrible, I says "I'm sorry I did that to your mother" I said "it's not- don't blame your mother for her attitudes towards me" I said "it's my fault, not your mom's fault". I says "you don't need to forgive her for anything" you know I said "I'm the one that created the situation."* So we talked and finally when I got to go up to the North Carolina to meet her, I mean here we are she said come in the driveway, me and Barb drive from (xxx), and she's got the video camera going, my grandkids in the driveway right in front of me, I mean I never met her before, her husband and the kids, they just welcomed me with open arms and she said "I don't know if my mother is, you know, willing to talk to you or not." I said, "look", I said "hopefully before we leave, there are a couple of weeks and *maybe your mother will at least let me apologize because I need to apologize"*

When I finally- before we left, her mother, her mother says, "okay I'll at least let him come see me." So she told me where her mother lived, I went over there, and **I get down on my knees for her mother and I said "(xxx), I'm so sorry for what I put you through."** I said "you have a'--I said, "we have a beautiful daughter," I said "it's all because of you." I said, "I just- I hope you accept my apology because I just totally was wrong." I says- and I explained to her I was only nineteen or twenty and (xxx) biggest asshole in the world, I said, "I didn't want a kid, I didn't want anything." And she accepted my apology and we are friends now, her mother and I, Barb her and Barb are great friends, I mean r she is just- you get along, I mean she likes Barb.

Self-disclosure narratives such as this one exemplify human attempts to order and reorder past experiences. We see this clearly in the bolded lines above. Bert now realizes that he needs to apologize to the mother of his grown child. The information divulged here reorders Bert's transgression into something given a more positive spin. In Bert's confession that, in hindsight he could see that he was a "jerk", we see evidence of a self-transformation that came only with maturity.

4.2 The "good old days"

Narratives are not only about the subject but also crucially about the contexts in which they unfold. In such cases the amelioration is not of the individual's past transgressions per se but rather in the perception that the actions of youth were permissible in an earlier era. Thus, in some sense it excuses the youthful actions, given the context of the past.

The example that follows is Jim's tale of an earlier time in a more trustful place. This story reflects neither nostalgia nor a mere boastfulness but a reminiscence of what he (and perhaps the interlocutors) believes was a better society – The "good old days".

(2) Interlocutors are Jim; Debbie (his spouse); Barb; Bert; Emma; and Mark

Debbie: *did you hear the story about his parents dropping him off at the lake [with his canoe on Friday night?*

[Jim: river, river. River, not lake

His parents when he was eleven would drop him off on Friday evening in with his canoe and some peanut butter and jelly sandwiches and pick him up on Sunday

Barb: I believe it

Emma: when you were eleven?

Jim: yeah

Emma: by yourself?

Jim: yeah I had a rifle [and fishing rod

[Debbie: rifle

Debbie: *tell them the story about the rifle--how you got the rifle, this is a really good one*

Jim: you know these were the days and I went down to--I rode the bus downtown with a friend of mine to the police auction, confiscated goods, we went down to see if there were going to be any deals on bicycles. And we sat there and no bicycles were coming up, all of a sudden a bolt action twenty-two (xxx) came up. Five dollars, so my hand went up. And that was that. Nobody else bid on the rifle, so the police sold me the rifle

Debbie: *eleven years old*

Barb: did they call your dad?

Jim: *no, I gave them a five dollar bill and they gave me the rifle, I got back on the bus carrying this rifle, rode the bus back home, got off. Nobody--nobody even looked twice, you know, back in those days*

Mark: *well they were different times*

Barb: yeah

Jim: *we used to take guns to school and trade them around you know, that was just no big deal*

Bert: yeah

Jim: *we were polite, everybody was armed and we were very polite*

Barb: *but we were raised polite when we were young*

Emma: *I think that's true. I think times have changed*

Bert: oh yeah

Debbie: obviously

As with many long married couples jointly telling a story, inevitably one partner goads the other into the narrative. This is clear in the example, where Debbie consistently encourages Jim to disclose. First, Debbie begins the story about Jim's parents dropping him off for an overnight canoe/camping trip by himself when he was only eleven. Jim adds that he had with him not only a fishing rod, but also a rifle. This disclosure leads to the story of how Jim got the rifle. Again, Debbie encourages Jim to tell this strange narrative.

All agree that this sort of thing was, in Jim's own words, "no big deal". This statement alone distinguishes the earlier childhood-day norms from present-day norms of what is dangerous or not. Barb brings up the notion that politeness expectations of the two eras are quite different. While people were polite back then, this is no longer true. There is general agreement with Emma's assertion that "times have changed".

In this sequence we see how the confession of a childhood event was not a transgression back in the "good old days". Rather, the description of the past event is one of lament – lament about how society has changed for the worse rather than how an individual has changed for the better. The behavior and event described would certainly be considered a serious transgression in today's society, even in the geographical location in which the event took place.

4.3 Neglectful parenting

By and large it was the men of the group who took the initiative in storytelling of past events that were confessional in nature. The gender difference was salient, as has been documented in gender differences in getting and holding the floor (e.g. Edelsky 1981) and generally in conversation in mixed-sex groups (e.g. Coates 1983). The women served the purpose of goading on their male partners, but did little else to move the narratives forward. One of the few exceptions to this norm was the following story. Barb confesses neglectfulness of one of her children at a time when, in hindsight, she should have been paying attention. As will become clear, the incident was a minor one, but the short narrative serves to show how Barb tries to make light of something not quite serious in its consequences but about which she felt guilt. While Barb tells the story, one of the other women in the group, Debbie, contributes short interjections. Tim gets the last word by taking the initiative of supplying the coda to the narrative:

(3) Interlocutors are Barb, Debbie and Tim

- Barb: Back in the tent-camping days, when my children were little, my daughter Crystal was probably a little over a year, and there's not much you can do while you try to set up the tent. *There's not much you can do with the child*, so I had brought her little walker and I set her down in her walker. So we were doing the tent I was drawing in the sleeping bags *all of the sudden I realized, "oh I haven't thought about her in a while."* I turned around and looked, she's in her little walker thing asleep with her mouth like this.
- Debbie: [Awww]
- Barb: Open and laying on the tray, you know in the bottom of the tray with her mouth wide. <LAUGH> *I guess she'd been crying or fussing and she fell right asleep*
- Debbie: Maybe she just fell asleep (XXX)
- Barb: Not her (XXX)
- Tim: Many years ago

Barb begins the short narrative by setting the stage, as it relates to the current goings-on of camping experiences. She confesses a minor transgression, first attempting a light-hearted excuse by trying to get the cohort to agree that “there’s not much you can do with the child” while setting up a tent. Barb then proceeds to explain how she found the baby, the position of which indicated to her that the child had been crying, and she had obviously not been paying much attention. Her feeling of guilt comes through, even now as decades have passed since the described event. Debbie makes an attempt at ameliorating Barb’s guilt when she suggests that perhaps the child had just fallen asleep; Barb rejects it. She deems herself neglectful. Tim’s coda, “many years ago”, is his attempt to distance all of them from past

actions. Barb's story indicates perhaps that her youthful action would not have been the same with maturity. This minor transgression is thus excused as a folly of youthful behavior.

4.4 All work and no play

The quietest member of the group, Mark, remained a listener for the first month of happy hour gatherings. Only at the beginning of the fifth week did he open up to tell of his past, describing his work. At this point in the hosting experience, Mark's spouse had been absent for a few weeks, having gone back home to Missouri. Thus, Mark's description of his work history is a telling of all work and no play, with neither input nor corroboration from his wife. He confesses that this of course entailed hardly seeing his children while they were growing up:

(4) Interlocutors are Mark, Tim, Debbie and Jim

- Mark: I mean I was in construction for ten years and then I went over to Annheuser Bush, I got a job there, I stayed there for thirty years
- Tim: steady?
- Mark: oh yeah. *I worked seven days a week*
- Debbie: you worked seven days a week?
- Mark: yeah
- Jim: there's a lot of pipes to fit in Annheuser Bush
- Debbie: why?
- Mark: money
- Debbie: *you mean when your kids were growing up, you never saw them?*
- Mark: *very little*
- Debbie: *woo, did it make for a happy marriage? <LAUGH> ¶ I just was joking*
- Mark: yeah I mean you know the first two years was not good, she wasn't happy about it, but...
- Debbie: after that she kinda liked it?
- Mark: yeah she liked it, you know

Mark's confession is neither boastful nor humorous, going along with his quiet personality. He does not come directly out with a confession of missing his children's growing years. It is offered by Debbie in the form of disbelief. In fact, Debbie's question can be construed as an accusation that encourages Mark to agree. She then makes light of the "accusation" by offering a joking response to his serious confession when she asks if it made for a happy marriage, turning the seriousness on its head (cf. Cortes-Conde and Boxer 2010). She laughs, but finds the need to make it clear that she was just joking. It follows that Debbie gets Mark to admit that after a while, Mark's spouse "kinda liked" not having him around.

Mark's confession shows some regret, but Debbie goads on the regret. He started the narrative simply by talking about his lived history of work. What turned the narrative into a confession was the veiled accusation, later made into a joking matter – that maybe he missed something by all work and no play, but his wife learned to like not having him around. Of course, because of his wife's absence, we only get her imagined perspective on the confession.

4.5 Skirting the law

There are several stories that tell of petty crimes, most of which were harmless. These are made humorous in the retellings. Tim initiates the first, becoming the "class clown". Others follow suit. In this story, most of the group participates. In the first example, Tim is the central narrator with intermittent comments from his spouse, Emma, and the others:

(5) Interlocutors are Tim, Debbie, Jim, Bert, Emma, Barb and Mark

Tim: Ok, how many people here have gone to a motel some place, all right? And then decided, "*Well, we're going to go next door for the breakfast tomorrow morning, because it's a better breakfast and it's free over there*".

Debbie: *No, never did that.*

Jim: Hmm, good idea

Bert: ⌈I haven't thought of that one.

Tim: ⌋*What's wrong with you people?*

<LAUGH>

Debbie: Don't you have to show your key or something?

Tim: No!

Debbie: [Oh]

Emma: They had hot waffles.

Bert: [Yeah]

Emma: We got continental breakfast.

Barb: Oh I see. You just walk to the next hotel and go in

Tim: ⌋Yeah

Emma: ⌋Yeah

Tim: Just walk in.

Bert: They don't know

Mark: ⌈smart move

Tim: ⌋They don't know who you are.

Tim's narrative is clearly a confession. Despite the fact that the other interlocutors have not committed the same transgression, they consider the narrative as useful information (e.g. Jim's statement, "good idea"). The group takes in the information and considers it, laughs about it, and accepts the overstepping of the boundaries of, if not the law, at least the impropriety of the action. In the above sequence, then, we see not a remedying of a youthful foolish act but something else entirely: The entitlement inherent in the confession. The interlocutors' laughter about the event

indicates an agreed-upon acceptance that leads to a mutual disclosure of a similar transgression. The next sequence follows immediately, with the same interlocutors:

(6) Interlocutors are Debbie, Emma, Bert, Tim, Mark and Ted

- Debbie: *How many of you have gone to the movies, and when the film was finished gone to the next one?*
<LAUGH>
- Barb: No, no.
- Emma: No, I've never done that.
- Debbie: You haven't?
- Emma: \uparrow No, it was, the one time we wanted to do it-
- Bert: \downarrow But, but *we used to have, go to the drive in with five guys in the trunk.*
- Tim: \downarrow *My sister was so bad, she'd sneak in and go to three.*
- Mark: \uparrow Oh, well, I mean, that's a whole different thing
- Emma: \downarrow My son was working in the movies for a while, and then I was going with him.
- Tim: \downarrow And I mean she ain't seven years old or nothing, I'm talking about that's recent
- Debbie: What's that?
- Emma: My son was working in the movies, I used to call him up and then I would get in with him, but you used to take the kids and go into different movies.
- Tim: Oh yeah.
<LAUGH>
- Emma: But, *his sister found out the one door, they would sneak in the back door.*
[Oh wow]
- Tim: And then go see two or three movies
- Emma: \uparrow And go see two or three movies.
- Debbie: \downarrow Oh that's amazing.
- Tim: And I'm not talking about when we were kids, alright? *This is recent*
- Debbie: [Yeah, yeah]
- Tim: My sister's older than I am.
- Emma: Yeah, she said, oh yeah she said, "We found out the back door was open", so they have to leave it open, which is weird, because you'd think there would just be a panic door that you can get out.
[Yeah]
- Tim: \uparrow Just open it up and walk in.
- Emma: \downarrow But, she said you can get in. So she said they just go in there and they watch-
- Debbie: Some of those movie theaters are not wise to people doing that.
- Ted: Well my son used to, when he was working in AMC, when he was still going to school. He told us, yeah just call up, and he'd say "I got two people coming down, I need two passes", and he'd give them the name, and we'd just go pick up the passes and go in. But he also told us that people that buy the mega popcorn
[Yeah]

Tim: Or the mega drinks. It's free refills
[Yeah]

Tim: So he says, "*Just go to any garbage can*
<LAUGH>

Tim: *Take out the container*
<LAUGH>

Mark: *That's a better trick-*

Tim: *They'll give you a brand new one, they don't reuse*
└them, they give you a brand new tub of popcorn.

Bert: └Right, they can't refill it, they can't refill it.

Debbie: └Oh Really? Oh.

Bert: └I didn't know that, next time you got to the movies you get
a freebie.

Debbie: └I didn't know that

Emma: Hey, you know what? *When you're a senior citizen, you gotta
do whatever you can*

Bert: └You gotta do what it takes, yeah

Several recent minor transgressions are told here. One leads naturally into the other. The participants do mutual self-disclosures and laugh about it. It is humorous in the retelling. The humor is a vehicle for the mutuality of divulging stories, indicating to the group that it is indeed a circle of trust – the stories will not result in negative judgments. A story world has been created based upon “what we get away with doing”. In the cases above, the skirting of legality is minor, and Emma also justifies it when she remarks about being “senior citizens” on fixed incomes. The fact that the group is composed of the young old, or “senior citizens”, leads to Tim and Emma’s next story about saving money.

(7) Interlocutors are Tim, Emma and Betty

Tim: We get a train to Mahwah that went to Port Jervis, all right?
So here we are, sitting there on this bench in Mahwah,
waiting for the train, with our suitcase being held together
with an electrical cord, and she says, “I gotta go to the
bathroom”. Now the train station ain't open.

Emma: Cause the train didn't come right away.

...

Emma: Now, mind you, this was, we still didn't pay for our ticket.

Tim: └No, we're waiting for the conductor to come.

Emma: └We're still waiting for the conductor to come so we could
pay him.
Cause, it was half-price on Sunday.

Betty: [Yeah]

Emma: For seniors.

Tim: So the conductor never comes, and we get to Port Jervis.

Emma: Uh-huh, yeah

Tim: So I says to her, “When you go out there, get off the other
side, not this side, because the conductor's on that side.
We'll get off this side”!
<LAUGH>

The narrative is about getting away with something that they should have paid for. While Tim casts the story in a boasting mode about skirting the legality of the situation, his wife Emma justifies the trip by saying it would have been half price on Sunday for seniors. Tim gets the laugh by making light of the situation and casting the story as a humorous one. Thus, while Tim talks about getting away with a transgression, Emma tries to say that indeed they were waiting to pay the conductor. Her tone is explanatory and somewhat apologetic, while Tim's is one of "we did it"! He gets the laugh in the end.

5. Discussion

In the fifteen hours of recorded narratives during the two-month stay among these seniors, several consistent themes emerged from the analysis. Except for minor talk about putting out food and drinks and commentaries about these items, the stories told comprise speech behaviors that are by and large in the form of confessions of past actions, many of which could be deemed transgressions. The confessions are realized only after an initial relational identity has been established in which the interlocutors feel a circle of trust, that is, after the first two weeks of getting together. After this initial period, the circle of unspoken trust is clear and the space is safe. It is a space in which stories can be told of past events that might have otherwise been kept secret. One must keep in mind that alcoholic beverages are being consumed during the happy hour event, thus there is the possibility of "loosening of tongues". Nonetheless, the circumstances of the circumscribed event with a limited duration of two months no doubt contributed to the ease and speed in which people described aspects of their lived histories. As Linde (1993: 7) states:

...we expect our degree of intimacy with a person to correlate with our knowledge of their life story....as we get to know a person, we expect successively more detailed life stories to be exchanged; and thus we will learn of our friends what has happened to them and what sort of people we are to understand that they are.

Indeed, in the speech event described herein, the life story exchanges are accelerated due to the constrained time frame of being together. The interlocutors are therefore compelled to exchange more and more details that divulge "what sort of people they are" rather quickly. There remains, nonetheless, a factor of risk in personal disclosures of past transgressions in a short amount of time. The participants must be careful not to paint themselves as "bad people". In order to assure this, they use humor to mitigate the confessions.

5.1 Humor

As in most ordinary social talk, people who are able to effectively use humor are able to build rapport and solidarity more easily with their interlocutors (Boxer 2011). In the case of the narratives analyzed in the present study, humor is employed to grease the wheels of interaction (Goffman 1971; Tannen 1984) and to entertain.

Many of these elder narratives attempt to reconstruct a more youthful identity, and the reconstruction is often done using humor as a vehicle in the retellings. Recall that in sequence 4, where Mark talks about missing the growing years of this children due to working seven days a week, Jim lightens the mood with a joke when he states: “Lots of pipes to fit”. This is a play on the Mark’s job as a pipefitter, and makes a joking matter out of a serious confession.

In sequence 5 we saw Tim as “the class clown” in making his story funny when he says, “What’s wrong with you people”? This is in response to the story in which he and Emma are telling of past minor transgressions of skirting the law. In sequence 6, also a narrative about getting into the movies for free, Bert exaggerates to create a humorous frame when he states, “We used to go to the drive in with five guys in our trunk”. It is by and large the men in the group who create the humorous frame. In contrast, the women take a more serious frame, and show guilt or excuse their guilt, as in sequence 5 when Emma states, “when you’re a senior citizen you gotta do whatever you can”.

The humorous self-disclosure narratives typically emanate from a more serious disclosure that then becomes funny through co-construction by the interlocutors. We see this in several of the examples above where the listeners interject into the narrative with some element to lighten a serious confession. That is to say, even when the confession is serious, it can become humorous through the participation by the audience that either creates a play frame or engages in banter. The relational identities displayed in these disclosures are oppositional to “fixed” social understanding of what it means to be older.

5.2 Gender differences

In the present study, women mostly stayed in the background, letting the men take on the central role of storytellers as well as jokers. This is unsurprising, given research on gender and language in mixed sex interactions (e.g. De Francisco 1991; Herring, Johnson and DiBenedetto 1992; West and Zimmermann 1983). In mixed sex groups, women have been found to do less humorous self-disclosure than in all female groups (e.g. Lampert and Ervin-Tripp 2006). The stories told by women in the corpus indicate a common perspective among women as we saw in the example

above where Barb expressed guilt about a younger foolishness in neglecting her child while setting up a campsite. Indeed, these sorts of stories among women function as a coping strategy. As Keltner and Capps (2001: 115) state: “Women volunteered real stories about themselves to resolve and heal old embarrassments or to build togetherness by revealing shared experiences”. For all of the interlocutors, and especially the women, confessional narratives helped the elders to explore the meaning of past events and lend insight into the interlocutor’s participation in the events themselves.

6. Conclusion

The process of self-disclosure in the senior confessions places the storytellers in a vulnerable position as they reveal personal information that is subject to judgment and unfavorable interpretations. On the other hand, this information can be used to take issue with stereotypical roles and activities of elders, in other words, as a mechanism to resist socially imposed roles of aging.

In U.S. society in particular, an older identity is often construed as debilitated. Thus one obvious strategy is to construct, in telling of past events, a more youthful identity. At times these are self-discovery narratives – retellings that deal with multiple past identities that are sometimes conflicting with what the larger society deems vibrant. The elders here therefore provide both initial and retrospective evaluations of past events, and in so doing achieve a sense of social mobility in their social identity.

In sum, through the telling of youthful events these seniors construct a more youthful identity, sometimes foolish, and indicate how they have remedied these identities in their new maturity. Hence, they contest the stereotypical identity of “elder” that may at times be feeble. In contrast, the *youthful* identities they reconstruct show the “feebleness”. In this particular corpus of stories, the seniors’ display of such past roles as irresponsible youth and neglectful parents, for example, show their current selves as remedied and therefore better than the way they were. Thus, there is a constant awareness of non-compliance with attributes the wider society assigns to old age. In these senior confessions we clearly see Relational Identity Display and Development. RID is what emerges when people come together and, for at least a moment, become more than the sum of their parts in search of understanding their roles as “the new old”.

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PART II

Cognitive perspectives

The speech went on (and on) as Kerry dozed off (*and off)

A conceptual grammar approach to *on* and *off*

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This chapter provides an encapsulated segment of a larger, on-going study centering on a complex set of prepositions and their corresponding phrasal verb particles and adverbs viewed from the methodological and analytic perspective of Conceptual Grammar. Conceptual Grammar is an approach to the analysis and teaching of grammar that combines three paradigms: corpus, discourse analysis, and cognitive linguistics to reveal systematically patterned grammatical meanings. The visual conceptual system is intended to dually represent various gradations of spatial/temporal/metaphorical/abstract meanings in graphic terms, using simple shapes as a mnemonic to aid in the apprehension of conceptual meaning. The system is intended to be generalizable across all uses and meanings of the target lexemes and thus to facilitate productivity of use, serving as a new type of “grammatical rule”.

Keywords: grammar teaching, prepositions, visual conceptual system

Kavinoky: It’s got to be incredibly difficult for Casey’s father, first of all, to be mourning the loss of a grandchild and then, of course, going through this legal process where his daughter’s now playing for the highest stakes around.

Velez-Mitchell: Here’s my big issue tonight. Slow-mo justice; **this saga is dragging on and on and on**. When will it finally go to trial?

CNN 2010 (100215) COCA Corpus (Davies 2008)
On the Casey Anthony Case involving the death of her two-year-old daughter, Caylee Marie Anthony)

At the end of President Obama’s news conference with Polish President Bronislaw Komorowski, **cameras caught the secretary of state dozing off as Komorowski gave his closing remarks.**

UPDATE: Secretary of State John Kerry took to Twitter Tuesday to insist he was not napping, but instead just took “a really long blink”. ABC News, June 3, 2014

1. Introduction

This chapter provides an encapsulated segment of a larger, on-going study centering on a complex set of prepositions and their corresponding phrasal verb particles and adverbs as they pattern within actual discourse, viewed from the methodological and analytic perspective of Conceptual Grammar. Conceptual Grammar is an approach to the analysis and teaching of grammar that combines three typically independent paradigms: corpus, discourse analysis, and cognitive linguistics to reveal systematically patterned grammatical meanings within discourse (see Buescher and Strauss 2015 [French]; Buescher and Strauss (2018) [French]; Strauss 2007 [Korean]; Strauss, Lee, and Ahn 2006 [Korean]).

Our focus here centers on the lexemes *on* and *off*, viewed from this three-pronged perspective. Our choice of these two lexemes is driven by a number of interrelated issues: They appear on the surface to express meanings of reciprocal polar opposition, and they both function triply as prepositions, as so-called phrasal verb particles, and as adverbs. And as do most if not all preposition/phrasal verb/adverb constructions in general, they pose significant challenges for both teachers and learners of English in L2 pedagogical contexts.

Filling a gap in both literature on the topic as well as in approaches to language pedagogy, we provide a unified analysis of both lexemes, derived first from observations of their uses and patterns in the Corpus of Contemporary American English (COCA) (Davies 2008). We then more deeply investigate the meanings and functions of these forms within discursive contexts, and have designed a graphic system of conceptual meaning representation for both *on* and *off* across all types of discourse genres, spanning their full range of grammatical functions and conceptual meanings.

2. Literature review: Prepositions, phrasal verbs and adverbs

In the simplest of terms, prepositions (and post-positions) serve an essential purpose of situating nominal entities in space and time, typically in relation to other nominal entities. When designating concrete spatial relationships, the meanings of prepositions can be represented in straightforwardly clear ways, either through graphic representation, paraphrased verbal meanings, conceptual verbal descriptions, or some combination thereof. Complicating this very basic characteristic of the preposition is the fact that some members of this seemingly limited and closed class of words also take on the function of expressing meaning far beyond a noun-to-noun spatial or even temporal relationship. That is, so-called monofunctional prepositional words like *from*, *onto*, *between*, and *near* (Dirven 2001: 5) serve

solely in the capacity of the canonical preposition, while multifunctional words like *on*, *in*, *off*, *up*, *down*, *over*, and *through* (Dirven 2001: 5) often pattern in English with particular types of verbs to evoke more abstract and metaphorical meanings, thus yielding their role as prepositions and taking on the functions as phrasal verb particles and adverbs.

As a result, the semantic lineage from preposition to phrasal verb particle is not always transparently clear. Further, much of the pedagogical and analytic literature addresses instances of prepositions or instances of phrasal verb particles, typically as grammatical markers that are separate and independent from one another. Some approaches to phrasal verbs and their meanings underscore an asystematic, random, and idiomatic set of uses and meanings of phrasal verbs in English.

Our work here centers on the tripartite usage of lexemes *on* and *off*, and aims to transparently elucidate the conceptual lineage as their uses and grammatical functions extend from noun-to-noun relationships in concrete space as prepositions to meanings associated with time, conceptual aspect (e.g. durative, completive), effort, force, attachment/detachment, presence/absence, visibility/invisibility, and processes of continuation/separation/invisibility. The graphic conceptual system presents an interrelated gradient network of unified meanings and thus one that supersedes notions of idiomaticity and randomness of meaning and use.

2.1 Prepositions: From space to time and more abstract concepts

Prepositions (and post-positions) serve the functions, first and foremost, of situating stationary entities in physical, abstract, or metaphorical space and of indicating directions of entities moving within those spaces. And by extension, these bits of grammar also serve to locate entities in physical, abstract, or metaphorical units of time. Prepositions and post-positions are the very linguistic markers that convert conceptual elements of real or imagined spatio-temporal contexts into meaningful bits of language, expressing such implicit perceptual notions as: shape, size, horizontal-vertical-linear dimensionality, ego-embodied relational directions (left/right), cardinal directions (north, south, east, west), volume, expanse, contact, connection, and boundary (Evans and Tyler 2004; Levinson 2003; Radden and Dirven 2007; Tyler and Evans 2001, 2003, 2004; Tyler 2012a, 2012b; Yule 2010).

Such essential spatial notions appear with varying degrees of specificity and granularity in reference grammars of English. Many center predominantly or solely on preposition usage within the domain of concrete space. Most address only prepositions and not phrasal verbs, and vice versa. For example, Swan (2003) simply provides lists of correct and incorrect collocations of verbs, nouns, and prepositions, without addressing form-meaning-use connections, beyond the terminology for the classic parts of speech, e.g. “preposition” and “noun” as in (1):

- (1) from Swan (2003: 438)

“This is a list of a few expressions which often cause problems. For information about other **preposition + noun** [boldface type original] combinations, see a good dictionary:

in a picture, photo etc. (NOT ~~on~~) [emphasis original]

on page 120 etc. (NOT ~~in/at~~) [emphasis original]

Presenting a more complex perspective, Yule (2010), proposes perceptual distinctions in terms of concrete geometric shapes that underlie and distinguish the meanings of seemingly similar prepositions of spatial locations, e.g. Point (for *at*), Surface (for *on*) and Area (for *in*), as in (2).

- (2) adapted from Yule (2010: 160–161)

“Where does Elvis live?” [italics in a., b., and c. original]

a. *at* 625 Royal Street [point]

b. *on* Royal Street [surface]

c. *in* the old part of town [area]

While these distinctions are helpful, they still provide a limited scope of use. Yule also briefly introduces phrasal verbs and their meanings by indicating that many “have unique (idiomatic) lexical meanings, and like other lexical items in English, should have their separate meanings listed as dictionary entries” (p. 169). He provides a skeletal description of phrasal verbs constructed with *off*, *on*, *out*, and *away* and makes insightful connections between the core meanings of these words as prepositions and an extension of that meaning into a handful of invented sentences with phrasal verbs.

Similarly, Radden and Dirven (2007: 309–310) appeal to the notion of dimensionality, borrowing from the Euclidian system of topology of space, where zero dimension designates a point; one dimension designates length; two dimensions designate length and width; and three dimensions designate length, width, and depth, as in (3):

- (3) adapted from Radden and Dirven (2007: 309–310)

a. zero-dimensional *at the corner* [point]

b. one-dimensional *on the border* [line]

c. two-dimensional *on the table* [surface]

d. three-dimensional *in the bottle* [container]

Radden and Dirven’s account is deeply analytical and appeals to categories of space and geometry that might well account for the meanings of the prepositions they address. However, the system is conceptually complex in terms of which prepositions belong to which category (zero-dimensional point, 1- and 2-dimensional

line/surface, and 3-dimensional containment). Further, there is a somewhat different system provided for prepositions of time, which rather than unifying prepositional meanings, sets them apart into unnecessarily discrete sub-categories. As a textbook for the teaching and learning of English grammar from a Cognitive Grammar perspective, the approach relies on verbal descriptions of highly abstract concepts that might not be readily adaptable in pedagogical contexts.

Shifting from reference grammars to linguistic research, studies on prepositions have ranged in analytic perspectives from early views of homonymy (e.g. Bloomfield 1933; Chomsky 1995; Frank 1972), where the diverse senses associated with a preposition (e.g. denoting space, time, and abstract meanings) are considered arbitrary and mutually unrelated. Ruhl (1989) proposes the concept of monosemy, arguing that individual linguistic forms carry a single, invariant highly abstract meaning, and that meaning variations related to a particular form come about as a result of “multiplicity” (p. 3), reflecting inferred differences in the various perceived meanings of a particular lexical item. However, according to Tyler (2012b), the monosemy model proposed by Ruhl is based on meaning that is “so abstract that its precise interpretation is filled in by context in conjunction with pragmatic inferencing. Thus, each of the other interpretations is figured out on the fly and not stored in memory” (p. 306).

More recent cognitive linguistic treatments of prepositions reveal far more appealing and systematic perspectives on meaning and interrelated meaning variation, or polysemy, that underlies the various senses of prepositions and other grammatical constructions (e.g. Brugman 1988; Dirven 1993, Evans and Tyler (2004, 2005), Lakoff 1987; Lee 2012; Lim 2004; Rice 1996; Taylor 1993; Tyler 2012a, 2012b; Tyler and Evans 2001, 2003, 2004). Tyler and Evans (2001, 2003, 2004) and Tyler (2012a, 2012b) propose a principled polysemy model, which sets forth a set of specific criteria to be used for determining the primary sense of a particular lexical item and the related network of varied meanings that are associated with that primary sense.

The appeal of cognitive linguistics to applied linguistic and linguistic anthropological research rests largely in the construct of the Figure-Ground or Trajector-Landmark (TR-LM), which establishes a visual construal of entities in space, time, and perspective illustrating the various semantic and pragmatic relationships between and among participants entered into discourse. In the simplest of terms, Figure (or Trajector) designates the located entity, while Ground (or Landmark) designates the location. (Langacker 1987, 1991a, 1991b; Talmy 2000a, 2000b; Taylor 1993). We discuss this more in detail in the section Alternate Analytic Perspectives.

2.2 Phrasal verbs and adverbs

Complicating the analysis of prepositions and their meanings is the fact that in many cases, lexemes that function as prepositions also function as so-called particles in phrasal verb constructions and as adverbs.

Phrasal verb constructions are compound or multi-word linguistic elements composed of a verb and at least one adverbial particle. These adverbial particles often look like prepositions, but differ predominantly in terms of function. Examples of phrasal verbs include the following: *figure out*, *take along*, *write down*, *cheer on* and *close off*.

From the perspective of grammar pedagogy, Celce-Murcia and Larsen-Freeman (1999: 432–433) classify phrasal verbs into three categories, organized respectively on a scale from most semantically transparent to less semantically transparent and then least semantically transparent: literal phrasal verbs (e.g. *sit down*, *stand up*), aspectual phrasal verbs (*play around*, *read through*), and idiomatic phrasal verbs (*run up a bill* [*run up* = idiomatic phrasal verb] vs. *run up a hill* [*run* = V, *up a hill* = preposition + NP used adverbially to indicate trajectory and manner]). Exemplars of each category are typically presented without actual discourse-based text. Even within the invented sentence exemplars, some “idiomatic” phrasal verbs also express aspect, thus blurring the line between the second and third category. Further, the category “idiomatic” suggests an apparent randomness or lack of semantic continuity between the verb + particle construction and the source prepositional component: “It seems difficult, if not impossible, to figure out the meaning of the verb by combining the separate meanings of its parts” (p. 433). Side (1990) and Yule (2010) reflect similar views on idiomaticity.

Other linguistic approaches to the denotational and conceptual meanings of phrasal verbs focus squarely on aspectual meaning, especially telicity (Brinton 1985) and on scalarity as an opposing viewpoint to telicity (Walková 2017). Polysemy-based research, which posits core meanings and metaphorically derived meaning extensions provides fertile ground and novel approaches for the application of cognitive linguistics to the study of phrasal verbs (Ke 2017; Kövecses and Szabó 1996; Rice 1996; White 2012).

And finally, lexemes functioning as prepositions or particles also function as adverbs (e.g. Lindstromberg 2010), as in the following examples from Evans and Tyler (2004) and Rice (1996) where *in* and *on* clearly serve no prepositional or phrasal verb function.

- (4) a. Evans and Tyler (2004)
 “The train is finally in” Arrival Sense. (p. 26)
 “The sun has gone in” Disappearance Sense. (p. 28)
- b. Rice (1996)
 “Despite the weather, they continued on”. (p. 135)

2.3 The case of *on* and *off*

Like many multifunctional prepositions (Dirven 2001), the lexemes *on* and *off* also function triply in the capacity of prepositions, particles of phrasal verbs, and adverbs. Dirven (1993: 78) posits the primary meaning for *on* as physical contact between TR and LM and a concomitant reciprocal relationship of mutual support, such that “*on* the floor” denotes actual physical contact with a line or surface, and “to dine *on* snails” more metaphorically evokes the sense of contact as well as support, as a means of subsistence. Dirven (ibid: 84) posits an opposite primary meaning for *off*, i.e. separation, or “departure from a surface with which one was in direct contact” (p. 84). Dirven further analyzes *of* as a reduced form of *off* and proposes a system of meaning for *off* and *of* based on the three domains of Place: “He has come off the ladder”, Area: “Talk of the devil, (and he is sure to appear)”, and Cause: “He has died of cancer”. According to Dirven, separation prepositions *off* and *of* are highly productive in terms of expressing the extended meaning of Cause, where *of* more specifically captures a meaning of “immediate cause of an event”. *Off* and *of* are considered by Dirven as among the least productive prepositions in terms of expressing meaning beyond spatial meaning.

Like Dirven (1993), Lee (2012) posits a prototypical sense of *on* as physical contact or connection, from which the extended, metaphorical meanings derive. Lee isolates 40 distinct senses for *on*, separated into seven categories for its use, function, and meaning as a preposition (i.e. spatial, temporal, reliance, reason/ground, member, influence, and idiomatic [e.g., “they are on duty”, “He wrote a book on tigers”.]) and five categories for its use, function, and meaning as a phrasal verb or adverb (i.e. wear [e.g. put on, have on], continuation of a process [Go on, speak on], connection to source [turn on a light], event [“What is on at the town hall today”?], and clash [“the two cars crashed head on”]).

For *off*, including 34 non-concrete senses, Lee (2012) isolates as many as 44 distinct senses, of which 28 involve phrasal verbs or adverbial uses, in contrast with Dirven’s findings that *off* is relatively unproductive in terms of expressing meaning that is not concrete or spatial. Somewhat in line with Dirven (1993), Lee posits the concept of ‘disconnect’ as the prototypical sense of *off*, from which the other, more abstractly metaphorical meanings extend (e.g. gap/distance; time gap; removal/elimination; dismissal; isolation; completion; rest; diverge; fire (i.e. ‘discharge from a gun’), lie (“She tried to pass herself off as a German”), and deviation from the ‘ordinary’ or ‘standard’ (“The milk goes off in hot weather”, “I dozed off in the middle of the lecture”). Lee’s and Dirven’s analyses for both *on* and *off* are provided through lists of illustrative examples that fall under quite numerous and hence pedagogically unwieldy categories of “meaning”. They offer no conceptual schema or framework delineating the semantic or pragmatic interrelationships between prototypical meanings and extended meanings.

3. Challenges for L2 teachers and learners

Explaining the meanings of prepositions denoting even the most basic of spatial relationships poses some degree of challenge, even for native speakers. “The key to understanding the uses of these basic prepositions is to be found in the number of regular distinctions made in English between different types of concepts...[e.g.,] the location(s) as a point..., a surface..., or an area...” (Yule 2010: 160–161). The apparent challenge is further compounded as prepositional meanings extend from the spatial into the temporal and metaphorical domains of conceptual thinking and representation, where the lexemes in question function variably as prepositions, as phrasal verb particles, or as adverbs.

Understanding the range of meanings of spatio-temporal and metaphorical expressions is even further complicated in L2 contexts. How each language divides up the world in spatio-temporal units and clusters differs from language to language. The meaning of one preposition (or postposition) in one language will not correspond in identical patterns to seemingly similar prepositions in another language (Buescher and Strauss 2015 [French]; Buescher and Strauss (2018) [French]; Kang (2012) [Korean]; Lam (2009) [Spanish]; Masuda (2003) [Japanese]). The potential for mismatch is illustrated in (5):

(5) ‘The pen is ON the table’: Chinese, Korean, Japanese, and Spanish

Chinese	笔在 桌子 <u>上</u> 。 pen table <u>up, on</u>	[上 vertical dimension]
Korean	a. 펜이 책상 <u>위에</u> 있다. pen-SM-table- <u>up/on-LOC</u> -be-DEC	[위에: two postpositions] [위 vertical dimension] [에 locative, goal marker]
	b. 펜이 책상 <u>에</u> 있다. pen-SM-table- <u>LOC</u> -be-DEC	[에 one postposition= locative/goal]
Japanese	a. 펜은 테이블의 <u>上</u> 에 있습니다. pen-TM table- <u>up/on-LOC</u> -be-POL	[上에 two postpositions] [上 vertical dimension] [に locative, goal marker]
	b. ?펜은 테이블 <u>に</u> 있습니다 pen-TM table- <u>LOC</u> -be-POL	[に: one postposition= locative/goal-marginal]
Spanish	La pluma está <u>sobre</u> la mesa. La pluma está <u>encima de</u> la mesa. La pluma está <u>en</u> la mesa.	[sobre = ‘on,’ ‘on top of’] [encima de = ‘on,’ ‘on top of’] [en = ‘on,’ ‘on top of,’ ‘in’]

Note first that in the Chinese example and the (a) versions of the Korean and Japanese examples, the concept of *on* is expressed using a postpositional marker of vertical dimensionality, i.e. 上 for Chinese and Japanese and 위 for Korean (lit. ‘up’, ‘the upper side of’). Secondly, the Chinese character counterpart of *on*, 上 ‘up’, can be deleted in the (b) versions for Korean and Japanese, with the location of the pen being marked simply with postposition 에 (Korean) or 上 (Japanese–marginal), each of which also serves as a goal or locative marker. And finally, in Spanish, the location of the pen can be expressed using one of three possible prepositions, *sobre*, *encima de*, or *en*, each of which differs in terms of its own pattern of spatial configuration. Further, collocations of verbs with prepositions differ from language to language. To illustrate, the English expression *dream about* is expressed in French with preposition *de* ‘of’: *rêver de* [lit. ‘dream of’] and in Spanish with preposition *con* ‘with’: *soñar con* [lit. ‘dream with’] (Saint-Dizier 2006: 2).

4. Alternate analytic perspectives: Corpus, discourse analysis, and cognitive linguistics: Prepositions, phrasal verbs, adverbs *on* and *off*

The lexemes *on* and *off* have been addressed by previous researchers as prepositions, phrasal verb particles, and adverbs (Dirven 1993; Lee 2012; Levin and Lindquist 2013; Lim 2004; Lindstromberg 1996, 2010; Radden 1985; Yule 2010). And while much light has been shed on these items, there exists to date no unified analysis of the lexemes *on* and *off* as they pattern triply in the functions of preposition, phrasal verb particle, and adverb across a wide variety of discourse-based language samples.

The following analysis presents a unified representation of the meaning scope of *on* and *off*, using a graphic five-tiered graded system of meaning for *on* and a four-tiered system for *off*. (The larger project includes a seven-tiered system for *on* and a six-tiered system for *off*). The exemplars provided are culled from actual corpus-based texts. The system is designed in such a way that it transparently links source meanings from prepositional core uses and illustrates progressive meaning extensions into the domains of the abstract and metaphorical.

4.1 Procedures

In order to more fully grasp the form-use-meaning connection of both target lexemes, we conducted an initial corpus-based investigation of each, noting first their overall frequencies in the Corpus of Contemporary American English (COCA). We then conducted collocation queries to reveal the most frequently occurring

patterns of each form with verbs and nouns. Based on the results of the investigation we observed the larger stretches of discourse containing the target forms and determined categories of function/meaning for each, moving from the domain of the concrete/visible/tangible to the more abstract, which allowed us to discern a primary, core meaning for each lexeme and then design a gradient network of related meanings.

This semantic network is similar in approach to the principled polysemy network (Evans and Tyler 2004; Tyler 2012a, 2012b; Tyler and Evans 2001, 2003, 2004) in that the various categories of meaning of each lexeme (regardless of its function as a preposition, phrasal verb, or adverb) are linked to the primary meaning or proto-scene. However, in lieu of a polysemy network built on interconnected nodes depicting links between and among the various meaning extensions of the target form and the proto-scene, we have designed a set of simple graphics to represent stages of meaning gradience for each semantic form. Our graphic system visually foregrounds the relationships between TR and LM and progresses in complexity from the central, core meaning of each lexeme (the concrete/visible/tangible domain), to increasingly abstract meanings of these forms in discourse, without paraphrasing meaning interpretations primarily through verbal labels (see Buescher and Strauss (2015); Buescher and Strauss (2018); Strauss, Feiz, and Xiang (2018), and Strauss (in preparation a and b) for additional discussions of the graphic semantic systems and rationales for avoiding the use of synonyms or verbal paraphrases to represent essential meanings of target lexical items). The results of the initial COCA search appear in Table 1.

Note first that *on* occurs approximately 9.4 times as frequently as *off*. *On*, as evoking a core meaning of *contact/connection with some expanse of the LM* is clearly the conceptually and substantively unmarked member of this lexeme pair.

Table 1. Raw numbers: Total tokens of *on* and *off* from COCA

Lexeme	Frequency
Tokens of <i>on</i>	3,134,834
Tokens of <i>off</i>	332,861

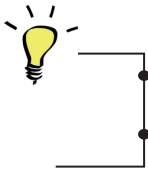
We then conducted an investigation of *on* and *off* as they collocate with nouns and verbs. We noted a relatively small, but powerful overlap between those nouns and verbs that collocated with each lexeme and that denote a binary opposition in meaning, as in:

Table 2. Noun and verb collocations with *on* and *off* designating binary opposition

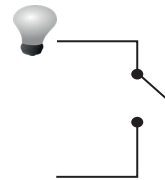
Collocations with nouns: Binary opposition	
on camera	off camera
on TV	off TV
on stage	off stage
on campus	off campus
on track	off track
on welfare	off welfare
on drugs	off drugs
on screen	off screen
on duty	off duty
on track	off track
online	offline
on the coast of	off the coast of
Collocations with verbs: Binary opposition	
turn on (light, road)	turn off (light, road)
switch on	switch off
get on	get off
pull on (hat, socks)	pull off (hat, socks)
be on	be off

While the majority of uses of *on* and *off* do not signal the types of polar opposite meanings as reflected in Table 2, the antonymic relationship is at the core of the meaning differences in these two lexemes.

We represent this opposition in Figure 1, designed as a pedagogical tool (for low-intermediate to advanced language learners) to first introduce the binary conceptual concepts underlying the forms, and to establish the foundation for discussion of the more complex and abstract system of meaning, particularly as *on* and *off* develop more abstract meanings in phrasal verb constructions and in adverbs.



a. ON: core, primary sense of “on” = connection / contact



b. OFF: core, primary sense of “off” = separation / no contact / disconnect

Figure 1. Basic semantic opposition between *on* and *off*

The core meanings for *on* and *off* here are similar to Dirven (1993); Lee (2012), and Yule (2010), in that *on* is represented as signaling “contact or connection” and *off* as signaling “disconnect” or “disconnected location” (see Yule 2010: 172). However, we have designed these graphics using the analogy of the electric light connection to expressly underscore only the meanings of “connection” and “separation/no contact” and to thus avoid any related peripheral paraphrased meanings, like “support” for *on* (Dirven 1993; Lee 2012) or potential (and possibly distracting) semantic connections with *of*, e.g. Place, Area, and Cause, as proposed by Dirven (1993) for *of* and *off*. We analyze *off* here as semantically independent of *of* and vice versa.

5. The graphic/conceptual system

We designed the system of graphics shown for *on* and *off* on the basis of all uses of tokens in discourse as identified in the corpus. We categorized the meaning of each lexeme as it progressed from the domain of concrete space and literal meaning (entry 1 for each lexeme), through the more abstract domains of place, time, and aspect (entries 2 through 5).

The conceptual system designed here is rooted in the basic proto-scene for each preposition. That is, the proto-scene for *on* simply evokes *contact* or *connection with some expanse of the LM*. The proto-scene for *off* simply evokes *separation*, *lack of contact*, or *disconnect*. Each instance of this basic meaning of *on* and *off* is essentially related to real world force dynamics, in that objects and entities make contact or lose contact with other objects and entities (i.e. Figures/Trajectors and Grounds/Landmarks). Further, the pair denotes opposing vectors of movement or force, whereby *on* denotes a directionality such that the figure-ground relationship makes or maintains reciprocal contact, and *off* denotes a directionality such that the reciprocal figure-ground association either involves no contact, a loss of contact, or mutual repellency. The force involved in these antithetically reciprocal figure-ground relationships (either denoting contact [on] or disconnect [off]) can be static, designating a location or state, or it can be dynamic, designating an action, which in turn can be either spontaneous or caused.

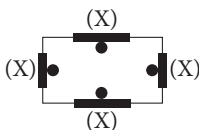
The essential meanings reflect embodied understandings of these very concepts from reoccurring patterns of real-world sensory-perceptual experience labeled by each respective linguistic marker. As noted by Evans and Tyler (2005: 21), citing Grady’s (1997) work on conceptual metaphor, “Humans regularly observe distinct events co-occurring in the world. After repeated observations of co-occurrence, the distinct events can become associated at the conceptual level”. The graphic system that we present here for the polysemy networks for *on* and *off*, functioning triply

as prepositions, phrasal verbs, and adverbs is “governed by constrained, systematic processes of meaning extension” (Tyler, 2012b: 308).

Such meaning progressions are captured in the graphics depicting the relationship between the TR *trajector* or *figure*, designated by X, and LM *landmark* or *ground*, designated by the rectangular image as in (6). This schema represents the first increment in the system for *on*, i.e. the most concrete use as a spatial preposition (entry 1 for each lexeme). In all graphics, X represents the TR and the rectangle □ represents the LM. When the landmark involves concrete space, the rectangle appears in solid lines; when the landmark evokes an abstract meaning, the rectangle is drawn with broken lines. In the graphic below, X appears in parentheses since the TR can occur at/on any location or on any plane within the conceptual scheme.

(6) Excerpt from *on*

1. **concrete/proto-scene meaning and graphic representation of ON:**



ON: **connection with concrete/tangible surface**

(on the wall, on the ceiling, on her head, on my face)

This visual conceptual system is intended dually to represent various gradations of spatial/temporal/metaphorical/abstract meanings in simple terms and to serve as a mnemonic to aid in the apprehension of conceptual meaning. The system is intended to be generalizable across all uses and meanings of the target lexemes and to facilitate productivity of use, functioning as a new type of “grammatical rule”, thus eliminating the need for language learners to memorize long lists of unrelated uses and collocations. These types of meaning progressions for *on* are illustrated in (7a). The semantic system of *on* presented here is based on a five-tiered system, moving progressively from the concrete, proto-scene meaning as entry 1 to the abstract domains of aspect [continuative] (entry 4) and force/effort (entry 5).

(7a) **ON: meaning extensions (from “connect” [light analogy – bulb is ON])**

Concrete/proto-scene (entry 1)

– [A]t this fish hatchery... they literally walk on the fish

Abstract: (entry 2)

– Mom, if I lived on campus, you wouldn’t even know when I came in.

Temporal/Durative State: (entry 3)

– On Wednesday, Erika Smith, the Warriors former director of community relations, sued the team in Alameda County Superior Court,

- He was glad to see that the medical examiner who had been on call was Wally Fullbright...

Aspectual (entry 4) [continuative]

- If that was Roger's fantasy, he could just dream on
- These women seem to notice, but they walk on by.

Force/effort (entry 5)

- Special sessions focused on the role of women in today's technology fields in India...
- For the first time, we can go to China and not try to play on humanitarian issues and not to say let's play to your better angels.

The semantic system for *off* is encapsulated in (7b). Because of fewer meaning extensions than those for *on*, it is based on a four-tiered system, moving progressively from the concrete, proto-scene meaning as entry 1 to the more abstract domains of barrier (entry 3) and progress leading toward an endpoint [completive/telic aspect] (entry 4).

(7b) **OFF: meaning extensions (from "disconnect" [light analogy – bulb is OFF])**

Concrete/ proto-scene (entry 1)

- Another neat thing to do is to take a bird cage, take the top off... .. Take the bird out...
- Press lightly to make sure panko is adhering; shake off any loose crumbs.

Abstract (entry 2)

- it's a good idea to cut off liquids at least one hour prior to going to bed.

Barrier (entry 3)

- The NPT regime has certainly closed off the most straightforward pathways to the bomb.

Aspectual (entry 4) [process leading to an end point; completive aspect/telic aspect]

- By surviving Hinckley's attack, Reagan helped shake off a national sorrow that had lingered since President John F. Kennedy's assassination.
- ...Her mother laughed it off; she didn't have a mean bone in her body.

Tables 3 and 4 present the most frequent collocations of verbs with *on* and *off* respectively, which includes their uses as prepositions, phrasal verb particles, and adverbs, as illustrated in (8) and (9) following each table.

Table 3. The 10 most frequent verbs collocating with *on*

Verbs collocating with ON	Number of tokens
go on (goes, going, went, gone)	89,483
base on (based)	61,859
be on (is, are, were)	61,050
focus on (focused, focusing)	46,878
work on (worked, working)	30,261
sit on (sits, sitting, sat)	22,367
depend on (depends, depended)	19,618
take on (took, taking, taken, takes)	19,492
put on (putting)	17,074
rely on (relied, relying, relies)	17,004

(8) Go + *on*: from literal/concrete to phrasal verb of aspect

a. literal/concrete (V + preposition):

He just dropped one of your plates. The sandwich went on the floor, right here.

b. abstract (V + preposition):

A lot of the kids that go on the show have never even sung in front of people before.

c. phrasal verb (durative state):

“We’re obviously very honored to be a part of what’s going on at Beyond Sport...”

d. phrasal verb (aspect/continuative):

He went on to earn at least eight degrees from French universities including in math, psychology economics, political science as well as a doctorate in law

Table 4. The 10 most frequent verbs collocating with *off*

Verbs collocating with OFF	Number of tokens
take off (took, takes, taken, taking)	9,315
go off (goes, went, gone)	8,163
get off (got, getting)	7,795
pay off (paid, pays, paying)	6,608
cut off	6,331
turn off (turns, turned, turning)	6,093
set off (setting)	4,689
come off (came, coming)	3,933
lay off (laid, laying, lays)	3,606
pull off (pulled, pulls)	2,879
head off (heads, heading)	2,146

- (9) **Take + off: from proto-scene /concrete to phrasal verb of aspect**
- a. concrete/proto-scene (V + preposition):
After a few Spanish lessons, I remembered the book and took it off the shelf, wondering if my Spanish had improved enough to read it.
 - b. abstract (V + preposition):
Although the GM tomato has been taken off the market, millions of acres of soy, corn, canola, and cotton have had foreign genes inserted into their DNA.
 - c. phrasal verb (remove, separate/abstract):
They untied their boat, unloaded their bags, and watched the plane take off.
 - d. phrasal verb (process leading to an end point/abstract):
The “do it yourself” idea took off in the 1950s, when buying a fixer-upper and fixing it up yourself came into vogue.

As the discourse-based excerpts illustrate and as will be illustrated in the progression of schematic diagrams, the meanings of these two lexemes, whether as prepositions in the domains of space/time/metaphor, as phrasal verbs, or adverbs, the conceptual meanings are rooted in the concrete/tangible proto-scene and then shift progressively to evoke more abstract meanings, as shown in Table 5:

Table 5. Conceptual shifts from concrete to abstract meanings for on and off

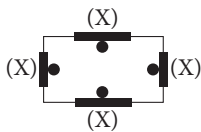
On	Off
apply, attach, uphold, undergird, force presence	remove, detach absence
be, cause to be visible	be, cause to be invisible
be, cause to be stable, static, located	be, cause to be gone, removed
state/process of continuation	state/process ending in separation, removal, prevention
Move from concrete, physical, tangible → time → metaphorical extensions	

5.1 The primary components of the conceptual system, in graphics

Throughout the remainder of this chapter, we present the majority of graphic components that we have designed for the conceptual systems for *on* and *off*, all of which represent the concepts as noted in Table 5 above.

5.1.1 Entries 1–5 for ONs

1. Proto-scene/concrete meaning and graphic representation of ON:



ON: connection with concrete surface

(on the wall, on the ceiling, on her head, on my face)

Schema description:

The connection of X (TR) to □ (LM) can occur at any location (as an expanse) on any surface of the LM.

Corpus Excerpts:

She placed six candles around the room and one on the table.

(Bk, Deadline, 2012)

Marina stared at the stains on the ceiling and tried not to feel bitter.

(Bk, Glider, 2012)

There was the appearance of body fluids on the floor and on the walls.

(NBC, Dateline, 2012)

2. Abstract meaning and graphic representation of ON:



ON: ABSTRACT; connection with abstract space or idea

(on Broadway, on campus, on the grounds that, on the contrary)

Schema description:

The connection of X (TR) occurs with the imaginary surface of an abstract, intangible (LM) □

Corpus Excerpts:

And if I wasn't on Broadway, I wouldn't have met Mazza, my girl.

(ABC 20/20, 2012)

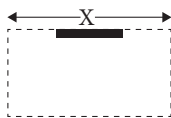
Simmons' high throw to first put Mark Reynolds on base....

(News Atlanta, 2012)

"...I was very down on relationships and on the idea that I would be in one successfully," he said.

(New York Times, 2011)

3. Temporal/Durative meaning and graphic representation of ON:



ON: ABSTRACT; designated expanse of time, durative state
(on Monday, on Christmas, on a pitch black night, on duty, on a diet)

Schema description:

The connection of X (TR) spans the entire imaginary surface of an abstract, intangible (LM) □

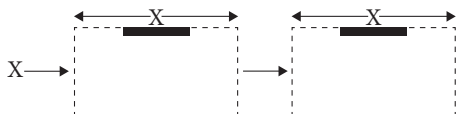
Corpus Excerpts:

Divers from the Italian Coast Guard searched in vain on Saturday.
(*Newsweek*, 2012)

“The wrong man is on trial,” Mr. Naftalis told the jury.
(*New York Times*, 2012)

I was on vacation in Puerto Rico two weeks ago. (NBC Today, 2012)

4. Aspectual meaning and graphic representation of ON:



ON: ABSTRACT; continuing, continuative aspect
(keep on trying, play on, sing on, went on and said)

Schema Description:

The connection of X (TR) spans the entire imaginary surface of an abstract, intangible (LM) □ and this scene continues over time or recurs.

Corpus Excerpts:

...my mother in law warned me that it... gets worse as time goes on.
(*Good Housekeeping*, 2012)

Paula kept on dancing and paid the bills. (NBC Dateline, 2012)

They drank on a while, the liquor going fast to Inman’s head...
(Bk, *Cold Mountain*, 1997)

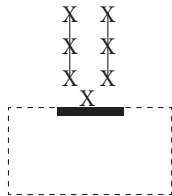
The graphic for entry 4 also indicates the potential of recursivity for *on* as a continuative marker, such that it can occur iteratively in natural discourse. Recurring instances of various levels of repetition of *on and on* in the corpus are noted in Table 4., with illustrative excerpts in (10) and (11):

Table 6. Recursion of aspectual *on* (i.e. *on and on...*)

Recurring <i>on</i>	Frequency in the corpus
On and on (2x <i>on</i>)	3,125
On and on and on (3x <i>on</i>)	479
On and on and on and on (4x <i>on</i>)	36
On and on and on and on and on (5x <i>on</i>)	5 (all spoken) [2 by Ross Perot in two separate interviews]

- (10) Pres. GEORGE BUSH: These outrageous deficits can not be permitted to go on and on and on and on.
- (11) Ross Perot: ... But if I look at the facts as a businessman, it's so tilted, the first thing you ought to do is just say, 'Guys, if you like these deals so well, we'll give you the deal you gave us'. Now Japanese couldn't unload the cars in this country if we – if they had the same restrictions we had and on and on and on and on and on and on and on.

5. Force/Effort meaning and graphic representation of ON



ON: ABSTRACT, effort, force

(rely on, concentrate on, work on, depend on, write a paper on)

Schema description:

The connection of X (TR) to an expanse of the abstract landmark (LM) occurs because of a downward vector of abstract effort or force, either as a single unit X (TR) or a convergence of multiple instances of X (TR), e.g. 'concentrate,' 'focus'.

Corpus Excerpts:

Proceedings of the 32nd Boston Conference on Language Development...

(JSpeechLang 2012)

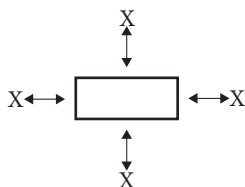
...the remainder of this article will focus on three trends. (Futurist 2012)

And they're basing it on this document that came out... (Fox, Hannity 2009)

Note that the foregoing semantic system for *on* invokes no inherently essential concomitant meaning of "support", in contrast with a number of previous accounts of *on* (e.g. Dirven 1993).

5.1.2 Entries 1 – 4 for OFF

1. Proto-scene/concrete meaning and graphic representation of OFF



OFF: basic meaning = separation

(break off [a piece], cut off [excess thread], pull off/take off [a ring, clothing])

Schema description:

X (TR) is either already separated from or becomes separated from a concrete, tangible (LM) \square at any place, point, or expanse on the LM.

Corpus Excerpts:

...snap off outer leaves from baby artichokes, cut off leafy tips, and trim stems to a point. (Sunset, 2012)

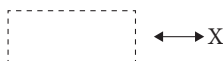
...he might pull off the helmet the moment the airlock doors opened.

(Analog 2009)

He took off his glasses and ran his hand down the stubble on his chin.

(Bk, Wildflowers 2012)

2. Abstract meaning and graphic representation of OFF



OFF: ABSTRACT; separate, remove, stop

(off campus, off target, off the web, break off a relationship)

Schema description:

X (TR) is either already separated from or becomes separated from an abstract landmark (LM) \square .

Corpus Excerpts:

Tried a faucet. The water had been cut off. (Bk, MurderUnleashed 2012)

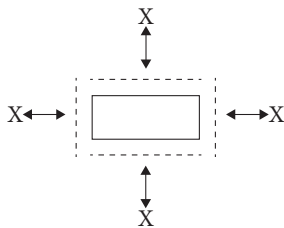
... and Jade had walked in, causing them to break off the kiss.

(Bk, HisSexyBadHabit 2011)

“Your youngest just went off to college, right?”

(Bk, KissVampire 2012)

3. Barrier meaning and graphic representation of OFF



OFF: CONCRETE AND ABSTRACT; separate, create a barrier
(cordon off, rope off, fend off, stave off, head off)

Schema description:

X (TR) is kept by a repellant force from making contact with a tangible, concrete LM \square or an abstract, imaginary landmark (LM) \square .

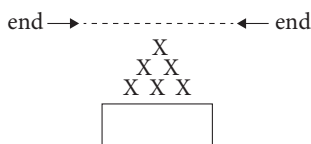
Corpus Excerpts:

...the kingdom has had some success to hold off a dangerous revolution in 1970
(Fox Baier 2011)

Presumably, more variation in the MHC will help a person fight off disease...
(ScienceNew, 2009)

...the easiest way to lose and keep off the extra pounds is with a clean diet
(Shape 2011)

4. Aspectual meaning and graphic representation of OFF



OFF: ABSTRACT process leading to an endpoint, separation (go off [bomb, beeper, fireworks]; pay off [loan]; take off [succeed])

Schema description:

X (TR) leaves a concrete, tangible LM \square or an abstract, imaginary landmark (LM) \square through a diffusive process that leads to an endpoint.

Corpus Excerpts:

Wall Street pulled off one of its biggest rallies of 2012. (CBS, NewsMorn 2012)
She told the police she heard the pop, pop, pop, then the alarm went off
(NBC Dateline 2008)

Locals cool off on the rocky steps surrounding Rovinj. (TownCountry 2009)

Note, too, that the foregoing system for *off* also appears to be semantically independent of *of*, in contrast with Dirven (1993). A cursory look at the frequency of *of* in COCA reveals an overwhelming number of tokens, i.e. 11,948,939, approximately 3.8 times as frequent as *on*. Further, given the graphics of our conceptual system for *off*, we find actually no transparent semantic/pragmatic overlap between *off* and *of*, despite their etymological connections.

And while we indicated in our title that the repetition of *off* and *off* would constitute an ungrammatical collocation, “as Kerry dozed off (*and off),” we did find a single instance of *off* recursion in the corpus, excerpted in (12), from an NBC Today Show interview, “Look At Me Now,” on the topic of weight loss. Here, the phrasal verb *come off* is used to express the completive aspect of process leading to an end point. It is the recursive nature of *off and off and off* that builds continuative aspect into that affectively charged description of the outcome.

- (12) NBC Today Show’s Joy Bauer and Hoda Kotb, featuring interviewees: Marilyn Morrison, Sherry Wheaton, Penny Russell and Annette Hallbrook
- KOTB: Joy, tell me, is this incredible to watch this whole family dynamic, huh?
- BAUER: Incredible, and I think what they did is they created this amicable competitiveness and it [the weight] just kept coming off and off and off. And wow.

6. Conclusion and pedagogical implications

This chapter and the larger study of which it is a part (Strauss, in preparation) provides a glimpse into an alternative system for the conceptualization and teaching of prepositions, phrasal verbs, and adverbs in English from the perspective of Conceptual Grammar. Relying triply on corpus, discourse, and cognitive linguistics, the Conceptual Grammar approach seeks to uncover the meanings of grammatical elements as they pattern with varying frequencies within discourse. At the heart of this system is the notion of “unified meaning” such that the source sense of each target lexeme’s proto-scene remains discernible and even traceable as meanings and uses shift from source domains of the concrete/tangible to more abstract dimensions of meaning.

The systems designed for *on* and *off* represent a simple set of graphics that capture the progressive stages of meaning gradience for each semantic form. The system makes visually salient the reciprocal and/or opposing relationships between TR and LM and progresses in complexity from the central, core meaning of each lexeme to increasingly abstract yet traceably related meanings.

The value of such a system includes: the general simplicity of the graphics, the limited (and less unwieldy) number of meanings and meaning extensions

determined by discursive patterns (i.e. a total of seven for *on*, with five presented here; and six for *off*, with four presented here), and the avoidance of the need to paraphrase or verbally articulate word meaning with yet more words.

Further, because the system is both simple and graphically precise, it expressly attempts to avoid potential overlap and fuzziness of boundaries between categories, as we observed in the case of Celce-Murcia and Larsen-Freeman (1999) for aspectual and idiomatic phrasal verbs. It also incorporates the domain of time as an integral part of the full system, rather than isolating it as a separate meaning category, as we observe in Dirven and Radden's (2007) approach.

From the perspective of language learning and teaching, a system such as ours can aid in the process of understanding grammar as an essentially conceptual and flexible system of meaning making and stance marking. In teaching grammar through graphics such as these, students can learn to re-think the notion of the static, rigid, and prescriptive "grammatical rule" and gain comfort in knowing that language use is often abstract and potentially ambiguous. The notion of "idiomaticity" fades as students and teachers come to better apprehend the meaning systems for these phrasal verbs and their individual components (both the verb and the particle [+preposition]) and also to use graphics such as these to further specify and disambiguate potentially problematic uses.

We plan to further develop this approach to grammar, especially prepositions, phrasal verbs, and adverbs, including experimental research projects designed for students and teachers to not only graphically link the semantic/pragmatic trajectories of target forms from prepositions to phrasal verbs based on the drawings that we have designed, but also to design their own and apply those to various constructions within discourse. We are currently working on designing an interface whereby the graphic system is linked to stretches of actual discourse through which teachers and students can conduct their own Conceptual Grammar analysis and recognize, use, and apprehend the broad scopes of meanings of the target lexemes.

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The role of embodiment in the semantic analysis of phrasal verbs

A corpus-based study

Narges Mahpeykar

Many of the meanings of prepositions are derived from our bodily experience and conceptualization of the spatial-physical world. This study examines the relationship between frequency and embodied meaning in spatial particles. Tyler and Evans' Principled Polysemy Model was used to analyze high and low frequency particles. The analysis shows that particles including *up*, *out*, *off* and *over* appear frequently in phrasal verbs due to a larger set of embodied experiences and a more complex semantic network associated with these particles. In contrast, low frequency particles such as *through*, *under*, *into* and *for* appear less frequently in phrasal verbs due to the nature of the embodied meanings motivating these uses. Implausible constructions such as *hold under* and *drop up* were found to be explainable by examining the basic embodied meanings of the verb and the particle.

Keywords: embodied experience, Principled Polysemy Model, spatial particles

1. Introduction

There is no question that embodiment plays an important role in understanding the meaning of polysemous words and constructions. A number of studies in Cognitive Linguistics (e.g. Johnson 1987; Tyler and Evans 2003; Vandeloise 2005) have highlighted the significance of embodied experience and cognitive processes to the analysis of English prepositions. According to these studies, many of the meanings of prepositions are derived from our bodily experience and conceptualization of the spatial-physical world. No study, however, has investigated whether there is a correlation between frequency of use and the embodied meanings of spatial particles or in other words, whether high frequency particles are associated with larger number of embodied experiences.

This study aims to examine the relationship between frequency and embodied meaning in spatial particles. For this purpose, sets of high and low frequency spatial particles in the Corpus of Contemporary American English (COCA) were compared in terms of the spatial and embodied properties. Tyler and Evans' Principled Polysemy Model was used to analyze the spatial particles under investigation. The comparison between high and low frequency particles in the corpus showed a strong correlation between frequency of use and the embodied meanings of the particle. According to the analysis, the reason for why certain particles including *up*, *out*, *off* and *over* appear so frequently in phrasal verbs is mainly due to a larger set of embodied experiences and a more complex semantic network associated with these particles. On the other hand, low frequency particles such as *through*, *under*, *into* and *for* appear less frequently in phrasal verbs due to the nature of the embodied meanings motivating these uses. Furthermore, implausible and infrequent constructions such as *drop up* and *turn through* were found to be explainable by examining the basic embodied meanings of the verb and the particle. These combinations do not work well as phrasal verbs, due to a mismatch between the spatial and physical experiences associated with the verb and the particle participating in the phrasal verb.

Our unique anatomy and perceptual system is fundamental to our cognition. Conceptual structures are for the most part mediated by how we as humans experience and interact with objects in our environment. Due to the unique nature of our physical bodies, our experience of the world is tied to our physiology and neural architecture; in other words, experience is embodied (Barsalou 2008; Bergen 2012; Evans and Green 2006; Gibbs 2006; Johnson 1987; Tyler and Evans 2003; Zwaan 2004). Our perceptual experience of the world is meaningful to us in various ways. Most importantly, the nature of our experience has inevitable consequences for survival including the way we react to critical situations and potential threats in our environment. For instance, knowing that certain entities such as fire, boiling water and wild animals are dangerous has important consequences for our survival. Therefore, as argued by Cognitive Linguistics (CL) studies (e.g. Evans 2004; Talmy 2000; Tyler and Evans 2003) meaning is embodied in nature and conceptual knowledge is largely derived from our perception and interaction with the spatio-physical world. Prepositions and particles are no exception to this.

The significance of embodied experience to interpreting the meanings of English prepositions has been emphasized in CL literature (e.g. Johnson 1987; Lakoff and Johnson 1980; Mandler 1996, 2004; Tyler and Evans 2003; Vandeloise 2005). According to these studies, spatial particles comprise complex conceptual categories with various meaning extensions. In order to determine the array of meanings associated with particles it is necessary to recognize the cognitive and perceptual mechanisms employed by humans in real language use. Tyler and

Evans (2003) argue that our embodied experience with the spatial-physical world motivates the majority of a particle's meaning extensions. For instance, our perception of the human body seems to project onto structures in the outside world. The asymmetrical structure of our bodies has given rise to the central (physical) meanings of *up* and *down*. As humans we have a top-bottom anatomical asymmetrical due to the fact that we are biped and our vital sensory organs are located on our heads. For instance, we can talk about the 'top' of the chimney or the 'peak' of the mountain in uses such as *The bird flew up the chimney* and *John climbed up the mountain*. Basic conceptualizations such as this, which are entrenched in the embodied nature of our interactions with the environment, motivate many of the meanings of spatial particles.

The significance of embodied meaning to the analysis of spatial particles has been discussed in the literature; however, no study has investigated the relationship between frequency of use and the embodied meanings of particles. Not much has been proposed by previous studies for why certain particles appear more frequently in phrasal verbs than others. The current study investigates the following research question: Is there a correlation between frequency of use and embodied meanings of spatial particles appearing in phrasal verbs?

The answer to the above question can shed light on the relationship between embodiment and language use. Our knowledge of the frequency of verb and particle combinations in phrasal verbs can shed light on their productive nature and provide us with more effective pedagogical tools. The findings can expand our understanding of the conceptual meanings of particles and the underlying motivations for producing certain verb-particle combinations. Moreover, it is hoped that the analysis of the frequency of the particles examined in this study will provide some insight for language teaching by explaining why certain particles are more frequently used than others and which verb-particle combinations are more likely to appear in every day language.

In order to answer the above question, the frequency measures of a set of particles were compared in terms of spatial and embodied properties. Except for *off* and *away*, the particles selected for the analysis are among the set of particles analyzed by Tyler and Evans (2003). The frequency rankings of the selected particles were retrieved from the Corpus of Contemporary American English (COCA), and the spatial particles were compared in terms of TR-LM relational status (spatial configuration) and embodied meaning. Tyler and Evans' Principled Polysemy Model was used as the basis for analyzing the spatial particles under investigation. The results of the analysis for high and low frequency particles showed a strong correlation between frequency of use and the embodied meanings of the particles. The rest of the chapter is organized as follows: Section 2 provides a brief review of the cognitive-semantic model used in this study for analyzing spatial particles as well

as background on embodied meaning. Section 3 presents the frequency rankings of the particles in the corpus data and the frequency analysis of the spatial particles under investigation. Section 4 presents the main conclusions and limitations of the analysis presented in this study.

2. Literature review

Tyler and Evans' (2003) Principled Polysemy Model provides one of the most comprehensive tools in the CL approach to lexical polysemy, in particular spatial particles. The model takes up the challenge by Sandra (1998) and Sandra and Rice (1995) calling for clear principles that offer consistent and objective semantic analysis. The principles aim to provide (1) a replicable method for identifying the central or basic sense from which the more complex senses are derived systematically; (2) a set of criteria for determining whether a specific sense of a particle should be considered as a distinct sense. These principles are important because they address methodological issues that had not been previously accounted for by other CL approaches such as Brugman and Lakoff (1988) and Lakoff (1987).

In this approach, the analysis of prepositions relies on recognized principles of cognition such as knowledge of force dynamics and embodied experience (Johnson 1987; Lakoff and Johnson 1980, 1999; Mandler 1992; Sweetser 1990; Vandeloise 1991). Tyler and Evans argue that language directly refers to the human conceptual system rather than the "real world" and meaning is conceptual in nature. The conceptual structure is largely mediated by how we as humans experience and interact with objects in our environment; in other words, experience is embodied. Consequently, many of the meanings of prepositions are derived from our embodied experience and conceptualization of the spatial-physical world.

Other studies in CL have underscored the importance of embodied meaning in understanding the many meanings of prepositions (e.g. Johnson 1987, Lakoff and Johnson 1987, Mandler 1996, 2004; Vandeloise 2005). In his 1987 book, Johnson argues that fundamental concepts such as CONTACT, CONTAINER, and BALANCE are meaningful since they are linked to human experience which is directly mediated by the nature of our physical body. These concepts are a basic part of understanding prepositions such as *in* and *out*. The notion of containment is necessary to understanding these two prepositions. Certainly, interacting with containers has unavoidable consequences for human being as we encounter several experiences through interacting with containers in our daily lives. For instance, our default locations or homes where we spend extended periods of time are containers, and when we move from one room to another we are crossing the boundaries of the rooms or containers. Many of the objects we constantly interact with are containers; for

example, kitchen appliances (e.g. cups and bowls), pieces of furniture (e.g. drawers and chests), and school kits all fall under the category of containers. Our bodies themselves are containers, which hold our organs and the vital fluids.

Human understanding of the notion of containment goes back to early years of life. According to Mandler (1992) infants develop preverbal concepts such as CONTAINMENT, PATH and SUPPORT during the first few months. Psychological experiments support this claim (e.g. Baillargeon, Needham and Devos 1991; Gelman 1990; Leslie 1988; McDonough and Mandler 1998). In an experiment by Kolstad (1991), 5.5-months old infants showed surprise when seemingly bottomless containers held objects. This shows that infants of less than 6 months have an abstract understanding of certain properties of objects and how they interact with each other. Mandler argues that it would be hard to explain how infants are able to infer notions such as containment by only relying on sensory-motor representations. Unless infants have developed an abstract schematic knowledge of containment and support, they will not be able to create expectations about containers and acknowledge when these expectations are not met. The schematic knowledge develops through the infant's interaction with the environment and attention to specific attributes of objects and events. Mandler suggests that the preverbal concepts function as semantic primitives or image schemas forming conceptual categories that will lay the foundation for further language development.

Further evidence supports the importance of embodied meaning in understanding language use. Studies of embodied cognition have shown that language users are sensitive to word order patterns i.e., certain word pairs are comprehended faster than others. For instance, Louwerse (2008) calculated the raw and relative frequencies of iconic and non-iconic word orderings of word pairs that have been widely studied in the literature, and found that they were significantly more likely to occur in their canonical or more "embodied" order (e.g. attic-basement) than in their non-canonical or less "embodied" order (e.g. basement-attic). Benor and Levy (2006) have also discussed the relationship between the canonical word orderings in English and our bodily interaction with the world. They mention a number of biological and cultural reasons contributing to the ordering preferences of certain constructions. For example, linguistic elements that are more easily perceptible (or less "marked") to us are more likely to appear first in a binomial: *up* and *down*, *head* and *tail* (above and below), *high* and *inside* (vertical and horizontal) and *physical* and *mental* (concrete and abstract).¹

The various distinct meanings of phrasal verbs can be explained by reference to embodied experience shaped from early years of our lives. For instance, the many

1. Benor and Levy (2006) mention some exceptions as in *back* and *forth*, *backward* and *forward* and *left* and *right*.

meanings of *get up* can be explained through our bodily experience of dealing with gravity from the time we were born. Gravity is an objective feature of the world but our physical anatomy permits certain kinds of experiences, which are different from other species such as birds or reptiles. Due to our body's nature we experience motion acts such as walking, running, crawling and flying in specific ways. Similarly a phrasal verb such as *get up* acquires distinct meanings from recurrent experience of elevation and interaction with gravity. According to Mahpeykar's (2014) analysis of *get up*, the phrasal verb in its central sense denotes a meaning of "an entity moving (or caused to be moved) from a lower position to a higher position". The distinct meanings of *get up* identified in the aforementioned study include Become Upright, Waking and Moving Out of Bed, and Organizing an Event which can be directly explained through embodied experience.

The first sense: Become Upright, is closely related to the central sense and denotes the movement of the body from the lower position (sitting or lying) to the upper position standing which motivates uses such as *Get up!* or *I got up and went to the back door*. An implicature of sitting or lying down is that typically we are less in control, and objects surrounding us are less visible. Therefore the sitting or lying position is "down" and the standing position is "up". Metaphorical use of this sense can also be found as in *a good friend helps you get up when you fail*. Instead of referring to a physical upright position of a human body, the phrasal verb denotes a sense of being in control and in a good position. The second sense: Waking and Moving Out of Bed is closely related to the previous sense, but the interpretation is more specific. One interpretation involves the actor (experiencer) moving from a state of being asleep to a state of being conscious. Another interpretation designates the physical movement of the body from the source location "bed". This meaning is also directly related to our embodied experience with the environment. In order to be out of bed, we move from a lying position to a upright position. Due to the high frequency of this particular experience with our resting location (or beds), this sense has become a conventionalized sense and *get up* has acquired a highly entrenched meaning which motivates the use *I got up late*. Finally the third meaning: Organizing an Event denotes organizing or preparing for an event or meeting. In this construal, events are conceptualized as objects that can be lifted from a lower position to a higher position. A consequence of being *up* is that we are more in control and in a sense of readiness. Thus by being in the upper position the event (LM) is inducing the person (TR) to be in a state of ongoing activeness such as in the usage *let's get up an entertainment for Christmas* (more explanation of the different senses of *get up* is provided in Section 4.2.2).

The notion of embodiment is thus crucial for understanding the different meanings of *get up*. Similarly, a wide range of phrasal verb meanings can be derived from the unlimited repository of human experiences. The various meanings

of phrasal verbs that we employ in our everyday communication are mainly a consequence of our unique bodily experience with the world. Hence, the contribution of embodiment to the comprehension of phrasal verb meanings should not be underestimated.

In the remaining sections, I account for a number of constraints on verb-particle combinations. For this purpose, I compare the spatial and embodied properties of a set of high and low frequency particles in COCA. The comparison between frequency of use and the embodied meanings associated with the spatial particles offers interesting insights into why certain particles tend to appear more frequently in phrasal verbs than others.

3. Analysis

The frequency measures in COCA were used as a benchmark for comparing the frequency of the spatial particles under investigation. Following the traditional particle-preposition grammatical distinction, COCA tags relevant instances as either adverbial particles (RP) or prepositions (II) or both. The frequency measures for spatial particles under investigation are reported in two separate tables: one for RP (Table 1) and one for II (Table 2).² In this study, adverbial particles with a frequency ranking of below 10 are considered high frequency particles, which include *up*, *out*, *down*, *in*, *off* and *over* (bolded in Table 1). Previous studies have also referred to these particles as high frequency particles appearing in phrasal verbs (e.g. Gardner and Davis 2007; Rudzka-Ostyn 2003). Adverbial particles with a ranking of above 10 (*through*, *under* and *away*) and prepositional particles (Table 2) are considered low frequency since this group seems to appear considerably less frequently in phrasal verb constructions. Except for *off* and *away*, the spatial particles selected in this study for the frequency analysis are among the set of particles analyzed by Tyler and Evans (2003). Spatial particles *back* (#3), *on* (#5), *around* (#9) and *about* (#10) which are not included in Tyler and Evans' (2003) analysis were also not included in the frequency analysis.

Section 3.1 examines the spatial particles of vertical axis including *up*, *over*, *above*, *down*, *under* and *below*, comparing them in terms of frequency and embodied meaning. In Section 3.2, I investigate the different spatial and embodied aspects of particles with bounded LMs including *out*, *in*, *into* and *through*. In Section 3.3,

2. The spatial particles *under* and *over* are tagged as both adverbial particle (RP) and preposition (II) in COCA. When *over* and *under* are compared with adverbial particles their ranking as an adverbial particle is reported and when they are compared with other prepositions their ranking as a preposition is reported in the study.

I examine spatial particles of orientation including *after*, *before*, *to* and *for*, comparing the different uses in terms of frequency, relational status of TR and LM and embodied meaning.

Table 1. Ranking and frequency measures of selected adverbial particles in COCA

Particle	Ranking	# as RP*
UP	1	890560
OUT	2	783003
DOWN	4	373578
IN	6	230684
OFF	7	210689
OVER	8	192578
THROUGH	11	36878
UNDER	15	4046
AWAY	16	356

* # = token frequency. RP = adverbial particle

Table 2. Ranking and frequency measures of selected prepositions in COCA

Prepositions	Ranking	# as II*
TO	2	4408597
INTO	9	761948
AFTER	13	358677
OVER	14	345720
BEFORE	19	198701
UNDER	20	185812
ABOVE	45	50070
FOR	51	44652
BELOW	65	20936

* # = token frequency. II = preposition

3.1 Spatial particles of the vertical axis

English has developed a subset of spatial particles that involve verticality. This set of particles include *up*, *down*, *over*, *under*, *above* and *below*. Interpreting the various meanings of these spatial particles necessarily involves some reference to the vertical axis. For instance, in the sentences *The painting is above the sofa* vs. *The ship is below the surface of the water*, the meanings of *above* and *below* cannot be understood without reference to the vertical axis.³ This set of particles form lexical

3. The importance of recognizing the vertical and horizontal axes in interpreting some spatial particles is also discussed in Langacker (1987) and Talmy (2000).

contrast sets such that understanding part of the meaning of each particle is dependent upon the meaning of another spatial particle in that domain. For instance, a number of patterns associated with *down* are inversely reflected in *up* including the functional element of the two particles. While the functional element of *up* is positive value, the functional element of *down* is negative value. A consequence of being *down* is that the TR becomes invisible and inaccessible and no longer exerts control or influence over the LM (Tyler and Evans 2003). Although in terms of spatial configurations, these two particles seem to form opposites, they have developed quite different polysemy networks; many of the extended meanings are not necessarily in opposition. In some cases certain aspects of the meaning of the two seemingly opposite particles share the same spatial scene. For instance, both *up* and *down* denote a Completion Sense in which the endpoint of the action is marked by the particle.

An examination of this subset of spatial particles in COCA shows that particles involving a high vertical position including *up*, *over* and *above* are significantly more frequent than those involving a low vertical position including *down*, *under* and *below*. Frequency rankings for this subset of particles in COCA are as following: *up* (RP) #1 vs. *down* (RP) #4, *over* (RP) #8 vs. *under* (RP) #15, and *above* (II) #45 vs. *below* (II) #65. This finding is consistent with the main argument proposed in this study pertaining to our embodied experience with the world. Due to human anatomy and top-bottom nature of our bodies it is more likely that we interact with objects or entities that are located in a high or *up* position. In general, objects that are higher tend to be more visible, more familiar and accessible to human beings. Most often interacting with objects that are in a low or *under* position requires extra effort. For instance, objects that are above the ground's surface are typically more accessible than objects that are below the ground's surface, and in order to gain access to the underneath world humans need to devote more time and effort. Moreover, as noted by Tyler and Evans, we are located on the earth's surface, which provides the most basic LM for the orientation of our bodies, and considering that the earth's surface is opaque we cannot easily access the underneath world. Taking this into consideration, it not surprising that most of the language we use for describing space involves spatial relations associated with the higher end of the vertical axis. Consequently, particles involving a high vertical position appear rather frequently in phrasal verbs.

Further examination of this subset of particles in COCA shows that particles denoting proximal relation between the TR and LM are significantly more frequent than those denoting distal relation. The comparison involves the spatial particles *over* (II) #15 vs. *above* (II) #45, and *under* (II) #20 vs. *below* (II) #65. Following Tyler and Evans, *over* and *under* denote a relation in which the TR is proximal and within potential reach of the LM, while *above* and *below* denote a distal relation between the two spatial components. Thus, what distinguishes these particles from

one another is the contrasting functional element of proximity and distance, which in turn, affects the potential for interaction between the TR and LM. Recognizing this distinction is crucial to the interpretation of the various uses of the particles, which code relative vertical location of the TR with respect to the LM.

The fact that particles involving proximity are more frequent can also be explained in terms of our embodied experience. As humans we tend to interact more with objects that are closer and within potential reach. These objects are typically more salient and accessible to us compared to objects that are located in a far location. We tend to have more control over our immediate surroundings and potentially we are more aware of it. Therefore, the language we use to describe the immediate environment is far more frequent than the language we use for explaining distal relations such as when objects are in a *below* or *under* relation with respect to the ground.

The notion of distal and proximal relations also applies to *off* (RP) #7 and *away* (RP) #16, in the horizontal axis. As previously explained, the contrastive set *off* and *away* differ in the way the distance between the TR and LM is conceptualized. The central sense of *off* denotes a relation in which the TR is separated from the LM such that the two remain in a proximal relation. However, in the spatial scene denoted by *away*, the TR is oriented “away” from the LM and is far from it such that the LM is no longer in the TR’s realm of influence. Minimal pairs of sentences with *off* and *away* demonstrating this difference are provided below:

- (1) Please *take off* your hat (result: the hat is removed from the person’s head and probably in his hand)
- (2) Please *take away* your hat⁴ (result: the hat is in a distance from its original location such that is no longer readily accessible)
- (3) *Keep* those dogs *off* her (stop the dogs from touching or attacking her)
- (4) *Keep* those dogs *away* from her (prevent them from getting near her/ make sure there is a considerable distance)

As can be seen from these examples, while both particles denote a sense of separation and detachment from the LM, spatial scenes including *away* underscore the distance between the spatial elements in the scene; implying the notion of “being out of reach”. This conceptualization is not necessarily implied with the uses of *off*. Similar to the analysis of particles in the vertical axis (e.g. *over* vs. *above*), the higher frequency of *off* compared to *away*, can be explained in terms of the notion of proximal vs. distal relations and our embodied experience. As mentioned above,

4. We can think of a context where a child is playing with the hat, and person A tells person B to *take away* their hat so that it is no longer accessible to the child.

our physiology and perceptual system is built such that we are typically more aware and in control of our immediate surroundings rather than remote locations, which largely influences the way we use language.

3.2 Spatial particles with bounded LMs

A number of particles in English mediate a relation in which the LM is conceptualized as being bounded or contained. A bounded LM is defined in terms of a three dimensional object with an interior, a boundary and an exterior. The set of particles denoting spatial relations with bounded LMs include *in*, *into*, *out* (*of*) and *through*. Different aspects of our experience with bounded LMs can give rise to the various meanings of this subset of particles. The most prominent consequence of our interaction with bounded LMs is the embodied experience of containment. Containment involves a number of functional consequences including among them: delimiting the movement of the LM, providing support, lack of visibility (opaque LMs) and providing protection. These consequences are reflected in the meanings of *in* and *out*. Another important consequence of interacting with bounded LMs is our experience with traversing bounded LMs i.e. passing from one side of a bounded object to another side as in walking from one end of a tunnel to the other end (*walk through* the tunnel) or crossing the boundaries of the LM as in running from outside a room to the inside of the room (*run into* the room). In such experiences, a bounded LM is conceptualized as a path or trajectory traversed by the TR (Tyler and Evans 2003).

The frequency data for this set of particles in COCA shows that *out* (RP) #2 is significantly more frequent than *in* (RP) #6 and *through* (RP) #11. The high frequency of *out* as an adverbial particle compared to *in*, and *through* can be explained in terms of our interaction with bounded LMs.

The functional consequences associated with the TR being exterior to the bounded LM has its own merits. Objects that are located exterior to the boundaries of the container are usually more salient and accessible compared to objects that are located inside. This is particularly the case with opaque LMs where the interior region is not visible to the viewer who is located in the exterior region. As mentioned before, objects that are more salient are usually more visible and hence known to the viewer. Additionally, objects that are *out* are no longer constrained by the boundaries of the LM, and hence become more mobile and free. In other words, the location of the object is no longer assured by the location of the LM but rather the object becomes independently located.

The notion of non-restriction associated with *out* can be best understood when compared with the different uses of *in*. Unlike *out*, the various uses of *in* are mostly

associated with the notions of restriction and delimitation. The following section briefly draws on some of these distinctions.

In Tyler and Evans' analysis, the spatial scene of *in* designates a relation in which the TR is located within a three-dimensional LM and the functional element involved in the scene is that of "containment". One ubiquitous consequence of containment is that bounded LMs constrain the movement of the TR or in other terms locate the TR with surety. For instance, the container (as in water in the bottle) constrains the liquid it contains to the specific limits of the container. This aspect of containment has given rise to a commonly used cluster of senses for *in* termed as the Location Cluster (Tyler and Evans 2003). The senses under this cluster imply that the movement or action of the entity is constrained as a result of being enclosed by the bounded LM. For example, the In Situ Sense denotes that the TR crucially remains co-located with the space highlighted by the LM for an extended time period and for a particular reason (e.g. *What are you in for?*-asked in a police station- or *He stayed in for the evening*). The State Sense is used with certain states including our mental or emotional states, which can be conceptualized as constraining the TR or posing certain difficulty for the TR (e.g., *We are getting in trouble. We are in debt*).⁵ Thus, what is common to all uses of *in* in the Locational cluster is the constricting nature of the experiences associated with *in*.

Parallel to *in*, some non-spatial experiences with *out* denote the notion of overcoming the surrounding restrictions. For instance, we frequently use *out* in contexts such as *getting out* of trouble or *holding out* in a bad situation. Similarly, the Not In Situ Sense of *out* denotes the person leaving the house (or their default location) for a more desirable situation as in *going out* on a date. There are of course some uses of *out* which appear in less desirable contexts such as objects no longer being available (e.g. *run out of milk*) or destroyed (e.g. *taking out a country*). However, examining the network of senses associated with the spatial particles *in* and *out* shows that unlike *in* most uses of *out* are associated with the notions of convenience and non-restriction.

Taking into account the functional consequences of non-containment, *out* seems to be a functionally enriched particle, providing potential explanation for why it appears so frequently in phrasal verb combinations.

5. As mentioned by Tyler and Evans (2003) other particles such as *on* and *at* can also denote a "state" sense. However, an important motivation for the use of *in* with particular states seems to be related to the notion of constriction. For instance, when someone is *in love*, they are committed to this feeling and cannot easily leave the emotional state of love. On the other hand, when someone is *on the pill*, or *at peace* it is more likely that the person voluntarily chose this particular state and it is easier for them to leave the state (p. 188).

There are potential reasons for why *into* (II) #9, and *through* (RP) #11 participate less frequently in phrasal verbs. Both *into* and *through* denote a sense of traversing or crossing the boundaries of the bounded LM. As previously noted, the central sense of *through* designates a relation in which the TR occupies a series of spatial points with respect to a bounded LM such that the LM is transected with respect to an entrance point and exit point (Tyler and Evans 2003). The functional element associated with this spatial particle is that of *path*. In the relation denoted by *through*, the *path* is conceptually contained (e.g., *I walked through the tunnel* or *I walked through the field*) which restricts its use. In general our experience with paths is more often accompanied with certain types of verbs, in particular motion verbs. Examining the first 50 frequent verbs appearing in phrasal verb construction with *through* showed that 60% of the verbs are non-stative verbs encoding some type of motion as in *walk*, *pass* and *sweep*. Therefore, certain verb-particle combinations are implausible or highly infrequent with *through*. For instance, the verb *hold* is a non-motion verb and the phrasal verb *hold through* is among these low frequency phrasal verbs. The following examples from COCA show the restricted uses of *hold through*:

- (5) The director says that traffic may *hold through* the summer.
- (6) Frost usually kills tender plants, but during the winter the garden retains a few herbs to *hold us through* the cool season.

This use of the phrasal verb is drawing from the Temporal Sense of *through* identified by Tyler and Evans (2003). Drawing on the notion of passage of time, the Temporal Sense denotes a time frame for which the action or state is continued. Similarly, in this use *hold through* denotes a sense of maintaining the state of the TR over a particular time period. The two contexts of use involve the extended uses of the phrasal verb. However, *hold through* in the physical (basic) sense is not linguistically realized, meaning we cannot use the phrasal verb in the sense of physically holding an object in a conceptually contained path. After all there is no good reason for why one would perform such an action, unless we think of a rare situation where two people would *hold hands through* a tube!

3.3 Spatial particles of orientation

A subset of particles in English involves an element of orientation i.e. in the spatial scene denoted by these particles either the TR or the LM is oriented. Among these particles are *up*, *down*, *after*, *before*, *to* and *for* (Tyler and Evans 2003). The conceptual orientation of top/bottom or lateral partitioning associated with these particles arises as a result of the way humans interact with certain entities. Previous studies (e.g. Talmy 2000) have predicted a number of factors motivating orientation,

including among them our perception of the entity, its shape (pointed or flat), the entity's movement and the way it is used. Thus, the notion of orientation motivating this set of particles is largely dependent upon our construal of the scene, as the same scene can be viewed in multiple ways (Tyler and Evans 2003). For instance, we can think of a particular scene such as one involving a woman sitting outside her house. In one construal, the same scene can be viewed as neutral with respect to orientation since the woman's orientation is not necessary to our interpretation of her being located exterior to the house. In another construal, the orientation of the woman can become relevant to the scene as in *The woman is walking to her house*. In this use, the woman is oriented towards her house, and *the house* (LM) is conceptualized as goal. Thus, the relational status of the entities and the construal of the scene are important in the way orientation is conceptualized by the language user.

The polysemy network of *up* is complex compared to other particles. This is mainly because there is a large set of embodied experiences and important consequences correlating a human being in a physically elevated state and the way humans interact with their surroundings (Lakoff and Johnson 1980; Tyler and Evans 2003). As previously mentioned, the physical asymmetry of human body not only influences many of our interactions with the environment, but also is largely reflected in language, in particular the various uses of *up* and *down*. The basic orientational metaphors with *up* and *down* are evidence of this fact (Lakoff and Johnson 1980). Orientational metaphors give a spatial orientation to the concept. Some which we encounter in our daily lives, are MORE IS UP, GOOD IS UP, HAPPY IS UP and the corresponding counterparts with *down* (Lakoff and Johnson 1980). The UP-DOWN spatialization metaphors are also fundamental to many uses of phrasal verbs such as *rise up*, *go down*, *brighten up*, and many more. Thus, due to the primary set of embodied experiences and important consequences correlating with humans being in an upright position, *up* and *down* have come to be among the most frequent and highly polysemous particles in English and some other languages.

The contrastive pair *after* and *before* also denote orientation. Some examples of verb-particle combination with these spatial particles in the corpus are provided below:

- (7) The man *bowed before* the king with his face to the ground.
- (8) Fiona *stood before* the mirror in her bedroom.
- (9) We are going to consider every option *put before* us by the Federal Highway Administration.
- (10) Reporters often have to *chase after* newsmakers for the next big story.
- (11) When he identifies a problem he *goes after* it.

After and *before* while spatial in nature, both denote a temporal sequence of events (Talmy 2000; Tyler and Evans 2003). Temporally located events can be compared to sequences of objects in motion. For instance, in a marathon, a runner who is spatially ahead of others gets to the finish line earlier, in other words s/he arrives first. Due to the tight experiential correlation between motion and the sequence of events such as arrival and departure, *before* and *after* have developed a Sequential Sense (Tyler and Evans 2003). *Before* denotes a sequence of events such that the earlier event (the event that occurred earlier in time) is highlighted with respect to the later event as in *I washed my hands before I had dinner*. In this use, the event of washing hands occurred earlier in time with respect to the event of having dinner. Parallel to this analysis, *after* denotes a sequence of events such that the later event is highlighted in the scene as in *I had dinner after I washed my hands*.

An examination of the frequency data shows that *after* (II) #13 is more frequent than *before* (II) #19. Consistent with the previous analysis of spatial particles, the higher frequency of *after* can be explained in terms of our embodied experience and cognitive mechanism. According to Talmy's Sequence Principle earlier events serve as Ground or reference points for more recent events, which serve as the Figure. Thus, in the sentence *I cried after I heard the news* the later event of crying (event 1) is the Figure and the earlier event of hearing the news (event 2) is the Ground. Events that occur later in time are more salient to us, since they are more recently on the scene and in the realm of awareness (Evans and Green 2006; Talmy 2000). According to the Implicational Universal (Talmy 2000), languages' means of expressing typical word order is always as simple or simpler. Therefore, *after* which marks the more salient event first in the sentence takes precedence in the inverse pair *after* vs. *before*. While in English the lexical means for expressing a *before* relationship is equally simple, in some languages such as Atsugewi, the notion of *before* is expressed in a more complex way (in this case by adding two independent words to the *after* verb form) (Talmy 2000). Nonetheless, the relationship denoted by *after* is less marked than the relationship denoted by *before* across languages. Thus, it is not a surprise that English speakers prefer using *after* more often than *before* in phrasal verb combinations. Based on this analysis, the discussion pertaining to the embodied uses of the two particles is consistent with the corpus finding that *after* is more frequent than *before*.

The spatial particles *to* and *for* also involve orientation. As previously noted, *to* and *for* are semantically similar in certain contexts of use. Both particles can denote orientation of the TR towards a LM, which is conceptualized as a goal (e.g., *John ran to the hills* vs. *John went for the hills*). However, the two spatial particles differ in their functional elements. While the central sense of *to* profiles a primary physical goal (e.g. *the hills*), the central sense of *for* profiles a secondary or oblique goal. In the above example, *the hills* are the secondary goal, and winning the competition

is the primary goal or the ultimate purpose of the action. Due to the different conceptualization of the goal (LM), *to* and *for* have developed different networks of meaning.

An examination of the frequency data shows that *to* (II) #2 is far more frequent than *for* (II) #51. Some examples of verb-particle combinations with *to* and *for* in the corpus are provided below:

- (12) Only 19 percent of bank lending last year *went to* small businesses.
- (13) If the watch is not claimed in 30 days, the street sweeper *gets to* keep it.
- (14) Scientists and engineers were not encouraged to *look for* problems.
- (15) Who do you think *paid for* his education at BYU and Harvard?

The difference in frequency ranking can be explained in terms of the properties of the LM in the spatial configuration denoted by the two particles. As noted by Tyler and Evans (2003) in the central sense of *to*, the LM is given a high degree of saliency due to orientation of the TR towards the primary goal. For instance, in the example *The clock tower faces to the east*, the LM (the east) assumes a certain degree of focus. In certain contexts the role of the LM, which is to locate the TR, is even more prominent in the scene, giving rise to the Locational Sense of *to*. In such uses of the particle, the TR is no longer oriented and the LM acts as a highly salient reference point with respect to the TR's location. An example of this use is the sentence *Please take the book to the front of the class*. In this example, *the front of the class* (LM) is given particular saliency in the scene and its role is to locate *the book* (TR). Thus, the saliency of the goal is an important aspect of the meaning of *to*, which distinguishes it from *for*. As mentioned repeatedly in this study, entities that are salient are more familiar and hence more known to the viewer. Similarly, since primary goals are typically more salient, they are more known to the viewer compared to secondary goals. Therefore, the spatial particle *to* which profiles a primary goal is used more frequently compared to *for* which marks secondary goals. The difference in the conceptualization of the LM seems to provide some explanation for the higher frequency of *to* compared to *for*.

Further examination of the different senses of *to* shows that in most senses, the TR and LM are proximal to each other. The senses of *to* demonstrating proximal elements are the Locational Sense (explained above), the Contact Sense, the Attachment Sense, and the Comparison Sense (Tyler and Evans 2003). The Contact Sense denotes a relation of contact between the TR and LM arising due to the experiential correlation of achievement of a particular goal and contact/closeness between the elements in the scene (e.g., *Keep food from sticking to the bottom of the pot*). The Attachment Sense, which is closely related to the Contact Sense, denotes a relation of attachment or strong connection between the TR and LM (e.g., *John*

and *Mary are married to each other*). Finally, the Comparison Sense is formed due to the act of comparison typically involving the embodied experience of bringing two objects close to each other for examination. Through pragmatic strengthening this sense has become a distinct sense for *to* (e.g. *His writing is good compared to his brother*). In all these uses the TR is proximal to the LM such that in certain contexts, the TR becomes in contact or attached to the LM. The fact that the TR-LM relation denoted by *to* involves proximity provides another explanation for the frequency of this particle compared to *for*. As previously noted, objects that are located in our vicinity, are typically more salient, more under control and more accessible to us compared to objects that are located in a far location. Therefore, the language we use to describe our immediate environment is much more frequent than language used for explaining distal relations.

4. Infrequent verb-particle constructions

Based on the above discussion, a number of potential reasons can be proposed for why certain verb-particles do not work very well as phrasal verbs. For instance, combinations such as *turn through* (e.g. *turn the dial through the different stations*), *kick into* (*kick someone into submission*), *break over* (*waves can break over the rocks*) are rarely used since there is not much human experience that maps on to these constructions. In other words, there is not much corresponding embodied experience that motivates the use of these phrasal verbs in the first place. Another potential explanation for the implausibility of certain combinations is the contradictory embodied meaning associated with the verb and the particle. Among these phrasal verbs are *drop up*, *fall up*, *rise down* and *grow down*. In all these combinations, the verb and particle highlight a particular pole on the vertical axis, and the embodied experience associated with the verb is incompatible with that of the particle. Moreover, while some contrast sets of phrasal verbs are grammatical in English (e.g. *give in* vs. *give out*, *look in* vs. *look out*) with other contrast sets, one combination is plausible, while the other is not linguistically realized. For instance, we use *hold over* but not *hold under*, and *look over* but not *look under*. Again some of this incompatibility can be explained in reference to our embodied experience and the anatomy of our bodies. In general, we are less often involved in actions pertaining to the lower end of the vertical axis rather than the higher end, which could be a potential reason. However, not all instances of implausible uses are easy to explain. For instance, it is more difficult to explain why *find out* is linguistically realized but not *find in*. Or it is less clear why certain verbs combining with *up* and *out* have a completion sense and some are not used in this sense as in *fight up* or *fight out*.

5. Conclusion

The comparison between high and low frequency spatial particles in COCA shows a strong correlation between frequency of use and the embodied meanings of the particle. The reason why certain particles appear so frequently in every day language is mainly due to the association of a larger set of embodied experiences with the different uses of these particles. On the other hand, low frequency particles appear less frequently in phrasal verbs due to less number of embodied experiences associated with the meanings of the particles in this set. Consequently, in most cases lower frequency particles come to develop a smaller semantic network with fewer extended senses. Within-group comparison of low frequency particles provides further evidence for the key role of embodiment. Spatial particles such as *to*, *after* and *above* are more frequently used than their corresponding pair in the contrast set i.e. *for*, *before* and *below* as a result of the type of embodied meanings associated with the particles.

Due to the nature of categorization, the analysis proposed in this study and other similar studies is partly subjective. Meanings of phrasal verbs and particles are underspecified to a certain extent i.e., different interpretations can arise from the same word used in a particular sentence. This is not surprising as language users experience the world in a unique way and each individual may interpret similar sentences differently based on their conceptualization and background knowledge. More research carried out on the semantic analysis of spatial particles could minimize possible researcher bias.

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Synesthetic metaphors of sound

An analysis of the semantics of English and Japanese adjectives

Mari Tsujita

In conceptual metaphor theory, metaphors are understood as a conceptual mapping from the physical to non-physical concept or domain. Grady (1997) elaborated on this by proposing primary metaphor whose source concept is directly perceived through our senses, while target concept is a response to the sensorimotor input. Synesthetic metaphor seems to be an exception, since both source and target concepts belong to the sensory domain. This study investigates English and Japanese adjectives that are used for synesthetic metaphors of sound by analyzing the primary sense of each adjective and how it relates to the qualities of sound. Following Tyler and Evans (2003), I propose that the analysis of synesthetic metaphor requires a semantic network approach, in which pieces of converging linguistic and empirical evidence are put together.

Keywords: metaphors, semantic network approach, sound

1. Introduction

Research on metaphor has been one of the major pillars of the Cognitive Linguistics enterprise, which emerged in the 1980s (Lakoff 1987; Lakoff and Johnson 1980). Metaphor, which had been assigned to the realm of linguistic creativity, has been reanalyzed as cognitive phenomena in everyday life. Lakoff and Johnson (1999) posited that abstract concepts are structured by concrete concepts. Grady (1997) elaborated on this by proposing that a concept that arises in response to a certain sensorimotor input is conceptualized in terms of the original sensory concept that is directly perceived. However, there is another type – synesthetic metaphor – which involves conceptualizing one sensory concept in terms of another sensory concept. The fact that both source and target concepts are sensory makes it difficult to explain the unidirectionality of conceptual metaphor. Nevertheless, there seems

to be an asymmetry between the sensory concepts that tend to be assigned as the source or the target.

The focus of present study is synesthetic metaphors of sound, which link the auditory domain to other sensory domains. More specifically, the study analyzes the relationship between the qualities of sounds and the adjectives used for describing them in English and Japanese. First, the motivations of synesthetic metaphors are analyzed based on definitions in dictionaries and a questionnaire survey. Next, the English and Japanese adjectives in synesthetic metaphors are compared using corpus data. Then, an experiment is carried out to investigate the relationship between the qualities of sounds and adjectives across languages and different types of sounds. It concludes with a proposal that synesthetic metaphor should be analyzed using a semantic network approach, following Tyler and Evans (2003).

2. Metaphor

2.1 Conceptual metaphor theory

In conceptual metaphor theory, metaphor is understood as a conceptual mapping from one concept or domain to another. The former is called the source, and the latter is called the target. The present study analyzes metaphors based on three key concepts: motivation, directionality, and universality. Motivation explains how the source and the target concepts are associated. Directionality concerns the question of whether the mapping is unidirectional or bidirectional. Universality asks if the metaphor is universal or culture-specific.

Grady (1997) developed the theory of primary metaphor, which provided a unified analysis of motivation for many conventionalized metaphors. Primary metaphor is an association between two concepts, as a result of perceiving two phenomena occurring together frequently. The primary metaphor *MORE IS UP* is motivated by the frequent co-occurrence of increase in quantity and vertical elevation, which is exemplified by pouring water into a glass or stacking books. In primary metaphors, “image content” which is captured by sensorimotor experience is mapped onto “response content” which is a cognitive response to the sensory stimulus (Grady 1997). Tyler and Evans (2003) support the notions of image content and response content through an in-depth analysis of English prepositions.

Furthermore, Grady (1999) categorized metaphors into two types based on their motivation: “correlation” and “resemblance”. Correlation refers to co-occurrence of two events or experiences in the physical world, and resemblance refers to similarities between two events, entities, or experiences. Primary metaphors are by definition, correlation metaphors, being the sole member of the category. On the

other hand, resemblance metaphor encompasses a wide variety of metaphors whose motivation is the perception of resemblance between the source and target concepts based on perception and representational schemas. Based on the “resemblance hypothesis” (p. 88), image metaphor as well as a more culturally-based metaphor belongs to this category.

The above typology is also useful in determining the directionality of the mapping. The metaphorical mapping in correlation metaphor is unidirectional, since the source is a sensorimotor concept, whereas the target is a cognitive response to sensation. In contrast, resemblance metaphor does not seem to have a clear constraint with regards to the nature of source and target concepts. Its motivation being a salient shared feature enables the mapping to either direction (Grady 1999). Nevertheless, there is a functional difference between, for instance, personification (e.g., This car is *dead*) and a person perceived as a machine (e.g., The pitcher *ran out of gas*).

As for universality, primary metaphors are good candidates for universal metaphors, since they arise from physical experiences. Johnson’s (1999) conflation hypothesis posits that children acquire different meanings of words through correlation. For example, the word *see* refers only to visual perception at first, but as the meaning of “understand” repeatedly occurs together with *see*, the visual and non-visual meanings are conflated until the two meanings are distinguished later in development. On the other hand, resemblance metaphor seems to be culture-specific, since which two concepts get associated is strongly influenced by culture and society. A classic example, “Achilles is a lion” is based on the metaphor BRAVE PEOPLE ARE SMALL LIONS, which maps culturally perceived attributes of lions onto those of humans (Grady 1999). There are various other candidates for “brave” animals in other cultures.

2.2 Synesthetic metaphor

One type of metaphor whose motivation has not been clearly categorized as correlation or resemblance is synesthetic metaphor, which is an association between two concepts in different sensory domains. For example, “cold light” is a mapping from temperature in the tactile domain to light in the visual domain. Although the source and target are apparent, it is not clear how the two concepts became associated.

Previous studies have observed general tendencies in the directionality of the mapping. Ullmann (1945, 1963 [1951]) analyzed synesthetic metaphors in poetry, examining poems by 11 Romanticists of the 19th century in Britain, France, and the U.S. The results showed that the most frequent source is the tactile domain, while the most frequent target is the auditory domain. This means that the mapping

from the tactile concept to the auditory concept is frequent compared to mapping in the opposite direction.

A similar tendency was observed in diachronic data. Williams (1976) analyzed adjectives with meanings in multiple sensory domains based on dictionaries. In addition to the five senses, dimension was included. He generalized that the semantic shift from one sensory meaning to another follows the order shown in Figure 1:

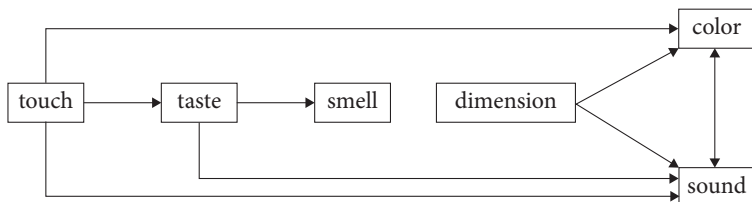


Figure 1. Order of synesthetic transfer

In both synchronic and diachronic data, the tactile sense is considered to be the original sense, whereas the auditory sense is derived. Similar tendencies have been observed in other studies taking the cognitive approach (e.g. Shen 1997 on Hebrew, Yu 2003 on Chinese).

Although researchers have sought to explain the motivation of synesthetic metaphors, their claims are at the level of speculation. Taylor (2003 [1989]) refers to synesthetic metaphors and rejects the idea that they are motivated by metonymy as some posit. For example, “loud color” is not motivated by a certain color being related to a loud sound. He also points out that “high notes” are not based on their higher frequency, since human beings do not perceive sounds as machines do. However, he does not give an alternative explanation. On the other hand, Barcelona (2000) argues for the metonymical basis of synesthetic metaphors. According to his analysis, the expression, “loud color” is motivated by the types of effects on perceivers. In the auditory domain, it is a deviant sound that produces a great impact, while in the visual domain, it is a color that stands out and attracts attention. Nevertheless, it is an over-stretched interpretation because metonymy typically involves an asymmetry between two entities: a salient part represents the whole (e.g. the head representing a person). The comparison of effects in two sensory domains are better understood in terms of metaphor than metonymy, since the two stimuli are perceived as “similar” rather than perceived as one representing the other.

In some psychological studies, comprehension of metaphor is analyzed as a categorization process. Glucksberg (2001) argues that nominal metaphors are understood by postulating a superordinate category to which both the source and target concepts belong. Sakamoto and Utsumi (2014) posit that in processing synesthetic adjectives, a superordinate category exemplified by the source concept is first

evoked, and then an appropriate meaning is chosen based on the noun being modified (e.g. sound/voice). Considering the aforementioned example, “loud color”, the things that are loud are evoked first (e.g. loud sound), and then a corresponding meaning (e.g. unpleasantly bright or too strong) is applied to “loud” color.

Previous studies have analyzed the tendencies of the conceptual mappings between different sensory domains. According to the synchronic study in literature and the diachronic study in historical linguistics, the meanings in the auditory domain are frequently derived from other senses. In Cognitive Linguistics and other related disciplines, the reasons and processes for conceptual mapping have been discussed, but the motivations for synesthetic metaphors have not been analyzed in detail. In the next section, an analysis of motivations for metaphors in music is presented.

2.3 Synesthetic metaphor of sound: PITCH IS VERTICAL SCALE

Analyzing the physical motivations of synesthetic metaphors requires an understanding of how associations arise at the perceptual or cognitive level, and whether these associations are intersubjective. There seem to be no previous studies devoted to synesthetic metaphors of sound, with the exception of the metaphor PITCH IS VERTICAL SCALE in music theory, which is a conceptual mapping from the spatial domain to the auditory domain. Although synesthetic metaphors are usually considered mappings among the five senses, the current study includes spatial domain for source and target concepts, as Williams (1976) included dimension in his diachronic analysis.

Cox (1999) gives a detailed account of the conceptual mapping PITCH IS VERTICAL SCALE. In English, the words *high* and *low* are used to describe the degree of pitch, in which spatial notions are applied to auditory concepts. He suggests ten physical sources for musical verticality as shown in Table 1:

Table 1. Sources for musical verticality (based on Cox 1999, Figure 1-1)

-
- (1) verticality in notation
 - (2) vocal verticality (head voice and chest voice)
 - (3) verticality in the propagation of sounds
 - (4) “higher” frequency of high notes
 - (5) “higher” perceived loudness levels of high notes
 - (6) “higher” quantity of air in high notes
 - (7) “higher” magnitude of effort in high notes
 - (8) “higher” degree of tension in high notes
 - (9) “high” emotional intensity
 - (10) “higher” state-locations
-

The ten sources are based on “acoustics, psychoacoustics, the experiences of singing and playing wind instruments, emotion, and the metaphoric state-locations of tones” (Cox 1999: 46). The sources in (1), (2), and (3) are literal sources, meaning that the notion of spatial verticality resides in both the source and target concepts. For all the other sources, the verticality in the source domain is metaphorical. For example, “vocal verticality” in (2) associates pitch with the position of acoustic vibration in the human body. On the other hand, “‘higher’ quantity of air in high notes” in (6) associates pitch with verticality via the metaphor *MORE IS UP*, referring to the fact that more air is required to produce a higher pitched voice.

As Cox (1999) admits, the ten sources are not all motivations of the mapping, as some merely reflect the already existing conceptual mapping. For instance, “verticality in notation” in (2) emerged after the metaphor *PITCH IS VERTICAL SCALE* became conventionalized. Nevertheless, the ten sources converge and reinforce the conceptual mapping, establishing the physical basis of musical verticality. The present study adopts the above approach in analyzing multiple motivations for each synesthetic metaphor.

2.4 Research questions

To investigate synesthetic metaphors of sound, the present study analyzes English and Japanese adjectives used in synesthetic metaphorical expressions to describe sounds (synesthetic adjectives, henceforth) using multiple means of investigation. First, the motivations for synesthetic metaphors are analyzed through a review of dictionary meanings and a questionnaire survey (Study I). Then, these motivations are used to analyze the actual usages of synesthetic metaphorical expressions extracted from corpus data in English and Japanese (Study II). An experiment is conducted to examine the relationship between the synesthetic adjectives and the auditory concepts represented, and the results are compared between two variables: language (English, Japanese), and sound types (environmental, music, speech) (Study III).

The research questions for each study are presented below:

Study I. An analysis of motivations for synesthetic metaphors of sound based on dictionary definitions and questionnaire responses

1. Which adjectives are used to represent synesthetic metaphors of sound?
2. What are the motivations for synesthetic metaphors of sound?

Study II. Corpus analysis to investigate the use of synesthetic adjectives

1. How are synesthetic adjectives that express sound qualities used?
2. What are the similarities and differences between synesthetic adjectives in English and Japanese?

Study III. Experiment for investigating the relationships between sound qualities and synesthetic adjectives

1. What are the relationships between synesthetic adjectives and sound qualities?
2. What are the relationships among synesthetic adjectives?
 - a. Are there differences between English and Japanese speakers?
 - b. Are there differences among environmental sounds, music, and speech sounds?

Each study is summarized separately, followed by discussions regarding the research questions (see Takada (2005) for a complete report of each study).

3. Study I: An analysis of motivations for synesthetic metaphors of sound based on dictionary definitions and questionnaire responses

3.1 Synesthetic adjectives

Synesthetic adjectives were selected and analyzed based on a review of definitions in dictionaries and a questionnaire survey. First, synesthetic adjectives were selected using dictionaries, considering both synchronic and diachronic meanings to determine the definitions.¹ The criteria for selection was as follows: (1) the adjectives are conventionally used to modify sounds, and (2) native speakers could identify the meanings in the auditory domain. The result is a total of twenty adjectives, which comprise ten pairs of antonyms. Next, interpretations of the synesthetic adjectives were collected from four linguistics researchers whose native language is English in the form of a questionnaire. The task was to describe the meanings of each of the twenty adjectives when modifying the words *sound* and *voice* (e.g. “bright sound”, “dark voice”). Corresponding adjectives in Japanese were selected based on dictionaries.²

Table 2 shows the synesthetic adjectives analyzed in the current study. The sensory domains of the source concepts include: dimension (*high/low*, *deep/shallow*, *big/small*, *thick/thin*), touch (*sharp/dull*, *hard/soft*, *smooth/rough*), kinesthetic (*heavy/light*), and vision (*bright/dark*, *clear/muddy*).

1. For the definitions of each synesthetic adjective the online version of Merriam-Webster (2009) was used since it provided detailed definitions in the auditory domain. For the etymology and earlier meanings, Buck (1998 [1949]) provided a reference.

2. The synesthetic adjectives in Japanese that correspond to the twenty English adjectives were selected based on both the monolingual (Japanese-Japanese) (Shin-meikai 1972) and bilingual (English-Japanese) (Matsuda 1984) dictionaries.

Table 2. List of synesthetic adjectives investigated

English			Japanese				
1.	high	11.	bright	1.	takai	11.	akarui
2.	low	12.	dark	2.	hikui	12.	kurai
3.	deep	13.	clear	3.	fukai	13.	sunda
4.	shallow	14.	muddy	4.	asai	14.	nigotta
5.	big	15.	hard	5.	ookii	15.	katai
6.	small	16.	soft	6.	tiisai	16.	yawarakai
7.	thick	17.	smooth	7.	futoi	17.	namerakana
8.	thin	18.	rough	8.	hosoi	18.	arai
9.	sharp	19.	heavy	9.	surudo	19.	omoi
10.	high	20.	bright	10.	takai	20.	akarui

3.2 Motivations for the synesthetic metaphors of sound

Motivations were analyzed for each synesthetic metaphor using a modified version of correlation and resemblance by Grady (1999). Although the original typology assumed complementary distribution of correlation and resemblance, a close examination of synesthetic metaphors of sound revealed that there could be two types of motivation for the same metaphor. Below are the original definitions of correlation and resemblance by Grady (1999) (Table 3) and the definitions for the current study (Table 4, modification in italics).

Table 3. Definitions of correlation and resemblance (based on Grady 1999)

Correlation	frequent co-occurrence of two distinct aspects or dimensions of a single event or experience
Resemblance	perceived similarities between two distinct entities, events, or experiences

Table 4. Definitions of correlation and resemblance for synesthetic metaphors

Correlation	frequent co-occurrence of two distinct aspects or dimensions <i>of a single sensory phenomenon perceived in different sensory domains</i>
Resemblance	perceived similarities between two distinct entities, events, or experiences <i>in separate sensory phenomena perceived in different sensory domains</i>

By applying the above definitions, the motivations for synesthetic metaphors of sound can be categorized into correlation (C) or resemblance (R) as shown in Table 5:

Table 5. Motivations for synesthetic metaphors of sound*

Adjective	Target concepts	Possible motivations	
		Type	Descriptions
high	high frequency	C	the amount of energy (cause) and MORE IS UP
low	low frequency, low amplitude	C	the length of and strength of vocal cords (cause/effect) and MORE IS UP
		C	upper or lower parts of body that resonate (effect) (e.g. <i>high</i> : head, <i>low</i> : chest)
		C	height of sound propagation (effect)
		C	level of impact (effect) (<i>low</i> also used for low volume)
		R	saliency or figure-ground relationship (i.e. perceiving high-pitched sounds as more salient than low-pitched sounds, which is analogous to a higher position being more salient than a lower position in physical space)
deep	low frequency, resonant	C	the amount of air (cause)
shallow	weak, less energy, not full	C	depth of body parts that resonate (effect) (e.g. deep: chest, shallow: throat)
		C	resonance (effect) related to depth or space
big small	loud, full and rich, multi-layered	C	the size of sound source (cause)
		C	the amount of energy (cause)
		C	the level of impact (effect)
thick thin	low frequency, noisy, garbled	C	the amount of air (cause)
		R	the amount of noise associated with viscosity (i.e. perceiving noise as a hindrance to capturing the main sound, which is analogous to the impure substance in fluid)
sharp dull	high frequency, sudden, intense, staccato, piercing	C	directness of impact (effect)
		R	response to stimulation associated with pain (i.e. The sense of hearing a “sharp sound” evokes the sense of touching a sharp object.)
			low frequency, slow, throbbing, weak, monotonous
bright dark	high frequency, lively, more energy	R	acoustic energy associated with energy of light
	low frequency, slow, less energy		
clear muddy	pure, single note, easy to discern	R	ease of hearing associated with ease of seeing
	garbled, complex, difficult to discern		

* C: Correlation, R: Resemblance

(continued)

Table 5. (continued)

Adjective	Target concepts	Possible motivations	
		Type	Descriptions
hard	loud, sudden, harsh	C	hardness of sound source (cause)
soft	quiet, brings ease and comfort	C	level of impact (effect) (<i>soft</i> also used for quiet)
smooth	sustained pitch and volume, lyrical	R	consistency in sound, ease of listening associated with consistency in texture, ease of movement
rough	unsustained pitch and volume, raspy		
heavy	low frequency, deep,	C	the weight of sound source (cause)
light	monotonous, being	C	the amount of energy (cause)
	struck high frequency,	C	the height of sound propagation (effect)
	quiet, airy	C	associated with gravitation
		C	the vertical position of body parts that resonate (effect) (correlation of vertical position and gravitational force of weight in the source domain)
		C	the level of impact (effect)

* C: Correlation, R: Resemblance

The analysis shows that there are multiple motivations for many of the synesthetic metaphors of sound. These results are used to analyze the corpus data in the next section.

4. Study II: Corpus analysis to investigate the use of synesthetic adjectives

4.1 Methodology

A corpus analysis was carried out to observe the actual usages of synesthetic adjectives and analyze what sound qualities each adjective refers to. The sources for synesthetic metaphors were online databases of American and Japanese literary works. For English, 23 titles by 20 authors in *Project Gutenberg* (www.gutenberg.org) were used, and for Japanese, 81 titles by 39 authors in *Aozora Bunko* [blue-sky library] (www.aozora.gr.jp).³ The results of the corpus analysis were later used to select the sounds for the experiment.

3. In the Japanese corpus it is possible to search across all literary works, and thus, more examples could be found.

Examples of synesthetic adjectives were collected using two keywords in each search: one of the twenty adjectives (see Table 2) and one of the two nouns, *sound* or *voice* in English and *oto* or *koe* in Japanese (*sound* or *voice*, henceforth). Expressions with a synesthetic adjective and the noun *sound* or *voice* in the same sentence were extracted, including those that did not collocate as noun phrases. The corpus data comprise 173 examples (English *sound*: 26, Japanese *sound*: 52, English *voice*: 49, Japanese *voice*: 46). Each example was analyzed by interpreting the meaning of each adjective from the context. Due to limitations of space, the whole data set cannot be presented. An analysis of the adjective *sharp* is presented as a sample in Table 6:

Table 6. An analysis of English and Japanese synesthetic adjective *sharp* modifying *sound* or *voice*

	Adjective	Sound/Voice	Language	Sound source	Target concept
1	<i>sharp</i>	<i>sound</i>	English	horses' hoofs	high frequency, sudden, intense, staccato
2	<i>sharp</i>	<i>sound</i>	Japanese	bullet being flicked out	high frequency, sudden, intense, staccato
3	<i>sharp</i>	<i>sound</i>	Japanese	steam whistle echoing	high frequency, sudden, intense, staccato
4	<i>sharp</i>	<i>voice</i>	English	Joe crying/yelling	high frequency, intense
5	<i>sharp</i>	<i>voice</i>	Japanese	Mother	high frequency, sudden, intense
6	<i>sharp</i>	<i>voice</i>	Japanese	Servant	high frequency, sudden, intense

In the corpus data, the most frequent adjective was *low* ($N = 32$), and the least frequent were *shallow* and *smooth* ($N = 0$). As with the two least frequent adjectives, there were gaps in the data when certain adjectives could not be found with the word *sound* or *voice*. In such cases, the meanings of adjectives were determined by the definitions in dictionaries and the questionnaire survey in Study I. In the next section, the individual meanings of synesthetic adjectives in English and Japanese are discussed, followed by overall tendencies.

4.2 Individual meanings of synesthetic adjectives

<*high*, *low*>

The words *high* and *low* are commonly used for pitch in both English and Japanese, reflecting the conventionalized metaphor, PITCH IS VERTICAL SCALE. For example, “a *high*, shrill *sound*” of an unknown instrument (E: English) and sounds coming

from train, copper ball cracking, and a window being opened (J: Japanese). In English, *low* seems to highlight volume more than pitch, although they often coincide. The sound sources include: a person moving, footsteps, door lock, human purring, singing, murmuring, and laughter (E). On the other hand, in Japanese, *high* used for voice implies loudness, as in a woman repeating a word (J).

<deep, shallow>

The words *deep* and *shallow* also represent a vertical scale, although it is downward. The word *deep* in English is used for the sound of nature such as wind and a mountain slide (E), which suggests enormous power. There was no occurrence of *deep sound* in Japanese, and *deep voice* was used for male characters (J). Although there were no instances of *shallow* in English, there is a common expression “*shallow breathing*”, which suggests that *shallow voice* is weak. In Japanese, *shallow* occurred with *sound*, accompanied by onomatopoeia: “A *shallow sound* like “*paan*” occurred at the site” (J).

<big, small>

The words *big* and *small* are conventionalized terms for volume in Japanese, whereas “loud” and “soft” are used in English. The examples for *big sound* include: ocean waves, a door closing, a horse carriage, glass breaking, and stumbling over a bucket (J). *Big voice* was used for: a person raising his/her voice, singing, a child crying, and a crow croaking (J). There was no example for *big sound* in English, and *big voice* was used for a powerful male character (E). *Small sound* in Japanese referred to the sound of a radio, a child crying, and a string breaking (J), and *small voice* was used for talking and singing (J). *Small sound* in English was also used for voice: “uttered a *small sound* indicating nothing” (E), and *small voice* was accompanied with adjectives like “trembling” and “whining” (E).

<thick, thin>

The words *thick* and *thin* both express unclear and inarticulate sounds, which suggests that the source concept is viscosity (e.g. *thick liquid*). Based on dictionary definitions and the questionnaire survey, *thick* refers to low frequency, full, noisy, raspy, garbled, and acoustically complex, whereas *thin* refers to high frequency, airy, feeble, shrill, reedy, and lacking in resonance. *Thick sound* was not found in the English corpus, although in Japanese, it was used for the sound of an organ deflating and mountain streams (J). *Thick voice* was used to refer to garbled voice in both English and Japanese. *Thin sound* in both languages referred to weak sounds including a string instrument (E), crickets (E), and leaves trembling in the breeze (J). *Thin voice* expresses feminine qualities in both languages, referring to female (E, J) or a man’s “falsetto voice” (E).

<sharp, dull>

The words *sharp* and *dull* refer to stimulation by sounds, transferred from the sense of touch. *Sharp* indicates a sudden impact, whereas *dull* indicates a slow but lasting impact. The examples of *sharp sound* include horses' hoofs (E) and a bullet (J), and those of *sharp voice* include a man yelling (E), a mother calling her daughter (E), and a servant shouting (J). *Dull sound* in English was used for the grating sound of a door lock, the roar of a waterfall, and the clang of an old clock (E), and *dull voice*, for a voice of a man with less interest or emotion (E). There was no instance found for *dull sound* in Japanese, and *dull voice* refers to the sound of an echo in the woods, also described as similar to "a big contrabass sound" (J).

<bright, dark>

The words *bright* and *dark* indicate the amount of energy in acoustics, which is analogous to the energy from light. *Bright sound* was applied to a girl's laughter (E) and a hand drum that resonates (J), while *bright voice* was applied to a person apologizing with a rising intonation (E), singing (E), and a voice like that of an obedient child (J). Neither *dark sound* nor *dark voice* was found in the English corpus, and *dark sound* was not found in the Japanese corpus. *Dark voice* was used for an inmate who sounded "bitter" (J). While English *dark* has a positive meaning "possessing depth and richness" (Merriam-Webster 2009), Japanese *dark* has a negative connotation, similar to "gloomy" in the visual domain.

<clear, muddy>

The words *clear* and *muddy* refer to ease of hearing, which is associated with ease of seeing via resemblance. More specifically, *clear* indicates pure tone, and examples include: the time signal of a clock (E), voices of sisters (E), glass breaking (J), and the pronunciation of "Komakata" (a region in Japan) in haiku (J). In the last example, the character interprets the voiceless consonants [k] and [t] as resonating with a cuckoo singing (J). *Clear voice* was used for both male and female voices that are easily heard in both languages. *Muddy* was not found in English. In Japanese, *muddy sound* was used for an alarm bell, and an oboe sound described as "heavy and muddy" (J). *Muddy voice* was applied to a male voice (J) and the special vocalization used in Japanese traditional music (J).

<hard, soft>

The words *hard* and *soft* refer to sound qualities associated with hardness of the sound source as well as the impact on the hearer. *Soft* in English has a conventionalized meaning referring to low volume. There was no example of *hard sound* in English. Japanese examples include: hitting a hard object (dried fish), walking along the corridor of a mansion, and people's voices. In the last example, singing

and murmuring were associated with the hardness of iron (J). *Hard voice* was used in “a hard official voice” of a sergeant (E), and a male or female voice which sounds nervous or is denying something (J). *Soft sound* was ascribed to both vocal and non-vocal sounds: an animal moving (E), a silk kimono shuffling (J), a temple bell (J), and a female voice (J). *Soft voice* in English seems to focus on volume, being accompanied by “low” (E), whereas in Japanese, it seems to highlight timbre, as in the case of a man speaking in a *soft voice* that “does not match his fierce eyes” (J).

<smooth, rough>

The words *smooth* and *rough* refer to the consistency of sound, as it requires some sort of movement to feel smoothness in the tactile domain. *Smooth sound* could be found in neither the English nor Japanese corpus, but *smooth voice* in English was used to describe a man’s voice, accompanied by “suave, persuasive, and cool” (E). *Rough sound* was used for the expected sound of a sliding door (J), and the sound of a big flame flaring up suddenly, accompanied by the onomatopoeia “bott” (J). *Rough voice* was applied to male voices, such as slaves (E) and a government official who prosecuted a man in “a loud voice and rough manner” (J).

<heavy, light>

The words *heavy* and *light* indicate the amount of physical stress on an object or impact on the hearer, analogous to physical weight. *Heavy sound* was used for “the clang of the clock” along with “dull” and “monotonous” (E), stepping on pine leaves and branches in the woods (J), big raindrops hitting a slate roof (J), and sliding a gate door open (J). *Heavy voice* was used for male voices, being accompanied by “muddy” (J). *Light sound* was used for bird sounds (E), the sound of somebody approaching (E), the sound of a street lamp turning on (J), a fly moving (J), and a small child coming from afar (J). *Light voice* was not found in English, and in Japanese, it was used for a man uttering a word after a long silence (J).

4.3 Overall tendencies of synesthetic adjectives

Corpus analysis showed how synesthetic adjectives are used to express sound qualities in English and Japanese. The twenty adjectives in English and Japanese exhibited similar meanings and usages, as shown in the translations of Japanese examples that make sense in English. The analysis revealed the characteristics of the semantics of synesthetic adjectives, mainly four types: (1) reference to multiple acoustic properties (e.g. Japanese *high* for pitch and volume, English *soft* for volume and timbre), (2) homonymy of the adjective (e.g. English *light* for weight and color), (3) general and specific meanings (e.g. English *clear* for the ease of hearing and purity; English and Japanese *smooth* for consistency and timbre), and (4) connotation

(e.g. Japanese *dark* for ominous). It should be noted that the absence of occurrence in the corpus does not indicate the absence of concept. Thus, the conceptual and linguistic levels should be distinguished to discover the language-specific and universal aspects of synesthetic metaphors.

Most synesthetic adjectives exhibited semantic complexity, with implied meanings in addition to the salient meanings. For example, in both English and Japanese, *high* and *low* could be used to indicate not only pitch but loudness. In Japanese, the reference to volume with *high* is conventionalized as a compound adverb *kowa-dakani* [voice-high “with a high and loud voice”]. Such connotations of *high* and *low* may have arisen in the auditory domain, though it could have transferred from the original dimension sense. One could imagine a physical situation in which spatial height involves higher magnitude, such as a mountain being high.

Language has various resources to evoke the auditory image of sounds. Synesthetic adjectives were often accompanied by other linguistic expressions that provide additional information such as the sound source, context, manner, quality, and emotional reactions. A major characteristic of Japanese was the frequent use of onomatopoeia. Among 52 excerpts that include synesthetic adjectives and *sound*, 17 onomatopoeic expressions were found. Below are some examples (sound sources in parentheses): *low* and “*goto-goto*” (motor), *shallow* and “*paan*” (dynamite), *small* and “*chapuri-chapuri*” (small waves), contrasted with *big* and “*zaburi*” (big waves), *bright* and “*pon-pon*” (hand drums) contrasted with *gloomy* and “*po...po...po...*” (hand drums), *clear* and “*kachan*” (glass), and *muddy* and “*jiriin*” (bell). English also had imitative or mimetic words with similar functions: *snick* [click], *low*, *purring*; *low*, *murmuring*; *dull roar*, *babble*; *dull*, *heavy*, *monotonous clang*; and *chirp*. The origins of these words in dictionaries suggest that they originated as onomatopoeic words and later became nouns, verbs, or adjectives.

Apart from adjectives, the usages of *sound* and *voice* had an overlap in both languages. The word *sound* could be used in two ways: in contrast with the human voice or as a superordinate category for all acoustic phenomena including the voice. When the human voice is referred to by *sound*, the words are inarticulate or not pronounced as in the cases of murmur, laughter, and singing. In Japanese, the word *voice* can also refer to sounds made by animals. Music was expressed by both *sound* and *voice*, serving as a mediator between environmental sound and the human voice, possessing both symbolic and iconic aspects (Truax 1984; van Leeuwen 1999).

Corpus analysis has shed light on the similarities and differences between English and Japanese synesthetic metaphors of sound. The primary role of synesthetic metaphors seemed to be the evocation of images and qualities of sound through concepts in other sensory domains. Synesthetic adjectives refer to permanent or temporary qualities of sound, which can be interpreted in multiple ways

depending on the context. A comparison of English and Japanese shows that many auditory concepts are shared, and the differences are linguistic in the extent to which the usages are conventionalized. The next section reviews the final experiment that focused on the relationship between auditory concepts and linguistic expressions.

5. Study III: Experiment to investigate the relationships between sound qualities and synesthetic adjectives

5.1 Methodology

To investigate how sounds were conceptualized, an experiment was conducted using three types of sounds: environmental sound, music, and speech. The specific purposes of the experiment were to discover the relationships between synesthetic adjectives and sound qualities, and the relationships among synesthetic adjectives. The participants listened to segments of sounds, each representing a specific sound quality, and chose adjectives that matched them. These results were compared between languages – English and Japanese – and across sound types – environmental sound, speech, and music.

The participants were 78 adult native speakers of English and Japanese (39 for each language) who lived in the US at the time. They were randomly assigned to one of the three groups in each language for the following purposes: (1) to counter-balance the order of sound types presented, (2) to investigate the relationship between the sound types and responses, and (3) to minimize the possible effect of individual differences among participants.⁴

The sound segments consisted of twenty sound qualities assigned to twenty adjectives. Three types of sounds were prepared for each sound quality, resulting in a total of 60 sound segments. Selection of sound segments was based on definitions in dictionaries, the questionnaire, and the descriptions of sounds in the corpus.⁵ To distinguish the names of sound qualities from the synesthetic adjectives, the former is indicated by quotation marks, and the latter is italicized (Quotation marks

4. In the actual experiment there was an additional description task, which is not reviewed in this chapter.

5. Environmental sounds were excerpts from sound-effect CDs created by the BBC. Speech sounds were extracted from foreign films available in the US. As for music, an instrument was assigned to each synesthetic adjective (e.g. “high”: soprano recorder), and a musical segment that features each instrument was extracted. The choice of music was chosen after consultation with experts (a musicology professor and professional musicians).

are omitted in the tables and figures). Table 7 shows the three sound types for the sound qualities, “high” and “low”.

Table 7. Sound segments selected for “high” and “low”

Type	high	low
Environmental	car horn	motor hum
Music	sopranino recorder	bassoon
Speech	girl	woman

The experiment consisted of two tasks, which elicited multiple-choice responses: (1) a baseline task and (2) the main task (see Appendix A). In the first task, the participants were asked to choose one adjective from a set of antonyms, and in the second task, the participants were asked to choose as many adjectives as possible.

Each question in the two tasks had expected responses. For the baseline task, an expected response would be a synesthetic adjective to which the sound quality was assigned. For example, an expected response for the sound segment “car horn” would be *high*. For the main task, it was hypothesized that the synesthetic adjectives in the same conceptual category would be selected together (see Table 8). The conceptual categories are based on definitions and previous research in psychology (e.g. Marks 1982; Osgood, et al. 1957). Thus, in the main task, one adjective (the same as the baseline task) and the adjectives in the same conceptual category were the expected answers. For instance, the expected answers for “high” would be *high* and nine other adjectives in the Conceptual category (A).

Table 8. Conceptual categories of adjectives (A) and (B)

Conceptual category	(A)	high	shallow	small	thin	sharp
		bright	clear	soft	smooth	light
	(B)	low	deep	big	thick	dull
		dark	muddy	hard	rough	heavy

For both the baseline and main tasks, a *t*-test was used to compare the frequencies of the expected responses from the English and Japanese speakers for different sound types. Additionally, for the main task, correlation analysis was conducted to observe which adjectives were selected together. In the next section, the frequencies of the expected responses and the results of *t*-test and correlation analysis are presented, followed by discussion.

5.2 Results and discussion

5.2.1 *Frequencies of expected response and t-test*

Comparing the frequencies of the expected responses across sound types, music was the highest in the baseline task (see Table 9). The results of the *t*-test showed that there was no significant difference between the two languages. As for individual sound qualities, the majority had expected responses, though there were five cases whose frequencies did not reach 50%: “thin” for English, and “shallow”, “thin”, “thick”, and “dull” for Japanese (see Table 10).

Table 9. Mean for expected responses and independent samples *t*-tests by sound type and language (baseline task)

Sound type/Language	English	Japanese	<i>t</i>
Environmental	13.92 (69.62%)	12.23 (61.15%)	1.82
Music	15.23 (76.15%)	14.62 (73.08%)	0.49
Speech	14.15 (70.77%)	13.23 (66.15%)	0.71

Table 10. Mean for expected responses by sound quality (baseline task)

Sound quality	E	J	Sound quality	E	J
high	92.31%	100.00%	low	87.18%	84.62%
shallow	58.97%	48.72%	deep	76.92%	58.97%
small	84.62%	51.28%	big	89.74%	92.31%
thin	33.33%	41.03%	thick	53.85%	35.90%
sharp	69.23%	58.97%	dull	61.54%	35.90%
bright	71.79%	61.54%	dark	79.49%	82.05%
clear	69.23%	61.54%	muddy	53.85%	69.23%
soft	82.05%	58.97%	hard	71.79%	82.05%
smooth	79.49%	79.49%	rough	61.54%	69.23%

The frequency of expected responses was the highest for music for the main task as well, gaining over 60% for both languages and all sound types (see Table 11). Comparing English and Japanese results separately for conceptual categories, the mean for expected responses in English for music in Conceptual category (A) has the highest rate (over 80%), and speech for Japanese in (A) has the lowest rate (under 60%). The result of the *t*-test showed a significant difference between English and Japanese for Conceptual category (B) in speech, with the frequency of the expected response lower for English speakers (see Table 12). The majority of individual sound qualities had expected answers, while those with frequencies less than 50% were: “shallow”, “thin”, “thick”, and “dull” in both languages, and additionally, “small” and “soft” in Japanese (see Table 13).

Table 11. Mean for expected responses by sound type and language (main task)

Sound type/Language	English	Japanese
Environmental	66.98%	67.20%
Music	74.64%	74.89%
Speech	63.34%	67.29%

Table 12. Mean and independent sample *t*-tests for expected responses by sound type and language for Conceptual categories (A) and (B)

Sound type	Conceptual category	English	Japanese	<i>t</i>
Environmental	(A)	64.75%	67.90%	-1.18
	(B)	69.21%	66.49%	0.71
Music	(A)	80.96%	77.61%	0.90
	(B)	68.31%	72.16%	-0.92
Speech	(A)	61.07%	58.93%	0.53
	(B)	65.62%	75.65%	-4.73**

$df = 24$

** sig. $p \leq 0.01$ (2-tailed)

Table 13. Mean for expected responses by sound quality (main task)

Sound quality	E	J	Sound quality	E	J
high	89.74%	89.74%	low	79.49%	87.18%
shallow	30.77%	20.51%	deep	74.36%	56.41%
small	64.10%	43.59%	big	66.67%	74.36%
thin	12.82%	25.64%	thick	38.46%	35.90%
sharp	61.54%	51.28%	dull	38.46%	41.03%
bright	66.67%	56.41%	dark	64.10%	66.67%
clear	79.49%	66.67%	muddy	43.59%	53.85%
soft	56.41%	46.15%	hard	61.54%	79.49%
smooth	76.92%	66.67%	rough	58.97%	58.97%
light	69.23%	66.67%	heavy	66.67%	66.67%

5.2.2 Correlation analysis

To investigate the strength of the association between individual adjectives, correlation analysis was carried out. Pearson correlation tests were conducted between all the possible pairs of twenty adjectives for each language (English, Japanese) and sound type (environmental, music, speech), generating 6 correlation matrices. Table 14 shows an excerpt from the matrix.

Table 14. Excerpt from matrix for correlation between adjectives in two conceptual categories (A) and (B) for environmental sounds for English speakers

Category	(A)		(B)	
	high	light	low	heavy
high	–			
light	0.32*	–		
low	–0.38*	–0.37*	–	
heavy	–0.31*	–0.52*	0.38*	–

* sig. $p \leq 0.05$ (2-tailed)

The adjective pairs ($n = 190$) were examined in terms of frequencies of positive and negative correlation. Based on the conceptual categories, 90 pairs were expected to have a positive correlation (A-A, B-B pairs), and 100 pairs were expected to have a negative correlation (A-B pairs). Each pair of adjectives will have a correlation coefficient that falls into: expected correlation, unexpected correlation, or no correlation.

The results showed that the majority of adjective pairs had expected types of correlation: a positive correlation within the same conceptual category, and a negative correlation between different conceptual categories (see Table 15). Although there were cases of no correlation and unexpected correlation, expected correlation was observed in over 70% of the cases for environmental sounds and music. However, the expected correlation was lower for speech sounds, in both English and Japanese.

Table 15. Mean for expected and unexpected correlations by sound type and language ($N = 190$)

Sound type	Language	Correlation*				No correlation	
		Expected	Unexpected				
Environmental	English	140	73.68%	10	5.26%	40	21.05%
	Japanese	137	72.11%	6	3.16%	47	24.74%
Music	English	133	70.00%	2	1.05%	55	28.95%
	Japanese	138	72.63%	5	2.63%	47	24.74%
Speech	English	110	57.89%	9	4.74%	71	37.37%
	Japanese	118	62.11%	7	3.68%	65	34.21%

* sig. $p \leq 0.05$ (2-tailed)

The adjective pairs that exhibited unexpected positive correlation and unexpected negative correlation are shown in Tables 16 and 17, respectively. Among the pairs of adjectives with unexpected positive correlation, *sharp* and *hard* are the most

frequent, observed in all 6 cases of sound types and languages, followed by *sharp* and *rough*, and *high* and *hard*. There were fewer cases of unexpected negative correlation. The pair, *sharp* and *soft*, was the most frequent with 4 cases, while no unexpected cases were observed in music and speech for English. The frequencies of unexpected positive and negative correlation are summarized in Table 18.

Table 16. Pairs of adjectives with unexpected positive correlation by sound type and language

Sound type	English	Japanese
Environmental	high-hard, sharp-hard, bright-hard, soft-dull, soft-muddy, smooth-dull	high-hard, sharp-hard, sharp-big, sharp-rough
Music	sharp-hard, sharp-rough	high-hard, small-dark, sharp-hard, sharp-rough
Speech	high-hard, small-dark, thin-hard, sharp-big, sharp-hard, sharp-rough, clear-hard, soft-low, soft-dull	high-big, small-low, small-dark, sharp-big, sharp-hard, sharp-rough

Table 17. Pairs of adjectives with unexpected negative correlation by sound type and language

Sound type	English	Japanese
Environmental	high-soft, sharp-soft, low-hard, dull-hard	sharp-soft, dull-hard
Music	–	sharp-soft
Speech	–	sharp-soft

Table 18. Pairs of adjectives with unexpected correlation and their frequencies*

Types of correlation	Adjectives (frequency)
Unexpected positive	sharp-hard (6), sharp-rough (5), high-hard (4), small-dark (3), sharp-big (3), soft-dull (2), high-big, small-low, thin-hard, bright-hard, clear-hard, soft-low, soft-muddy, smooth-dull
Unexpected negative	sharp-soft (4), dull-hard (2), high-soft, low-hard

* Number in parentheses indicates frequency. No number indicates a single occurrence.

5.2.3 Discussion

In both English and Japanese, music had the highest frequency of expected responses, which suggests that the meanings of synesthetic adjectives are well-established and intersubjective. Possible explanations are that instrumental sounds in classical

music are closer to pure tones than other types of sounds, and musical sounds carry fewer indexical and symbolic meanings. On the other hand, environmental sounds and speech have complex tones, so it may be difficult to match the sound qualities with synesthetic adjectives. Moreover, the fact that these two types of sounds often have immediate consequences for human lives makes it difficult to focus on sound qualities. In a separate open-ended task, in response to environmental sounds, many responses referred to the sound source such as a car horn, a horse, and hail. In response to speech sounds, interpretations of the utterances were frequent, even though the participants did not comprehend those languages. Likewise, in the multiple-choice tasks, the attention of listeners may have been directed towards the sound source or the meaning of utterance, rather than the sound quality.

The majority of the individual sound qualities had expected answers, while four of them had low frequencies of expected responses in both English and Japanese: *shallow*, *thin*, *thick*, and *dull*. Both linguistic and cognitive reasons are possible. At the linguistic level, the adjectives are not conventionalized as modifying sounds, so they were seldom chosen as a response. One participant mentioned that the use of *thin* and *thick* for sound qualities did not sound familiar. The word *shallow* may also be less conventionalized. On the other hand, the use of *dull* was not so rare in the corpus. A cognitive reason for the participants' disagreement could be that the sound quality was not salient enough to be recognized. Although the selection of sound segments was based on multiple sources, the perception and cognition of sound qualities varies among individuals. Nevertheless, the absence of certain synesthetic adjectives in the corpus or failure to be chosen in the experiment does not mean that the synesthetic metaphors are non-existent. They are manifested in various other ways and not restricted to modifying the words *sound* and *voice*, or immediately referring to the sounds being heard.

As for the strength of association among adjectives, most pairs of adjectives had expected types of correlation. On the other hand, the cases of unexpected correlation indicate the need to modify the conceptual categorization. Synesthetic adjectives have multiple meanings, so each adjective does not always co-occur with the same set of adjectives. Sounds with complex tones may have seemingly contradictory qualities. For example, in response to the sound of a water-tight doorbell, two English speakers included both *bright* and *dark* in their choice of adjectives. The co-occurrence of adjectives needs to be analyzed more accurately to capture how different sound qualities relate to one another.

5.3 Summary

The experiment investigated which synesthetic metaphors were selected among the cross-linguistically available choices, influenced by both cognitive and linguistic factors. The baseline task tested one-to-one correspondence between a synesthetic adjective and a concept, and the results showed no significant difference. The main adjective task involved choosing multiple adjectives for each sound. A statistically significant result was observed in response to speech sounds: the frequency of expected responses was lower for English speakers than Japanese. In both tasks, music had the highest frequency of expected responses, which suggests that synesthetic metaphors may be more intersubjective and commonly used in response to music than in response to environmental sounds and speech. For correlation analysis, the adjectives were categorized into two conceptual categories, with the assumption that the adjective pairs in the same category would be chosen in response to each sound segment. The majority of adjective pairs had expected types of correlation, but several cases of unexpected correlation suggest the reconsideration of the conceptual categories.

Unlike previous psychological experiments, the present study used sounds that are similar to those heard in everyday life, which made it difficult to control the variables. Nevertheless, it allowed for a more natural response by the participants and more ecologically valid sampling. Even though the participants had no idea what types of sounds they would hear, they demonstrated remarkable human abilities to identify and describe newly encountered sounds, including foreign languages they had never heard. Although the adjective task required participants to assign synesthetic adjectives to different sound qualities, they did not seem to have any difficulty. In both the baseline and the main tasks, there were interactions between languages and across sound types, so that both language- and sound-specific tendencies were observed. Commonalities between English and Japanese speakers may reflect the nature of human conceptualization.

Although the results were not conclusive, they suggest some important implications for Cognitive Linguistics and other relevant disciplines. The choice of synesthetic adjectives was influenced by both cognition – the association of sound qualities and adjectives – and language – the range of meanings in adjectives.

6. Answers to research questions

In what follows, the research questions are re-introduced, followed by answers based on the results of each study.

Study I. An analysis of motivations for synesthetic metaphors of sound based on dictionary definitions and questionnaire responses

Questions

1. Which adjectives are used to represent synesthetic metaphors of sound?
2. What are the motivations for synesthetic metaphors of sound?

Answers

1. The twenty adjectives used in the study are conventionalized to a certain extent.
2. There are multiple possible motivations for each synesthetic metaphor of sound. Each motivation can be categorized into correlation or resemblance.

The current study investigated synesthetic metaphors by first analyzing their motivations. Twenty adjectives were determined as conventionalized based on their dictionary definitions and the results of a questionnaire. The typology of motivation was adapted from Grady (1999), and each motivation was categorized as either correlation or resemblance. All metaphors had multiple motivations, and some of them had both types of motivation.

Study II. Corpus analysis to investigate the use of synesthetic adjectives

Questions

1. How are synesthetic adjectives that express sound qualities used?
2. What are the similarities and differences between synesthetic adjectives in English and Japanese?

Answers

1. Most usages can be interpreted with the meanings based on Study 1.
2. Many usages are similar, but synesthetic adjectives in Japanese are frequently accompanied by onomatopoeia.

To examine the actual usages of synesthetic adjectives, corpus analysis was carried out using English and Japanese literary works. In most cases, the synesthetic expressions could be interpreted based on the meanings from the dictionary definitions and the questionnaire responses. English and Japanese adjectives were used with similar meanings, although there were differences in how conventionalized the metaphorical expressions were. Japanese adjectives were frequently accompanied by onomatopoeia.

Study III. Experiment to investigate the relationships between sound qualities and synesthetic adjectives

Questions

1. What are the relationships between synesthetic adjectives and sound qualities?

2. What are the relationships among synesthetic adjectives?
 - a. Are there differences between English and Japanese speakers?
 - b. Are there differences among environmental sounds, music, and speech sounds?

Answers

1. In the majority of cases, the relationships between synesthetic adjectives and sound qualities are as expected, with a synesthetic adjective assigned to a salient sound quality.
2. In the majority of cases, the synesthetic adjectives in the same conceptual category are correlated.
 - a. There was a significant difference in response to speech; English speakers had a lower frequency of expected responses.
 - b. Music had the highest frequency of expected responses.

The experiment was conducted to observe the relationships between synesthetic adjectives and auditory concepts, and the relationships among synesthetic adjectives. English and Japanese speakers chose synesthetic adjectives that matched the sound qualities of three different types of sounds – environmental sounds, music, and speech. The results showed that synesthetic adjectives were associated with the salient sound qualities as expected. The rate of expected responses was highest for music. There was a statistically significant difference between English and Japanese for speech sounds. As for the relationship among synesthetic adjectives, those in the same conceptual category correlated in general.

7. Conclusion

The objective of the current study was to investigate the conceptualization of sound in synesthetic metaphors. Based on dictionary definitions and questionnaire responses, the possible motivations for each synesthetic metaphor were analyzed. Corpus analysis was conducted to compare twenty synesthetic adjectives in English and Japanese, and determine the sound segments for the experiment. Due to limitations of time and resources, not all cases were found in both languages, but definitions in dictionaries confirmed the meanings of adjectives in the auditory domain. Overall, the English and Japanese counterparts have similar meanings and usages in the auditory domain. Some lexical differences revealed how the meaning and usage of synesthetic adjectives are conventionalized in individual languages.

Based on the experiment, English and Japanese speakers were generally similar in their choice of synesthetic metaphors in response to the sound segments. A statistically significant difference was observed in the frequency of adjectives

in the same conceptual category being chosen for speech sounds; it was lower for the English speakers. As for the correlation between adjectives, the majority of responses were as expected, but there were several cases of unexpected correlation, which suggests modification of the conceptual categories. Comparing the frequencies of expected responses among sound types, music reached the highest level of agreement, while environmental sound and speech had more variation among responses. This seems to reflect the cross-culturally shared nature of sound; musical sounds are more intersubjective in terms of sound quality than environmental sounds, which often include complex and aperiodic sounds, and speech, which is susceptible to contextual and emotional factors.

Further research is necessary to capture the polysemy of synesthetic adjectives and the relationships among them. For this purpose, the semantic network approach is adopted, following Tyler and Evans (2003). A combination of linguistic evidence and empirical evidence could unravel the semantics of each adjective as well as the semantic network of synesthetic adjectives. For instance, the adjective *sharp* can be analyzed in terms of how the meaning extended from the tactile sense to the auditory sense based on diachronic data. Then, the synchronic differences between *sharp* and the frequently co-occurring *high* can be analyzed through corpus analysis and experiments.

The conceptualization of sound and the means of expression are determined by perception, cognition, and language. For millions of years, the physiology of human auditory perception has developed as we have adapted to life on earth. Cognition shapes the way perceptual information is selected and expressed in words. Thus, language reflects the interface between perception and cognition.

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Corpora

- Project Gutenberg* (www.gutenberg.org)
- Aozora Bunko* [blue-sky library] (www.aozora.gr.jp)

Appendix A

Excerpt from the answer sheets for (1) the baseline task and (2) the main task

- (1) Choose the adjective that best describes the sound. You will have 5 seconds to choose the adjective.
 1. high low neither
- (2) Choose as many adjectives as possible that best describe the sound. You will have 20 seconds to choose the adjectives.
 1. high deep big thick sharp bright clear hard smooth heavy
low shallow small thin dull dark muddy soft rough light

Conceptual vs. inter-lexical polysemy

An LCCM theory approach

Vyvyyan Evans

In this chapter I consider two types of polysemy that have not received wide attention in the cognitive linguistics literature. First, I argue that polysemy can arise from the non-linguistic knowledge to which words facilitate access. This phenomenon I refer to as *conceptual polysemy*. I illustrate this with an analysis of the lexical item *book*. Moreover, polysemy also arises from different word forms, which, at least on first blush, appear to share a common semantic representation. This phenomenon I refer to as *inter-lexical polysemy*. I illustrate with a detailed case study involving an analysis of the prepositional forms *in* and *on*. I draw on the Theory of Lexical Concepts and Cognitive Models to account for these phenomena.

Keywords: polysemy, the Theory of Lexical Concepts and Cognitive Models

1. Introduction

The issue I address in this chapter relates, on the face of it, to two distinct types of polysemous phenomena. The first type concerns examples of the following kind, where a single lexical item – in this case *book* – obtains distinct readings in different contexts of use. For reasons to be explained below, I refer to this phenomenon as *conceptual polysemy*:

Phenomenon 1

- | | | |
|--------|------------------------------------|---------------------|
| (1) a. | That's a heavy book | 'tome' |
| b. | That antiquarian book is illegible | 'text' |
| c. | That's a boring book | 'level of interest' |
| d. | That's a long book | 'duration' |

In each of these examples, *book* means something slightly different. In (1a), *book* refers to the physical artifact, and the fact that as a physical artifact books can be heavy – this might be dubbed the 'tome' reading. In (1b), *book* again obtains

a reading that concerns the physical properties of books; but here, specifically, the reading relates to the physical text with which a reader engages – this might be dubbed the ‘text’ reading. In (1c) *book* is understood to refer to the activity of reading, and specifically the level of interest achieved by the reader – what we might think of as the ‘level of interest’ reading. And finally, in (1d), which again concerns the activity rather than the physical properties of the book, the reading concerns length of time taken to read the book – what might be dubbed a ‘duration’ reading. Collectively, these examples illustrate how an open-class lexical item can take on different interpretations in different linguistic contexts.

I refer to this phenomenon as conceptual polysemy as some analysts, (e.g. Evans 2009; Langacker 1987) have attributed this type of polysemy as arising in the following way: linguistic context can serve to differentially highlight different aspects of the non-linguistic or encyclopedic knowledge to which a word form facilitates access. The polysemy is made possible precisely because our knowledge representation for a book is not a monolithic structure, but consists of a complex array of interdependent components. For instance, Langacker (1987) terms polysemy such as this as being due to active zones: distinct facets of our conceptual representation for the physical artifact ‘book’ become active during language use, triggered by linguistic context. As such, context plays a role in modulating (Cruse 1986) exactly which parts of conceptual representation become activated during language understanding.

The second type of polysemous phenomenon concerns data of the following sort, where distinct lexical items, in this case prepositions, appear to have, at least on the face of it, broadly similar readings, a phenomenon we might term *inter-lexical polysemy*. In these examples, I am focusing on the English prepositions *in* and *on*:

Phenomenon 2

- | | | |
|--------|--|-----------|
| (2) a. | We are in love/shock/pain | ‘state’ |
| | Cf. We are in a room | ‘spatial’ |
| b. | We are on alert best behavior/look-out/the run | ‘state’ |
| | Cf. We are on the sand | ‘spatial’ |

In these examples, the prepositions *in* and *on* both appear to have a distinct ‘state’ sense – which contrasts with a spatial sense associated with each preposition. But while the ‘state’ senses of *in* and *on* are broadly similar, the referents, in the sense of the semantic arguments that can co-occur with each preposition, are markedly distinct, as we see from the following examples:

- | | | |
|--------|---|-----------------------------|
| (3) a. | *We are in alert/best behavior/look-out/the run | (intended meaning: ‘state’) |
| b. | *We are on love/shock/pain | (intended meaning: ‘state’) |

The examples in (3) demonstrate this: the range of semantic arguments that the ‘state’ senses *in* and *on* can take are in complementary distribution; the ‘state’ senses associated with *in* and *on* are not, in fact, identical.

In earlier work (Evans 2009, 2010, 2015a, c), the first work I am aware of concerning inter-lexical polysemy, I argued that this distinction arises from distinct sets of *parameters* associated with the ‘state’ senses of *in* and *on*. While I develop the notion of a parameter in some detail later in this chapter, briefly, a parameter is a schematic unit, or ‘atom’ of linguistic knowledge. The claim I defend below is that word senses are constituted of an assortment of parameters: atoms of schematic linguistic meaning that, collectively, give rise to a word’s *lexical concept*.

This construct of a lexical concept accounts, I argue, for the distinction observed in comparable senses across distinct lexical items: the phenomenon of inter-lexical polysemy. In contrast, the phenomenon of conceptual polysemy arises, I argue, from the non-linguistic knowledge to which lexical items facilitate access. Non-linguistic knowledge is constituted of what I refer to as *cognitive models*. And lexical concepts facilitate access to a set of cognitive models: a word’s semantic potential. While conceptual polysemy arises due to the nature and organization of non-linguistic knowledge, linguistic context nevertheless plays a role in guiding what sorts of non-linguistic knowledge are activated, in order to give rise to the requisite readings obtained, as evidenced by the examples in (1).

The two theoretical constructs – the lexical concept and the cognitive model – that I use to account for these two types of polysemy arise under the aegis of the *Theory of Lexical Concepts and Cognitive Models*, or LCCM Theory for short. (e.g. Evans 2006, 2009, 2010, 2013). This provides an account of lexical representation and compositional semantics: these two fundamental theoretical constructs provide the theory with its name. My overall objective in this chapter, and one facilitated by LCCM Theory, is to provide a unified account of contextual and inter-lexical polysemy, deploying the theoretical insights provided by LCCM Theory. The approach I develop is not ‘unified’ in the sense that these distinct phenomena can receive a single account. Rather, with a psychologically-appropriate account of language and its relationship with conceptual structure, these two distinct types of polysemy can be viewed as distinct, albeit predictable, symptoms of our universal meaning-making capacity.

Accordingly, my argument amounts to this: meaning construction involves conceptual representations of two qualitatively distinct types, inhering in two distinct systems: the linguistic and conceptual systems respectively (detailed arguments for the qualitative nature of these two systems are presented elsewhere, e.g. Evans 2009, 2015b, 2016). The representations that arise from the the linguistic system – lexical concepts – account for inter-lexical polysemy. In contrast, the representations that derive from the conceptual system – cognitive models – account for

conceptual polysemy. As LCCM Theory provides a joined-up account of the role of both conceptual linguistic and non-linguistic knowledge in meaning construction, this affords a unified account of these two distinct types of polysemy. Moreover, and more generally, the chapter makes the case for the distinct and differential role of linguistic and non-linguistic (sometimes referred to as encyclopedic) knowledge in accounting for (distinct types of) polysemy (see Evans and Green 2006).

The chapter is structured as follows. In Sections 2 and 3, I present the theoretical basis for the account of polysemy I provide later in the chapter. Section 2 is concerned with the distinction in the representational format of linguistic versus non-linguistic knowledge. And in Section 3, I situate that distinction in the framework of LCCM Theory. Sections 4 and 5 then deploy the theoretical constructs developed, in order to provide an analysis of conceptual polysemy (Section 4), and inter-lexical polysemy (Section 5). In Section 6 I draw conclusions, making the point that LCCM Theory provides a framework that enables a joined-up account of polysemy.

2. Parametric vs. analogue concepts

In this section and the next, I present the necessary theoretical context for the account of polysemy I present later in the chapter. In this section, I make the case for a qualitative distinction between conceptual structure on the one hand, and semantic structure on the other. Semantic structure is the representational format that inheres in the linguistic system, while conceptual structure is the representational format that sub-serves the conceptual system. I summarize, here, some of the reasons for thinking there is a principled distinction of this sort in human semantic representation, although for detailed discussion see Evans (2009, 2013: ch. 2, 2015b).

Research in cognitive science has definitively established that humans are not alone in possessing conceptual systems (see Evans 2014, and Hurford 2007 for overviews). A conceptual system, which serves as our repository for concepts, is essential for a wide array of tasks upon which basic mental function is contingent. These include categorization, learning, choice, wayfinding, and reasoning. Many non-human species have fairly sophisticated reasoning capabilities (see Hurford 2007 for a review).

However, while other species have a conceptual system, humans are the only species with language (Evans 2014). Moreover, language appears to be an evolutionary trait that is specific to the genus *Homo*, common to humans as well as extinct species of our genus (Levinson and Gray 2012). In previous work I have argued that as the human conceptual system must have preceded language in evolutionary

terms, it is plausible to suppose that language evolved in order to serve as an executive control system on the conceptual system (Evans 2009). Language harnesses representations in the conceptual system – which evolved for other purposes – in order to facilitate linguistically-mediated representation. For this to have happened, it stands to reason that representations in the linguistic system – semantic structure – is qualitatively distinct from representations in the conceptual system – conceptual structure. While representations, or concepts, in the conceptual system are rich in nature, deriving from sensory-motor and interoceptive experiences in which they are directly grounded, representations in the linguistic system are schematic or much sparser in terms of the perceptual detail that they encode (Evans 2009, 2013, 2015b).

From the present perspective, words are in fact cues that index or point to body-based states processed and stored by the brain (Evans 2009, 2013; Fischer and Zwaan 2008; Glenberg and Robertson 1999). To illustrate, consider the use of *red* in the following example sentences (adapted from Zwaan 2004):

- (4) a. The school teacher scrawled in red ink all over the pupil's homework book
- b. The red squirrel is in danger of extinction in the British Isles

In (4a), the use of *red* evokes a bright, vivid red. In (4b), a dun or brownish red is most likely evoked. This illustrates the following: The meaning of *red* is not, in any sense, there in the word – although I nuance this view below. Rather, words cue perceptual and interoceptive states stored in the conceptual system. And these body-based states are re-activated during language use. Put another way, the word form *red* gives rise to distinct re-activations, or more technically *simulations* for different hues of red. These simulations arise as a consequence of reactivating stored experience types in the conceptual system. These reactivated experiences we might refer to as *analogue concepts* – concepts that are directly grounded in the experiences that give rise to them. How then does semantic structure (in language) differ from this level of conceptual structure – which is to say, from analogue concepts?

To illustrate, I consider the use of the adjective *red*, and the noun *redness*, in the following examples, adapted from a skin care product advert:

- (5) a. Treat redness with Clinique urgent relief cream.
- b. Treat red skin with Clinique urgent relief cream.

Both words – *red* and *redness* – relate to the same perceptual state, presumably. But the words package – which is to say, serve to construe – the content in a different way, giving rise to distinct simulations. In the example in (5a), *redness* gives rise to an interpretation relating to a skin 'condition'. In the second, (5b), *red* refers more straightforwardly to an unwanted property of the skin.

The different interpretations arising from these sentences are not due to a different hue being indexed. Rather, the words – noun versus adjective – modulate the perceptual hue in a slightly different way, giving rise to distinct simulations: ‘skin condition’ versus ‘discoloration of skin’ interpretations. In other words, the grammatical distinction between *red* (adjective) and *redness* (noun) appears to relate to a semantic distinction between the notion of property versus thing. The words *red* and *redness*, while indexing the same (or similar) perceptual state, also encode schematic concepts: PROPERTY versus THING (cf. Langacker 2008).

But unlike the body-based perceptual state – the hue of red – which is analogue in nature, PROPERTY and THING are highly schematic notions. They are what I refer to as *parametric concepts*. Unlike the perceptual experience of redness, which comes to mind when we variously imagine a fire engine, a Royal Mail post box (ubiquitous in the UK), henna, fire, the Chinese flag, or superman’s cape, parametric concepts are not like veridical embodied experiences. There is nothing about the (parametric) concepts PROPERTY or THING that is akin to the perceptual experience of redness (an analogue concept). Parameters are abstracted from embodied (= perceptual *and* interoceptive) states, filtering out all points of difference to leave highly image schematic content: the parameter.¹ The word form *red* encodes the parameter PROPERTY, while *redness* encodes the parameter THING. This is another way of saying that *red* is an adjective – it describes a property of a thing – while *redness* is a noun – it describes a property that is objectified in some way, and established as being identifiable, in principle, in its own right, independent of other entities in world. Figure 1 captures the relationship between a word form, and its parametric and analogue concepts.

My claim, then, is this. There is a distinction between analogue concepts on the one hand, and parametric concepts on the other. The former relate to non-linguistic concept-types that, in evolutionary terms, had to precede the existence of language. Parametric concepts, on the other hand, constitute a species of concept that arose as a consequence of the emergence of language. They provide a level of schematic representation directly encoded by language: parametric concepts guide *how* analogue concepts are activated, and, consequently, *how* simulations are constructed in the service of linguistically-mediated meaning construction. For instance, the forms *red* and *redness* both index the same perceptual state(s). But they parcelate the conceptual content in a different way, giving rise to distinct simulations: *redness* = condition; *red* = (unwanted) property of skin. The schematic parametric concepts, which is to say, that part of meaning that is native to language, relates to

1. Cf. the related notion of image schema developed in the work of Johnson (1987).

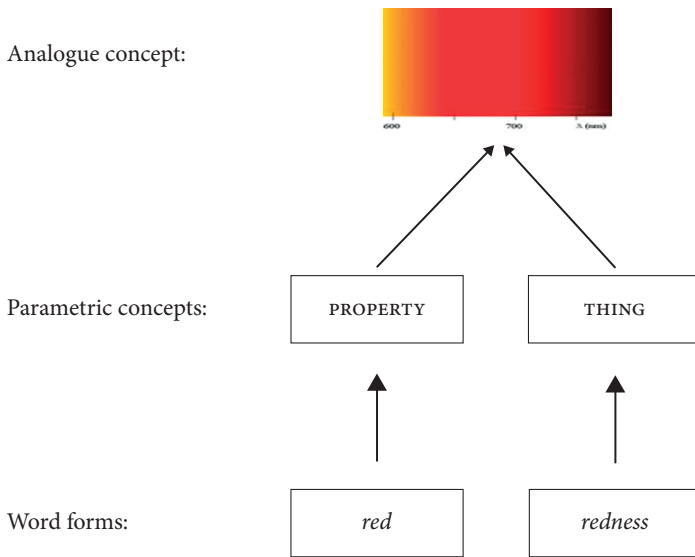


Figure 1. Analogue and parametric concepts

THING VERSUS PROPERTY. Parametric concepts are language-specific affordances, rather than affordances of the conceptual system.

Related proposals have been put forward by Bergen (2012), and Taylor and Zwaan (e.g. 2008, 2009). Taylor and Zwaan have captured this view in terms of what they dub the *Linguistic Focus Hypothesis*. They argue that during language understanding, motor representations are activated that are under the governance of linguistic constructions. These serve to differentially direct focus on the referential world. Bergen's findings are consonant with this hypothesis. In one set of behavioral experiments, Bergen (2012: 114) found that the grammatical subject, for instance, the use of *I* versus *you*, influences the perspective that a language user perceives a scene from. In the light of this discussion, what then is the function of language, and specifically, parametric concepts in meaning construction? My answer is that parametric concepts, encoded by language, guide the formation of complex simulations for purposes of linguistically-mediated communication. Parametric concepts guide the *parcellation* (focal adjustments, in Langacker's 2008 terms) of analogue (i.e. perceptual and interoceptive) concepts, in the construction of simulations. Parametric concepts encode schematic, which is to say, 'digitized' content. Content of this sort is abstracted from analogue, which is to say, perceptual and interoceptive representations. Hence, the parameters THING VERSUS PROPERTY are schemas drawn from embodied experience. Table 1 represents a summary of the distinction between parametric and analogue concepts.

Table 1. Parametric vs. analogue concepts

Parametric concepts	Analogue concepts
<ul style="list-style-type: none"> – Specific to language – Parametric (abstracted from embodied states, filtering out all points of difference to leave a highly schematic properties or parameters) – Underpin all linguistic units (where a linguistic unit is a form/parametric content unit of any complexity) 	<ul style="list-style-type: none"> – Specific to the conceptual system – Analogue (albeit attenuated) representations of body-based states – Arise directly from perceptual (conscious experience), and reside in the same neural system(s) as body-based states – Re-activated or simulated (by language, imagination, etc.) and can be combined to form complex and novel simulations

3. Towards an account of meaning construction

Having distinguished between analogue and parametric concepts, we now require an account of their respective contribution to the meaning construction process. This will facilitate my account of polysemy in subsequent sections.

3.1 LCCM Theory

In two book-length treatments (Evans 2009, 2013) I have developed a theoretical account of lexical representation and semantic composition dubbed the *Theory of Lexical Concepts and Cognitive Models*, or LCCM Theory for short. The claim at its heart is enshrined in the distinction between its two foundational theoretical constructs – the *lexical concept* and *cognitive model*: there is a qualitative distinction between the representations captured by these theoretical constructs. This distinction relates, ultimately, to the bifurcation between analogue versus parametric concepts, which respectively structure lexical concepts and cognitive models. While both types of knowledge are conceptual in nature, they are qualitatively distinct. Lexical concepts encompass knowledge that is more schematic in nature, and often associated with closed-class semantics. In contrast, cognitive models encode knowledge that is rich and contentful in nature, associated with encyclopedic dimensions of meaning evoked by open-class semantics (see also Talmy 2000 for a related perspective).

In keeping with the thrust of the argument developed in the previous section, LCCM Theory assumes the linguistic system emerged, in evolutionary terms, much later than the earlier conceptual system. The utility of a linguistic system, on my account, is that it provides an executive control mechanism facilitating the

deployment of conceptual representations in service of linguistically-mediated meaning construction. Hence, ‘semantic’ representations in the two systems are of a qualitatively distinct kind. I model semantic structure – the primary representational substrate of the linguistic system – in terms of the theoretical construct of the lexical concept. A lexical concept is a component of linguistic knowledge – the semantic pole of a *symbolic unit* (in Langacker’s 1987 terms) – that encodes a bundle of various types of highly schematic *linguistic content* (see Evans 2006, 2009). Hence, lexical concepts are parametric in nature.

While lexical concepts encode highly schematic linguistic content, a subset – those associated with open-class forms – are connected, and hence facilitate access, to the conceptual system. Lexical concepts of this type are termed *open-class lexical concepts*.² Such lexical concepts are typically associated with multiple areas in the conceptual system, referred to as *association areas*.

The range of association areas to which a given lexical concept facilitates access is termed an *access site*. LCCM Theory assumes that the access site for any given open-class lexical concept is unique. As lexical concepts facilitate access to a potentially large number of association areas in the conceptual system, any given open-class lexical concept, in principle, facilitates access to a large *semantic potential*. However, only a small subset of this semantic potential is typically activated in *interpretation* of a given utterance.

In LCCM Theory, *conceptual structure* – the semantic representational substrate of the conceptual system – is modeled by the theoretical construct of the cognitive model. A cognitive model is a coherent body of multimodal knowledge directly grounded in the brain’s modal systems, and derives from the full range of experience types processed by the brain including sensory-motor experience, proprioception and subjective experience including affect. Hence, cognitive models are analogue in nature, and as such are constituted by analogue concepts.

The conceptual content encoded as cognitive models can become re-activated during the simulation process. Simulation, as implied in earlier discussion, is a general purpose computation performed by the brain in order to implement the range of activities that sub-serve a fully functional conceptual system.³

2. See Evans (2009) for the rationale for this position.

3. For discussion and findings relating to the multimodal nature of conceptual representations and the role of simulation in drawing on such representations in facilitating conceptual function see, for instance, Barsalou (1999, 2008), Gallese and Lakoff (2005), Glenberg (1997) and references therein.

3.2 The cognitive model profile

An important construct in LCCM Theory, and one that is essential to providing an account of both polysemy and meaning construction, is that of the *cognitive model profile*. As an open-class lexical concept – a noun, verb, adjective or adverb – facilitates access to numerous association areas within the conceptual system, it facilitates access to numerous cognitive models. Moreover, the cognitive models to which a lexical concept facilitates access are themselves connected to other cognitive models. The range of cognitive models to which a given lexical concept facilitates direct access, and the range of additional cognitive models to which it therefore facilitates indirect access is termed its cognitive model profile. To illustrate, consider the cognitive model profile for the lexical concept that I gloss as [FRANCE] associated with the form *France*. A partial cognitive model profile for [FRANCE] is represented in Figure 2.

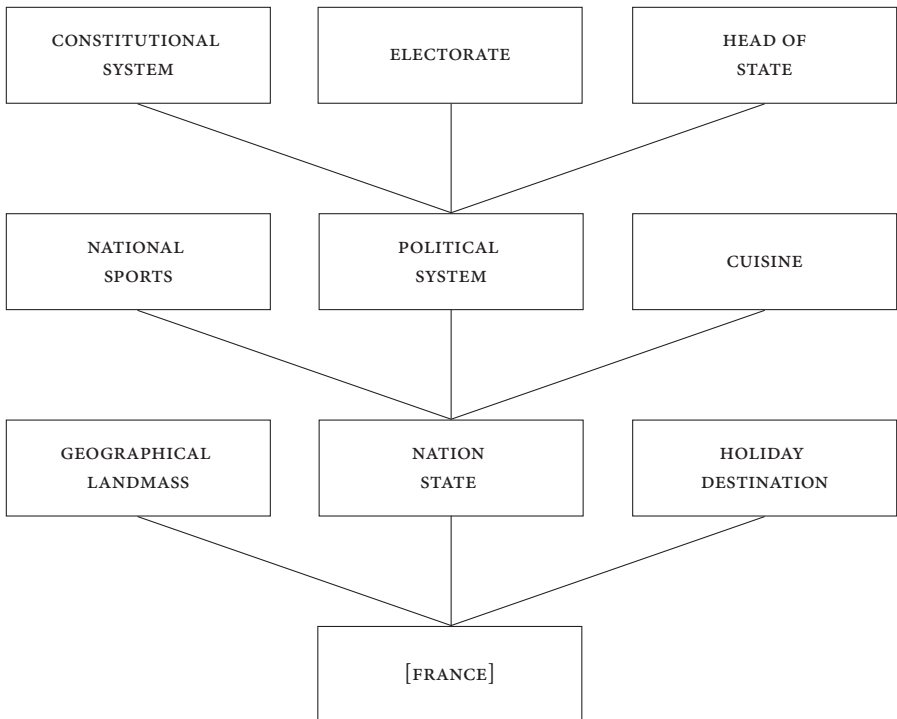


Figure 2. Partial cognitive model profile for [FRANCE]

Figure 2 is an attempt to capture (a subset of) the sort of knowledge that language users must presumably have access to when speaking and thinking about France. The lexical concept is denoted by the term in small caps and in square brackets: [FRANCE]. This is a mnemonic for the semantic content encoded by the lexical concept, which may include a cluster of parametric knowledge – parameters – about which I have more to say in the next section.

In contrast, cognitive models are denoted by terms in small caps without square brackets. As illustrated by Figure 2, the lexical concept [FRANCE] provides access to a potentially large number of cognitive models.⁴ As each cognitive model consists of a complex and structured body of knowledge, which, in turn, provides access to other sorts of knowledge, LCCM Theory distinguishes between cognitive models which are directly accessed via the lexical concept – *primary cognitive models* – and those cognitive models which form sub-structures of those which are directly accessed – *secondary cognitive models*. These secondary cognitive models are indirectly accessed via the lexical concept.

The lexical concept [FRANCE] affords access to a number of primary cognitive models, which make up the *primary cognitive model profile* for [FRANCE]. These are hypothesized to include: GEOGRAPHICAL LANDMASS, NATION STATE and HOLIDAY DESTINATION – and I reiterate, a cognitive model represents a coherent body of complex information: multimodal information, gleaned through sense-perception, interoceptive experience, and through propositional information achieved via cultural learning, language and other channels. Each of these cognitive models provides access to further cognitive models.

In Figure 2, a flavor of this is given by virtue of the various secondary cognitive models that are accessed via the nation state cognitive model – the *secondary cognitive model profile*. These include NATIONAL SPORTS, POLITICAL SYSTEM and CUISINE. For instance, we may know that in France, the French engage in national sports of particular types, for instance, football, rugby, athletics, and so on, rather than others: the French don't typically engage in American football, ice hockey, cricket, and so on. We may also know that as a sporting nation they take part in international sports competitions of various kinds, including the FIFA football world cup, the Six Nations rugby competition, the rugby world cup, the Olympics, and so on.

That is, we may have access to a large body of knowledge concerning the sorts of sports French people engage in. We may also have some knowledge of the funding structures and social and economic conditions and constraints that apply to these sports in France, France's international standing with respect to these particular sports, famous French sportsmen and women, and further knowledge about the sports themselves including the rules that govern their practice, and so forth. This

4. Note that the abbreviation [FRANCE] represents the linguistic content that is encoded by the vehicle *France*.

knowledge is derived from a large number of sources including direct experience and through cultural transmission (including language).

With respect to the secondary cognitive model of political system, Figure 2 illustrates a sample of further secondary cognitive models that are accessed via this cognitive model. Hence, each secondary cognitive model has further (secondary) cognitive models to which it provides access. For instance, (FRENCH) ELECTORATE is a cognitive model accessed via the cognitive model (FRENCH) POLITICAL SYSTEM. In turn the cognitive model (FRENCH) POLITICAL SYSTEM is accessed via the cognitive model NATION STATE. Accordingly, NATION STATE is a primary cognitive model while ELECTORATE and POLITICAL SYSTEM are secondary cognitive models.⁵

The utility of the LCCM Approach is that it provides a ready means of accounting for meaning construction. To illustrate, consider the following sentences all involving the lexical item *France*.

- (6) a. France is a country of outstanding natural beauty.
- b. France is one of the leading nations in the European Union.
- c. France beat New Zealand in the 2007 Rugby world cup.
- d. France voted against the EU constitution in the 2005 referendum.

In each of these examples the semantic contribution associated with the form *France* is slightly distinct: the reading for *France* varies across these distinct utterances. France, in (6a) has a geographical landmass reading; in (6b) it is France as a political entity, a nation state; in (6c), it is the 15 players who make up the French Rugby team; and in (6d) the reading involves that proportion of the French electorate who voted 'non' when presented, in a national referendum, with the proposal to endorse a constitution for the European Union. The key insight of LCCM Theory is that the reason for this variation is due to differential activation of non-linguistic knowledge structures within the cognitive model profile to which the lexical concept associated with *France* affords access.

The differential readings associated with the examples in (6) arise as follows. In (6a) the interpretation associated with the form *France*, which relates to a particular geographical region, derives from activation of the GEOGRAPHICAL LANDMASS cognitive model. Individual language users have knowledge relating to the physical aspects of France, including its terrain, and its geographical location. In this example, the utterance context serves to activate this part of the cognitive model profile accessed by the lexical concept [FRANCE]. In the second example, the utterance context serves to activate a different part of the cognitive model profile to which the lexical concept [FRANCE] affords access. In this example, the reading derives from activation of the NATION STATE cognitive model. The use of *France* in the

5. The rationale for distinguishing between primary and secondary levels of cognitive models has been laid out in detail elsewhere (e.g. Evans 2013: ch. 2).

example in (2c) relates to the group of 15 French individuals who play as a team and thereby represent the French nation on the rugby field. In the example in (2d) the form *France* relates not to a geographical landmass, nor a political entity – a nation-state – nor to a group of 15 rugby players who happen to be representing the entire population of France. Rather, it relates to that portion of the French electorate that voted against ratification of the EU constitution in a referendum held in 2005. Accordingly, what is activated here is the ELECTORATE cognitive model.

This last example provides an elegant illustration of the way in which activation of a cognitive model serves to provide a situated interpretation of a lexical concept by giving rise to an access route through the semantic potential. In this example, interpretation requires that an access route is established through the cognitive model profile accessed via the lexical concept [FRANCE] in a way that is consistent with the lexical concepts associated with the other linguistic forms and units in the utterance. The interpretation associated with *France* in this example has to do with the French electorate, and specifically that part of the French electorate that voted against ratification of the EU constitution. In other words, [FRANCE] in this example achieves an interpretation that is facilitated by activating the cognitive models shown in bold in Figure 3.

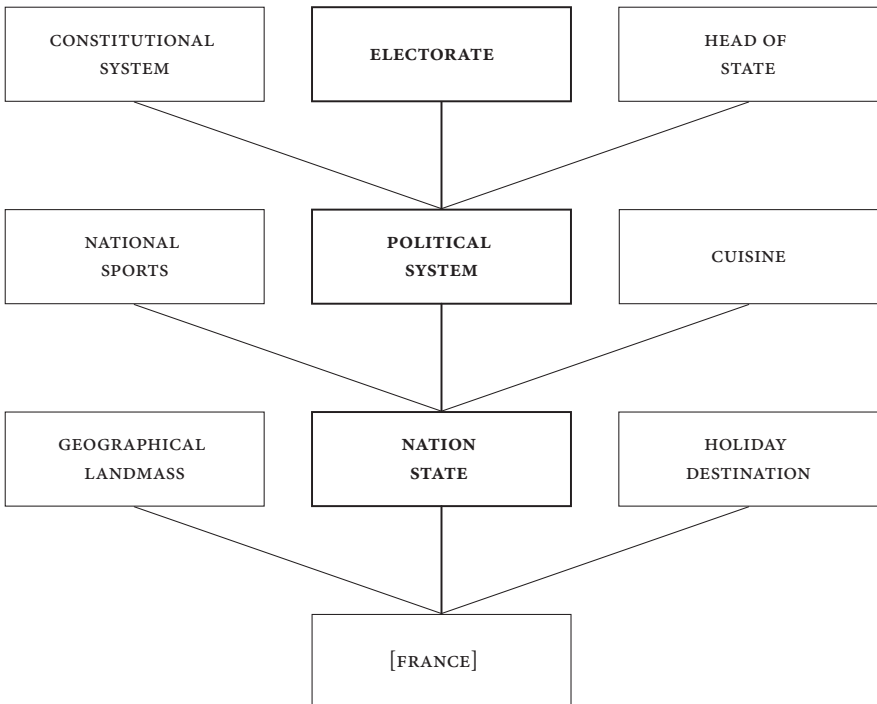


Figure 3. Access route established by the interpretation of [FRANCE] in the utterance *France voted against the EU constitution*

An important consequence of assuming a distinction between primary and secondary cognitive models relates to figurative language. Specifically, some aspects of the distinction between literal and figurative language can be elegantly accounted for. For instance, consider knowledge representation for the celebrated French novelist, critic and essayist Marcel Proust. Many native speakers of English, especially those not steeped in French literature, or without a literature background more generally, may only be dimly aware of Proust's literary contribution. Speakers in this category may simply know that Proust was a French literary figure. They may be unaware precisely when he lived, what his literary output related to, and indeed any other information about him. Cognitive model profiles relating to Proust, for these speakers, will involve knowledge inherited from *type* cognitive models. Such cognitive models facilitate inheritance of content in order to populate a cognitive model profile for an *individual*. In this case, a *schematic cognitive model profile* will be derived. Such a cognitive model profile is presented in Figure 4.

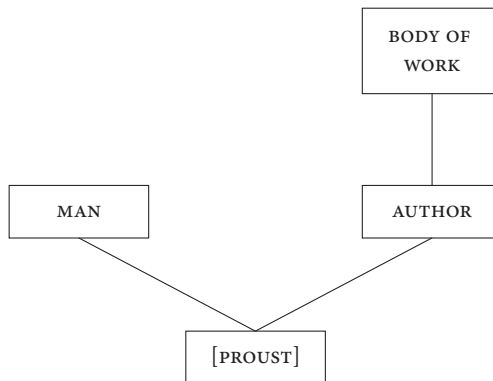


Figure 4. Schematic cognitive model profile for [PROUST]

In the schematic cognitive model profile in Figure 4, there are at least two primary cognitive models, for *MAN* and *AUTHOR* respectively. Each will consist of a range of *attributes*, inherited from type cognitive models for man and author. For instance, the type cognitive model for *MAN* will include generic information relating to aspects of physiology, appearance, personality, socio-cultural role, dress, behavioral traits, and so on. The schematic cognitive model for *AUTHOR* will include generic information relating to the generic habits and qualities associated with being an author, the nature of the activities engaged in, potential for success, and so on. A salient secondary type cognitive model also inherited by the schematic cognitive model profile is likely to relate to *BODY OF WORK*. This might include generic knowledge about the type and nature of the output associated with being an author, some

information about the publishing process, the requirement to have a literary agent, the role of booksellers, and so on.

Now consider the following sentences:

- (7) a. Proust had a moustache.
b. Proust is difficult to read.

The sentence in (7a) gives rise to a reading in which the man identified as Proust had a moustache. In contrast, the example in (7b) relates not to the man *per se*, but rather to his literary output. That is, in an example such as this *Proust* would normally be taken as referring not to the man, but rather to the literary works produced by Proust the man. Moreover, the interpretation of *Proust* in (7a) would normally be judged to be literal, while the interpretation in (7b) would be judged as figurative, and more specifically an instance of metonymy: Proust stands for the works created by the man – PRODUCER FOR PRODUCT.

A central claim of LCCM Theory is that one reason for the distinction in literal versus figurative interpretations is a consequence of the cognitive model profile, and a distinction, therefore, in terms of the range of analogue concepts directly and indirectly accessed by the lexical concept. Literal interpretations involve activation of a primary cognitive model – in this case *MAN* – while figurative interpretations involve activation of secondary cognitive models – in this case *BODY OF WORK*. And intuitively, it does seem as if there is some sense in which body of literary output is more peripherally accessed by the lexical concept [*PROUST*], than that of being a human male, a man, and having a particular profession, namely being an author. In other words, the explicit claim made by LCCM Theory is that cognitive model profiles accessed by open-class lexical concepts exhibit a qualitative distinction between cognitive models that are in some sense more central to the knowledge associated with, for instance, Proust, and knowledge that is less central. While there is unlikely to be a neat distinction between primary and secondary cognitive models, and while the distinction is likely to vary from individual to individual, and indeed across discourse communities, there appears to be grounds for making a qualitative distinction of this sort.

4. Conceptual polysemy

With the foregoing theoretical background, let us now return to the first of the phenomena under the microscope in this chapter: conceptual polysemy. I reproduce the relevant data below.

Phenomenon 1

- (8) a. That's a heavy book 'tome'
 b. That antiquarian book is illegible 'text'
 c. That's a boring book 'level of interest'
 d. That's a long book 'duration'

We now begin to see that polysemy of this sort is a consequence of differential activation of regions of the cognitive model profile – the vast semantic potential, aka encyclopedic knowledge – to which the lexical concept [BOOK] facilitates access. To see how this works, let's examine the sorts of knowledge that the lexical concept [BOOK] must afford access to.

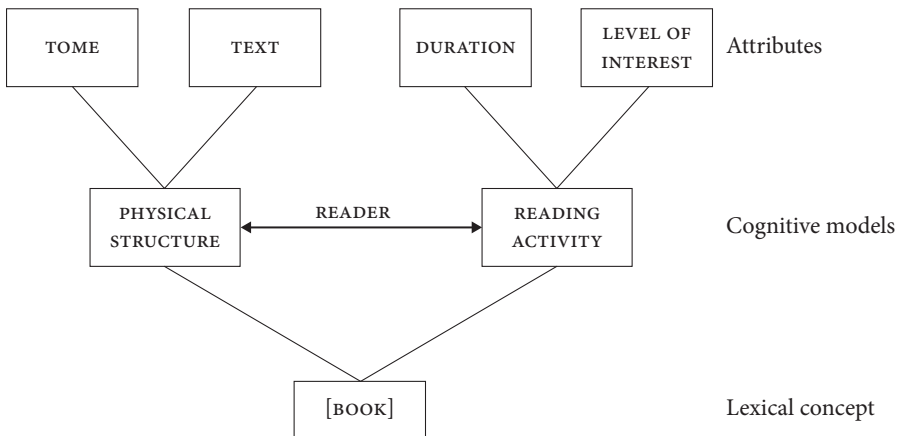


Figure 5. The relationship between lexical concepts, cognitive models, and attributes and values

Let's consider the cognitive models accessed via [BOOK]. As illustrated in the partial cognitive model profile given in Figure 5, the knowledge accessed by [BOOK] includes, at the very least, that a book is a physical entity and is interacted with via a process of reading. These two distinct sorts of knowledge – knowledge relating to an artifact, on one hand, and the process of reading, on the other – are captured in Figure 5 by the two cognitive models: PHYSICAL STRUCTURE and READING ACTIVITY respectively. The two cognitive models are related by virtue of a reader – the entity that interacts with the physical artifact by handling the tome and reading the printed text. Relationships of this sort holding between cognitive models I refer to as a *structural invariant*: a stable knowledge structure that is relational in nature. I capture the structural invariant in Figure 5 by a double-headed arrow, and the specific relation involved is signaled by the mnemonic READER. In addition, cognitive

models consist of a large, detailed, but structured, body of knowledge: what I refer to as *attributes*. Figure 5 provides two attributes for each of the cognitive models that [BOOK] provides access to.

The cognitive model PHYSICAL STRUCTURE relates to the physical artifact, consisting of, at the very least, knowledge as to the physical structure and organization of a given book. This includes detailed knowledge concerning the material aspects of the artifact, including its dimensions, weight, binding (paper or cloth), and so forth. This aspect of our knowledge about books I refer to as the TOME attribute. In addition to the physical organization and construction of a book, books consist of text, which is interacted with through the process of reading. This I refer to as the TEXT attribute. The READING ACTIVITY cognitive model relates to the process involved in interacting with books, especially the nature of the interaction with the text itself. One consequence of this interaction is that reading takes up a period of time, which I refer to as the DURATION attribute. That is, depending on the amount of text involved, reading can take lesser or greater amounts of time. Another consequence of interaction with books is the level of interest that a given book holds for the reader. This I refer to as the LEVEL OF INTEREST attribute. While the reader might judge the book to be interesting another might be judged to be boring, and so on.

Now we return to the specific type of polysemy under the spotlight in this section. Each of the utterances in (8) involves a distinct interpretation of the [BOOK] lexical concept. This is achieved by virtue of each instance of *book* being interpreted in a way consistent with the utterance context: consequently, a slightly different access route is established through the cognitive model profile accessed via the lexical concept [BOOK]. For instance, the readings that result from (8a) and (8b) have to do with activation of the PHYSICAL STRUCTURE cognitive model. However, each involves differential activation of attributes associated with this cognitive model – a process I term *highlighting* (Evans 2009). While the reading associated with *book* in (8a) involves highlighting of the TOME attribute, the reading associated with *book* in (8b) involves highlighting of the TEXT attribute.

In contrast, the readings that result from the utterances in (8c) and (8d) have to do with activation of the READING EVENT cognitive model accessed via [BOOK]. The reading associated with *book* in (8c) results from highlighting of the DURATION attribute. The reading associated with *book* in (8d) results from highlighting the LEVEL OF INTEREST attribute.

5. Inter-lexical polysemy

Now let's consider inter-lexical polysemy. Perhaps inevitably, this is a somewhat more complex phenomenon to account for, involving, as it does, distinct lexical items. I reproduce the relevant examples below:

Phenomenon 2

- | | | |
|--------|--|-----------|
| (9) a. | We are in love/shock/pain | ‘state’ |
| | Cf. We are in a room | ‘spatial’ |
| b. | We are on alert best behavior/look-out/the run | ‘state’ |
| | Cf. We are on the sand | ‘spatial’ |

The challenge is to account for why it is that prepositions such as *in* and *on* have seemingly related ‘state’ senses. In this section, I argue that the ‘state’ lexical concept associated with *in* selects for co-occurring open-class lexical concepts which access conceptual structure concerning emotional or psychological ‘force’ such as being ‘in love’, ‘in pain’ and so on. In contrast, the semantic arguments that co-occur with *on* relate to content that has to do with time-restricted activities, as well as actions that involve being currently active. These include being ‘on alert’, ‘on duty’, and so forth. In short, the types of co-occurring lexical concepts selected by each of the ‘state’ lexical concepts for these prepositions is of a quite different kind. This suggests that each of the prepositions is associated with a distinct ‘state’ lexical concept.

5.1 ‘State’ lexical concepts for *in*

In this section I present an LCCM analysis of the ‘state’ lexical concepts associated with *in*. In particular, I argue that there is more than one distinct ‘state’ lexical concept conventionally associated with the preposition *in*. I also show how these ‘state’ lexical concepts relate to, and are motivated by the prototypical spatial lexical concept, which I gloss as [ENCLOSURE].⁶

In LCCM Theory, the semantic content that makes up a lexical concept consists of a number of parameters: schematic units or ‘atoms’ of linguistic content – that is parametric knowledge, which, recall, is a type of conceptual content encoded by the linguistic system. The prototypical spatial lexical concept for *in* – the [ENCLOSURE] lexical concept – encodes the Enclosure parameter, as evidenced by the example in (10). In contrast, the [PSYCHO-SOMATIC STATE] lexical concept – one of the ‘state’ lexical concepts associated with *in* – encodes the parameter Psycho-somatic State, as evidenced in (11), but not the Enclosure parameter.

6. For detailed argumentation for the claim that [ENCLOSURE] is the prototypical lexical concept for *in* see Evans (2009, 2010)

- (10) The kitten is in the box Salient parameter: Enclosure
 (11) John is in love Salient parameter: Psycho-somatic state

Hence, the [ENCLOSURE] lexical concept, which sanctions the use of *in* in (10), encodes a schematic dimension abstracted from sensory-motor experience in which the figure (F) – e.g. *the kitten* – is contained by the bounded landmark (b-LM) – e.g. *the box*. Notice that the relation encoded is highly schematic in nature: it says nothing about whether there is contact or not between the F and b-LM as in (12), nor whether the F represents part of the landmark (LM) or not as in (13):

- (12) a. The fly is in the jar (i.e. flying around)
 b. The fly is in the jar (i.e. stationary on one interior surface)
 (13) There's a crack in the vase

Indeed, the precise spatio-topological nature of the F, LM and their relationship is a function of the F and LM and their possible forms of interaction, rather than the abstract parameter encoded by the [ENCLOSURE] lexical concept. This information derives from the semantic potential accessed via the open-class lexical concepts, for instance *fly* and *jar*.

In contrast, the [PSYCHO-SOMATIC STATE] lexical concept encodes the parameter Psycho-somatic state. This information is also highly schematic in nature: the parameter encoded does not determine the precise nature of the psycho-somatic state. Rather, that is a consequence of the semantic argument that co-occurs with *in*. Hence, while the parameters encoded by a preposition's lexical concept determine the possible range of lexical concepts – and hence semantic arguments – that can co-occur, the open-class semantic arguments specify the precise nature of the psycho-somatic state (e.g. *in love* versus *in a rage*).

[ENCLOSURE] AND ITS PARAMETERS

I now turn to a more detailed analysis of the [ENCLOSURE] lexical concept. This is necessary as the 'state' lexical concepts for *in* have derived from this more prototypical lexical concept for *in*. As noted above, the [ENCLOSURE] lexical concept encodes a spatio-topological relation holding between a schematic F, the entity enclosed, and a bounded landmark. Bounded landmarks themselves consist of many types even in everyday experience. A bounded landmark includes an interior, which further subsumes an interior surface, and the volumetric interior bounded by the interior surface. It also subsumes a boundary, which can be rigid, as in a metal safe, or non-rigid, as in a plastic carrier bag. The boundary also has other physical characteristics such as permeability and degrees of opacity. Finally, the bounded landmark has, by definition, an exterior: that region which constitutes the inverse of the volumetric interior. Accordingly, part of the exterior includes the exterior surface. The spatio-topological attributes just described relate to enclosure.

Due to human interaction with enclosures, the [ENCLOSURE] lexical concept, as manifested in usage events, is associated with a number of functional consequences. There are a number of identifiably distinct sorts of functional categories associated with spatial scenes involving enclosure. In addition to the functional category of enclosure itself, these additionally include Location with Surety (aka containment), Occlusion and Affecting Conditions, summarized in Figure 6.

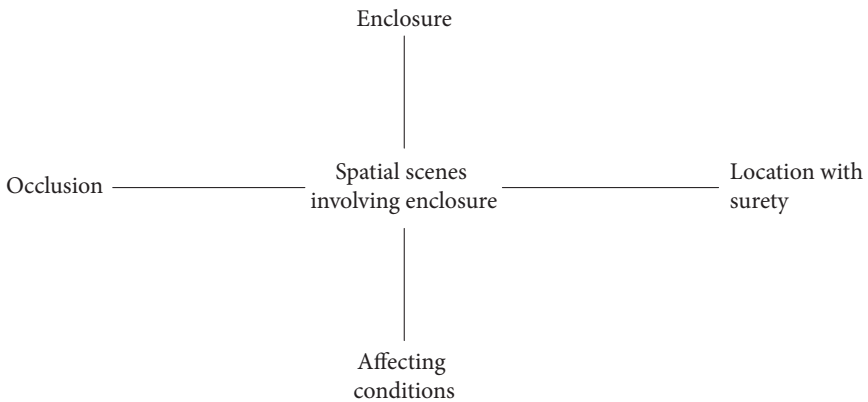


Figure 6. Parameters deriving from spatial scenes involving the spatio-topological relation: Enclosure

Bounded landmarks that are specialized for providing a Location with Surety function are known as ‘containers’. This functional category is encoded in linguistic content in terms of what I refer to as the Location with Surety parameter. Containers can provide a support function by virtue of locating by fixing – i.e. holding and restricting – the location of the F, as in the case of coffee in a coffee cup. Alternatively, containers can restrict access (and escape), as in the case of prisons, and safes.

The second functional category mentioned relates to Occlusion. A consequence of certain bounded landmarks, due to the opacity of the material that forms the boundary, is that the figure located on the volumetric interior is occluded, and hence hidden from view. This functional category gives rise to the Occlusion parameter.

The third functional category, that of Affecting conditions, relates to the fact that an enclosure provides a delimited environment which thereby affects the F located on the volumetric interior. For instance, a prisoner held in solitary confinement in a windowless sound-proofed room is thereby subjected to a particular sensory environment that is a direct consequence of the nature of the bounded landmark in which s/he is located.

My claim is, then, that by virtue of interacting in humanly relevant ways with the spatio-topological relation Enclosure, a number of distinct functional consequences arise, which I formalize as distinct and identifiable categories. These

functional categories amount to schematic parameters that come to be encoded as semantic ‘atoms’, forming part of the bundle of linguistic content encoded by the [ENCLOSURE] lexical concept. In essence, the lexical concept [ENCLOSURE] encodes the spatio-topological relation Enclosure, a schematic unit of knowledge akin to a parameter, and the parameters – arising from the encoding of distinct functional categories – Location with surety, Occlusion and Affecting Conditions.

How then does polysemy arise? Due to the multiplicity of parameters encoded by a single lexical concept, under certain conditions, a parameter (or parameters) that is (or are) particularly salient in a given context of use can become reanalyzed as a distinct sense-unit, giving rise to a new lexical concept in its own right. This doesn’t mean, for instance, that the [ENCLOSURE] lexical concept loses the Affecting Conditions parameter from its linguistic content. Rather, the Affecting Conditions parameter can become established as the core parameter of a new lexical concept.

‘STATE’ LEXICAL CONCEPTS FOR IN

I now consider the ‘state’ lexical concepts for *in*, in order to see how these arise from the core spatial lexical concept: [ENCLOSURE]. Consider the following examples, all involving *in*.

- (14) a. She is in good health.
 b. She is in love.
 c. She is in trouble/debt.
 d. She’s in banking [i.e. works in the banking industry].

While each relates to a ‘state’ of some kind, these examples in fact relate to slightly different ‘states’: those that have a physical cause, as in (14a) – the state of being ‘in good health’, which is a consequence of the physical condition of an organism’s body – those that have a psychological or emotional cause, as in (14b) – the state is a consequence of a subjective state, which may (or may not) have physical, i.e. observable, manifestations – those that have a social/inter-personal cause, as in (14c) – resulting from social/interpersonal interactions which result in an externally-maintained state – and those that are a result of a habitual professional activity, as in (14d). Put another way, each of these ‘states’ co-occurs with distinct lexical concepts – they take distinct semantic arguments – that relate a particular entity to quite different sorts of states. Hence, there are four distinct sorts of semantic tendencies in evidence, supporting the view that we are dealing with four distinct lexical concepts for *in*. This is illustrated more clearly in the examples below:

[PHYSIOLOGICAL STATE] (i.e. bodily state)

- (15) a. he’s in poor/good health
 b. The woman is in labor

[PSYCHO-SOMATIC STATE] (i.e. subjective/internal state)

- (16) a. She is in shock/pain (over the break-up of the relationship)
 b. Susan is in love (with herself/her husband)

[SOCIO-INTERPERSONAL STATE] (i.e. externally-maintained state)

- (17) a. a. The girl is in trouble (with the authorities)
 b. b. She is in debt (to the tune of £1000)

[PROFESSIONAL STATE] (i.e. professional activity habitually engaged in)

- (18) a. She is in banking
 b. She is in insurance

In addition to evidence based on distinct patterns in terms of semantic arguments, there is an additional line of evidence to support the position that there must be a number of distinct 'state' lexical concepts associated with *in*. This is demonstrated by virtue of ambiguities associated with an utterance of the following kind:

- (19) She's in milk

The utterance in (19) could potentially be interpreted as relating to a woman who is nursing a baby, and thus lactating. Alternatively, it could relate to a woman who works in the dairy industry. Given an appropriate extra-linguistic context, an example such as this can be interpreted in at least two ways. The potential for divergent interpretations is a consequence, in part, of our knowledge that *in* has a number of distinct lexical concepts associated with it: what is relevant for this example is the distinction between a [PHYSIOLOGICAL STATE] lexical concept and a [PROFESSIONAL STATE] lexical concept. Moreover, ambiguities can be generated even when a relatively well entrenched example is employed. For instance, even examples of the following kind:

- (20) She is in labor

- (21) She is in love

can be interpreted in alternate ways. For instance, (20) could be interpreted as relating to childbirth or to a professional activity, e.g. the trade union movement. Similarly, (21) could be interpreted as relating to an emotional state or a professional activity, e.g. marriage guidance counseling. The former reading is only possible by virtue of assuming something akin to an [PSYCHO-SOMATIC STATE] lexical concept that is distinct from a [PROFESSIONAL STATE] lexical concept. And so, both lexical concepts *must* inhere in long-term semantic memory if 'love' can be interpreted in these ways in this example.

DERIVATION OF THE 'STATE' LEXICAL CONCEPTS

I now examine how the distinct 'state' lexical concepts may have arisen. My claim is that these lexical concepts developed from the Affecting Conditions parameter associated with the prototypical [ENCLOSURE] lexical concept for *in*.

In terms of an LCCM account of the emergence of the 'state' lexical concepts for *in*, the trajectory is as follows. Situated implicatures arise in *bridging contexts* (Evans 2009). These are contexts in which a usage sanctioned by the relevant 'spatial' lexical concept, such as the [ENCLOSURE] lexical concept, also gives rise to a situated implicature, such as an affecting condition. If the prepositional form is repeatedly used in such bridging contexts, the situated implicature may give rise to the formation of a new parameter, or the detachment of an existing parameter, as the core parameter of a new lexical concept. I argue below that bridging contexts involving the functional category of Affecting Conditions may have given rise to the formation of a number of related but distinct 'state' parameters, and hence lexical concepts.

In order to trace the development of the parameter Affecting Conditions, we need to consider spatial scenes that might provide appropriate bridging contexts. To illustrate, consider the following expressions:

- (22) a. in the dust
 b. in the sand
 c. in the snow

While dust, sand and snow are physical entities that can 'enclose' they cannot, normally, fulfill the functions provided by, for instance, containers: they do not typically serve to locate with surety, exceptional circumstances such as quicksand and avalanches excepted. For instance, dust, sand and snow, by virtue of enclosing, do not normally have the structural attributes that allow an entity to be supported and thus transported (cf. a bucket, or a coffee cup), nor do they normally restrict access in the way a prison cell does, for instance.

Nevertheless, these examples exhibit some of the spatio-topological properties associated with the [ENCLOSURE] lexical concept. This is a consequence of the properties associated with these 'bounded' landmarks: they provide an affecting condition, an environmental influence that affects our behavior. For instance, they determine the kinds of apparel we wear, and how we behave when we are exposed to the dust/sand/snow, and so on. As such, these contexts of use provide bridging contexts: both enclosure and affecting conditions are implicated, and either (or both) may be understood. While examples such as sand, snow and dust can be construed as enclosures with boundaries, there are other related examples of what we might refer to as Prevailing Conditions that are much less clear-cut in terms of the nature of the boundaries involved:

- (23) a. the flag in the storm
 b. the flag in the wind

I suggest that these instances of *in* in (23) are sanctioned by virtue of there existing a distinct parameter Affecting Conditions, which forms part of the linguistic content encoded by a distinct [PREVAILING CONDITIONS] lexical concept. Hence, the next stage in the development of a new lexical concept is for the parameter: Affecting Conditions, to be re-analyzed as a core component of an independent lexical concept. Clearly a storm and wind are much less prototypically enclosures, and more saliently provide prevailing conditions that thereby constitute an environment that affects us. As such, spatial scenes involving more prototypical enclosures have given rise to the functional category Affecting Conditions, which has led to the formation of a distinct Affecting Conditions parameter in semantic memory. The existence of a distinct [PREVAILING CONDITIONS] lexical concept, as evidenced by examples in (23), provides suggestive evidence that such a distinct Affecting Conditions parameter exists.

I argue that the distinct 'state' lexical concepts associated with *in* evidenced in (15) to (18) encode the parameter Affecting Conditions, but not Enclosure. Indeed, these lexical concepts are what I have referred to as 'state' lexical concepts, as the states invoked all provide, in some sense, affecting conditions. Moreover, all these 'state' lexical concepts are relatively, and to degrees, far removed from the physical notion of enclosure from which they developed. In essence, once an Affecting Conditions parameter becomes conventionalized, it can be applied to distinct kinds of affecting conditions, even those that are non-spatial in nature, such as states. This leads to the development of new lexical concepts.

The first such 'state' lexical concept relates to the physical condition of an organism that thus provides an affecting condition. Such physical conditions include good/ill health, pregnancy, and any salient physical aspect of the organism's condition that affects and thus impacts on the organism's functioning. This lexical concept I gloss as [PHYSIOLOGICAL STATE]. In addition to environmental and physical conditions, affecting conditions can be caused by psycho-somatic states, such as grief, happiness and sadness, which are internal in nature. This 'state' gives rise to a [PSYCHO-SOMATIC STATE] lexical concept associated with *in*. In addition, social interactions that give rise to social or interpersonal relationships lead to conditions that may affect the individual. Such extrinsic or socially-induced affecting conditions might include debts, or other sorts of difficult situations that impose conditions on the behavior of an individual. This set of affecting conditions gives rise, I suggest, to what I gloss as the [SOCIO-INTERPERSONAL STATE] lexical concept associated with *in*. Finally, one's habitual professional activity provides an affecting condition by virtue of the physical and social interactions that are attendant upon

such activities. This provides an affecting condition giving rise to a lexical concept glossed as [PROFESSIONAL STATE] associated with *in*. The relationship between the Affecting Conditions parameter and the range of non-spatial lexical concepts for *in* discussed is summarized in Figure 7.

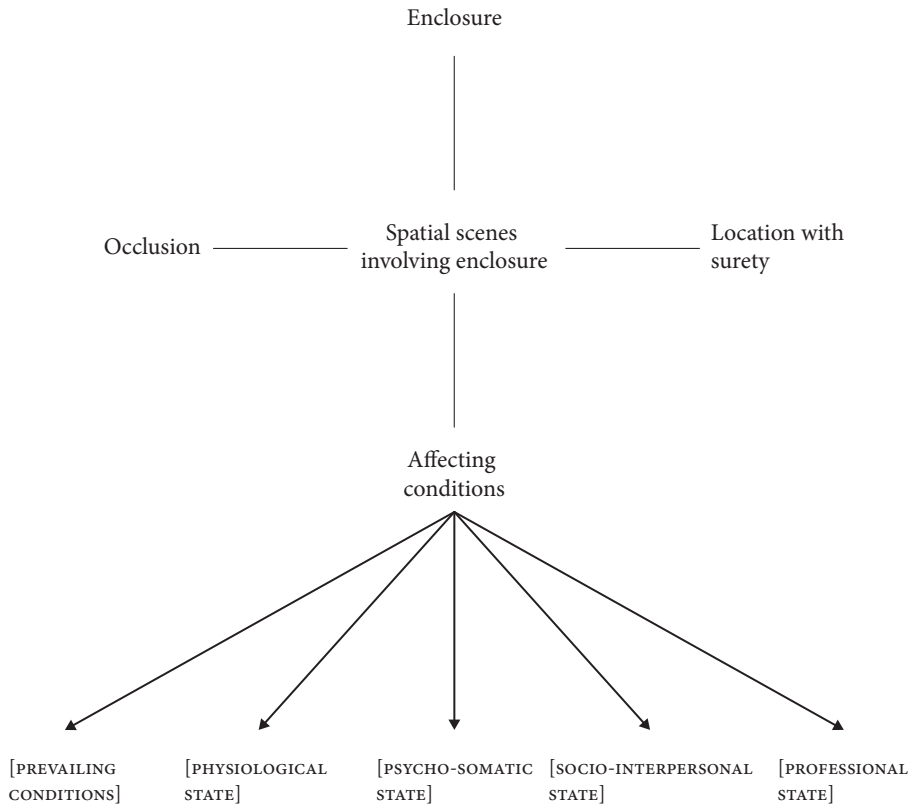


Figure 7. Parameters and their relationship with the ‘state’ lexical concepts for *in*

5.2 Lexical concepts for *on*

In this section I deal, somewhat more briefly, with lexical concepts associated with the prepositional vehicle *on*. The spatial relation designated by *on* involves the relation of contact or proximity to the surface of a landmark (LM), and so the functional consequence of being supported or upheld by it. I gloss the prototypical spatial lexical concept conventionally associated with *on* as [CONTACT]. This serves to encode the spatio-topological relation Contact, giving rise to a Contact parameter encoded by the preposition. A functional consequence of contact is that

the TR is thereby supported by the LM. This gives rise to the parameter Support, which is also encoded by *on*. The [CONTACT] lexical concept sanctions an example of the following sort:

(24) the apple on the table

Notice that evidence that the parameters Contact and Support are both encoded by the lexical concept [CONTACT] comes from the fact that *on* can only felicitously be employed to describe spatial scenes in which both parameters are apparent. For instance, if an apple is held against a wall by someone, the utterance in (25) is semantically anomalous. However, if the apple is affixed to the wall, for instance by glue, then (25) is entirely appropriate.

(25) the apple on the wall

In short, while the apple is in contact with the wall in both scenarios, in the first scenario it is the person, rather than the wall, that affords support, while it is the wall, and the glue, which employs the wall as a means of affixing the apple, in the second. Hence, the example in (25) applies *only* when there is both physical contact between the TR and the LM, and when the latter has a role in supporting the former.

Indeed, there are a number of distinct 'support' lexical concepts associated with *on* which privilege the Support parameter at the expense of the Contact parameter, as illustrated by the following examples:

[SUPPORTING BODY PART]

- (26) a. on one's feet/knees/legs/back
 b. on tiptoe
 c. on all fours

In the examples in (26), the use of *on* relates to that part of the body that provides support, rather than being concerned with contact. That is, *on all fours*, for instance, does not mean that something is in contact with all fours. Rather, the conventional interpretation is that 'all fours' provides the means of support.

[MEANS OF CONVEYANCE]

- (27) a. on foot/horseback
 b. on the bus

With respect to the example in (27b), it is worth pointing out, as Herskovits (1988) does, that if children were playing on a stationary bus, for instance, that had been abandoned, then it would not be appropriate to say: *on the bus*, but rather *in* would be more natural. This supports the view that the [MEANS OF CONVEYANCE] lexical concept is a distinct 'support' lexical concept encoded by *on*.

[SUPPORTING PIVOT]

(28) The Earth turns on its axis

Again, in this example, being ‘on’ an axis has to do with being supported and thus, in this case, being able to turn. Other examples of more abstract support, ranging for chemical reliance to rational support are illustrated below:

[CHEMICAL RELIANCE]

- (29) a. Are you on heroin?
b. She’s on the pill

[PSYCHOLOGICAL SUPPORT]

(30) You can count/rely on my vote

[RATIONAL SUPPORT]

(31) on account of/on purpose

THE [ACTIVE STATE] LEXICAL CONCEPT

There is just one ‘state’ lexical concept for *on*, which I gloss as [ACTIVE STATE]. This lexical concept derives not from the parameter Support. Rather, it pertains to a functional category concerning ‘functionality’ or ‘activity’. In many spatial scenes, a consequence of contact is that the TR, as it comes into contact with a particular surface, becomes functional. This parameter I refer to as Functional Actioning. Removing contact precludes functional actioning. Such forms of contact, for instance, invoke scenarios involving physical transmission, such as the very salient one of electricity. Many times a day we plug-in or switch ‘on’ electrical appliances. It is by facilitating contact between the appliance and the electrical circuit that an appliance is rendered functional. A ‘switch’ provides a means of facilitating this contact, which is why we employ the term ‘switch on’ in English. I propose that the [ACTIVE STATE] lexical concept associated with *on* encodes a Functional Actioning parameter as part of its linguistic content. It is this which makes it distinctive from the spatial lexical concepts for *on* discussed in the previous examples.

The [ACTIVE STATE] lexical concept associated with *on* relates to lexical concepts which concern a particular state that can be construed as ‘active’ or ‘functional’, as contrasted with a, perhaps, normative scenario in which the state does not hold. In other words, states described by instances of *on* sanctioned by this lexical concept are often temporally circumscribed and thus endure for a prescribed or limited period of time. In this, the states referred to are quite distinct from those that the ‘state’ lexical concepts associated with *in* relate to. Here, the notion of being ‘affected’, apparent with *in*, is almost entirely absent. Consider some examples:

- (32) a. on fire
 b. on live (i.e. a sports game)
 c. on tap (i.e. beer is available)
 d. on sleep (as in an alarm clock on a particular mode)
 e. on pause (as in a DVD player)
 f. on sale
 g. on loan
 h. on alert
 i. on best behavior
 j. on look-out
 k. on the move
 l. on the wane
 m. on the run

Figure 8 depicts the parameters associated with the [CONTACT] lexical concept encoded by *on*.

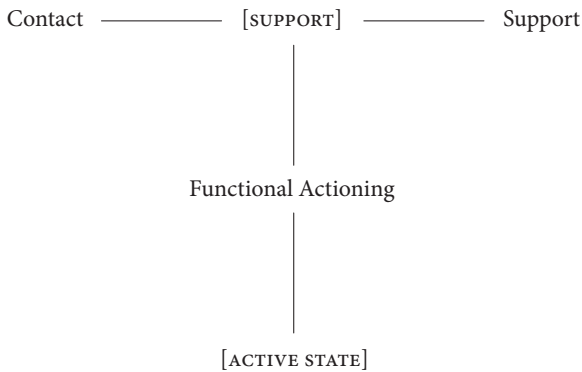


Figure 8. Parameters and their relationship with ‘state’ lexical concept associated with *on*

5.3 Discussion

On first blush, the ‘state’ lexical concepts of *in* and *on* appear to be comparable: they relate not to spatial scenes, but rather abstract states. But on closer analysis, it turns out that the semantic arguments that co-occur with *in* and *on* are distinct. And based on an analysis deriving from LCCM Theory, which posits that semantic sense units – lexical concepts – consist of schematic parameters – units of semantic structure – it appears that the ‘state’ lexical concepts for *in* and *on* are in fact wholly distinct. I have argued that the difference concerns the distinct core spatial lexical concepts – associated with *in* and *on* respectively – from which the respective ‘state’ senses have derived.

According to LCCM Theory, parameters derive from the humanly-relevant scenes with which words are associated during language use. Any such scene involves a number of situated implicatures, associated with the scene. Implicatures that re-occur in usage contexts associated with the same lexical form can come to be stored as parameters – schematic units of semantic structure – conventionally associated with a distinct form. And over time, some parameters can come to be reanalyzed as being more salient than others, allowing a lexical item to gradually be used in new contexts of use. And when this happens, we are provided with evidence that a new lexical concept associated with the form has emerged, with a revised inventory of parameters vis-à-vis the prototypical spatial lexical concepts – in the case of *in* and *on*.

In the case of prepositions, functional consequences of the spatial relations give rise to parameters such as Affecting conditions – in the case of *in* – and Functional Actioning – in the case of *on*. These quite different parameters entail a divergent distribution in terms of the semantic arguments that can co-occur with the ‘state’ lexical concepts for *in* and *on*. While the various ‘state’ lexical concepts for *in* require semantic arguments that provide, in some sense, an affecting condition, in contrast, the ‘state’ lexical concept for *on* involves semantic arguments that give rise to an active state of some sort. And these qualitatively different sorts of states are directly attributable to the spatial semantics conventionally associated with the prototypical lexical concept of each preposition.

6. Conclusion

Polysemy is often defined in the literature as the relation between two distinct, albeit related sense-units associated with the same lexical form. For instance, the relation between the following usages of *over* would normally be considered polysemous:

- | | | |
|------|--------------------------------|---------------------|
| (33) | The lamp is over the desk | ‘above’ |
| | The ball is over the wall | ‘on the other side’ |
| | The clouds are over the sun | ‘occlusion’ |
| | The relationship is over | ‘completion’ |
| | He prefers red over white wine | ‘preference’ |

The focus of much research within language science, and especially within cognitive linguistics, has been on trying to account for the relationship between such relatively stable, albeit distinct, interpretations associated with a single form. One view, dubbed monosemy (e.g. Ruhl 1989), takes the view that polysemy arises from the filling-in of context. On this account, a form such as *over* would possess a relatively abstract underlying representation that is filled in by context. Pustejovsky

(1995) provides an impressively detailed attempt to account for the sorts of ways in which words might get contextually filled-in. In the cognitive linguistics tradition, polysemy has been viewed as a function of underlying entries in semantic memory, stored in long-term semantic memory. On this view, the lexical form has the interpretations evident in (33) not because context fills in, or modulates its underlying abstract meaning. But rather, *over* already has these distinct sense-units stored in semantic memory (Tyler and Evans 2001, 2003). In this chapter, I have tackled polysemy from a slightly different angle than this bifurcation. Polysemy arises, in part, from non-linguistic (i.e. encyclopedic) knowledge, I have proposed. The complex conceptual representations to which words facilitate access provides a vast semantic potential that we deploy during language use and meaning construction.

As my discussion of *France*, *Proust* and *book* have shown, polysemy arises, in large measure, from the sorts of analogue knowledge we possess, and which we draw upon during language understanding. Moreover, in my discussion of inter-lexical polysemy, we see that polysemy arises from the semantic lineages of words: any given word has a usage history, which relates to the usage contexts and humanly relevant scenes that correlate with its use. And these, in the guise of my notion of a 'parameter', can come to embellish and modify a word's representation. Over time, this can lead to new lexical concepts, which deviate from the 'originating' lexical concept, although in a lineage-specific way: the 'state' lexical concepts for *in* are different from *on* precisely because of the originating spatial semantics that gave rise to them. In the final analysis, what this reveals is that polysemy is a complex and multifaceted phenomenon. It is probably overly simplistic to assume, as has sometimes been done (e.g. Tyler and Evans 2003) that discussions of polysemy boil down to the polemic of monosemy on the one hand, versus the multiple distinct sense-units of the *principled polysemy* approach that I espoused with Andrea Tyler in our 2003 book. This bifurcation is too neat, and consequently ignores the very phenomena that I have been addressing in this chapter.

While polysemy as viewed through the eyes of Charles Ruhl (1989) is surely empirically flawed, it is fair to say that the view of polysemy developed in Tyler and Evans (2003) is probably also too simplistic. There we argued for neat semantic networks, where word-senses constituted clearly-demarcated nodes within a radiating lattice of semantic memory, which we thought, ultimately, would be locatable in the brain. But what I've shown in this chapter is that polysemy derives from different sources, and in various ways. To account for what I have termed conceptual polysemy, we need to understand the nature of non-linguistic knowledge to which a word facilitates access. And to account for inter-lexical polysemy, we need to know how word-senses develop, and hence, the linguistic knowledge that words contain as part of their semantic structure – what I have referred to as parameters. In short, we require an account of the nature of semantic structure – representation

unique to language – and conceptual structure – representation that is wholly non-linguistic in nature. LCCM Theory provides just such an account: it offers a psychologically-plausible way of viewing the qualitatively distinct and distinguishable types of representations – the linguistic and the conceptual – that are essential to understanding linguistically-mediated meaning construction. And in so doing, LCCM Theory affords a joined-up account of polysemy.

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PART III

Applications to L2 teaching and learning

Formulaicity and context in second language pragmatics

Kathleen Bardovi-Harlig

Pragmatic routines are realized by a range of expressions at different points on the formulaicity scale, meaning that some expressions are more set than others. This chapter draws on acquisition research to highlight the types of pragmatic knowledge that underpin successful use and emerging use of formulaic language in pragmatics, exploring the alignment of speech act, pragmatic strategy, content, meaning, and form in the acquisition and use of conventional expressions and routines, and the role of context. Examples are drawn primarily from two studies on pragmatics, a large cross-sectional study ($N = 179$; 5,504 responses to a conversation simulation, Bardovi-Harlig 2009), and an instructional effects study (responses to simulated group work, Bardovi-Harlig, Mossman, and Vellenga, 2015a).

Keywords: conventional expressions, formulaic language, pragmatic routines, speech acts

1. Introduction

Formulaic language was first investigated in second language (L2) pragmatics by Scarcella (1979) in which she used a written production task to elicit conventional expressions such as *Happy birthday*, *Come in*, and *Watch out!* Eisenstein and Bodman's 1986 article "I very appreciate" captured interlanguage forms of formulaic language and Bodman and Eisenstein (1988) discussed cross-cultural borrowings such as *May God increase your bounty*. Edmonson and House (1991) noted the absence of formulaic language in the production of nonnative speakers and hypothesized that the absence of formulaic language might be a factor in the longer responses ("waffling") by nonnative speakers compared to native speakers.

Nattinger and DeCarrico (1992) promoted the teaching of lexical phrases for conversation and discourse. Aijmer's (1996) monograph provided a speech-act oriented, corpus-based perspective on conversational routines. Granger (1998) linked

the growing research in pragmatics with the increasing interest in formulas more generally. Interest in formulaic language in L2 pragmatics was renewed in the early 2000s in Kecskes (2000) where he discussed interlanguage uses of formulaic language such as *Sure no problem*, in exchanges like *Would you like some candy? Sure, no problem* compared to contexts in which it was expected such as *Can I borrow your pen? Sure no problem*.

In contrast to a relatively small, but growing literature on the acquisition of formulaic language in L2 pragmatics, there has been continuous research on the use of formulaic language in pragmatics by native speakers (see, e.g. Bardovi-Harlig 2012a and the 2012 *Annual Review of Applied Linguistics* volume on formulaic language). This chapter draws on acquisition research to highlight the types of pragmatic knowledge that underpin successful use and emerging use of formulaic language in pragmatics, exploring the alignment of speech act, pragmatic strategy, content, meaning, and form in the acquisition and use of conventional expressions and routines, and the role of context.

2. Formulaic language

Pragmatics is the study of how to say what to whom when (and how that affects other people). Second language pragmatics is the study of how speakers of second languages come to know how to say what to whom when. Put more formally, with an emphasis on hearers as well as speakers, pragmatics is “the study of language from the point of view of users, especially of the choices they make, the constraints they encounter in using language in social interaction and the effects their use of language has on other participants in the act of communication” (Crystal 1997: 301).

An illustration of the challenge of using formulaic sequences conversationally in a second language is found in Example (1), which is excerpted from an academic advising session between a male linguistics graduate student and his male faculty advisor. The purpose of the advising session was to determine the student’s academic schedule for the following semester. At the point of the excerpt, the advisor had already made a variety of course suggestions, all of which had been rejected by the student (Bardovi-Harlig and Hartford 1996).

(1) Use of formulaic sequence in advising session

Advisor: There is Introduction to Phonetics, no that’s an undergraduate course. Ah...and you feel you have a, you have a background in syntax. You wouldn’t want to take an elementary syntax course.

Student: If you insist.

Advisor: What?

Student: If you insist, I am...willing to take that course.

The exchange between the advisor and the student shows the layers of knowledge required in order to appropriately use a conventional expression. In the case of “if you insist” we see that the learner’s understanding of the meaning of the expression and the use of the expression are misaligned with the context as evidenced by the advisor’s response “What”? in the third line. The advisor’s “What”? triggers a repetition of “if you insist” by the student. Taken literally *if you insist* would suggest that the student asserts that the advisor is insisting and that under those conditions he will agree to comply. If that is the case, the learner appears to have misread the advisor’s turn. The advisor’s turn, “You wouldn’t want to take an elementary syntax course”, is at its strongest a suggestion, although it appears to rule out the syntax class rather than to nominate it as a possible course for the student. The strength of the student’s reply noticeably exceeds that of the advisor’s contribution. However, an alternative interpretation might suggest that the learner does not fully control the expression or controls another use of it, which is to use it jocularly when an interlocutor makes an offer that is favorable to the potential recipient as in the constructed example by Macmillan Dictionary “Another piece of cake”? “Oh, if you insist”.¹ The difficulty in interpreting the exchange in (1) is that we do not know whether the student believes the advisor is insisting or whether the student thinks the advisor has made a suggestion that benefits him. If the student believes that the advisor is insisting, then it could be argued that he does not realize the consequences of the highly dispreferred act of saying so. On the other hand, if the student intends a humorous acceptance as in the piece-of-cake example, his relief at finally being offered what he sees as a good option is not clear to the advisor.

Example (1) illustrates the potential challenges for learners in using formulaic language in conversation; in addition to having recognizable form, formulaic sequences are associated with speech acts, pragmatic strategies, meaning, content, and context in pragmatics.² Although isolated examples point to areas worth investigating, they do not provide a systematic means of investigating the acquisition and use of formulas by second language learners.

1. This illustrates the two parts of the definition for *if you insist* listed by Macmillan Dictionary: [1] used for agreeing to something because someone says you must. [2] This expression is often used humorously “another piece of cake?” “Oh, if you insist”.

2. Production in context may be compared in terms of speech act realized, semantic formulas used, content encoded, and the form used to do it (Bardovi-Harlig 2010). These points of comparison can also be used to compare variation in formulaic language (Bardovi-Harlig 2012b), with the addition of meaning to more fully explore learner knowledge of conventionalized expressions. In order to avoid confusion when discussing formulaic language, I have replaced my earlier use of “semantic formulas” with the equivalent term “pragmatic strategies”.

2.1 Definitions

In the field of pragmatics, researchers are interested in formulaic language because it is one type of linguistic resource available to speakers to do things with words, and it may be extraordinarily effective at doing those things since it is often illocutionarily transparent (Blum-Kulka 1989; Reiter, Rainey and Fulcher 2005); formulaic language reflects norms of speech communities; and specific expressions are targets of learning for both newcomers (or novices) and language learners. Coulmas (1981) defined routine formulae as “highly conventionalized prepatterned expressions whose occurrence is tied to more or less standardized communication situations” (pp. 2–3) emphasizing the social aspect of formulas by describing them as “tacit agreements, which the members of a community presume to be shared by every reasonable co-member. In embodying societal knowledge they are essential in the handling of day-to-day situations” (p. 4).

Knowledge of conventional expressions forms part of a speaker’s pragmatic-linguistic competence (a speaker’s linguistic toolbox for expressing speech acts), and knowledge of their use and the contexts in which they occur is part of sociopragmatic competence (a speaker’s internal playbook of what to say when). Coulmas (1981) and Edmondson and House (1991) emphasized the social contract of co-members of a speech community, and Terkourafi (2002) showed that formulas are used to demonstrate membership. In pragmatics, definitions of formulaic language include three parts: the form as a recurrent sequence, its occurrence in specific social contexts, and the idea of the social contract which extends to members of a particular speech community (Bardovi-Harlig 2012a).³

Formulaic language forms a continuum from highly idiomatic and non-compositional strings such as *kick the bucket* and *bite the bullet* to conventional, but transparent strings such as *Sorry I’m late* and *Nice to meet you*. Sometimes the same string can be both transparent and opaque as illustrated by the literal and figurative meanings of *piece of cake*, *Ok shoot*, and *get out of here!* (Kecskes 2000). Kecskes (2010) distinguished conversational routines from situation-based utterances (SBUs). For Kecskes, conversational routines are the broader category (and include SBUs as a subset) and are functionally bound, whereas SBUs are situationally (or contextually) bound. Examples of conversational routines include *after all* and *to tell you the truth*, which can be used in a variety of social contexts and topics. In contrast, SBUs such as *How do you do* and *Welcome aboard* are linked to specific pragmatic contexts: *How do you do* is linked to introductions and *Welcome*

3. This pragmatic account leaves aside questions of processing, storage, and lexical retrieval, which are not pragmatics issues per se. (See, for example, ARAL 2012 volume on formulaic language, and Bardovi-Harlig and Stringer 2017).

aboard to either literally boarding a ship or a plane or more figuratively, to starting a new position.

SBU's seem to be very similar to what the empirical pragmatic literature has also called are pragmatic routines. Pragmatic routines are associated with speech acts (such as welcoming and greeting a new acquaintance; Edmondson and House (1991) illustrate this with the expression *Can/could you do* used in requests and House (1996) with *Hi nice to see you* and *How are you* in greetings.

2.2 Another distinction

This chapter considers one more distinction, pragmatic routines and conventional expressions. Pragmatic routines are associated with speech acts more generally and conventional expressions are the preferred expression in a specific context requiring the specific realization of a speech act. Take for example the speech act of thanking or expressing gratitude. *Thank you* (alternating with *Thanks*) is one pragmatic routine associated with the speech act of thanking, but in specific contexts members of a speech community may favor the conventional expressions *Thank you for your {time/help}*, *Thank you so much*, or *That'd be great*. Conventional expressions are not only associated with a general speech act, but they are used by members of a speech community to the exclusion of other possible responses in specific situations (Bardovi-Harlig 2009).

While many categories focus on the fixedness and flexibility of form and its relation to meaning, in this chapter, I consider another continuum that is relevant to pragmatics: a continuum that takes into account the relation of form and the context of use. Some reviews describe formulaic language as frequent, others as community wide, and still others as the preferred form. This chapter considers two points along this continuum in terms of acquisition, namely, conventional expressions and pragmatic routines. Both are formulaic language, both indicate the illocutionary force of the speech acts being performed, and both are relatively frequent. Any pragmatic routine could potentially become the preferred response in a particular situation.

The sections that follow lay out means of documenting the formulaic status of an expression, then explore what it means to know a pragmatic routine or a conventional expression and to be able to use them, revisit the role of context in facilitating acquisition, and finally consider the effects of instruction.

3. Documenting formulaic status: Frequency and conventionality

Like pragmatic routines, conventional expressions are linked to the realization of certain speech acts, and moreover, they are the favorite realization of the speech act in a specific context (Bardovi-Harlig 2009). Erman and Warren (2000) define prefabricated language (i.e. formulaic language) as “combinations of at least two words favored by native speakers in preference to an alternative combination which could have been equivalent had there been no conventionalization” (Erman and Warren 2000: 31).

A conventional expression is thus defined as the preferred expression in a specific context such as thanking a professor for her time (and operationalized as occurring in more than 50% of the NS production, see discussion in the following section), but in another context such as thanking a professor for giving a make-up exam, that same expression may be in the minority. Thus, the thanking expression *That'd be great* may be the preferred expression in some contexts, used in a variety of other thanking scenarios (but not all) as one pragmatic routine among many, and may not be used in others, just as *Thank you so much* is the conventional expression in some thanking scenarios, but not all.

In order to investigate both the distribution of conventional expressions and how they were acquired, we needed clear target expressions where only one expression was possible. To do this, we turned to established research procedures from cross-cultural and interlanguage pragmatics. In order to investigate the acquisition of conventional expressions (and their degree of preference), I developed an oral computer-delivered conversation task in the form of an aural-oral discourse completion task that included turns to which learners could respond. The production tasks were developed in several steps: (a) observation of conversations in the community, (b) scenario construction, (c) piloting, (d) further revision of scenarios and culling of expressions, (e) re-piloting, and (f) selection of final contexts and expressions. Steps (a) through (e) were carried out by participants in the Seminar in Interlanguage Pragmatics at Indiana University.

Following the second pilot (Step (e)), the 32 scenarios that elicited a single expression in 50% or more of the NS responses were identified and advanced to the production task which was a computer-delivered, time-pressured aural-oral conversation simulation with turns (allowing participants 7 seconds to respond). Respondents listened to the scenarios over individual headsets, simultaneously hearing and reading the scenario on the screen. For initiating items, participants spoke first; for responding items, participants heard a turn (without written support) immediately after the scenario, saw a screen that showed only “You say,” and then provided an oral response. Responses were recorded through headset microphones onto digital files. (see Bardovi-Harlig 2009 for the full task.)

A total of 171 participants completed the tasks: 122 English-language learners (with 11 L1s) and 49 native speakers of American English affiliated with the same large public research university in the American Midwest, comprising two groups: 35 undergraduate peers who were the same age as the learners and 14 ESL teachers. Learners were distributed evenly across Levels 3–6 of a seven-level intensive English program.

In the sections that follow, I use examples from the production task to illustrate levels of knowledge with specific learner responses. The full quantitative results of the tasks are available elsewhere (Bardovi-Harlig 2009, 2010, 2012b; Bardovi-Harlig and Bastos 2011; Bardovi-Harlig, Bastos, Burghardt, Chappetto, Nickels and Rose 2010).

4. Components of knowing an expression

4.1 Knowing an expression

Conventional expressions are used when speakers in a speech community agree that a particular speech act is appropriate to a specific context, that a certain pragmatic strategy is to be performed, and that it encodes specific content. Only then can the same form be used felicitously. What looks seamless when learners use the same conventional expression as the native speakers in their community is actually underpinned by knowledge of the expression (its form, meaning, and use), understanding of the sociopragmatics of the context, and knowledge that the expression in question is a pragmatological resource for accomplishing the sociopragmatics.

For example, the introduction context in Example (2) and the reciprocal closing in (3) show high use of the conventional expression used by the community.

- (2) Your friend introduces you to his new roommate.
(Audio): “This is my new roommate, Bill.”

Native speakers and learners alike reply with *Nice/good to meet you* in at least 80% of the responses (89% and 86% for native speaking peers and teachers, respectively, and 100% for Level 3 learners to 80% for Level 6).

- (3) You are in the supermarket. After you pay, you are ready to pick up your bags. The cashier says,
(Audio): “Have a nice day!”

Almost all the respondents reply *You too!* (94% and 100% for native speaking peers and teachers, respectively, and 83% for Level 3 learners to 94% for Level 6).

Conventional expressions can be quite specific to the context as shown by the thanking contexts in Examples (4) and (5). Native English-speaking undergraduates

in the American Midwest responded with two different preferred expressions, according to context.

- (4) You stop by your teacher's office to ask a question about the assignment. She takes time to answer your question. You know she is very busy, so before you say good-bye, you say:

94% of undergraduates used a {*Thanks/Thank you*} for format realized as either {*Thanks/thank you*} for your time or {*Thanks/Thank you*} for your help.⁴ In response to the favor granted in (5), the same undergraduates used a different expression.

- (5) You have been studying very hard for your test. But on the morning of the test, your alarm does not go off and you oversleep. You ask your teacher for a make-up test.
(Audio): "Okay. I'll give you a make-up test this time, but don't let it happen again."

In response to this scenario, 80% of undergrads said *Thank you so much*. So although both (4) and (5) are contexts for expressions of gratitude, there is a clear preference for different conventional expressions in the two contexts.

Another thanking scenario (Example 6) elicits a conventional expression from native speakers but not the learners.

- (6) You need to pick up a book at the bookstore, but you don't have any free time today.
(Audio): "I can pick it up for you."

The undergraduates (66%) and the teachers (57%) used *That'd be great* and 20% and 21% use *Thank you*, respectively. The learners, on the other hand, did not use *That'd be great* (there are only 3 uses by 121 learners, in Levels 5 and 6) and instead used *Thank you* (without elaboration) at a rate of 66% in Level 3, increasing to 84% in Level 6. Here is a case where everything seems to align, except the expression. Using an expression requires the alignment of both sociopragmatics and pragmatolinguistics. The following sections demonstrate how interpretations of scenarios have to align in order for an expression to be used, with the intention of demonstrating the pragmatic knowledge behind acquisition and successful use of conventional expressions.

4. Aijmer (1996) discusses the distribution of *thanks* and *thank you* and co-occurring intensifiers in the London-Lund corpus. In the present data from the American Midwest, both *thanks* and *thank you* are used by native speakers in the contexts we tested; however, learners rarely used *thanks*, and overwhelmingly used the full form *thank you*.

4.2 Aligning speech acts

In order to use a conventional expression in the conversation simulation, learners must interpret the context as requiring the same speech act as the community members. For example, most respondents saw the closing of a meeting with one's teacher (Example 4) as a context for thanking. Nevertheless, 14 learners of 122 saw it as a context for an apology (Example 7). Some Level 3 learners used both apologies and thanking expressions (7d and e). No learner who used both apologies and thanks used the conventional expression.

- (7) You stop by your teacher's office to ask a question about the assignment. She takes time to answer your question. You know she is very busy, so before you say good-bye, you say:
- I'm sorry about u:h your time. I'm sorry I know I'm-, you are busy. (0.6) Sorry. (1.0) >So sorry<
 - I'm sorry if I bother you
 - <I'm sorry, if I interrupt you.>
 - >I'm so sorry my teacher< [length: 1.0 sec], I know:: you are you are busy but uh (1.7) but thank you very much
 - I'm sorry about, I bother you::, and um (1.0) I know you busy. Thank you.

4.3 Aligning pragmatic strategies

The alignment of speech acts is followed by the alignment of pragmatic strategies. In response to expressions of gratitude, a speaker may respond with an acknowledgement/acceptance or a deflection/rejection. The scenario in (8) included a very low imposition favor: The interlocutor has given a classmate who lives in the next building a ride home.

- (8) You give your classmate a ride home. He lives in the building next to yours. He gets out of the car and says, (Audio): "Thanks for the ride."

In response to "Thanks for the ride," more than half of the learners (54%–65%) responded with an acceptance, namely, *you're welcome*, whereas only 16%–21% of the native speakers did. The native speakers instead used the deflector, *no problem* (used by 80% of the native speaking peers and 64% of the teachers). Learners did, however, attempt a deflector, *my pleasure*, in 6% to 16% of the responses across levels. In summary, the majority of the learners used the same speech act (response to thanking), but a different pragmatic strategy [acceptance]. A minority of learners aligned the speech act and the pragmatic strategy, but used a different (but recognizable) expression.

4.4 Aligning content

Once speech act and pragmatic strategy are aligned, content is the next level. Two refusal contexts provide insight into how content of the same pragmatic strategy may vary.

- (9) You are having dinner at a friend's house. Your friend offers you more food, but you couldn't possibly eat another bite. (Audio): "Would you like some more?"
- (10) You go to a clothing store and you need to find a new shirt. A salesperson approaches you. You don't want the salesperson's assistance. (Audio): "Can I help you?"

A traditional speech act analysis would show the following responses to these scenarios as [refusal] [explanation]. The content of the explanation may differ from the preferred *No thanks, I'm full* in (9) and *No thanks, I'm just looking* in (10). In the More Food scenario some learners responded, "No thanks I'm:: satisfy", "(Ahm) No. Tha- That's enough and Thank you!" and "No thank you:. I have \nearrow enough." In Shopping No Help, others responded "Uh: no thanks. (3.3) >I can help myself.<" and "No thanks it's okay. I'll find it myself." Interestingly, one Level 3 learner (the lowest level tested) gave the same answer to both scenarios, "No thank you. I'm fine." His use of a generic response, acceptable in both situations, succeeds locally, but may not ultimately carry him toward a varied inventory of expressions.

4.5 Aligning meaning

Meaning is a bit harder to investigate by production, although Example (1) hints at the meaning issue. The data on meaning come from a task involving aural recognition and self-assessment of knowledge accompanied by a demonstration (Bardovi-Harlig 2014). Learners heard 20 expressions, drawn from the same set of expressions as the production task. After each expression (played twice), learners read through options that described their level of knowledge of the expression. If they decided that they could create an example of the expression in a conversation, they wrote it down. In contrast to the production task, this task was untimed, self-paced, and written; learners advanced to the next item when ready. Participants included 113 learners (from 11 L1s) and 9 teachers.

Some misalignment of form and meaning are clear in odd uses of a conventional expression, but others are hidden in apparently appropriate use. Local use by our ESL students with their teachers and classmates suggests anecdotally that they may see "nice to meet you" as generalizable to contexts where only "nice to see you" is appropriate. This was borne out in the learner self-reports of the meaning of these expressions presented in (11) and (12).

- (11) *Nice to see you*
 Def: I'm happy to meet you
 Ex: Hi. My name is Mary, Nice to see you.
 "I'm Kelly. Nice to see you, too"
- (12) a. *No thanks*
 Def: That's OK, don't thank me.
 Ex: Thank you! No thanks!
- b. *No thanks*
 Def: You are welcome.
 Ex: No thanks. That's my job.

Learners may know the form and at least one plausible example use, but not the meaning as Examples (13)–(15) show. Some learners reported that *Watch out!* means “look outside” or “it’s amazing” and that *Be careful* means “don’t forget things”, but in the examples they constructed, the idiosyncratic meanings are not evident.

- (13) *Watch out!*
 Def: look outside
 Ex: watch out. It's raining.
- (14) *Watch out!*
 Def: look at something or somewhere, it's amazing
 Ex: Watch out! It's a big cat!
- (15) *Be careful*
 Def: don't forget thing.
 Ex: I want travel. My mom says be careful to me.

4.6 Meaning again, from a different perspective

There are some contexts where learner responses show that they interpret the situation in the same way as native speakers; their responses encode the same meaning, and some learners use the same metaphor as the native speakers.

- (16) Scenario: You are in the theater. There is a group of young teenagers sitting behind you. They are talking so loudly that you cannot hear a word.
 You say:

60% of the native-speaking peers' responses included *Be quiet*. The remainder of the responses were *shut up* (11%), *keep it down* (11%), and *quiet down* (9%) with one response each of *shhhh*, *I can't hear*, and a combination of expressions. In contrast, NS teachers did not agree with the NS peers (although they usually

did, see Bardovi-Harlig 2009). Only 21% of the native-speaking teachers said *Be quiet*. The remainder of the responses were the equally frequent competitor *keep it down* (21%), with *hold it down* (14%), *shhhh* plus explanation (14%), and one response each of *shut up*, *quiet down*, *shhhh* (alone), and one opt-out indicating “too embarrassed to say”. If the teacher responses are viewed not merely as variable (Bardovi-Harlig 2012b), but from the perspective of metaphor following cognitive linguists (Boers and Lindstromberg 2008), the metaphor QUIET IS DOWN is evident in 42% of the teachers’ production: *keep it down*, *hold it down*, and *quiet down*.

The metaphor QUIET IS DOWN also leads to a richer interpretation of learner production. Aggregating the learner responses across levels shows two uses of the targetlike *keep it down* and *quiet down*, and 10 additional interlanguage uses with *down* which included {*turn/calm/keep*} *down your voice*, *low down*, *loud down of your {voice/sound}*, *could you loud down?*, and *can you turn down your talking?* Although this represents only 10% of the 122 learners’ responses, it does suggest that learners are aligned with the speech act, pragmatic strategy, content, and meaning. Learners also showed 26%–48% usage of *Be quiet*, the preferred expression used by their NS peers, further demonstrating their alignment as a group.

4.7 Aligning form

In these responses to (9), *No thanks I’m:: satisfy* and *No:: , thank you. I can’t eat that’s enough for me*, it appears that the speech act, pragmatic strategies, and content are all in place. The expression, “No thanks, I’m full”, seems to be the remaining piece of the puzzle in these responses. In other cases, learners indicate their knowledge of the target expression by the presence of key words in the appropriate contexts. In response to (10) where the established conventional expression is *I’m just looking*, learners may use the key words, *just look*, but not be able to realize the full form as in *I just look*, *Just I’m looking*, and *I’ll just looking*. In these cases learner production seems to be constrained by their interlanguage grammars rather than their interlanguage pragmatics. (For a fuller discussion, see Bardovi-Harlig and Stringer 2017).

5. The role of context(s) in the acquisition of L2 pragmatic routines and conventional expressions

In pragmatics, context is of paramount importance. As I hope to have shown, there are some contexts that are characterized by consistent use of a single, preferred expression, which I have called a conventional expression. There are also other contexts in which there is no consensus use.⁵ But there are also contexts in the middle where another type of formulaic sequence is used, namely pragmatic routines. Like conventional expressions, pragmatic routines indicate the illocutionary force of an utterance. They tend to be reasonably frequent, but unlike conventional expressions, they may be interchangeable with other pragmatic routines in the same context.

In the research of phraseology in the context of second and foreign language learning, researchers have identified characteristics of formulas that may increase their long-term retention of form, notably phonological repetition (alliteration, assonance, and rhyme, for example), and characteristics such as transparency, compositionality, and imageability that might enhance learning of meaning (Boers and Lindstromberg 2012). Although outside of compositionality, there are no obvious parallels in the formulaic language considered here, one could ask whether the specificity of context would convey an advantage to learning to use a conventional expression compared to the much broader contexts of pragmatic routines. Highly restricted cases such as *Nice to meet you* with one context and one expression might be advantageous to learners because of the clarity of the context and the lack of competitors. On the other hand, the looser association of pragmatic routines to speech acts, with a variety of alternatives may in some ways be easier given the breadth of the target. In the first case, the target is clear-cut, occurring in well-defined contexts (such as introductions), but the target (a single expression) may be viewed as restricted, i.e., learners have to hit a single mark. In contrast, pragmatic routines such as agreement and disagreement routines in academic discussions have many alternatives (e.g. *That's right*, *You're right*, *That's true*, *I agree*) and offer learners many targets for acquisition and thus multiple ways to be targetlike, offering boarder targets, yet they present less salient contexts for acquisition. The question for second language acquisition is whether one situation over the other offers an advantage to learners, all other things being equal: a range of expressions that can be used in a broad range of contexts or single expressions in very restricted contexts. Of course, there are possibilities in between, where expressions can be generalized from their restricted contexts to other contexts, or any one of roughly equivalent expressions can be used in increasingly restricted contexts.

5. Contexts in which no formulaic language is used seem to be in the majority (Bardovi-Harlig 2016)

6. Instruction

Boers and Lindstromberg (2012) claim that lexical chunks are not likely to be learned autonomously by learners, but respond well to instruction. Our work suggests that while learners may learn at least some pragmatic routines and conventional expressions from extensive interaction in the host environment (Bardovi-Harlig and Bastos 2011), they nevertheless respond well to pragmatic instruction targeting formulaic language as Boers and Lindstromberg have observed.

Outside of the classroom, learnability seems to be enhanced when a conventional expression or pragmatic routine occurs predictably in a particular context, when it is a part of an exchange that learners observe or participate in regularly, and when learners are expected to say it or have the potential to say it (providing that they have the grammatical proficiency to do so). Consider two examples: When asked to provide what the television anchor would say to encourage viewers to continue watching after a break, students who had been in the U.S. less than two years replied *Keep your channel* and *When we come back we will an action* (Kecskes 2000). TV-anchor routines might be less likely to be noticed because learners do not anticipate being television anchors and they do not expect the opportunity to use the expressions. In contrast, the response in the sequence *Have a nice day! You too!* is likely to have been learned from engagement in the community.

In what follows, I discuss two central activities of instruction: input and assessment. One of the crucial functions of instruction is to increase the salience of the input, and hence, the target for the learners. As a precursor to this, instructors need to determine the target expressions: usefulness as well as frequency should be considered (Boers and Lindstromberg 2008). Although the conventional expressions collected via observation and testing can be used in instruction (Bardovi-Harlig and Vellenga 2012), the cycle of observation and refinement are very time consuming for materials development. We have instead used a range of spoken corpora to develop materials for teaching pragmatic routines (Bardovi-Harlig and Mossman 2016). It is important to note that commercially available language textbooks are of limited value for the teaching of pragmatics (noted as early as Williams 1988, and as recently as Cohen and Ishihara 2013), including pragmatic routines and conventional expressions (Bardovi-Harlig, Mossman and Vellenga 2015b). Gouverneur's (2008) review of general purpose EFL textbooks cites the need to redefine the principles for selection and presentation of phraseological units, thus suggesting that the inadequacy of published materials may extend to textbook treatment of lexical phrases more generally.

In preparing to teach pragmatic routines for agreements, disagreements, and clarifications for academic discussion, Bardovi-Harlig, Mossman and Vellenga (2015a,b) first consulted EAP (English for Academic Purposes) textbooks for

relevant pragmatic routines, then compared them to the results of their searches of the Michigan Corpus of Academic Spoken English (MICASE; Simpson, Briggs, Ovens and Swales 2002; <http://quod.lib.umich.edu/m/micase>), a corpus of 1.8 million words compiled from transcribed speech from almost 200 hours of recordings from the University of Michigan, using the range of 10–40 occurrences per million words as a lower limit for frequency (Biber, Johansson, Leech, Conrad and Finegan 1999, and Biber, Conrad and Cortes 2004, respectively). The resulting review (Bardovi-Harlig, Mossman and Vellenga 2015b) of the five EAP textbook series showed that although textbooks did include some frequent expressions, they also included expressions that did not occur in the academic corpus (such as *That's completely wrong*, and *That's crazy!* for disagreements), and they also failed to include the three most frequent disagreement expressions *Yeah but*, *OK but*, and *I agree... but*. Textbook evaluations along with studies of the effect of instruction show that although instruction is helpful in facilitating acquisition, existing commercial materials may need to be supplemented in order to do so.

The second crucial activity is assessment. Acquisition of formulaic sequences has been measured in a variety of ways ranging from controlled written tasks to free oral and written production, but most of the available assessment methods have to be modified for use in pragmatics. Among the controlled written tasks are a C-test in which blanks and letters provided cues to the formula (Jones and Haywood 2004), and C-tests that also give a meaning gloss: “I’ve been watching the news report and they say that **there’s a go ___cha___** that the international debts of poorer countries might be cancelled (*this will probably happen*)” (Schmitt, Dörnyei, Adolphs and Durow 2004: 73). Reporting that learners lost sight of context when trying to fit expressions into a C-test, Revier (2009) developed a 3 × 3 matrix to test Verb-Article-Noun sequences from which participants selected one word from each column (*tell a joke*, *keep a secret*, or nonidiomatically, *tell a secret*, *keep the joke*). Roever (2005) investigated learner identification of pragmatic routines using a multiple choice task. Alali and Schmitt (2012) used four tests to assess the learning of English formulaic sequences, translation of Arabic into English (form recall), translation of English into Arabic (meaning recall), multiple-choice selection of English expressions for Arabic (form recognition), and multiple-choice selection of Arabic given English expressions (meaning recognition). Boers and Lindstromberg (2012: 91) refer to such tasks as “easy” and it would be very difficult to disagree. At the opposite end of the evaluation spectrum are production tasks that allow learners to determine their own contributions. These include written essays (Jones and Haywood 2004), written DCTs (Olshtain and Cohen 1990), oral role-plays (House 1996), and oral opinion-gap activities (Németh and Kormos 2001), the last three of these are pragmatics tasks.

A comparison of these studies shows that learners generally score higher on the controlled written tasks than on the open-ended tasks; and although the desired outcome for pragmatics instruction is improved oral production, in free production tasks learners may not produce the targeted formulaic sequences (Jones and Haywood 2004, for essays; Németh and Kormos 2001, for opinion gap activities). However, when evaluations of instructional outcomes both control context and allow free production, learners demonstrate significant gains (Bardovi-Harlig and Vellenga 2012). Learners showed dramatic gains when an oral group-work simulation task with spoken turns was used to test the efficacy of teaching pragmatic routines (Bardovi-Harlig, Mossman and Vellenga 2015a). Free production alone may not create sufficient opportunities for learners to use pragmatic routines, and giving learners non-competitive turns may assure that every learner gets a chance to speak. Developing challenging but controlled tasks for pragmatics does seem to be possible, without resorting to the “easy” tasks that do not resemble language use. Pragmatics may be able to contribute elements of task design to the study of the acquisition of formulaic language in other contexts.

7. Reflection

Research on the acquisition and use of formulaic language in second language pragmatics reveals the complexity of using conventional language as a pragmlinguistic resource. In addition to associating a recurrent sequence with its meaning, in order to use a pragmatic routine or conventional expression, learners must also align their contributions to those of the target language speech community on several levels pragmatically. To use either pragmatic routines or conventional expressions learners must know both the approximate form and the meaning(s) of an expression or expressions, and align their response with the speech act and the pragmatic strategy of the target speech community in a specific pragmatic context or a range of contexts. To use a conventional expression, learners must additionally align content and ultimately form and chose one expression to the exclusion of others, in situations where there is one favorite expression. It is important to keep in mind that formulaic language is only one pragmlinguistic resource among many that are used by speakers, and that most speech acts are realized without formulaic language. Even in the situations that favor formulaic sequences, it is possible to produce a pragmatically felicitous response without them by aligning on all but the level of form.

Although we are making headway in exploring the acquisition and use of formulaic language in L2 pragmatics, it seems to me that a crucial area of investigation is to determine what learners notice on their own pragmatically, and how

they notice it. While intensity of interaction with speakers of the target language (whether native or not) correlates with increased recognition and use of conventional expressions, mere length of residence does not. Yet, when learners drawn from the same population take a pretest prior to instruction, their performance shows very low pretest scores on such common pragmatic routines as agreement and disagreement routines, suggesting that what learners notice and when they notice it is quite contextualized and perhaps very individual.

Studying the acquisition of formulaic language as a pragmalinguistic resource highlights the role and function of formulaic language in pragmatics more generally. This, in turn, contributes to our understanding of the social aspects of formulaic language, a topic of ongoing interest in applied linguistics.

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What is happened? Your amazon.com order has shipped

Overpassivization and unaccusativity as L2 construction learning

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It is well known that many L2 users overpassivize unaccusatives. The same L2 users may also be reluctant to accept constructions with unaccusative meanings. We examined the responses from 56 L2 users of English on a scaled grammaticality judgment task. We predicted that performance would be negatively affected in the presence of a conceptualizable agent in the discourse scene that biases an external causation construal and with low-frequency verbs and alternating verbs. We found clear effects for frequency and alternation in the hypothesized direction. However, there was no evidence for an independent contribution of the conceptualization bias condition. Our study supports the claim that learners build their L2 grammars by abstracting not only the statistical properties but also the complex, polysemous meanings of the constructions they experience in usage.

Keywords: frequency, cognitive-effects, L2 constructions

1. Introduction

A widely documented phenomenon in the oral and written production of second language (L2) users of English is the tendency to mark unaccusative predicates such as *die*, *happen*, *fall*, or *vanish*, with passive morphology, commonly referred to in the second language acquisition (SLA) literature as overpassivization errors. The following are attested cases:

- (1) *My mother *was died* when I was just a baby. (Thai L1; Zobl 1989)
- (2) *The most memorable experience of my life *was happened* 15 years ago. (Arabic L1; Zobl 1989)

- (3) *Most of people *are fallen* in love and marry with somebody.
(Japanese L1; Zobl 1989)
- (4) *Rush hour traffic can *be vanished* because working at home is a new version.
(Chinese L1; Yip 1995)

Overpassivization is a type of overgeneralization that occurs at the level of argument structure. In the course of development of English as a first language (L1), children growing up monolingually also overgeneralize verb argument structures, as Bowerman (1974) famously documented with the overtransitivized innovation *He disappeared the rabbit*. In child language these cases are of low incidence and short-lived. In L2 learning, by comparison, overpassivization is also low in overall incidence but is attested across diverse L1 backgrounds and continues to be documented at advanced levels of proficiency. The methods SLA researchers have used to investigate this phenomenon have ranged from the analysis of free production data (Oshita 2000; Yip 1995; Zobl 1989), to elicitation of grammaticality judgments or controlled production (Balcom 1997; Gao 2016; Hirawaka 2001; Ju 2000; Kondo 2005; Montrul 2001, 2005; Sorace 1993, 1995; Sorace and Shomura 2001) to both (Han 2000, 2006). Most of these studies have adopted a formal linguistic perspective that focuses on the lexical semantics of the verb and the deep and surface syntax that characterizes different argument structures for which different verbs subcategorize, in the tradition of Perlmutter (1978) (see also Levin and Rappaport Hovav 1995; Van Valin 1990). However, an interesting early study by Ju (2000) turned to cognitive linguistics to shed light on the phenomenon, proposing that L2 overpassivization can be best captured if the role of discourse meaning is taken into account. That is, instead of locating explanations in the semantics of verb classes in interaction with their syntactic deep and surface structure, Ju shifted the lens onto the semantics of the event as construed by a language user at the moment of pairing a given utterance with a given mental scene (Langacker 2008; Tyler 2012).

In the present study, we expand on the approach pursued by Ju (2000) and elicit acceptability judgments to investigate the extent to which L2 users are willing to (a) accept (grammatical) unaccusative frames (*What happened? Your amazon.com order has shipped*) and (b) reject (ungrammatical) overpassivized constructions, some of which (*What is happened?*) are not attested in the target input and some of which (*The taste of the soup was changed slowly when I boiled it*) contain verbs that are attested in the target input in other constructions with passive meaning (*The soup of the day was changed last month*). We also ask whether L2 users are sensitive in their responses to the frequency of verbs in the constructions they judge, the alternative constructions in which these verbs can participate,

and – following Ju – the availability of construals invoking an externally or internally caused event. Our goal is to shed empirical light on overpassivization and the L2 development of unaccusative constructions by turning to usage-based insights into second language and multilingual learning (e.g. Cadierno and Eskildsen 2015; Ellis, O’Donnell and Römer 2013; Ellis, Römer and O’Donnell 2016; Ortega, Tyler, Park and Uno 2016). Drawing from similar constructionist views of L1 development (Goldberg 2016; Lieven 2016; Tomasello 2003), we view L2 knowledge as the outcome of sedimented experience of language, where linguistic representations emerge from the interaction between the properties experienced in the context of communication and general associative learning mechanisms that are driven by frequency and meaning.

2. Overpassivation and unaccusativity

Several SLA scholars (e.g. Hubbard 1994; Oshita 2000, 2001) pointed out early on that nonnativelike passivization by English L2 users, such as the attested utterances illustrated in (1)–(4) above, are distinctively associated with unaccusative verbs. In one of the largest studies of overpassivization to date, Oshita (2000) analyzed the incidence of the phenomenon in a total of 3,362 essays by L1 Italian, Spanish, Korean, and Japanese learners of L2 English with diverse proficiency levels, drawn from the Longman Learners’ Corpus (<http://www.pearsonlongman.com/dictionaries/corpus/learners.html>). When 10 preselected unaccusatives were inspected (*appear, arise, arrive, die, disappear, exist, fall, happen, occur, rise*), a relatively wide range in the incidence of overpassivization was observed, depending on the learners’ L1 background. The highest rate of 20.5% (or 8 out of 39 cases) was found in the essays written by L1 Korean writers and the lowest rate of 1.5% (5/327 total instances) in the essays by L1 Spanish writers. The resulting average was a ratio of 4.5% overpassivized occurrences (e.g. *They were arrived*) to targetlike unaccusative noun phrase-verb frames (e.g., *They arrived*), or 38 out of a total of 851 inspected contexts. By contrast, when inspecting 640 exemplars featuring 10 preselected unergative verbs (*cough, cry, dance, joke, laugh, shout, smile, speak, talk, walk*), overpassivization was negligible, with a mere single instance, *He has been walked since last month*, from an L1 Spanish writer. Oshita concluded that “virtually all the instances of nontargetlike ‘passive’ structures on intransitive verbs involve unaccusatives, not unergatives” (p. 310). Thus the association between English unaccusativity and overpassivization seems undisputable in L2 learning.

2.1 Unaccusatives as types of predicates

Unaccusatives are a type of intransitive predicate in formal linguistic theories. In his influential Unaccusativity Hypothesis, Perlmutter (1978) described them as predicates that carry non-agentive and telic meanings and whose subjects are semantically a patient (e.g. *burn, fall, drop, sink, slide, drown*) and as one-argument predicates of existing and happening (e.g. *exist, happen, occur*) (see also Levin and Rappaport Hovav 1995; Van Valin 1990). Unaccusative verbs are traditionally divided into two formal subclasses. Non-alternating unaccusatives do not have transitive counterparts and thus occur only as intransitive frames (e.g. *suffer, happen, appear*), whereas alternating unaccusatives do have transitive counterparts (e.g. *increase, decrease, improve*), meaning that they can subcategorize as transitive as well as unaccusative syntactic frames.

With non-alternating unaccusatives, the constructional elements and arrangement are conventional: These verbs will participate in unaccusative constructions only, with no transitivity, that is, no possibility of active or passive meanings. With alternating unaccusatives, the choice is often a rhetorical or discourse-pragmatic one. To illustrate, the alternating unaccusative *to ship* is used as an unaccusative in the statement *Your amazon.com order has shipped*. This choice is consistently preferred by Amazon in automated email titles to customers to announce that their order *has been shipped*, even though this latter transitive rendition would be equally plausible (in fact, we found it attested in our Google searches only in a message warning against phishing scams, dated September 21, 2012, Omniquad Security Blog). The unaccusative preference is possibly a commercial strategy designed to background the DOER or causer of the event and to foreground instead the RECIPIENT or patient (i.e., the customer anxiously awaiting to get the purchased product).

Indeed, because of this patient-focusing effect, when analyzing unaccusativity with alternating verbs, formal syntacticians (e.g. Alexiadou and Doron 2012) speak of *anticausative* predicates in sentences such as *The window broke*, a zero derivation that obviates the fact that it must have *been broken* by someone or something and suggests an inchoative situation where the breaking was spontaneous. They also speak of *dispositional* middle voice predicates for alternating unaccusative sentences such as *This book sells well*. Cognitive linguists would say, instead, that the alternation must in fact be considered two different constructions with different meanings, offering two *construals* of the same event (e.g. Langacker 2008; Tomlin 1983). As Langacker (2008) explains, “in viewing a scene, what we actually see depends on how closely we examine it, what we choose to look at, which elements we pay most attention to, and where we view it from” (p. 55). In unaccusative constructions with alternating verbs, an action that might otherwise be viewed

as transitive from the perspective of the doer is viewed as primordially from the perspective of the affected object and/or recipient, such as a book reaching success (*This book sells well*) or an awaited order being on its way (*Your order shipped*). Moreover, cognitive linguists see transitivity and unaccusativity as graded and subject to prototypicality effects (Ambridge 2015; Hopper and Thompson 1980). For instance, using passive morphology with an alternating verb for an unaccusative meaning will at times result not just in a passive meaning (*Your order was shipped*) but in a less acceptable construction, such as *The taste of the soup was changed slowly when I boiled it*.

Drawing from cognitive linguistic discussions (e.g. Langacker 2008; Tomlin 1983) of the prototypicality of agent and patient in events and the notion of construal, or grammatically achieved ways of viewing a particular situation from different vantage points, a novel approach to the problem of overpassivization was undertaken by Ju (2000).

2.2 Event construal of causation in unaccusative constructions

Ju (2000) hypothesized overpassivization would be more likely licensed in L2 mental grammars when an event could be construed as externally caused rather than when it is viewed as internally caused. The contrast is shown in (5) as in (6), both taken from the instrument in the 2000 study:

- (5) A fighter jet shot at the ship. The ship sank/was sunk slowly.
- (6) The rusty old ship started breaking up. The ship sank/was sunk slowly.

If given a choice, Ju predicted, L2 users would prefer *was sunk* for (5) but would be more willing to choose *sank* for (6). In essence, then, the hypothesis is that biasing an event towards an external causation construal might make a verb “more transitive” in the eyes of L2 users, and thus more passivizable (i.e. inviting overpassivization). At the time, Ju cited only general ideas in cognitive linguistics as inspiration for the proposal. Later empirical work from usage-based perspectives has indirectly empirically supported Ju’s hunch, turning up related evidence that language users more readily accept one-argument unaccusatives like *disappear* in two-argument transitive constructions, thus overtransitivizing them, for verb or event meanings that they construe as directly externally caused. For example, this has been found for L1 speakers of English across ages (Ambridge, Pine, Rowland and Young 2008; Brooks, Tomasello, Dodson and Lewis 1999) and for heritage speakers of Spanish (Zyzik 2014). In close alignment with Ju’s logic, Ambridge, Pine, Rowland, Jones and Clark (2009) manipulated the causer of an event to be less-direct (*the funny man*) or more-direct (*the funny man’s joke*) and found that adults and children

alike rated overtransitivized items more acceptable when they had a more-direct causer (*The funny man's joke giggled Bart*), thus suggestive of more direct, external causation, than when they did not (*The funny man giggled Bart*).

Ju (2000) created a battery of 36 two-sentence unaccusative items where the condition of external and internal causation was manipulated in the first sentence, which invoked (or not) an agent who could be conceptualized as the doer of the action in the second sentence, as shown in (5) and (6) above. The researcher then elicited forced-choice responses from 35 graduate-level Chinese L1 English L2 learners whose paper-and-pencil TOEFL scores ranged from 550 to 575, and from 10 undergraduate English native speakers who served as a baseline group. All participants responded to the 36 experimental items featuring 13 alternating unaccusative verbs and 5 non-alternating unaccusative verbs. Each unaccusative verb appeared twice, always with an active and a passive verb form to choose from, once in an item that favored an event construal as externally caused (as in (5) above) and the other time as internally caused (as in (6) above). The Chinese learners were found to be statistically significantly affected by the manipulation of causation in event construal and, as predicted, tended to choose the overpassivized verb forms more often with items biasing an external causation construal of the scene.

Ju (2000) also examined post-hoc whether L2 participants' responses differed when the unaccusative verbs were alternating vs. non-alternating, reasoning that learners accrue (potentially confusing) positive evidence that alternating verbs can be both active and passive, whereas at least indirect negative evidence is available in the surrounding environment that non-alternating verbs never occur in passive form. However, there were only 5 non-alternating verbs in the instrument and, therefore, the alternation factor could not be systematically explored. Moreover, Ju noted additionally that learners seemed affected in their judgments more strongly by lexical specific knowledge of verb meanings than by their overall membership into the alternating or non-alternating class. For example, participants seemed to have more difficulty with the nativelike use of *close*, *break*, and *freeze* but not *grow* and *decrease*, despite all of them belonging to the same unaccusative group of alternating verbs. Ju noted in passing that a plausible explanation might lie with the relative input frequency of the unaccusative verbs that happened to be included in the instrument.

We think Ju's (2000) early in-passing suggestion that alternation and frequency must matter was well taken. Since then, other studies have shown that both children and adults are more accurate in their L1 judgments of overtransitivization in unaccusatives with items containing high-frequency verbs (Ambridge et al. 2008; Brooks et al. 1999; Theakston 2004), although this frequency effect has not always been replicated (e.g. Zyzik (2014) did not find any frequency effect with heritage language learners of Spanish). That alternation ought to matter is congruent with

usage-based rationales that posit that “[t]he verb is a better predictor of sentence meaning than any other word in the sentence and plays a central role in determining the syntactic structure of a sentence” (Ellis and Ferreira-Junior 2009: 189) and that the tighter the semantic fit between a given verb and the construction or constructions in which it participates, the more entrenched and thus better learned the particular form-function mapping will be (Ambridge and Lieven 2011: 256–265). Ju’s attempt at accounting for English overpassivization is meritorious and has not been taken up until now.

2.3 L2 learning of unaccusatives as construction learning

What must L2 users learn, when they learn unaccusativity in English, including learning to retreat from overpassivization? The task is certainly complex. The usage-based, constructionist view of L2 development we espouse (Cadierno and Eskildsen 2015; Ellis 2016; Ellis et al. 2013, 2016; Ortega et al. 2016) is based on similar views for L1 development (Lieven 2016; Tomasello 2003). Learning will begin piece-meal, with weak abstract representations emerging via statistical learning processes of entrenchment and statistical preemption, driven by learning mechanisms of analogy and structure mapping, and with high sensitivity to frequency and to lexis-specific learning. In particular the powerful role of frequency in language learning has been by now well established (Ambridge, Kidd, Rowland and Theakston 2015; Behrens and Pfänder 2016, and in SLA see Ellis 2002). Language users need massive, recurrent opportunities to experience linguistic units across a number of ordinary usage events and in a variety of meaningful social contexts, in order to implicitly strengthen memory traces of their form-function co-occurrences. Meaning, and not only frequency, must be emphasized as a key part of the learning task: Learners eventually abstract not only the statistical properties but also the complex, polysemous meanings of these linguistic units or constructions (Perek and Goldberg 2015; Tyler 2012).

Let us illustrate the task of learning unaccusativity in L2 English with the verb to *ship*, and the constructions in which it appeared in personal emails received by the authors from amazon.com, reproduced below:

Emails with *ship*

- a. *We thought you’d like to know that we shipped your item, and that this completes your order*
[inside an email message from amazon.com]
- b. *Your package is being shipped by USPS and the tracking number is...*
[in a footnote at the end of the same email message]

- c. *Your amazon.com order has shipped!*
[in the email message subject]
- d. *Your amazon.com order has been shipped!*
[in a googled message warning against phishing scams and advising how to recognize them]

An L2 user of English will encounter many instances of the verb *ship* in many transitive constructions as in (a). Transitive constructions are highly prototypical in how humans experience the world (Hopper and Thompson 1980). They can be understood and used by children at the age of 2 and a few months, at least at the most basic level of “encoding intentional agents and the transfer of an action from agent to patient” (Theakston et al. 2012: 120). In the case of the *ship* construction in (a), the semantics are of relatively high transitivity, with *amazon.com* as an intentional – though not animate – AGENT who is the subject, a high level of affectedness of a THEME or OBJECT, which is the product bought and to be received, a PATIENT or RECIPIENT who is the customer and order beneficiary, and an event that can be thought of as a dynamic ACTION, shipping.

With increasing language experience, our L2 user will also hopefully encounter sufficient tokens of *ship* in the passive construction, as in (b). These would show the same dynamic action of shipping, a subject that is not the agent in the event but an affected entity, and an agent in the *by*-phrase, which is shaded or deprofiled as less prominent in the construal of the scene (Goldberg 2005). Passive constructions are scarcer than transitive ones in the input and, perhaps in part for this reason, they are late-acquired. Armon-Lotem, Haman, Jensen de Lopez, Smoczynska, Yatsushiro, Szczerbinski and Kamandulyte-Merfeldiene (2016) estimate that “[o]nly 0.4% of the speech addressed to English-speaking children consists of passive constructions of any kind” (p. 32). They also conclude that, across a number of languages, monolingual children acquire most basic passive constructions only by the age of 5. But in the world, passive constructions are often communicatively useful if, as we noted earlier, we want the discourse focus to be on entities affected by actions, as opposed to the agents of those actions (Gordon and Chafetz 1990).

If our L2 user continues to experience passive constructions like (b) with *ship* and perhaps with other high-transitivity verbs which can participate in passive constructions, she may come to understand the value of English passive morphology to help focus co-communicators’ attention on elements of the discourse scene other than the doer. If so, she may eventually also extend the passive construction to other verbs like *happen*, *vanish*, and so on, which in English do not conventionally participate in passive constructions. This overpassivization is possible because, as Perek and Goldberg (2015) found, “[l]earners are willing to use verbs in unwitnessed ways when the function of the target construction is better suited to the discourse

context than a witnessed construction would have been” and most particularly “if they have witnessed even a minority of verbs appearing in both constructions” (p. 125). So, based on the repeated experience of alternating verbs like *ship*, our L2 user may well begin to produce or accept overpassivized constructions like the one in (7), taken from item 4 in the instrument used in the present study:

(7) A coin fell into the mud. The coin was vanished instantly

Gradually, however, sufficient encounters with *happen* constructions, *vanish* constructions, and other similar ones, may result in the statistical strengthening and eventual entrenchment of such attested constructions and the abandonment of (7) as not possible for these (non-alternating) verbs, simply because they are not attested (Ambridge and Brandt 2013).

Returning to the verb *ship* in the emails above, its occurrence in an unaccusative construction like (c) may not be predicted or expected by our L2 user, who has learned by now from her accumulated experience to expect (a) and to a lesser extent (b). Because tokens like (c) are less likely encountered than the alternative active or passive constructions, and thus will be unfamiliar to her (Robenalt and Goldberg 2016), and because the two alternatives (b) and (c) seem to achieve similar discourse effects (Perek and Goldberg 2015), she will be more willing to reject the unaccusative (c) and conservatively stick to the passive (b), if presented with a metalinguistic choice. A real learning challenge for *ship*-like verbs, traditionally called alternating verbs, as the emails illustrate, is that they constitute a case of “lexical types that are more widely spread over a range of constructions, and this promiscuity means that they are not faithful cues” (Ellis and Ferreira-Junior 2009: 193). These verbs are promiscuous and thus offer weak cues to unaccusativity. This is in contrast to *happen*-like verbs, or so-called non-alternating verbs, which are distinctively associated with unaccusative constructions.

At the same time, even very few encounters of unaccusative constructions with *ship* in the input may be particularly noticeable and potentially learned faster, precisely because of their novelty or unpredictability value (Ellis 2002: 174). Below we reproduce an exchange we serendipitously found in a forum on the Internet.¹ It demonstrates that the metalinguistic noticing potential of unaccusative meanings is very real to language users, nonnative and native alike (a reminder that Kellerman’s 1979 classic SLA notion of psychotypology is also very real).

1. Retrieved 12 May 2016 from: <http://english.stackexchange.com/questions/107286/your-order-has-shipped>

Internet exchange

I ordered a CD from an online music store. My confirmation email reads “your order has shipped.” English is not my first language, and this strikes me as odd. Shouldn’t it be a passive-voice sentence, i.e. “your order has been shipped”?

The company’s wording is fine. You might want to check out the sister site for English Language Learners; questions as basic as this one would be better received at that site. J. R. Mar 14 ‘13 at 11:50

I would just like to point out that, even as a native English speaker, I have always found “your order has shipped” to sound a little odd. Justin Mar 14 ‘13 at 12:30

I, also a native speaker, have never found it odd. It is just another example of the protean nature of English words. Robusto Mar 14 ‘13 at 12:33

(non native speaker) it does sound odd to me because it is meant to be “The order has been shipped” – passive voice. Despite the given answer I do believe it is a result of simplification and thus – is incorrect. Rossiten Jan 9 ‘15 at 20:45

This attested example also suggests, however, that metalinguistic reasoning cannot take language users very far in their insights, and that unaccusativity is a rather complex meaning-motivated phenomenon. Be that as it may, if unaccusative instances of *ship* receive such explicit attention from our learner and/or occur with sufficient iteration in her usage experience, statistical learning mechanisms may be engaged to the point when *ship* comes to be interpreted and used as acceptable in such unaccusative meanings. Nevertheless, occurrences of the existing competing passive construction in emails (b) and (d) might make our L2 user hold longer to the impression that they are somewhat better than (c) for expressing the same basic meaning and in the same communicative context, for example, in an email from amazon.com to a customer. Perhaps for a long while, as Montrul (2001) reported for L1 Turkish and L1 Spanish learners, our L2 user will be more willing to accept overpassivized constructions for other verbs that seemingly participate in many of the same constructions as *ship* as well, such as the verb *close* in (8), taken from item 12 in the instrument used in the present study, instead of the unaccusative construction in (9):

(8) I walked through the automatic door. The door was closed immediately

(9) I walked through the automatic door. The door closed immediately

All throughout our exemplification, an additional factor that we have yet to sufficiently consider is the influence of the discourse context that contributes to a given construal of the event scene. This was the factor that Ju (2000) studied, and that others have noted exerts a powerful influence on acceptability judgments of unaccusatives by L1 and L2 users alike (e.g. Ambridge et al. 2008; Zyzik 2014). Namely, discourse meaning at the time of interpretation, when pairing a given utterance

with a given mental scene representing how a speaker conceptualizes and understands the meaning-in-discourse, is at the core of language and language learning in cognitive linguistics (Langacker 2008; Tyler 2012). This being so, the more our L2 user perceives a given instance of *ship*, *vanish*, and so on, as directly externally caused, the more likely she is to construe it as a transitive (either active or a passive) event. That is, because of this conceptual bias, she might prefer (a), (b), or (d) over (c) for *shipping* (see emails with *ship* above), even though all are grammatical, and she may accept the overpassivized (ungrammatical) constructions shown earlier in (7) and (8), even though those precise form-function mappings are unattested in the input.

In sum, optimal language learning of unaccusativity can be posited to proceed by learners keeping track of what verbs they have witnessed in what contexts for what meanings (i.e. by keeping track of experienced constructions), as well as how expected or surprising given verb-construction collocations are in their accumulated experience. In the case of unaccusatives, meaning and frequency must be posited to constantly interact in the process of creating abstract knowledge of the various related constructional repertoires, as their statistical and meaning representations are fine-tuned through sedimented experience. The usage-based theoretical lens predicts that retreat from L2 overpassivization and full-blown deployment of unaccusative constructions will be modulated by two input learning biases, the lexical token frequency of verbs and the alternative constructions from which those verbs participate, and one conceptual bias, the type of causation depending on whether a conceptualizable agent is available in the surrounding discourse.

In view of the empirical evidence we have reviewed and the theoretical arguments we have presented, the following research questions and hypotheses guided the current study:

- RQ1. *Will L2 users be sensitive to verb frequency in their acceptability judgments of unaccusative constructions?* We hypothesized participants would be more accurate in accepting (grammatical) unaccusatives and rejecting (ungrammatical) overpassivized constructions when the constructions contain high-token frequency verbs, compared to low-token frequency verbs. This prediction is based on the expectation that representations of less frequently encountered linguistic units are less elaborated and less entrenched in memory (Ambridge et al. 2008).
- RQ2. *Will L2 users be sensitive to the causative alternation in their acceptability judgments of unaccusative constructions?* We hypothesized participants would be more accurate in their judgments of unaccusative constructions containing non-alternating verbs (e.g. *suffer*, *happen*, *appear*), when compared to unaccusative constructions involving verbs that participate in transitive (active and passive) constructions in the input (e.g. *increase*, *decrease*, *improve*).

The rationale is that, by participating in transitive and unaccusative constructions, alternating verbs are promiscuous and offer weaker cues (Ellis and Ferreira-Junior 2009) for the learning of English unaccusativity than non-alternating verbs, which are more faithfully predictive of unaccusativity.

RQ3. *Does type of causation in event construal affect L2 users' judgment of English unaccusativity?* We hypothesized participants would be less accurate in their judgments of items where the discourse context offers the possibility to interpret the unaccusative event as externally caused. This prediction directly stems from the theoretical rationale and empirical results in Ju (2000; also Ambridge et al. 2009), whose L2 participants were found to be more likely to choose overpassivized verb forms over unaccusative forms when the scenarios invited an external causation construal of the event, as compared to scenarios associated with internal causation.

3. Method

3.1 Participants

The participants came from an initial pool of 63 volunteers recruited at a large public university in the United States. Four of the volunteers were screened out because they accepted perfectly grammatical passive constructions less than 80% of the time on 20 control items. Given this behavior, it was concluded they may not have had passive constructions yet in their constructional repertoire, which means they may have rejected (ungrammatical) overpassivized items and accepted (grammatical) unaccusative items for the wrong reasons, namely simply because they do not recognize or use passive verbs. Another 3 of the initial volunteers were excluded because of incomplete responses.

The final participants were 56 adult speakers of L2 English (24 males and 32 females) with an average age of 25.68 ($SD = 6.16$). Their L1s were varied: Korean (19), Japanese (13), Chinese (9), Samoan (3), Vietnamese (3), Hindu (2), French (2), Spanish (2), Arabic (1), Bengali (1), and Urdu (1). They had an average length of residence in the United States of 1.99 years ($SD = 2.20$, minimum = 0.25, maximum = 12). Their self-reported paper-based TOEFL scores showed a mean of 564.7 ($SD = 57.2$, minimum = 490, maximum = 667). On average, they had studied English for 12.32 years ($SD = 6.44$), from the age of 11.23 ($SD = 2.31$). In addition, baseline data were collected from 10 English native speakers (6 males and 4 females) of a similar age range to the L2 participants, and also recruited from the same university context.

3.2 Corpus-based selection of target verbs

Tables 1 and 2 summarize the tallied frequencies of the 16 verbs we chose to target in our study. Four alternating and four non-alternating verbs were chosen each to represent high frequency and low frequency occurrence in the English language. We derived the 16 target verbs in a series of analytical steps, which we explain in detail here.

First, we turned to Perlmutter (1978: 162–163), who provides a list of 121 English unergative and unaccusative predicates, and we calculated the frequencies of the unaccusative predicates in this list from two balanced corpora that represent American English in use: The Brown Corpus (Kucera and Francis 1967) and the American National Corpus Second Release (ANC) (Reppen, Ide and Suderman 2005). The Brown Corpus is a one-million-word database that has long served to estimate lexical frequencies in many studies. The ANC contains 25 million untagged words including written and spoken genres in American English, such as academic papers, novels, newspapers, radio and TV talk shows, telephone conversations, and blogs. By consulting these two corpora, we hoped to select verbs for the acceptability judgment task that fell under the high-frequency and low-frequency bands of ordinary usage in American English, the variety of English in which the L2 participants were immersed via formal study for their degrees.

In a second step, we tagged the ANC data with ANCTool and Hepple part of speech tags. The third step was to submit the tagged data to MonoconcPro concordance software to calculate the frequency values of all unaccusative verbs in the two corpora. Verb frequency was defined as the summed frequency of the stem form, simple present *-s*, progressive *-ing*, simple past tense *-ed*, and past participle *-ed*.

In the fourth and final step we chose the 16 verbs by applying two additional strategies. The first strategy was to exclude any irregular verbs. Our rationale was that irregulars may cloud interpretation of the unaccusativity and overpassivization issues under investigation, since they have been posited to exert differential frequency and prototypicality effects on learning and processing (e.g. Bybee 2006; Clahsen 2006). The second strategy was to look at the semantic distance of the verbs to be included. Specifically, if any two verbs were semantically related to each other too closely (e.g. *occur* and *happen*) or if they were a pair of antonyms (e.g. *appear* and *disappear*), only one of the two (or none of the two) was included in our final list.

As shown in Tables 1 and 2, the verbs targeted in the current study overlapped by five and two items, respectively, with the verbs included in the studies by Ju (2000) and Oshita (2000).

Table 1. Eight non-alternating unaccusative verbs included in the present study

High-frequency	Brown		ANC	
	Raw	Per million	Raw	Per million
<i>Happen</i> [†]	278	220.31	7065	311.84
<i>Appear</i> ^{*†}	352	278.95	4939	218.01
<i>Remain</i>	314	248.84	4894	216.02
<i>Result</i>	144	114.12	3247	143.32
Low-frequency				
<i>Progress</i>	25	19.81	194	8.56
<i>Vanish</i> [*]	25	19.81	182	8.03
<i>Glow</i>	19	15.06	20	0.88
<i>Glisten</i>	12	9.51	11	0.49

* Also included in Ju (2000).

† Also included in Oshita (2000)

Table 2. Eight alternating unaccusative verbs included in the present study

High-frequency	Brown		ANC	
	Raw	Per million	Raw	Per million
<i>Turn</i>	566	448.54	6829	301.43
<i>Increase</i>	332	263.10	6808	300.50
<i>Change</i> [*]	226	179.10	5366	236.85
<i>Close</i> [*]	174	137.89	2474	109.20
Low-frequency				
<i>Explode</i>	22	17.43	362	15.98
<i>Scatter</i>	29	22.98	295	13.02
<i>Bounce</i> [*]	28	22.19	266	11.74
<i>Shatter</i>	22	17.43	112	4.94

* Also included in Ju (2000)

3.3 Scaled acceptability judgment task

We adapted Ju's (2000) instrument to elicit our L2 participants' judgments of overpassivization in unaccusative constructions, with two modifications. One, already explained, was that our selection of verbs for the instrument systematically reflected high and low corpus frequencies and balanced out alternating and non-alternating verbs. The other modification was that, rather than a binary response format that forced participants to choose between an active and a passive verb form for each

item, we implemented a scaled acceptability judgment task (AJT), that is, each item was seen by participants with a given verb form in it, and its degree of acceptability was judged. Scaled AJTs, first proposed by Bard, Robertson and Sorace (1996), are thought to overcome the limitations noted for dichotomous response formats when judging grammaticality (Bard et al. 1996; see also Sprouse 2011). This was particularly important from a usage-based perspective, since most phenomena of interest, and particularly frequency and event semantics, are not a matter of black-and-white but probabilistic and graded (e.g. Ambridge 2015). In particular, following Juffs's (2001: 311) suggestion, participants in the present study were asked to respond on an entirely positive scale, ranging from 1 (least acceptable) to 6 (most acceptable), in order not to allow zero midpoint responses from them. Responses to ungrammatical items were then reverse coded. The response format that the participants saw is shown in Figure 1.

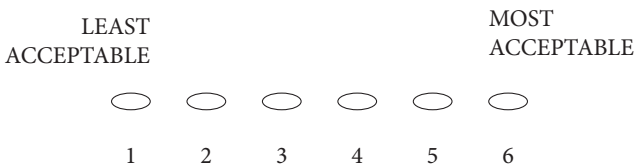


Figure 1. Response format in the scaled acceptability judgment task

Table 3 illustrates the item types in the scaled AJT, which contained a total of 32 experimental items plus 20 control items. Each item consisted of two sentences, the first setting up a construal of the scene and the second one containing the target construction to be responded to. All 32 experimental items were unaccusative constructions, half of which were grammatical and half of which were ungrammatical because they were overpassivized (i.e., they exhibited passive morphology even though the meaning of the construction was unaccusative). All 20 control items were passive constructions, half grammatical and half ungrammatical because they were underpassivized (i.e., they exhibited an active verb form even though the meaning of the construction was passive). Thus, in all cases, ungrammatical items resulted from a poor fit between a given verb's meaning and the construction slot's meaning (Ambridge 2015).

The 32 experimental items featured 16 unaccusative verbs counterbalanced for frequency (high and low) and alternation (non-alternating and alternating) (shown earlier in Tables 1 and 2). The 20 control items featured 10 high-frequency transitive verbs (*accept, allow, complete, correct, create, damage, expect, prepare, relieve, and use*). Thus, there were 26 verb types in the instrument, and each appeared twice, once in a grammatical construction and once in an ungrammatical construction. In

Table 3. Illustration of items and design in the Scaled Acceptability Judgment Task*

	External causation	Internal causation
HF+NA	#6. The little boy tried to pull his toy house out of the sand. The house appeared slowly.	#36. The fog cleared. The house was appeared slowly.
	#31. Someone had a car accident on the main street. The delivery was resulted in a delay.	#9. It was Christmas Eve. The delivery resulted in a delay.
LF+NA	#34. The magician did a trick with a coin. The coin vanished instantly.	#4. A coin fell into the mud. The coin was vanished instantly.
	#5. The city officials turned on the electricity. The street light was glowed brightly.	#17. There were clouds in the sky last night. The street light glowed brightly.
HF+A	#3. The boy turned on the water in the bath. The water level increased gradually.	#20. It rained for a long time. The water level was increased gradually.
	#23. I boiled the soup. The taste of the soup was changed slowly.	#43. The soup was not kept in the refrigerator. The taste of the soup changed slowly.
LF+A	#39. I hit the tennis ball. It bounced up and down a few times.	#10. A ball fell from a bag. It was bounced up and down a few times.
	#32. He dropped the sodas down the stairs. They were exploded suddenly.	#24. The sodas were left outside. They exploded suddenly.
Control	#29. The child met a strict teacher. The behavior corrected instantly.	#11. The traffic was very heavy. The bus expected to come late.
	#1. The mother scolded her child. The behavior was corrected instantly.	#26. The bus left an hour late. The bus was expected to come late.

* HF = high-frequency verbs. LF = low-frequency verbs. NA = non-alternating verbs. A = alternating verbs.

addition, of the entire 52 items in the instrument, 26 involved an internal causation event and 26 an external causation event. Half of the 32 experimental items probed an external causation construal of the event through the mention in the first sentence of an agent potentially conceptualizable as the doer of the unaccusative verb in the second sentence. The other half of the experimental items probed an internal causation construal of the event through a first sentence devoid of any mention of an entity with agency. While the items were created to achieve a counterbalance of

the features of interest (verb frequency, alternation, type of causation), they were then reordered randomly and presented to the participants in the same random fixed order. As an external reviewer pointed out, it would have been desirable to randomize the order of items across participants, to address potential fatigue effects on particular items. However, the paper-and-pencil, individual administration of the AJT precluded this option.

The inclusion of 20 control items (see Table 3 for examples) served two purposes. First, as mentioned in Section 3.1, it allowed us to ascertain that participants were capable of appropriately recognizing and accepting passive English constructions. This was important because being able to accept grammatical unaccusatives and reject ungrammatical overpassivized constructions would mean something quite different for learners who have not yet registered the existence of passive constructions in English. Thus, the valid interpretation of performances on the scaled AJT was crucially dependent on passive constructions being already a part of an L2 learner's constructional repertoire. In addition, the control items enabled us to minimize a rejection response bias in the acceptability judgment instrument as a whole (Paolillo 2000). Namely, since all experimental items that were grammatical were so in the active verb form (the other ungrammatical half being overpassivized constructions), it was a good counterpoint to have all the control items that were grammatical be in the passive voice (i.e., all ungrammatical control items were cases of underpassivization; see Table 3).

The reliability of the scores we elicited from the scaled AJT ($n = 56$, $k = 32$) was Cronbach's $\alpha = 0.84$. This suggested reasonable instrument reliability for the present study.

3.4 Procedure

Participants completed the AJT individually one-on-one with the second or third author, depending on their personal schedules. After signing a consent form, they completed a background questionnaire form. Prior to the main testing, instructions and practice items were provided. The instructions read: "**Please read the first sentence and judge how acceptable THE SECOND SENTENCE is by checking one of the six circles.** Please do not mark anything between the circles, and do not go back and change your initial answers" (cf. Figure 1). The instructions were also verbally explained and demonstrated with a practice item. It was stressed that the first (construal-setting) sentence should be read prior to their judgment of the second (target) sentence. The participants were allowed to ask questions related to vocabulary items, as we wanted to ensure knowledge of the targeted verbs would not be a problem (e.g. with low-frequency items like *glisten*). When a question arose that was directly about a targeted verb, care was taken to provide paraphrases in order

to avoid giving synonyms of the verbs, because those might provide them with unexpected clues regarding unaccusativity or overpassivization. The scaled AJT was administered in an untimed manner, and the entire session including the consent form and the background questionnaire took about 30 minutes to complete.

3.5 Analyses

All responses were coded, with ungrammatical responses reverse coded, and mean scores were calculated for each item and participant, ranging from 1 (least accurate response) to 6 (most accurate response). A $2 \times 2 \times 2$ analysis of variance (ANOVA) was chosen as the appropriate inferential test for the present study. The three within-subjects factors were verb frequency (high-token frequency versus low-token frequency), causative alternation (non-alternating unaccusative verbs versus alternating unaccusative verbs), and type of causation (event construal involving internal versus external causation), and the dependent measure was participants' responses on the scaled AJT. The alpha level was set at 0.05. The general approach to interpreting ANOVA effects is to analyze any higher-order interactions. In order to analyze the possible combination of interactions at each different level, the estimated marginal means were calculated. Based on the estimates, pairwise comparisons at each level were also made using Šídák-corrected 95% confidence intervals. This is a multiple-comparisons adjustment method equivalent to the Bonferroni method that allows slightly more power (Abdi 2007).

4. Results

The descriptive statistics for the baseline group of 10 native English speakers are presented in Table 4. As expected, the L1 users were at ceiling performance (close to a maximum possible mean score of 6) across conditions, largely accepting the grammatical unaccusative items and rejecting the ungrammatical overpassivized items and also accepting the grammatical passive construction control items and rejecting the ungrammatical underpassivized control items. In other words, they showed targetlike knowledge of English unaccusativity and passive voice and were influenced by none of the three main factors under investigation: frequency of verbs, alternation status, or type of causation. This allowed us to assume with more confidence that if any patterning were exhibited in the responses from the L2 participants, this was unlikely stemming from some unknown properties of the instrument or the instructions.

Table 4. Descriptive statistics for baseline English native speaker data ($N = 10$)*

Verb frequency	Causative alternation	Event construal of causation	Mean	SD
High	Non-alternating	Internal	5.90	0.24
		External	5.65	0.34
	Alternating	Internal	5.81	0.30
		External	5.57	0.33
Low	Non-alternating	Internal	5.80	0.27
		External	5.70	0.36
	Alternating	Internal	5.87	0.27
		External	5.75	0.31

* Maximum possible score is six in each cell.

Table 5 summarizes the means and standard deviations for the data from the L2 users. It can be seen that the averaged response scores ranged from 3.67 (for the low-frequency, alternating verbs that appeared in internally caused event construals) all the way to 4.23 (for the high-frequency, non-alternating verbs that appeared in internally caused event construals).

Table 5. Descriptive statistics for L2 participants ($N = 56$)*

Verb frequency	Causative alternation	Event construal of causation	Mean	SD
High	Non-alternating	Internal	4.23	1.06
		External	4.09	0.97
	Alternating	Internal	3.81	1.01
		External	4.10	0.97
Low	Non-alternating	Internal	3.90	1.13
		External	3.89	1.16
	Alternating	Internal	3.67	1.01
		External	3.83	0.95

* Maximum possible score is six in each cell.

The overall $2 \times 2 \times 2$ ANOVA results are summarized in Table 6. They yielded two statistically significant within-subjects main effects and one statistically significant interaction effect. Both verb frequency and alternation exhibited statistically significant main effects, with the magnitude for the effect for frequency ($\chi^2 = 0.15$) noticeably stronger than for alternation ($\chi^2 = 0.08$). These main results suggest that verb-specific cues representing facilitative learning biases in the input, including verb form frequency and its alternation behavior, exerted important influences on L2 responses to unaccusativity and overpassivization. Type of causation was not

Table 6. Summary of three-way ANOVA

	Factors	Sum of squares	df	Mean square	F	Sig.	eta ²
Main effects	F	6.15	1	6.15	9.50	0.01*	0.15
	Error	35.61	55	0.65			
	U	3.48	1	3.48	4.92	0.03*	0.08
	Error	38.94	55	0.71			
	C	0.68	1	0.68	1.56	0.21	0.03
	Error	23.80	55	0.33			
Two-way interaction	F * U	0.08	1	0.08	0.16	0.69	0.01
	Error	27.31	55	0.50			
	F * C	0.01	1	0.01	0.01	0.95	0.00
	Error	27.64	55	0.50			
	U * C	2.43	1	2.43	4.90	0.03*	0.08
	Error	27.30	55	0.50			
Three-way interaction	F * U * C	0.47	1	0.47	0.83	0.37	0.02
	Error	31.30	55	0.57			

* F = Verb frequency; U = Types of unaccusatives; C = Causation types

statistically significant. Thus, event construal per se did not affect L2 responses to unaccusativity and overpassivization. However, the statistically significant main interaction effect observed between alternation and type of causation in event construal, $F(1, 55) = 4.90$, $p = 0.03$, $\chi^2 = 0.08$, suggests that the effect of causative alternation was not the same for events construed as internally versus externally caused. Pairwise comparisons with Šídák correction located the main and interaction effects, as follows.

First, L2 participants in this study performed statistically significantly better, that is, they were able to accept unaccusative constructions and reject overpassivized constructions more often, with the experimental items that featured high-frequency verbs. The mean difference was 0.23 in the six-point scale AJT ($p = 0.01$, $\chi^2 = 0.15$), and about 15% of the variance was accounted for by the facilitating main effect of high-token verb frequency. Second, L2 participants in this study also scored statistically significantly better when judging unaccusatives and overpassivization in the experimental items containing non-alternating verbs. The mean difference was 0.18 in the six-point scale AJT ($p = 0.03$, $\chi^2 = 0.08$), and about 8% of the variance was accounted for by the facilitating main effect of non-alternating unaccusative verbs. Thirdly and finally, the results of the pairwise comparisons revealed the interaction effect between verb alternation and causation in event construal was due to the fact that L2 participants scored better in the internal causation event items with non-alternating unaccusative verbs when compared to internal causation items with alternating verbs ($p = 0.01$, $\chi^2 = 0.08$). The mean difference was 0.32, and this

interaction effect alone accounted for 8% of the model. In the external causation event construal items, by comparison, verb alternation was not a factor affecting performances, with a statistically non-significant and negligible mean difference favoring non-alternating verbs of 0.03 in the six-point scale AJT.

5. Discussion

Two of our three research questions can be answered in ways that supported our expectations in the study. First, the L2 participants correctly preferred unaccusativity and dispreferred overpassivization to acceptability levels that were closer to the native speaker baseline (although still far from ceiling) for constructions that contained high-token frequency verbs than for constructions featuring low-frequency verbs. It is reasonable to infer that this facilitation is due to greater accumulated exposure to the target verbs in the high-frequency band. These L2 users have built a more solid knowledge of the usage of those verbs and the unaccusative constructions they participate in. This interpretation is in line with the claim that language learning is the outcome of previous learning experience, aided by compulsory tallying of the frequency distributions of form-function mappings attested in the surrounding linguistic environment. It may be predicted that if and when these L2 users reach high enough levels of proficiency, the frequency effects will diminish in importance, until at some point when frequency should not affect their performance at all, as we saw it did not in the L1 participant baseline. Some researchers, however, have claimed that L2 users will never exhibit full knowledge of unaccusative constructions, particularly if they come from certain L1 backgrounds (Han 2006). Future research should look into the performance of learner groups sampled at different proficiency levels, in order to ascertain when and whether frequency ceases to be a factor in L2 overpassivization, meaning that L2 users begin to perform at ceiling effect in their acceptability of unaccusatives even with low-frequency verbs.

The second expectation in the study was also supported: The L2 participants performed better on their acceptability judgments (i.e. accepting grammatical unaccusatives and rejecting ungrammatical overpassivized constructions) with constructions that involved non-alternating verbs rather than alternating ones. This finding further supports a role for statistical learning mechanisms driven by experience with the language input. That is, since non-alternating unaccusative verbs do not appear in passive constructions in English (e.g., *When was the accident happened?*), given sufficient experience with consistently not hearing the option *was happened*, this absence may be tallied by L2 users and eventually abstracted into knowledge that *happen* does not select passive constructions. Conversely, the

alternating verb types can appear in passive constructions in usage. Learners might have encountered passive as well as unaccusative constructions with these verbs in the course of their language development. Thus, the more complex mapping into three different constructional meanings (transitivity, passivity, unaccusativity) may have gotten in the way of accurate judgments.

The third prediction was not borne out. We had expected that when an entity was made available in the previous discourse to be construed as the agent for the scene, L2 users would be more likely to accept an overpassivized over an unaccusative construction. This prediction directly followed from Ju's (2000) main finding. Contra Ju, the L2 participants in the present study achieved comparable scores regardless of the causation manipulation. The presence or absence of a conceptualizable agent in the immediately previous discourse made a difference in the present study only when its effects were examined in interaction with the effects of alternation of the unaccusative verbs, in that L2 participants scored statistically significantly most accurately when judging unaccusative events containing a non-alternating verb in combination with an available construal of internal causation. In what follows, we discuss each main finding in turn, starting with the dissonance between the present study and Ju (2000).

5.1 Why did the availability of a conceptualizable agent make only a subtle difference?

The effect for type of causation in the present study was subtle, if statistically reliable, and restricted to an interaction with alternation status of the verb. By comparison, Ju's (2000) findings would suggest that L2 learners' overpassivization is highly sensitive to the presence of a conceptualizable agent. What might explain the discrepant finding?

One reason might lie with the elicitation method employed in each study. Both Ju (2000) and the present study elicited untimed grammaticality evidence that allows for a mixture of metalinguistic and intuitive knowledge to shape the responses. But changing from a forced-choice binary response format to a scaled judgment format may change the processing and thus the results of the judgments. We do not have sufficient information about the administration procedures used by Ju. But we feel our two-sentence procedure aiming at the manipulation of construal would have been most effective if it had relied more tightly on timed, online processing. In the paper-and-pencil individual experiment session, we took care to have L2 participants pay close attention to the prompt sentence prior to reading the following paired sentence. It might be, however, that learners did not always do so, and that their scaled responses were influenced by the acceptability of the experimental sentences in relative isolation from the previous sentence setting up the discourse

scene. It would be advantageous in future studies to have a computerized design approach so the issue is more adequately addressed. Via a computerized delivery, the participants could be forced to read the prime sentence obligatorily before the experimental sentence would be shown and the scaled acceptability judgment recorded. This is important because the effect of the causation types would solely be attested where appropriate contexts are provided.

Another explanation might be related to the present participants' wide range of English proficiencies. Whereas the TOEFL scores of the 35 learners in Ju (2000) had a fairly narrow range of 550 to 575, those of the participants in the present study ranged from 490 to 667. Even though in both studies all participants had already some knowledge of passive voice (as shown in their 80% or above performance on the 20 control items), the two participant groups may have had different depths of English passive constructional knowledge, and the better entrenched knowledge of passivization by the overall more proficient participants in the present study may have lowered their susceptibility to the subtle differences in event construal created by the external versus internal causation manipulation. That is, our participants may have been closer to the baseline performances of the L1 users, who were unaffected by the construal manipulation (cf. Table 4). As an external reviewer pointed out, however, there are no particular theoretical rationales that would posit the disappearance of the event construal effect before the lifting of the frequency effect or the alternation effect. This proficiency explanation thus remains speculative, opening up the interesting question for future research as to what relative learning constraints may ease out earlier or later in L2 development: effects associated with input biases (frequency, alternation) or with conceptual biases (type of causation in event construal).

A third difference that may help explain the discrepant findings between the two studies is the fact that Ju's (2000) participants were all from the same L1 background, Chinese, whereas in the present study many L1s were included in the sample. Han (2006) has argued that overpassivization is one area prone to permanent fossilization for Chinese L1 learners. Fong, one of the two advanced English users she followed, still produced overpassivized constructions such as *However, if the virtual memory is used, the speed will be slowed down significantly* (p. 71) after seven years of continued and immersive use of English for academic and professional purposes. Thus, it may be Ju's participants were more sensitive as a group to the type of causation manipulation than were the participants in our mixed L1 sample, because of some transferable property of their L1 Chinese. The issue of crosslinguistic influence, in particular, is an important one that we did not set out to explore. Therefore, in the next section we elaborate on this factor, which we hope will attract more research attention from usage-based perspectives in the future.

5.2 The importance of considering crosslinguistic influence

Of relevance here is to remind readers that, in our L1 mixed sample, a third of participants were from an L1 Korean background, 16% from an L1 Chinese background, and a varied mixture of other L1s accounted for the rest (see Section 3.1). Almost certainly, hidden crosslinguistic effects might have been present, but it is impossible to speculate how they might have influenced the observed results. In the future, when considering any negative or positive crosslinguistic influence that might be at play in the development of L2 unaccusativity, two key issues to consider are the source of transferability and the differential difficulty of specific L1–L2 language pairs.

Researchers working from formal linguistic perspectives have typically assumed that it is morphological differences that are the source of crosslinguistic influence in this area of L2 development. For example, Montrul (2001) found that, at low proficiency levels, L1 Spanish learners exhibited difficulties with accepting the unaccusative meanings of alternating verbs, in great part – she argued – because they expected English to behave like their language, which requires some morphological marking of the unaccusative meaning in inchoative intransitive sentences like *the door closed* (e.g. in Spanish, a reflexive marker *se*, as in *la puerta se cerró*; see also Zyzik 2006, 2014). In an interesting recent study and taking a functional linguistic perspective, Gao (2016) disagreed and suggested that crosslinguistic influences in the development of unaccusativity may lie less in superficial morphological correspondences (or lack thereof) in the particular language pairs involved, and instead may be of a semantic nature. He studied the judgments of anticausative middle constructions (e.g., knowledge that *The book reads easily* is possible in English but *The answer knows easily* is not) by L1 Chinese and L1 Korean learners of English. Careful predictions based on the special overt markings that both L1s make available for such constructions did not explain the judgments well. Instead, Gao found the Korean L1 group was more reluctant to accept English unaccusatives than the Chinese L1 group, although both performed significantly worse than the L1 English baseline performances he also collected. Gao suggests the culprit is the stricter semantic restrictions that Korean imposes on what can be a subject in a construction. Specifically, inanimate entities cannot easily take the subject position in Korean (p. 133). On the other hand, he argues that the Chinese L1 group was more willing to accept middle constructions because the topic-comment information structure of Chinese means that in fact “patient-as-subject structures [...] are much more common in Chinese than in English” (p. 140).

Also debatable is the possibility that specific L1–L2 language pairs might pose different degrees of challenge when it comes to the learning of unaccusativity. L1 Chinese speakers of L2 English seem to find unaccusativity difficult, based on Ju’s

(2000) research and also the longitudinal study by Han (2000, 2006). But based on the findings reported by Gao (2016) we just discussed, we may want to conclude that L1 Korean users will find English unaccusativity even more challenging. Interestingly, Oshita's (2000) descriptive tallies support this speculation. Of the four L1 backgrounds he inspected, the Korean essay writers exhibited by far the highest proportional levels of overpassivization (20.5%, 8/39) followed afar by the Japanese writers (6.3%, 17/269), whereas the Italian and even more so the Spanish writers overpassivized only rarely (3.7%, 8/216 and 1.5%, 5/327, respectively). However, as the raw counts reveal, the available cases inspected were unequal across languages and particularly thin for Korean, so no generalization is possible. Gao's (2016) crosslinguistic findings suggest a specific comparison of Korean and other L1 backgrounds may be profitable in the future, because L2 construction learning may be particularly sensitive to crosslinguistic influence at the level of event semantics that Ju (2000) and the present study tackled.

In sum, further replication of Ju's (2000) proposal of the conceptualizable agent factor is needed in order to better understand how event construal may affect the learning of English unaccusativity by L2 users. The elicitation method, participant proficiency, and particularly the workings of crosslinguistic influence are variables that are worthy of close consideration in the future.

5.3 Frequency is key to L2 learning, but is no panacea

Our main findings reveal a role for input biases in the L2 learning of unaccusative English constructions. However, we must also be reasonably cautious. Frequency itself is a complex and disputed property of usage (Ambridge, Kidd, Rowland and Theakston 2015), and it is important to note some limitations to the operationalization of verb frequency in the study. They in turn help contextualize the interpretation of the conclusion that high verb token frequency and non-alternating verbs facilitate L2 knowledge of unaccusativity.

First, with our corpus-based frequency estimates we were only able to gauge the incidence of unaccusative verb *forms*, rather than form-function mappings. This was not a problem for the eight non-alternating verbs (cf. Table 1), since the verb form alone is a highly reliable cue to the construction in which it can occur and their joint constructional meaning: If one of these non-alternating verbs appears in a construction, we can assume it will appear with no passive morphology and with a subject that is *not* an agent, in other words, always with an unaccusative meaning. Thus, our corpus-based frequency estimates of non-alternating unaccusative forms are a good reflection of the frequency with which unaccusative constructions containing these verbs will occur as well. However, for the eight alternating verbs we targeted (cf. Table 2), accounting only for verb form frequency is indeed a

problem: Our corpus-aided automated tallying of active voice occurrences of these alternating forms necessarily captured combined frequencies of unaccusative (*My order shipped*) and transitive (*Amazon shipped my order*) constructions in which they participate, since there is no morphological marking on the verb that would differentiate the two constructional meanings. This means that the frequency of form-function unaccusative mappings for alternating verbs, that is, the relative frequency with which these verbs participate in transitivity vs. passive vs. unaccusative constructions, remains underdetermined. The frequency rank orders of alternating verbs can be different in their occurrence in the whole of language versus their occupancy in unaccusative constructions specifically.

More fine-grained analyses of the kind proposed by Ellis et al. (2013, 2016; see also Gries and Ellis 2015) would be needed to precisely gauge the role played by alternating verbs in the L2 learning of English unaccusativity and the retreat from overpassivization. Specifically, it would be advisable to tally how often each alternating verb selects into unaccusative constructions and to find out through statistical measures such as the one-way dependency statistic ΔP (Ellis and Ferreira-Junior 2009) the degree of contingency with which a specific alternating verb is predictive of an unaccusative construction, and in the opposite direction the degree to which an unaccusative construction is predictive of specific alternating verbs. This approach would also help determine whether a few alternating verbs might lead the way in the abstraction of unaccusativity, because they occupy unaccusative constructions more selectively and faithfully (Ellis et al. 2016) than others, even if they will never be as reliable and faithful a cue of unaccusativity as non-alternating verbs. By doing so, future studies would help address lexical specific learning beyond general frequency effects, and this is particularly important if Ju (2000) was right in speculating that L2 users may be more sensitive to idiosyncrasies of specific unaccusative verbs than to overall verb classes like the alternating and non-alternating distinction. Note that neither Ju nor our study could investigate the role of lexical specificity in learning, as in both studies only 2 tokens per verb type were included in the instruments (in our own instrument, one token appearing in a grammatical item and one in an ungrammatical item, cf. Table 3).

A second limitation in our operationalization of frequency is of a more general but not less important nature. Namely, our global frequency tallies of two large corpora afforded us only an idealized estimate of any one L2 user's language exposure profile with regard to verb forms that participate in unaccusative constructions. From the standpoint of usage-based linguistics, actual, rather than idealized, histories of usage should be documented. This is imperative given that "grammar is the cognitive organization of one's experience with language" (Bybee 2006, p. 711). In other words, if frequency matters in acquisition, what matters is not how frequent something is as an inert property of a language, regardless of how well studied in

a massive and representative corpus, but how frequent something is in someone's experience of language.

Of course, the question of how best to represent usage histories of sedimented experience of language, and within it the input frequencies to which L2 users are exposed, is thorny. Research comparing idealized versus actual usage histories is scarce, but one study exists that should give us reason to pause. Ellis et al. (2013: 43–44) inspected combined data from all longitudinal corpora available in CHILDES (MacWhinney 2000), and hence drew from evidence that is representative of parental input and child language across over 400 hundred families. They found that child language use during the ages of 1;0 and 3;6 correlated with verb frequency profiles of child-directed speech at the level of $r = .85$. By comparison, the correlations yielded with global corpus estimations (in their case, using the British National Corpus, 2007) were at $r = .46$ for age 1;0 and $r = .50$ for age 3;6. This finding strongly suggests that looking for input effects in child language acquisition when usage histories are idealized results in great attenuation.

Striving for the added precision that is gained from documenting actual histories of usage is therefore important in child language acquisition. In the study of how the linguistic environment contributes to L2 adult learning this may be all the more necessary. This is because we must assume that adults enjoy more limited and more variable access to high-quality, socially-supportive input in the target language than children do. Initial empirical documentation of this reality has been furnished by Ranta and Meckelborg (2013), with participants who were international students immersed in English-medium higher education, much like the participants in the present study. Ranta and Meckelborg developed an innovative computerized log instrument and documented the target language contact profiles of 17 Chinese graduate students during the first 6 months of study at a Canadian university. They found surprisingly low averages of target language use for personal purposes, for example, as low as 3.3 minutes daily on average reading for pleasure or 10.9 minutes daily on average of conversations in English with a friend. Even exposure to English through activities that are central to graduate study showed great individual variability, with the average times spent daily on reading and writing in English for different individuals reported to be as low as 3.6 hours for some and as high as 7.9 hours for others. Future studies should document the distributional frequencies of unaccusative constructions in learner-directed speech, as this strategy would offer a more nuanced estimate of actual histories of usage and thus greater insights into the roles of input frequency in language learning.

In sum, frequency is no panacea. Nevertheless, the main, independent effects for frequency and alternation we observed in this study indicate that (a) the more a learner encounters similar instances in the experienced language, and if they keep reoccurring across a number of meaningful usage events, the better that learner's

gradual schematization of the instance will be, and (b) the more reliable the occupancy of a verb in a given construction is, the easier the particular construction will be learned. Input matters, in L2 development as in L1 development.

5.4 In defense of the centrality of discourse meaning in constructional learning

The present study contributed clear evidence that verb frequency is a facilitating influence on the development of L2 knowledge about unaccusativity. By comparison, our manipulation of causation type via a conceptualizable agent offered much less conclusive evidence for discourse meaning playing also a role. Lest this latter finding is hastily interpreted, we would like to close this discussion by emphasizing the need to continue to investigate event construal and constructional meaning as key influences on the development of individual L2 grammars.

As Tyler (e.g. 2012; Tyler and Evans 2001) has long maintained, meaning, including discourse meaning, is central in explaining language and language learning. A recent study by Perek and Goldberg (2015) offers powerful experimental support for this position. In a nutshell, in three successive experiments their L1 participants showed more sensitivity to the usefulness of alternative novel word orders for answering the question *What happened here?* versus *What happened to the <undergoer>?* than to the tallied statistical information as to which specific verbs appeared with which specific novel word orders, and how often and consistently they did so. Perek and Goldberg put forth the strong conclusion that “the perceived [discourse] functions of constructions play an important role in determining which dimensions are relevant to generalization” (p. 124).

Indeed, upon inspection of Oshita’s (2000) essay data, which represent relatively natural discourse production, we must note that most of the 10 unaccusatives found to invite overpassivization in that study are fairly high-frequency verbs. The frequencies per million words of the verbs in his study, calculated on the ANC, are as high as 311.84 (*happen*), 218.01 (*appear*), and 180.05 (*die*), and as low as 68.15 (*arrive*), 35.62 (*arise*), and 31.38 (*disappear*), and all are more frequent than the eight low-frequency verbs in the present study (cf. Tables 1 and 2). This indicates that overpassivization innovations occur in the productive language use of L2 users even with relatively frequent verbs. Thus, meaning is necessary to explain why this might be so.

Besides the type of causation factor that Ju (2000) and the present study investigated, some other conceptual and discourse-semantic influences may be at play in the learning of L2 unaccusativity. For example, known to affect transitivity, passivity, and unaccusativity in constructional knowledge are degree of animacy

and intentionality of agents/subjects, whether the verb meanings are actional or non-actional and eventive or stative in the given discourse context, or even the extent to which the situation or event is construed as a causative process or an attitudinal state (see discussion in Ambridge, Bidgood, Pine, Rowland and Freudenthal 2015; Armon-Lotem et al. 2016). Thus, these dimensions would be worth addressing by design. We are reminded here again of the finding by Gao (2016) that cross-linguistic discourse-semantic effects can be stronger predictors than morphological ones when explaining how lenient or strict learners are in accepting English unaccusative constructions.

The verb semantics of causation may play a role too. A recent study by Nagano (2015) can be brought to bear on our point here. In two related experiments, he found that L1 Japanese users of L2 English had difficulty rejecting overtransitivized constructions (*The man disappeared the coin*), which are grammatical in the L1, and that the difficulty was greater for low-proficient participants and in items containing low-frequency verbs. However, this was true only for the non-alternating verbs in the two semantic classes of appearance/disappearance unaccusatives (e.g. *disappear, wither*) and inherently directed motion verbs (*arrive, dive*). For the two alternating semantic classes of change of state verbs (*break, smash*) and manner of motion verbs (*turn, bounce*), neither proficiency nor frequency mattered and transitives were accepted across the board. Nagano interpreted his finding as proof that “the lack of a frequency effect in the prototypical causative verbs [...] suggests that usage-based learning does not account for all aspects of L2 acquisition and that rule-driven acquisition is at work in tandem with the input” (p. 349). We instead interpret the evidence gleaned in that study as strongly supporting the key usage-based claims that prototypical meanings drive pattern-finding learning and abstraction of schemas (Tomasello 2003; also Hopper and Thompson 1980), and that the tighter the semantic fit between a given verb and the construction or constructions in which it participates, the more entrenched and thus better learned the particular form-function mapping will be (see a clear discussion of this “FIT account,” see Ambridge 2015; also Ambridge and Lieven 2011: 256–265). In Nagano’s study, the prototypical causative frame and their construction slots ([AGENT] [ACTION] [PATIENT]) offered a tight fit for the high-transitivity semantic classes of change of state verbs (*break, smash*) and manner of motion verbs (*turn, bounce*), and additionally they were compatible with corresponding L1 renditions, making sentences like *The player moved the chess pieces* easy to accept regardless of proficiency or frequency differences.

Indeed, for any constructional learning – for example for the well-studied choice of the double object construction (*I gave him some milk*) and the to-dative construction (*Give this to me*), see de Marneffe, Grimm, Arnon, Kirby and Bresnan

(2012) – it has been established that multiple factors are at play, including lexical semantics (the meanings or semantic classes of specific verbs), phonology (length of verbs depending on whether they are Anglo-Saxon, *give*, or Latinate, *donate*), as well as a range of information structure or discourse function, such as topicalized participants, besides different event construals. It is not far-fetched to expect, therefore, that the L2 learning of unaccusative constructions might likewise be sensitive to a statistically weighted and complex bundle of factors spanning various levels of frequency and discourse meaning. Therefore, there is a need for experimental as well as natural discourse data to be collected and analyzed more comprehensively in the future in order to map and explain the L2 learning of English unaccusativity as an important case of item-based induction that is driven by constructional meaning (Perek and Goldberg 2015).

6. Conclusion

Before closing, we would like to offer some cautious implications for language teaching. In order to teach L2 learners the meanings and functions that unaccusative constructions make available in English, the findings suggest that it might be judicious to work in the classroom with more frequent and non-alternating unaccusative verbs first, before less frequent or alternating ones, be it for explicit explanations, implicit exposure, or select negative feedback. If L2 learners can encounter non-alternating unaccusatives with sufficient frequency more regularly early in their learning process, we can expect that they will get a head start in acquiring the meaningful, patterned use of unaccusative constructions with more ease. At the same time, with less frequent unaccusatives, which might not be readily available in the learners' accumulated learning experience, and with alternating unaccusatives, which offer weak cues as to their ability to participate in unaccusative meanings in English, the role of explicit instruction would be all the more crucial. Finally, explicit instruction, if provided, should take meaning at the center stage and focus on constructional meaning and construal and perspective taking, as Tyler (2012) has argued and shown.

The findings of this study suggest that sedimented experience of language affects L2 users' retreat from overpassivization and their learning of English unaccusativity. In their responses to the grammatical unaccusatives and nongrammatical overpassivized constructions involving 16 counterbalanced target verbs, our participants were statistically significantly affected by two learning biases in the input, the lexical token frequency of verbs and the alternative constructions in which those verbs participate. The fact that sensitivity to the input was shown in the present study – despite the idealized operationalization of high- and low- frequency of exposure

to alternating and non-alternating verbs – is important. It provides evidence for the robustness of input frequency contributions for L2 learning (Ellis 2002; Ellis et al. 2016). It also bolsters the usage-based claim that first and second language acquisition are fundamentally similar because the same mechanisms continue to be at play in both types of acquisition (Ellis 2015; MacWhinney 2015). Frequency matters in the construction of L1 and L2 grammars (Behrens and Pfänder 2016; Ellis et al. 2016), because the positive and negative input evidence that feeds into statistical language learning mechanisms matters for L2 users (Ambridge and Brandt 2013; Robenalt and Goldberg 2016) as for L1 learners (Ambridge et al. 2008; Perek and Goldberg 2015). We also were able to detect a subtle and small effect of one conceptual bias: Apparently, unaccusatives are easiest for L2 users to accept and overpassivized construction easier to reject if there is no conceptualizable agent available in the surrounding discourse and the verb is non-alternating. This finding is incipient evidence that meaning and frequency are paramount in language, as cognitive linguists have always claimed, and that this remains true of the language capacities of L2 users, as Tyler (e.g. 2012; Tyler and Evans 2001) has always argued.

We have long known in SLA that overpassivization is an L2 developmental phenomenon related to the larger picture of the acquisition of unaccusative constructions, and that it is typical, if low in incidence, of advanced English L2 users across L1 backgrounds. The present study supports the claim that it may not be accounted for solely by formal lexical semantic and syntactic explanations. Instead, we believe we have provided some new evidence that linguistic knowledge of unaccusativity and retreat from overpassivization might develop through meaningful usage, in the L2 as in the L1. Frequency and meaning are central to the acquisition of all human language.

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Effects of L2 exposure on the use of discourse devices in L2 storytelling

Yuko Nakahama

This study builds on Nakahama, Tyler and van Lier (2001), which showed that conversation provides a plethora of learning opportunities as opposed to de-contextualized, mechanical types of activities. The study investigates second language (L2) storytelling by Japanese learners of English as a second language (ESL) and English as a foreign language (EFL) while talking with native speaker interlocutors. Major differences were found between the two groups. ESL learners produced more words and discourse markers (DMs) than their EFL counterparts. Furthermore, while the EFL learners' narratives were monologic, the ESL learners' narratives were dialogic and involved NS collaborations. Negotiation of meaning was found in both groups when non-understanding occurred during the storytelling. However, while the EFL learners' errors received recasts from the NS, the ESL learners' errors went uncorrected by their interlocutor.

Keywords: discourse markers, English as a Second/Foreign Language, narratives

1. Introduction

Both the knowledge of language and the ability to use that knowledge appropriately are imperative in L2 learning, especially since the goal of language for most language learners is to acquire the ability to communicate. Functional approaches to language learning value discovering form-function relationships, rather than merely focusing on language forms. Within this framework, several studies have revealed how L2 learners developed form-function mapping skills in story retelling in terms of tense (e.g. Bardovi-Harlig 2000, 2008) and referent tracking (e.g. Chaudron and Parker 1990; Huebner 1985; Jarvis 2002; Nakahama 2003, 2011; Ryan 2015) and so forth. Eliciting narratives within a functional framework of L2 acquisition studies, much of the previous work employed retellings of silent films (e.g. Charlie Chaplin's *Modern Times*) or picture story books (e.g. *Frog, where are you?* Mayer 1969). However, storytelling in a real conversational setting, rather than story-retelling of films or

picture books, would depict learners' language use in a more authentic manner, as the former type of setting would occur more naturally in real life (see e.g. Bachman and Palmer 1996 for the importance of authenticity of tasks).

Further, it has been pointed out that, within the framework of functional approaches to language learning, the focus of investigation has traditionally been placed upon L2 products, be they temporal forms or referential forms, and the processes such as input or interaction have tended to get overlooked (Mitchell, Myles and Marsden 2013). With this assessment in mind, naturalistic conversation might help reveal a more interactional way of storytelling that would be bound to better reflect a real-life state of affairs. Therefore, the present study examines how collaborative interaction between speaker and listener will influence L2 speakers' storytelling by focusing on collaborative devices such as DMs (e.g. *y'know*) and negotiation of meaning. The effect of learning environment on the acquisition of pragmatics has been manifested in many studies (e.g. Bardovi-Harlig and Dörnyei 1998; Schauer 2006), thus the current study compares L2 learners from two different learning environments (ESL and EFL) in their processes of L2 storytelling, and provides a microanalysis of the interaction between NS and NNS.

2. Background

2.1 Narrative as a means of communication

Story telling is an integral part of how humans construct their communal world through verbal interaction. Narrative involves complex processes in which speakers use numerous resources to show continuity of such elements as discourse referents, temporality and location across a span of utterances to convey information to the listener. While storytelling is a universal activity, be it spoken, written, or signed, the ways in which stories are told, that is, how knowledge and experience are interpreted into expression, vary among cultures (Cortazzi and Jin 1994; Riessman 1993). In other words, as Slobin (Berman and Slobin 1994; Slobin 1991) puts it, experiences are "filtered" through choice of perspective and through the set of options available in the particular language (Berman and Slobin 1994: 9,12). This principle is called "thinking for speaking" (Slobin 1991, 1993) and this "filtering" could play a very critical role in learners' L2 acquisition, which might be displayed by the choice of grammaticized items such as voice, tense, focus and topicalization, as well as by the choice of pragmatized markers.

It can be said that acquiring L2 could also mean acquiring "thinking for speaking" from the perspective of a functional approach to language learning. Various studies report how thinking for speaking in first language (L1) transfers to that

in L2 (e.g. Jarvis and Pavlenko 2010; Nakahama 2011; Nakahama and Kurihara 2007; Yoshioka 2008), and this “conceptual transfer” remains fossilized even at the advanced level (see e.g. Choi and Lantolf 2008; Nakahama 2011). It is argued that conceptual elements are harder to acquire as compared to other elements such as syntax and the lexicon, and that difficulty is caused by a lack of awareness (see Jarvis and Pavlenko 2010; Odlin 2005).

2.2 Collaboration between speakers and listeners in storytelling

While many researchers have studied L1 and L2 narratives to date, they tend to underrate the importance of the interaction between teller and listener in storytelling activities (e.g. Crosthwaite 2011; Tanskanen 2006). Tanskanen (2006) claims that teller-listener collaboration can be realized via feedback such as completions and clarification requests to ensure that the participants have understood what their partners were saying.

Many studies in the field of SLA also have investigated this so-called “negotiation of meaning” in information gap tasks. General understanding of negotiation of meaning in SLA has been that the more negotiation of meaning, the better the opportunity for learning. However, this concept was contested by Nakahama, Tyler, and van Lier (2001), revealing that conversational interaction could provide a larger range of affordances for language use as compared to more highly structured interactional activities such as information gap tasks. Nakahama et al. showed that while the information gap task did elicit more instances of negotiation of meaning than conversation as predicted by previous research, the conversational exchanges triggered more global, meaning-based negotiation of discourse. Nakahama et al. (2001) maintained that L2 learners of English and their NS interlocutors “negotiated meanings” to try to understand the content of the story and ended up learning a lot about each other.

Goodwin (1995) also asserted the value of interaction between speaker and listener. He claimed that there is a turn-taking in storytelling and that the processes of speaker-listener interaction within the turn would influence the maintenance of coherence in storytelling. Goodwin’s view of storytelling as a collaborative act is shared by Linell (1998) who regards (dialogic) “utterance as socially, i.e. collaboratively, constituted and generated, and looks upon communicative actions as contextual and dialogical in several senses” (1998: 91). Linell calls this co-construction of storytelling “dialogism” as opposed to “monologism” in which the utterance is considered as the speaker’s own creation that has no bearing on the listener.

Nakahama (2005) discovered that “conversation” emerged out of semi-structured L2 English interviews when the interviewer and the interviewee realized they shared common backgrounds and experiences. In other words, the two asymmetrical

speakers/listeners have changed into two interlocutors who have a symmetrical conversation with equal distribution of rights and duties in talk. What Linell (1998) would call dialogism was found throughout after the two interlocutors realized they were communicators and no longer interviewers/interviewees.

As mentioned previously, L2 storytelling has been studied mainly in the light of L2 product, rather than in the context of processes of SLA (Mitchell, Myles and Marsden 2013). Crosthwaite (2011) is probably one of the few exceptions to this circumstance. Crosthwaite investigated the effects of scaffoldings (collaboration) between the speaker and the listener on referential markings in L2 English storytelling by Korean speakers. He found no significant differences in terms of the number of occurrences of individual forms investigated, that is, zero anaphora, personal pronominal, bare form, definite article forms, and indefinite forms. However, when he examined the accuracy/inaccuracy of the forms used, he found significant differences between scaffolded and unscaffolded narratives in terms of the use of bare nouns and definite articles in one of the two narratives he had the learners narrate. Subsequently he had NS raters rate the L2 narratives and found that the scaffolded narratives received higher coherence scores. The study revealed that scaffolding between speakers and listeners promoted the accurate use of definite articles and helped reduce the amount of bare nouns, which ended up making the narratives more coherent.

Collaboration can be achieved utilizing various linguistic devices besides use of negotiation of meaning moves as briefly discussed above. DMs can be considered one of the most important devices for conversation, the topic that this chapter turns to next.

2.3 Discourse markers (DMs)

Schiffrin (1987) defines DMs as “sequentially dependent elements which bracket units of talk” (1987: 31), and it has been well established that they play an essential role in spoken interaction (Carter and McCarthy 2006). They have many functions in conversations. For instance, *oh* – one of the most well studied DMs – is regarded as a “marker of information management” (Schiffrin 1987: 73), and its most common use is to acknowledge receiving information (Heritage 1984; Schiffrin 1987). Acknowledging receipt of information requires cognitive operation, therefore *oh* is regarded as a marker of cognitive tasks; however, its use may have pragmatic effects in speaker-hearer interaction. For instance, it can signal subjective, emotional orientation, and surprise (Aijmer 2002; Heritage 1984), and by the use of *oh*, the speaker shows an expletive of surprise, the function of which Schiffrin (1987) calls “receipt of unanticipated information” (p. 89). As an extension of the emotional interpretation of the marker’s function, Aijmer (2002) further maintains that *oh*

has politeness functions. For instance, in speech acts of refusal, the speaker can add *oh* as an external mitigator before the actual refusal act to reduce the possible “face threatening act.” In Nakahama et al.’s (2001) study, which compared interactional patterns of NS and non-native speaker (NNS) interaction between an information gap task and conversational task, it was found that *oh* was more frequently observed in the conversational task both in NS and NNS utterances. Detailed analyses of the functions of the marker in each task type were not conducted in Nakahama et al. (2001); however, the study undoubtedly showed that the conversational task could provide affordance for learning as compared to the simple mechanical exchanges of information placed on sheets given to the interactants.

Okay was also analyzed in Nakahama et al. (2001), and the study revealed that this DM was used mainly by NSs in both the information gap task and conversational activity. Though the majority of the use was found in the information gap task, the way in which it was used did not differ between the two activities. NS interlocutors used *okay* mainly to indicate “I get it”, or even “good” (see De Fina’s 1997 analysis of *bien* in Spanish) and it can be taken as a sign of asymmetry between the NS and NNS in the study (Nakahama et al. 2001). *Okay* also serves to signal transitional points in discourse (Fung and Carter 2007; Schegloff and Sacks 1973). In Nakahama et al., NS participants uttered *okay* to move on to finding another difference in the two pictures in the information gap task, whereas in their conversation they said *okay* to move onto another topic after acknowledging their understanding of what their NNS partner said in their conversational task. Thus, *okay* can serve evaluative functions as well as organizational functions (see Maschler and Schiffrin 2015).

Y’know is another marker that has received a lot of attention in discourse studies. Schiffrin (1987) states “*y’know* marks interactive transitions in shared knowledge” (1987: 309). Schiffrin argues that the speaker signals to the hearer that the speaker is relying on the hearer for his/her talk, and instantaneously involves the hearer in conversational reciprocity. Therefore, it can be said that *y’know* could make talks bi-directional and thus interactive, as the hearer is expected to be involved with the use of this marker. This type of DM is also considered affective and marks the affective and social functions in utterance grammar (Carter and McCarthy 2006), and *y’know* is further classified under the interpersonal category (Fung and Carter 2007). Fung and Carter also maintain that *y’know* indicates shared knowledge between the speaker and the hearer as well as attitudes of the speaker.

DMs have a major interactive role in conversation as they show a relationship between the interactants in discourse. Perhaps because of such characteristics, researchers tend to focus on the use of DMs in conversational interactions. As Norrick (2001, 2016) rightly argues, storytelling differs from turn-by-turn conversation in

terms of how they both function in discourse. Storytelling involves not only the speaker but also the hearer in that, in naturalistic settings, the hearer would most likely ask questions if he/she wanted to know more details or did not understand the meaning that the speaker wanted to convey. I argue in the current study that storytelling should be regarded as dialogic and is bound to be facilitated by collaboration between the speaker and the hearer, and therefore, DM should play a considerable role in narratives. However, the pragmatic knowledge required for storytelling in interaction has been considered difficult to acquire due to learners' lack of awareness, as discussed above (e.g. Jarvis and Pavlenko 2010). Daily exposure might enhance learners' awareness of pragmatics; the next section summarizes relevant research on this topic.

2.4 The effects of learning environment on L2 pragmatics

Many studies have shown that ESL learners have greater pragmatic awareness than EFL learners (e.g. Bardovi-Harlig and Dörnyei 1998; Röver 2012; Schauer 2006). For instance, replicating a seminal study conducted by Bardovi-Harlig and Dörnyei (1998); Schauer (2006) examined (1) whether ESL and EFL learners show differences in recognizing and rating grammatical and pragmatic errors, and (2) whether an extended stay in the target environment has an effect on pragmatic awareness. Schauer extended her study by allowing the participants to correct their errors in post hoc interviews in order for the researcher to examine the relationship between the awareness and production of pragmatics. The results showed that Schauer's German ESL learners were more aware of pragmatic inappropriateness than their EFL peers, and that the ESL learners increased their pragmatic awareness during their stay in the target environment. The use of pragmatic strategies by learners who studied Japanese as a foreign language (JFL) and Japanese as a second language (JSL) were examined by Shimizu (2004). Shimizu found that although both JFL and JSL learners showed divergence from the target language norms, the JSL learners' responses were closer to the Japanese NS's strategies.

However, further studies have suggested that it is not simply the case that ESL learners have advantages in the acquisition of pragmatics in all domains (e.g. Taguchi 2008). Taguchi (2008) compared ESL and EFL learners by investigating the speed and accuracy of comprehension of indirect refusals and indirect opinions. The results showed that the EFL learners made significantly greater improvement than the ESL learners in the accuracy of comprehension of refusals, whereas the ESL learners excelled in their speed of comprehension of the speech acts.

Assessing the relevant areas of research such as above, Wyner (2014) argues that while an L2 learning environment largely grants more opportunities for pragmatic

development than a foreign language learning environment, acquisition of pragmatic ability is a complex process and the vital relationship between environment, L1 transfer, and motivation should be considered in order to explain such a complicated mechanism.

Considering the pragmatic functions of DMs found in the conversational studies, as well as how learning environment affects pragmatic language use, the present study investigates the discursive structure of L2 storytelling embedded in conversation in both ESL and EFL settings. The data is analyzed both quantitatively and qualitatively, with an emphasis on the latter when noteworthy tendencies are found in the data. Specifically, the study asks the following three research questions:

1. Are there differing ways in which Japanese ESL and EFL learners use DMs and other linguistic resources in telling stories in L2 English?
2. What role do DMs play when NNSs of English interact with NSs in their L2 storytelling activity?
3. What were the NSs' impressions of their NNS interlocutors?

3. Method

3.1 Participants

The participants of the study were five Japanese learners of EFL and five Japanese learners of ESL. Each group consists of three males and two females. The EFL learners are from a major university in Japan and the ESL learners are from universities in the U.S., and the academic standards of each school are equivalent to each other. The learners from both groups had TOEFL scores ranging from 480 to 525 at the time of data collection and could be considered intermediate-high level learners of English. Based on the questionnaire given to them, the EFL participants had never lived in English speaking countries, except for short visits, and did not use English outside of their English classes. Two participants from the EFL group liked watching American movies, and thus had exposure to some input, but they had no opportunities to have regular interactions using English. The ESL participants, on the other hand, had been in the U.S. for an average of eight months, had some classes in English, and had opportunities to have conversations with English NSs.

Two NSs of English served as their interlocutors. A twenty-five-year old American male graduate student talked with the EFL participants. He had been living in Japan at the time of data collection for about a year but did not speak Japanese apart from simple greeting words. The interlocutor of the ESL learners was a 20-year old American undergraduate male student who seemed to be mature for

his age. He had some knowledge of Japanese as he had a Japanese friend and had been to Japan, but his command of Japanese was limited in a manner similar to the EFL interlocutor. The personality of both NSs of English was very similar in that they were both friendly and had a high tolerance for foreign accent or culture. To ensure their conversation styles did not vastly differ from each other, the researcher conversed with both of them prior to the data collection. They both produced quite similar DMs and other types of interactional phrases when they spoke with the researcher, therefore, they were selected to take part in the research.

3.2 Procedures

The NS English interlocutors were asked to have a casual conversation with their Japanese speaking English learners for a total of 15 minutes. They received the instruction to ask the L2 English learners to tell them their happiest memories and saddest or most unpleasant experiences. The interlocutors were advised to be as natural as possible in the way in which they led the L2 learners to tell the stories.

In addition, after the conversations, the researcher conducted a stimulated recall with the NS participants using their audiotaped conversations with their NNS partners in order to ask questions about their impressions during the interactions. After all the data was collected, the researcher had her two assistants transcribe the recorded conversations and code interactional devices such as DMs, recasts, and meaning negotiations.

3.3 Analysis

The conversations were analyzed in terms of how NSs and NNSs of English interacted with each other. Firstly, linguistic features that facilitate co-construction of storytelling within conversational exchanges were coded. Specifically, DMs (*oh*, *okay*, and *y'know*) between the learners and the NSs were coded. Secondly, any other discernible differences between EFL and ESL narratives such as L1 use were coded and studied. Lastly, the NS interlocutors' responses to the speakers' uses of DM were further examined. I considered instances of meaning negotiation and corrective feedback (recast) in NS and NNS discourse. It should be noted here that originally only the storytelling part was going to be analyzed in terms of DMs and other interaction markers; however, the analysis ended up being conducted for the entire interaction, including storytelling. This was because (1) many of the markers occurred outside of storytelling especially in the EFL learner data, and (2) storytelling became conversational interaction in the ESL learner data, and therefore, it was difficult to differentiate one from another.

4. Results and discussion

The total length of narratives by EFL and ESL as well as their interlocutors were examined in terms of total number of word counts. Table 1 shows the average number of total word counts for the entire conversations for each group.

Table 1. Average number of total word counts

	ESL learners	NS (for ESL)	EFL learners	NS (for EFL)
Word count	974	1435	685	739

As Table 1 shows, the ESL learners produced more words than their EFL counterparts. Furthermore, the average total number of word counts of the NS interlocutor in the ESL group was much higher than that of their EFL counterpart. Given that both NS interlocutors were very talkative with the researcher prior to the data collection, this result was puzzling. Careful examination of the data further revealed that the NS interlocutor in the ESL group spoke more with the male learners of English, whereas the NS interlocutor in the EFL group showed the exact opposite tendency, i.e., he spoke more with the female learners. Another noticeable tendency was that the NS in the EFL group spoke rather slowly toward the learners, which might have contributed to the total word count given the same duration of the data recording. Since the current focus is on the NNS narratives, this finding on NS interactional patterns has been set aside for another investigation.

4.1 Use of DMs (*oh*, *okay* and *y'know*)

Table 2 presents the total number of the uses of *oh*, *okay* and *y'know* in both NS and NNS utterances in ESL and EFL settings. As seen in Table 1, there was a big difference between ESL and EFL groups in terms of the total number of word count; thus, to make a fair comparison between the two groups, the data was normed and the total occurrences of the DMs per 1000 words are provided in Table 2 below.

Table 2. Total number of occurrences of the DMs per 1000 words

	ESL learners	NS (for ESL)	EFL learners	NS (for EFL)
<i>Oh</i>	73	47	16	22
<i>Okay</i>	42	31	3	20
<i>y'know</i>	29	28	0	23
Total	143	105	19	65

As Table 2 illustrates, ESL learners produced far more DMs than their EFL counterparts. In fact, EFL learners hardly produced any DMs besides 16 occurrences of *oh* and three occurrences of *okay*. Though the frequency of the occurrence of *oh* was much lower in the EFL data, all the speakers used *oh* at least once. Surprisingly, the number of DMs produced by the NSs was also different between the EFL and ESL groups. I examine all three markers qualitatively in what follows.

4.2 Use of *oh*

While *oh* was produced by both groups of learners, the usage pattern of this marker seemed to differ greatly between the two groups. Excerpt (1) illustrates the typical usage of *oh* by the EFL learners.

Excerpt 1. Use of *oh* by EFL learner #4

line 25 NNS: Where you come from?
 line 26 NS: I'm from Seattle, Washington.
 line 27 NNS: //Oh::://
 line 28 NS: //In America.// um.. *y'know* Ichiro!
 line 29 NNS: //Oh::::// (hhh)

When the NS interlocutor answered where he is from, the learner uttered *oh* with elongated stress. Rather than simply indicating receipt of knowledge, this learner appeared to show surprise or excitement as evidenced by the use of elongation. However, perhaps because this response only claimed rather than demonstrated understanding, the NS interlocutor was evidently not clear whether the learner understood Seattle or where it is in the U.S., so he continued to add information by mentioning the famous Japanese baseball player, Ichiro. It should be noted here that the NS used *y'know* since Ichiro should be shared knowledge between him and any Japanese person. But the attempt received the same pattern of *oh* by the EFL learner. He showed surprise or excitement again, followed by laughter. After this exchange, both speakers dropped the topics Seattle and/or Ichiro, and moved on to another topic. Excerpt (2) shows another example of *oh* by a different EFL learner.

Excerpt 2. Use of *oh* by EFL learner #5

line 24 NS: Actually I met a girl who's in a ((unintelligible)) circle..
 line 25 NNS: // Oh really?//
 line 26 NS: //I think// she's working at the Starbucks in Ito Yokado..
 line 27 NNS: Aa..
 line 28 NS: I met her at the Starbucks like a month ago,
 line 29 NNS: //Oh//
 line 30 NS:// or // two months ago..
 line 31 NNS: Oh really?
 line 32 NS: Yeah. //Um..//
 line 33 NNS: //So //so last year I participating um international
 international

line 34 debating championships, (hm) in Australia, //so//
 line 35 NS: //Oh//
 line 36 NNS: // Yeah//, so I went to
 Australia and I met a lot of people from various
 background various countries, and I think it was really
 good experience for me.

In this excerpt, the NNS reacted to the previous utterance of the NS with apparent surprise. This exchange occurred at the beginning of the conversation while both NS and NNS were trying to get to know each other. The NS was going to talk about a common acquaintance of theirs, and the NNS used the marker *oh* in order to engage in the conversation and interrupted the NS utterance in line 25. In fact, in line 25, *oh* was accompanied with *really*, and the way the speaker uttered *oh really*, it was obvious that she was showing great surprise. The NNS continues to use *oh*, and *oh really* in her consecutive turns. Line 31 contains an interesting use of *oh*. It seems as though the NNS was not surprised anymore about the fact that the NS saw the common acquaintance, but continued to use *oh* or *oh really* to indicate receipt of information or even show some sort of emotional engagement. In English these DMs come at the end of the speaker's message (Gardner 2001); however, every incremental piece of information is acknowledged by the NNS as seen in Excerpt (2), and ends up making the exchange rather unusual.

What is common among the EFL learners is that they tend not to continue with further comments or expand the topic of conversation after uttering *oh*. The use of free-standing *oh* (i.e. *oh* and *oh really* without further comments attached to them) is rather rare (e.g. Gardner 2001; Heritage 1984) yet this usage tends to dominate the EFL data in the current study. Their interlocutor, as a result, initiated another topic and they carried on their conversational interaction. In Excerpt (2), however, when the NS was contemplating what topic he should shift to after the NNS's uttering *oh* in line 31, the NNS attempted to acquire the turn by using *so* in line 33. Interestingly, this unwarranted sudden change of topic by the NNS, especially with a mention of his stay in Australia as seen in line 34, triggered "real" surprise in the NS. His utterance of *oh* overlapped the middle of the NNS's story in line 35. As if acknowledging that he caused the surprise with the sudden mention of Australia, let alone an unanticipated topic change, the NNS uttered *yeah*.

Next we examine how the ESL learners used *oh* in their talk.

Excerpt 3. Use of *oh* by ESL learner # 1

line 122 NNS: //OH NO:::!!// (hhh) <hhh> I:: have to move somewhere. (hhh)
 line 123 NS: (hhh) And uh what about cats or horses.
 line 124 NNS: Oh, no problem. Cats. Y'know quiet. (Mm.) More, more quieter
 than ... dog.
 line 125 NS: Yeah. Ah. That's very interesting.

Unlike the EFL learners from Excerpts (1) and (2), this ESL learner continued her utterance after stating *oh no* in line 122. In this scene, she talked about her horrible experience of being bitten by a dog and her NS interlocutor asked what she would do if her boyfriend had a big dog, etc. In line 124, she said *oh, no problem*. She could have ended her turn but she expanded the conversation by giving a reason why cats would be OK. This usage of *oh* at the beginning of a turn that answered the question posed by the NS, called ‘oh-prefaced response’ (Heritage 1998), was not found in the EFL learner data. After these exchanges about the NNS’s horrible experience with a dog, the speaker and the hearer naturally shift the story to the NS’s experiences with animals, while the NNS interlocutor asked a lot of questions in return. Thus, the ESL learner’s storytelling turned into conversation-like discourse. Excerpt (4) shows another example of the use of *oh* in the discourse of another ESL learner.

Excerpt 4. Use of *oh* by ESL learner #2

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line 93 NS: And some reading on this series about why people do
line 94      (((unintelligible))) cut trees like... the foreign policy
           that they do
line 95      (Oh, ya?) And it just gets repetitive and boring after a
           while (Oh yeah)
line 96      But the tests I take are super //hard!!/
line 97 NNS:           //((unintelligible))//

```

In this excerpt, the NS interlocutor was telling a story, while the ESL learner provided two variations of ‘*oh*’ without obtaining a turn, as shown within (). In the conversational exchange between this ESL learner and the NS, many instances of *oh* were found with *yeah*, as in *oh yeah*, as can be seen in the third line in Excerpt (4) above. It seems that the learner inserted *oh yeah* in the NS’s utterances many times to show that he was listening and sympathizing with what the NS had to do for his class. The NS was acting in quite a similar way with the use of *oh* when the NNS was telling the story and this made the storytelling of both NS and NNS more dialogic.

Thus far, we have seen that although *oh* was found in both ESL and EFL learners’ discourse, the role it played in discourse was quite different. Whereas the EFL learners inserted *oh* mainly for the sake of showing their surprise, the ESL learners used it as an interactive device to show empathy and expand the topic further together with the NS interlocutor.

4.3 Use of *okay*

As Table 2 shows, *okay* was hardly used by the EFL learners, whereas the ESL learners used it 42 times. Excerpt (5) demonstrates a typical use of *okay* in the learners’ discourse.

Excerpt 5. Use of *okay* by ESL learner #2

line 103 NS: I think it's, I think he he decided to go about six to
 eight for the actual
 //essay.//
 line 104 NNS: //Okay//
 line 105 NS: And about two to three for the um short answers. (Uh-huh)
 So, it's,
 probably..
 line 106 NNS: Ah, okay. How long do gonna take to to write e- ten es-
 ten papers?

The first use of *okay* in line 104 by the NNS was used to acknowledge that he understood what his NS interlocutor said. The second *okay* (in conjunction with “ah”) seems to have been used to claim a turn as he continued with his question about the essay the NS had to write. It is clear that the NNS was trying to take an active role in being part of the conversation and establish a symmetrical relationship with his NS interlocutor. Thus it can be argued that *okay* can help the speaker gain the leadership of the interaction at the time and achieve symmetrical rapport with the interlocutor.

The fact that the use of *okay* was only found twice in the NNS discourse in the EFL setting might indicate that the NNS remained passive interactants, whereas their ESL counterparts made a more active move to be part of the NS's dialogic storytelling activity.

4.4 Use of *y'know*

As Table 2 indicates, there was no occurrence of *y'know* in the learner discourse in the EFL setting. There were two incidences of *you know* as in *Do you know* but it seemed to be a purely referential question as to whether the interlocutor knew a certain activity group on campus.

In contrast, in the ESL learner discourse, as many as 29 instances of *y'know* were observed. Excerpt (6) displays a typical usage of *y'know* in the ESL discourse.

Excerpt 6. Use of *y'know* by ESL learner #4

line 49 NS: Uh, so she didn't buy //yours.//
 line 50 NNS: //Sh//- she didn't mine. Yes! She didn't buy mine.
 line 51 NS: Um..
 line 52 NNS: I was so, *y'know* =
 line 53 NS: =That's kinda like, what's all that about?
 line 54 NNS: Yeah. Yeah.

It appears this ESL speaker wanted to get the NS interlocutor's agreement or sympathy for an upsetting event with his girlfriend. He was complaining about how he always had to pay everything for his date with his girlfriend but she never

reciprocated. In this scene, he was talking about how when he stepped out to smoke a cigarette, she went to buy a movie ticket, but only bought her ticket. So he had to go back to get his ticket. This was after he had taken her to dinner and paid for her. In line 51, when the NS was thinking about what to say regarding this unpleasant happening, the NNS attempted to elicit the NS's empathy by uttering *y'know* in line 52. The strategy worked as the NS hearer showed agreement as is demonstrated in line 53. The NNS showed further consonance on the NS's utterance in line 54 with another marker of agreement, *yeah*. This kind of usage of *y'know* has the typical function of "seeking for agreement" discussed in Schiffrin (1987).

The ESL learners' substantial usage of *y'know* as well as *okay* and *oh* discussed above suggests the active role that the learners attempted to achieve in both their own L2 storytelling and that of their NS partner in discourse. In contrast, the EFL learners used the marker *oh* to agree with what the NS said or to show surprise. Then, as soon as the utterance of *oh* was achieved, the cycle stopped there, and the NS actively asked questions to elicit more details of the story or merely to have the learner talk more. In other words, whereas active use of DMs made storytelling activities in the ESL setting more dialogic and interactive, infrequent use or non-use of the DMs above made the storytelling monologic and single directional in the EFL setting.

Hitherto we have examined differences in the ways in which three DMs were used by the learners from two different learning environments. Detailed analysis of these markers reveals that the ESL learners' storytelling style was more dialogic and involved their NS partner, and as a result, the NS's discourse might have become more dialogic as compared to the NS who conversed with the EFL learners. This could possibly provide an explanation for the low occurrences of DMs in the NS's utterances in his conversation with his EFL NNSs. The striking differences in the use of DMs within the different learning environment groups suggest that being exposed to abundant input of interactional markers during daily interactions with others enables L2 learners to acquire pragmatic use of these markers, embedding them into their own interactional styles.

4.5 L1 use in learner discourse

To understand what kind of scaffolding strategies besides DMs are used both by the NS and the NNS for understanding and smoothing out interaction, all the data were examined in terms of the use of L1 (Japanese), negotiation of meaning, as well as corrective feedback. Table 3 shows the number of occurrences of L1 use. Again these occurrences were adjusted to a word count of 1000. These numbers exclude proper nouns such as names of places or persons.

Table 3. Total number of occurrences of L1 per 1000 words

	ESL learners	EFL learners
L1 use total	3	83
L1 use (Japanese equivalent of <i>Whatchamacallit</i>)	1	23

As can be seen in Table 3, many more instances of L1 (Japanese) use were observed in the EFL data compared to the ESL setting. L1 was used mainly when the NNSs did not know the words in English. In the EFL setting, the NNSs said the words in Japanese mainly after variations of a phrase ‘*nante iu n daroo*’ (the Japanese equivalent of *Whatchamacallit*). It appeared that the NNSs were appealing for the authority of the L1 English speaker. On rare occasions, the NS (the ESL learners’ interlocutor) happened to know the words in English and thus helped out the NNSs. The following excerpt is a unique case in which the NS knew the equivalent word in English. Japanese words are depicted in italics in Excerpt (7).

Excerpt 7. L1 use by EFL speaker #3

line 107 NNS: Uh::: (2) not happy but I m::: (4) *anshin-* m::: I (2) uh::
nantsundarona

line 108 Mm::::

line 109 NS: Um May- maybe relief?

line 110 NNS: Uh yes yes yes!

line 111 NS: (hhh) (mn) And what about the opposite? Do you have a
 really sad,
 upsetting or even scary memory?

The NNS could not think of the word *relief*, thus he used the equivalent word in Japanese, *anshin*. After pausing for about two seconds, he uttered *Nantsundarona* (*Whatchamacallit*) and paused again. His NS interlocutor happened to know what *anshin* meant, so he provided a helping hand by suggesting the possible English word for it. Not only this speaker but three other speakers in the EFL group sought help from the NS with L1 use like this when they encountered difficulty in finding words. Interestingly, out of 51 instances of L1 use, 16 were variations of this *Nante iu n daro* (*Whatchamacallit*), and they were mumbled as if they were talking to themselves (as in “private speech” in a Vygotskian framework). In this case, as seen in Excerpt (7), that phrase prompted the NS’s helping hand, as he happened to know the word; however, all other cases of this phrase did not trigger the NS’s translation of the words in question.

L1 use was found in only two speakers’ narratives in the ESL narratives and how it was demonstrated was different from their EFL counterparts. One ESL learner used the same phrase ‘*Nan daro*’ and, in her case, she seemed to utter it to think about what sad or upsetting story she could think of, and not to indicate she could

not come up with words or phrases in English. Since the NS interlocutor for the ESL learners had visited Japan and had some knowledge of Japanese language and culture, the NNSs could have at least tried to ask for the meaning of words they struggled to come up with in English. However, it appears that the NNSs adhered to L2-only use in order to maintain the symmetrical role of conversation partner for their NS interlocutor.

4.6 Q & A or conversation

Comparing the nature of the EFL and the ESL storytelling activities within conversations, one very discernible feature was identified. While EFL learners tended to answer with brief utterances, ESL learners spoke more expansively.

Excerpt 8. Question and Answer type exchanges by EFL learner #3

line 115 NNS: Uh my grandmother died when I was fifteen years old and my
 line 116 grandfather died uh::: (1) two year ago, two years ago,
 about two years
 line 117 ago. (2) I live, I lived with them, uh::: since uh::: I was
 very small child.
 line 118 (ha) So mn..
 line 119 NS: And so you lived with them, and did you also live with
 your parents?
 line 120 NNS: Yes.
 line 121 NS: I see. Did you, do you have brothers and sisters?
 line 122 NNS: Uh: I have one elder brother.
 line 123 NS: Mm:: and is he near Tokyo or,
 line 124 NNS: Uh: he he is living Saitama.

As can be seen in this excerpt, though the NNS started telling his saddest story, he then hesitated, and the NS interlocutor started asking the NNS questions in an attempt to have him expand the topic or be more engaging. Despite the NS's efforts in this regard, he continued to play the role of an interviewer, and the NNS assumed the role of interviewee. As is evident in the utterances of the NNS in lines 120 and 122, his responses were rather short, merely answering the NS's questions. Most of the EFL learners' storytelling was monologic and, even when the interlocutor tried to co-construct storytelling by asking questions, the questions were answered with simple words or sentences without resulting in more interactive conversations.

ESL learners' narratives were strikingly different from those of their EFL counterparts in that they were interactive and more conversational in nature, rather than constituting traditional narratives. Excerpt (9) illustrates this pattern.

Excerpt 9. Dialogic storytelling by ESL learner #3

line 64 NNS: O:::h, well when I was uh sixteen years old, (Mm-hm.) uh
 I had chance that,
 line 65 uh, I could be an exchange student between uh American high
 line 66 school? (Oh, good.) and my high school. Uh, in American
 high school, is
 line 67 uh Punahou high school in Hawaii. //And uh, //
 line 68 NS: //Oh!// That sounds pretty
 good.
 line 69 NNS: //And it is uh, //
 line 70 NS: //That's cool!// They've got a really nice weather. ((hhh))
 line 71 NNS: //Yeah.// And uh:: uh Punahou is uh Obama's mother school.
 line 72 NS:// Oh yeah! //Oh, yeah, yeah.

This excerpt was taken from the NNS's narrative of his happy memory. As was revealed in the stimulated recall interview, the NNS mentioned President Obama's high school hoping that the NS interlocutor would make a remark about that, but the subject went overlooked as one can see that the NS only mentioned the nice weather in Hawai'i in line 70, rather than referring to Obama. Having noticed that, the NNS made a remark that the school is where Obama graduated, which was followed by the NS's *Oh yeah!* to acknowledge he just realized that. Just as is seen in this excerpt, the ESL learners and their NS interlocutor made an equal contribution to the conversation even within the storytelling, and their storytelling was dialogic.

4.7 Recast and negotiation of meaning

Negotiation of meaning and recast were coded to investigate whether there were any discernible patterns between the ESL and EFL learner groups. Having examined all the data, evidence of corrective feedback and negotiation of meaning were found; there were instances of recast, rephrase, confirmation check, clarification request, and elaboration. Table 4 illustrates the summary. Again, the total occurrences of these items were adjusted to the occurrences in 1000 words.

Recast was generally initiated by a NS with a rising intonation at the end of utterance, and is an implicit way of correcting incorrect utterances by NNS. While recast is regarded as corrective feedback, all the other types of feedback were considered negotiation of meaning. "Confirmation check" was recorded when one speaker asked for confirmation of the interlocutor's preceding utterance via repetition. The utterance was coded as "rephrase" when a speaker reiterated material using a different phrase after the other speaker showed non-understanding using a confirmation check or silence. "Elaboration" is similar to rephrase but the former coding was allocated when a speaker extensively elaborated his/her former utterance attempting to ensure the other speaker understood the meaning. Lastly, utterances were

Table 4. Total number of occurrences of feedback types per 1000 words

	ESL learners	NS (ESL)	EFL learners	NS (EFL)
Recast	N/A	1	N/A	20
Rephrase	0	8	0	14
Confirmation check	21	6	20	11
Clarification request	1	1	1	9
Elaboration	2	3	1	8

coded as “clarification requests” when one speaker asked for assistance in order to understand the other speaker’s preceding utterance using questions.

As Table 4 shows, besides recasts and clarification request by the NSs, there were no great differences between the ESL and the EFL groups. While there was only one case of recast by the NS in his conversation with his ESL conversation partners, there were 20 occurrences by the NS in the EFL conversations. The ESL learners’ utterances were certainly not without errors; therefore, the NS interlocutor could have provided recasts to correct the learners’ erroneous utterances. It could have been the case that the NS preferred the role of conversation partner, not the authority of the target language, and when non-understanding occurred, he solved the problems by giving different types of feedback such as confirmation checks. The NS who interacted with the EFL learners, on the other hand, felt it necessary to play the role of the expert in the target language and give recasts in his attempt to elicit the meaning that the NNSs tried to get across. This could be triggered by numerous uses of L1 by the EFL learners as well as their discourse style that did not involve interactive DMs.

The negotiation of meaning device used most by the NNSs in both groups was confirmation checks, and this demonstrates that the learners were trying to understand their NS interlocutors and have successful interactions with them. Similarities between the two groups were also found in the NSs. The NSs in both groups used rephrase or elaboration after their NNS partners attempted some kind of meaning negotiation moves such as confirmation checks. The use of rephrase and elaboration certainly helped the conversation partner in both the EFL and the ESL groups to pass on the meanings and keep the interaction going.

4.8 Post hoc interview with the NSs

The NS for the EFL group stated that he understood most of the conversation including the NNSs’ storytelling. However, he realized the conversation did not go particularly smoothly especially when he kept asking questions only to receive yes or no responses. He maintained that he used recasts mainly to understand the

NNSs' responses better and to make sure he understood everything the NNSs said by giving confirmation checks. He did not feel like he intentionally tried to play the role of an interviewer, but at the same time, the interactions with his NNS conversation partners did not seem to be two-way interactions, either.

The NS for the ESL group revealed that he felt quite comfortable conversing with the ESL learners, especially when they used *y'know*, and *oh*, and he understood most of what they said. He utilized confirmation checks not necessarily because the NNSs' utterances were imperfect or difficult to understand; he simply wanted to find the missing piece to complete the puzzle.

5. Conclusion

This study asked whether Japanese ESL and EFL learners displayed different patterns in the use of DMs and other linguistic resources in their storytelling, as well as the role DMs play when NNS interacted with NS interlocutors in their L2 storytelling activity. The study also asked what NNSs' impressions of their NNS interlocutors were. The ESL learners used *y'know* frequently and that seemed to facilitate the involvement of the NS interlocutor into the learners' storytelling and *oh* to be involved in the NS's storytelling. As a result, their storytelling became dialogic. Further, they used *okay* to maintain the stance of an equal participant in the conversation, and thus it is argued that the ESL learners in the current study strived to evaluate their NS interlocutor's remarks and managed to take charge of the interactions. The use of DMs helped the ESL learners stand on an equal footing with their NS interlocutor in telling a story in the L2 and constructing a dialogic storytelling. The EFL learners, in contrast, hardly used the DMs examined in the study, with the exception of *oh*. However, qualitative analysis revealed that its use was quite different from that of their ESL counterparts. The EFL learners mainly used *oh* to show surprise at the utterances of their NS interlocutor, but after uttering *oh*, the learners did not follow up with additional comments or questions or develop the topic of the conversation further. This resulted in the NS initiating another topic of conversation. There was an occasion that an EFL learner used *oh* to show some form of emotional engagement; however, he did not know how to make *oh* a platform to expand the topic or take his turn in the conversation.

Considerable use of L1 and recasts was found only in conversations between the EFL learners and their NS conversation partner, whereas negotiation of meaning devices were used in both the EFL and the ESL groups. It is argued that the use of L1 was triggered by the learners resorting to the authority of the NS who holds expert knowledge of the target language, and that move made the interaction asymmetrical. As a result of the stance of the EFL learners in the conversations, their NS

interlocutor tended to remain the leader of the conversation and thus made use of recasts to keep the conversation going, although the post-hoc interview showed that he was not intentionally undertaking this role. The NS conversing with the ESL learners stated that he felt at ease during his interaction with them mainly because of the frequent use of DMs such as *y'know* and *oh*.

6. Limitations and implications

Some limitations are recognized. Recall that not only the learners but also the NS in the EFL group produced much fewer words compared to the ESL group. Although the two NSs in the study appeared to be equally talkative and friendly when talking to the researcher, it is possible that they reacted differently when they talked to learners of English, especially to learners without much experience in speaking in English. In addition, the NS in the EFL group must have felt the need to speak more slowly, resulting in fewer words being uttered. To clarify this issue, it is advisable to have the same NS interact with both EFL and ESL learners, or provide a thorough training session to the NS interlocutors. Further, the TOEFL score was used to determine the learners' overall proficiency in the study. However, it might be suitable to administer a supplementary speaking test besides the TOEFL to gauge their speaking proficiency in order to clarify the findings.

The study has recommendations for further studies as well as pedagogical implications. The current study placed its focus on investigating DMs and negotiation of meaning between speakers and listeners when learners told stories in L2 English; however, other cohesive devices such as referents are worthy of investigation, as they contribute greatly to coherence in discourse. Crosthwaite (2011) conducted a study that examined interactional effects on accuracy of referent markings, but his participants were low-level learners and their storytelling tasks, using picture stimuli, were artificial in nature. I encourage further study to investigate referent tracking in naturally occurring narratives and to study how interactional support leads L2 learners to develop more coherent and inspiring storytelling.

The study provides pedagogical implications as it clearly showed that learners surrounded by abundant pragmatic input can become active users of DMs, and as a result become active conversation partners. For those learners who do not have sufficient English input outside of classrooms (i.e. learners in EFL situations), we should incorporate lessons involving discursive devices such as DMs into classroom teaching for them to acquire interactive skills to converse with their interlocutors. While some studies assume an underlying advantage of explicit instruction to teach L2 discourse (e.g. Rose 2000), others show evidence of the effect of sequential

input of features in natural discourse preceding learner output (e.g. McCarthy 1998), with awareness building during activities such as language observation, and cross-language comparisons (McCarthy and Carter 1995). I am inclined to support the latter implicit teaching stance, as DMs can be and should be understood inductively in realtime discourse. In addition, the functional use of DMs is both subtle and intricate, thus, metacognitive explanation of DMs alone cannot help learners understand form-meaning relationships in discourse.

While I support the view of presenting natural discourse to learners and have them become aware of real-life language use in context, I feel one should not necessarily have to always adhere to the order of comprehension preceding production. For instance, if learners are at an intermediate or higher proficiency level, teachers could first give them a dialogic storytelling task and have them work in pairs. Second, they can watch prototypical storytelling between “fluent” speakers of the target language (be they NSs or NNSs). Teachers can then ask learners whether they “noticed” any differences between their own interactions and prototypical ones during their storytelling, with a particular focus on DMs. After learners succeeded in awareness building while observing and comparing their original discourse styles and the prototypes, then they might be considered “ready” on their own account. Learners can also work in a group of three, with one being an observer while the other two actually perform L2 dialogic storytelling, and then later the observer provides them with feedback

Last, if one merely focuses on grammatical accuracy, the EFL or ESL learners’ discourse in the current study might appear to be faulty to grammarians. However, if the ability to communicate is of central importance, both groups of learners are worthy of commendation as they utilized various interactive strategies to get their meaning across and attempted to build rapport with their NS interlocutor despite their limited linguistic skills.

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Appendix A. Transcription conventions (adapted from Markee 2000: 167–168)

Identity of speakers

NS: Native speaker

NNS: Non-native speaker

// Simultaneous or overlapped utterances between the two speakers

line 27 NNS: //Oh::://

line 28 NS: //In America.//

= Two utterances that follow one another without any perceivable pause (latching)

line 52 NNS: I was so, y'know =

line 53 NS: =That's kinda like, what's all that about?

() Backchannel utterances Back-channel items from the hearer often overlap with the turn of the current speaker, and are thus inserted into the utterance in parentheses such as (Oh)

(+) (++) (1) Intervals within and between utterances

(+) = a pause of between .1 and .5 of a second; (++) = a pause of between .6 and .9 of a second; (1) (2) (3) = pauses of one, two or three seconds respectively.

Characteristics of speech delivery

?	rising intonation, not necessarily a question
!	strong emphasis, with falling intonation
so,	a comma indicates low-rising intonation suggesting continuation
NO:::	One or more colons indicates lengthening of the preceding sound; each additional colon represents a lengthening of one beat
<u>that</u>	underlined type indicates marked stress
OH	capitals indicate increased volume
<hhh>	in-drawn breath
hhh	exhaled breath
(hhh)	laughter tokens

Commentary in the transcript

((unintelligible)) indicates a word or utterance that is unintelligible to the analyst

The use of hedging devices in L2 legal writing

A cognitive functional perspective

Natalia Dolgova

The focus of this chapter is to determine the conceptual profile of the rhetorical phenomenon of hedging and to investigate how hedging devices are represented in legal memos produced by L2 writers of English. Because it addresses negotiation of various poles on the reality spectrum, hedging is crucial for the construction of an effective legal memo. A sample of 14 memos is analyzed utilizing a mixed method approach. The analysis demonstrates that the differences in the objective “success” of memos are conditioned by each writer’s textual and functional patterns of hedging. These conclusions elucidate the processes guiding legal memo writing and the longitudinal development of the hedging function in the writing patterns of non-native legal writers.

Keywords: Cognitive Linguistics, English for Specific Purposes, second language writing

1. Introduction

Second language (L2) writing instruction is usually guided by certain principles present in the target discourse (McCarthy and Carter 1994). The L2 writers’ awareness of target genre expectations and genre rules can be boosted through the provision of feedback (Abbuhl 2011; Bruce 2002; Ferris 1997; Ferris and Hedgcock 2014; Ferris and Roberts 2001). In particular, Abbuhl (2011) analyzed the role of feedback in writing legal memos and demonstrated that learners who received both form and meaning feedback on their legal memos showed greater linguistic growth over the course of the semester than the participants from the group which received only one type of feedback.

Despite being a crucial methodology for promoting L2 writing, effectiveness of feedback may vary depending on context and the linguistic features targeted. Complex or multidimensional structures are harder for L2 writers to process and internalize than the more salient linguistic structures with one-to-one form-meaning correspondence (e.g. third person “-s”; nominal plural forms) (Ellis 2003). Hedging

devices represent an example of such multidimensional structures. The terms “hedge” and “hedging” are associated with the use of deliberately vague language or the avoidance of clear-cut, decisive statements (Clemen 1997). One of the most comprehensive definitions of hedging is provided by Hyland (1998: 1): “any linguistic means used to indicate either a lack of complete commitment to the truth value of an accompanying proposition, or a desire not to express that commitment categorically”.

The use of hedges has been analyzed in various discourse or context types (cf. Crompton 1997; Granger and Tyson 1996; Hewings and Hewings 2002; Hyland 1996; Salager-Meyer 1994; Vassileva 2001). Furthermore, a number of researchers have also approached hedges from functional perspectives (metadiscourse: Crismore et al. 1993; Vande Kopple 1985; interpersonal: Hyland 1996; Salager-Meyer 1994; politeness: Brown and Levinson 1987; Hinkel 1997; Huebner 1983; Myers 1989), focusing on the pragmatic reasons behind their use.

Understanding hedges as fulfilling different functions in discourse has led to the creation of hedging taxonomies grounded in the textual and grammatical functions of hedges in analyzed contexts. To illustrate, Hyland (1998) differentiates between lexical and non-lexical, or strategic, hedges; Salager-Meyer (1994) identifies a number of hedging types pertinent to medical discourse; Vassileva (2001) analyzes hedging types in comparative (English vs. Bulgarian) academic contexts. Finally, in a meta-analysis of studies dedicated to defining and classifying hedges, Clemen (1997) covers key hedging strategies (politeness, indirectness, mitigation, vagueness, understatement) and corresponding modifying devices. More recently, Vass (2004) analyzed the use of hedging in two legal genres (U.S. Supreme Court opinions and law review articles) and concluded that it followed genre-specific patterns conditioned by illocutionary context and participants’ access to the same schema. In sum, previous authors largely focused on context- and discourse-specific realizations of hedges rather than the core meaning of the phenomenon of hedging as a communicative or discursive strategy/act.

However, the act and intent of hedging appear to be primary, and the textual hedges, secondary; the core meaning of hedging underlying context-specific realizations was not explicitly addressed by previous researchers. The tools of Cognitive Linguistics appear crucial for this goal. They can be used to create a hedging model that would be applicable to different contexts and discourse types, providing transparency for all audiences.

This chapter thus aims to analyze hedging using a Cognitive Linguistics approach and demonstrate how it can be applicable to the study of specific discourses, in particular, legal discourse. The conclusions about the core meaning of hedging are then applied to the analysis of hedging devices in one form of L2 writing: legal memos produced by foreign LL.M. students at a U.S. law school.

2. Cognitive Linguistics and the ICM of hedging

Cognitive Linguistics approaches the study of language from the perspective of human cognition processes, which are believed to serve as the key to the explanation of the creation, learning and usage of language. According to cognitive linguists, human language naturally reflects the extension of the physical world through cognitive processes of categorization (Taylor 2003; Tyler and Evans 2003), metonymy, conceptualization (cf. Boers et al. 2004), and metaphor (cf. Grady 1999; Lakoff 1987; Lakoff and Johnson 1980) expressed in the grammatical, syntactic and semantic spheres of language (Langacker 1987). In other words, the theoretical constructs of Cognitive Linguistics expose the processes of how humans conceptualize their environments and tackle the essence behind specific linguistic phenomena.

Cognitive linguistic tools are highly relevant for profiling the notion of hedging. As referenced by multiple authors (Clemen 1997; Crompton 1997; Hyland 1996), the rise of hedging taxonomies was initiated by Lakoff, who characterized them as statements or expressions “whose job it is to make things fuzzier or less fuzzy” (1972: 195). Despite initiating this discussion, Lakoff never extended “his pioneering model of hedges to account for the considerably broadened spectrum of hedging research” (Clemen 1997: 239). To build on Lakoff’s initial definition, I will rely on the notion of the *Idealized Cognitive Model*, as well as the notion of *profile* (Langacker 1987).

Lakoff (1987) characterized Idealized Cognitive Models (or ICMs) as helping organize our knowledge of concepts perceived within certain frames. For example, the idealized cognitive model of a “bachelor” makes sense within a frame of a society with “certain expectations about marriage and marriageable age” (Ibid., p. 70). ICMs can also be complex structures entailing more than one feature and profiling the relationship between multiple semantic elements within a concept (Langacker 1987): e.g., the verb *lie* includes a cluster of three conditions with relatively equal significance: falsity of belief, intended deception, and factual falsity (Lakoff 1987).

Overall, the notion of an ICM is highly useful in the sense that it allows for the analysis of culturally or linguistically prominent but vague concepts. Specifically, it can be helpful for determining the core of the notion ‘hedging’. Because hedging ultimately profiles negotiation between the expected and the actualized, it assumes the presence of two poles – one of the epistemic modality (Hyland 1998) and one of ideal reality – against which the epistemic modality is ultimately perceived. In other terms, these realities can be titled the realms of *realis*, pertaining to artifacts of the categorically ideal, or prototypical, reality in a given context, and *irrealis*, pertaining to multiple possibilities that can take place in contrast to the prototypical reality and thus tied with expressions of uncertainty. The idea that only “real,” or “experienceable” things are valid, while things that are not directly supported

by existing experiences lack a certain validity, is one of the primary metaphors by which human cognition operates (Grady 1999).

The speaker selecting a hedge assumes a certain stance in order to bridge the gap between the two types of reality. Thus, the relevant features of the ICM of hedging include the following:

1. the ideal or prototypical reality of the action/concept/scenario/etc.;
2. the epistemic modality (multiple unrealized possibilities), mapped against the prototypical reality of the action;
3. negotiation between the prototypical reality and the epistemic modality, or bridging the gap between the two; and
4. the pragmatic (functional) focus of such negotiation or gap-bridging process.

These elements are depicted in Figure 1:

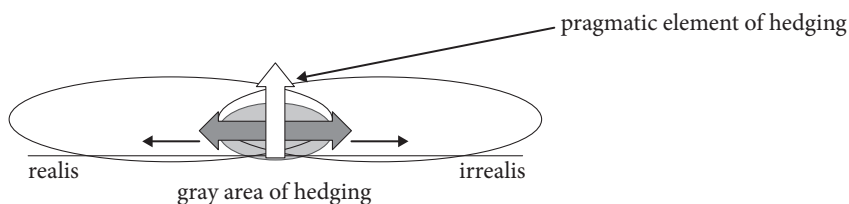


Figure 1. The Idealized Cognitive Model of hedging

The white indicator in the middle refers to the process of hedging that simultaneously combines both ends of the spectrum (hence side arrows both ways) and produces a negotiation of the two in the gray area (gray oval in the background). The linguistic realization of hedging is indicated through the vertical arrow pointing upwards.

The gap between the *realis* and *irrealis* ends of the spectrum needs to be minimized in order to represent the actual, not the prototypical or infinitely possible, state of the world, and to be expressed through a choice of a hedge. Let us consider several previously recognized examples of hedging and demonstrate how the ICM of hedging is incorporated into them.

1. Lexical and modal hedging: “This *would appear* to be in significant conflict with...” (Hyland 1996: 480). This sentence includes two hedges – *would* and *appear* – that can also be regarded as a compound hedge.
 - a. prototypical reality: “this is in significant conflict with”;
 - b. *irrealis* of possibilities: “this is not in significant conflict with”;
 - c. “would appear” is selected as the best compromise reflecting the state of things between the two gaps;

- d. this hedging is done for a context-specific pragmatic reason, such as vagueness, politeness, or mitigation of reality (i.e. trying to reflect the actual state of things).
2. Discourse-level hedging: “*Despite our careful alignment and model building procedures we do not claim that our model structure is comparable to a crystal structure*” (Hyland 1998: 144):
 - a. the ideal or prototypical reality/*realis*: the state of the world where “our model structure” will be “comparable to a crystal structure” and where claims in that regard will be justified;
 - b. the possible reality/*irrealis*: the opposite of the prototypical scenario in a), i.e. absence of the said state of the world;
 - c. the “despite” construction and the “we do not claim that” clause are selected as the most precise descriptors of the given reality;
 - d. the pragmatic reasons behind hedging may include but are not limited to: demonstrating understanding of the genre conventions, indicating the shortcomings of the given scientific approach, etc.

Realizations of the pragmatic function of hedging are relevant because hedges “get their meaning through the contexts in which they occur” (Markkanen and Schroeder 1989: 12). The ICM of hedging provides a unified standard to rely on when analyzing specific discourse realizations of hedging in various contexts.

2.1 Hedging in legal memos

Legal discourse in general comprises a number of subgenres governed by rhetorical functions that differ across various linguistic dimensions (Gotti 2011). In this chapter, the genre utilized for the analysis is the legal memo. According to Black’s Law Dictionary (Garner 2011), legal memos, a fundamental genre of the common law system, provide a summary of a legal expert’s recommendations pertaining to the client’s case. The structure of the memo usually includes the following components: a statement of the facts of the case in question; the legal question presented as well as a brief answer to that question; a discussion outlining the legal argumentation and indicating reasons for certain predicted outcomes; and a conclusion summarizing the key legal outcome expected (Oates and Enquist 2014). The main goal of the memo is to establish the facts and to make a prediction about the potential outcome of the case, while demonstrating that the anticipated outcome is grounded in previous patterns in statutory and common law. This organization serves the purpose of common law argumentation, which aims to analogize and distinguish between patterns in possibly relevant forms of legal authority and make a prediction based on those patterns. When referring to judicial precedent, a successful example of common law argumentation must necessarily include four steps:

1. state the facts of the precedent;
2. outline the rule and rationale for the rule given by that specific court;
3. compare and contrast the case in question from the given precedent;
4. make a prediction based on the legal pattern that is observed. The main weight of demonstrating the common law reasoning patterns is carried by the discussion part of the legal memo.

Such a dichotomy between the desired prototyped reality and a potentially endless range of other possible outcomes represents a crucial conceptual aspect of a legal memo, which lends itself naturally to the elements of *realis* and *irrealis* of the ICM of hedging. Because the “valid” legal reality (*realis*) is valued much higher than the not yet valid, or hypothetical scenarios, a memo’s functional goal is to make a prediction that will be as close to the desirable legal reality as possible. In the legal context, the elements of hedging *realis* are the facts, patterns, judgments, and rules from previous case law or statutes. The *realis* information thus is legally established and acknowledged as minimally valid in the field. In contrast, the elements of *irrealis* are the predictions and conditional statements accompanying the argument, and not yet recognized as valid knowledge in the field. The goal of the legal writer is to demonstrate their awareness of both ends of the spectrum. Hedging devices allow the writer to exhibit how much s/he had considered the existing possibilities in regard to each outcome and then express those possibilities as precisely as possible. Absence of relevant hedging, i.e. high degrees of certainty regarding the predictions, would detract from the relevant authoritative stance that needs to be projected (cf. Allison 1995; Hyland and Milton 1997).

The pragmatic element present behind hedging in legal memos is rather uniform. Since intentional understatement/politeness is generally avoided in legal writing (Lee et al. 1999; Neumann and Tiscione 2013), hedges function as tools helping mitigate (Clemen 1997) the reality between the two ends of the probability spectrum as clearly as possible.

2.2 L2 writing

It is important to remember and consider a number of factors conditioned by the L2 writing setting of the study. The goal of EAP/ESP (English for Academic/Specific Purposes) instruction is to equip students with a set of academic literacy skills that will be applicable or even necessary in the majority of academic settings (EAP) or within a specific professional context (ESP). Some objectives typically addressed in the process are working with sources (summarizing, paraphrasing, synthesizing, quoting), understanding rhetorical characteristics of select target genres and subsequently mastering those genres, and becoming increasingly proficient in an

academic register. The academic register typically includes a range of features that aim to minimize subjective expression; some of these features are use of passive voice, avoidance of personal pronouns and nominalization. Hedging is also regarded as a common element of the academic register in the sense that it allows the writer to express a more opinionated stance in a relatively objective manner.

Hedging (and in particular the idea of negotiation between possible outcomes) is difficult to acquire even for native speakers; non-native speakers naturally struggle with this concept to an even greater degree (Hyland and Milton 1997). Previous research indicates that overall, L2 writers prefer a realistic (more direct), rather than a hedged, stance toward the portrayal of various relationships (Bloor and Bloor 1991; Skelton 1988) because they lack the cultural knowledge often required to grasp and to produce variations in the meaning of hedges. However, in most cases, English learners are not provided with adequate instruction of hedging devices (Holmes 1988; Hyland 1994), and the rich variation of hedging forms (i.e. a lack of one-to-one form-meaning correspondence) prevents learners from being able to master hedging tools easily.

Furthermore, foreign LL.M (Master of Laws) students in the U.S. legal context deal with an even higher learning curve: despite already being legal professionals (lawyers, judges, prosecutors, etc.) in their native countries, they are typically trained in civil law systems. The American system, on the other hand, is grounded in common law, which necessarily relies on relevant precedents for making new judicial decisions. Previous research has not investigated how L2 legal writers handle the target genre of the legal memo and what role hedging might play in the process. This study offers a glimpse of the development of hedging use by L2 writers over the course of one semester.

3. Method

This section provides an overview of key characteristics of the study design and methodology.

3.1 Context and data

The L2 data utilized for this study represent a part of the larger pool of data collected during a class on U.S. Legal Discourse taught to international students. Class topics focused on common law argumentation and typical legal genres; all students received weekly feedback on their writing. At the end of the semester, a number of students received a ‘high pass’ mark, which demonstrated a certain degree of persuasiveness and coherence of argument in their writing. The ‘high pass’ was

given by a legal expert reader, i.e., the target audience of the genre of legal memo. In this sense, the instructor of U.S. Legal Discourse and the legal expert who read the final version pursued somewhat different goals in assessing the final products. Accordingly, to reflect the end-of-semester designation, the writers with 'high pass' mark will be referred to as 'more successful', while the writers without it will be referred to as 'less successful'.

The data used for analysis were two drafts of a legal memo – first and final ($n = 14$; collected from seven students), produced within about two months of each other. The small number of drafts allowed for the analysis to focus on qualitative changes in hedging patterns that occurred in student writing. Since the key function of hedging in legal writing is negotiation, only the parts that contain the bulk of the negotiation-oriented discourse – i.e. discussion and conclusion sections – were used for the present analysis. The remaining parts, such as the statement of facts and the question presented, which typically did not contain many hedges, are more formulaic in nature and were therefore excluded from consideration.

The research questions are as follows:

1. Do more successful L2 legal writers use hedges quantitatively and qualitatively differently than their less successful classmates? In other words, to what degree did the successful use the hedging patterns contribute to a 'high pass' grade (or lack thereof) at the end of the semester?
2. How does the use of hedges align with the common law argumentation scores writers received on their first and the final memo drafts?

3.2 Operationalization of hedging

The ICM of hedging discussed in the previous section serves as a guide to the present operationalization. Because previous hedging classifications invariably tied the categories to context-specific realizations, a Cognitive Linguistics model allows a focus on the essence of hedging. The criterion for determining whether a linguistic structure functions as a hedge was the explicit pragmatic element – i.e. the presence/absence of a negotiation function, characteristic of legal memo writing. Hedges not related to the negotiation of two possible outcomes of the case in question were excluded from analysis, as were quoted or paraphrased hedges coming from other sources.

3.3 The rubric

The rubric (see Appendix A) included sections on grammar, lexicon, global organization, local organization, supporting ideas, and common law argumentation (focusing on four key components: facts of the case, rationale, similarities/differences between precedents and the case in question, and application/prediction). Each section included a range of scores from 1–8. Because the distance between scores is theoretically assumed to be equal, these measures constitute interval-like variables. Scores on the rubric elements are then added up for one total score. Thus, the maximum score one can earn on the rubric is 48, while the minimum score is 6. The scores of rubrics did not have a direct relation with the ‘high pass’ scores, as the two were given by different raters/audiences. ‘High pass’ mention is used for our analysis as evidence of target-like practices, as acknowledged by a professional audience.

3.4 The hedging coding scheme

A context-specific coding scheme was developed using a subsample of model legal memos (i.e. successful L1 production). All hedges were analyzed and coded using the following categories (see Appendix B for more detailed descriptions and examples for the type and discourse function categories):

- Single versus cluster hedges: in many cases, several hedges were used in the same syntactic unit (e.g. *would seem*, *although* the outcome *may* be, etc.) and contributed to the general negotiation stance profiled by the sentence. In other words, hedging clusters referred to the occurrence of adjacent hedges with the same discourse function.
- Hedging type, or the context-independent linguistic characteristics of possible hedging devices: syntactic, lexical, or grammatical.
- Discourse function, or the contextual purposes of syntactic hedges or the syntactic units in which specific lexical and/or grammatical hedges are used.¹

3.5 Analysis and procedure

The methodology utilized in this study includes both descriptive quantitative and qualitative methods. The two groups of writers whose production was analyzed as part of the study were divided into *less* and *more successful* legal writers based on

1. Select hedging occurrences had multiple discourse functions, which is reflected in the results.

the presence/absence of the 'high pass' grade awarded to the final drafts at the end of the semester. In other words, the division of writers into two groups was based on the functional adequacy of their writing for the target context and not on language proficiency per se. Eight drafts produced by the four more successful and six by the three less successful L2 legal writers were coded for the use of hedging according to the above-mentioned scheme.

The analyzed data also included the analytic rubric scores assigned to each draft, with a particular focus placed on the common law argumentation scores. These scores represented a proficiency-focused component of assessing these writers. Three raters (graduate teaching assistants who had prior experience working with legal writers and also attended a rubric training) blindly scored all memos using the rubric. The final category scores assigned to each memo were calculated based on negotiated individual scores agreed upon by all three raters. The use of inferential statistics was not justified due to the small data sample.

The findings of this small-scale study allow us to establish a preliminary set of hedging use patterns contributing to the perception of the legal document as more or less successful by the professional legal audience.

4. Results

This section provides an overview of results obtained in the study.

4.1 Descriptive quantitative patterns

In response to the first research question, Table 1 summarizes the number and grammatical types of hedges in first and final drafts the L2 legal writers (referred to by pseudonyms in all tables) presented by their level of proficiency. It is clear that the majority of writers (five out of seven) increased their use of hedges from the first to the final draft. Most writers, except for Ben and Walter, preferred individual hedges to hedging clusters. The percentage of cluster vs. individual hedge use remained approximately the same, becoming slightly more balanced in the final draft.

For both types of writers, the results demonstrate a clear preference for grammatical hedges expressed through epistemic modal verbs in both drafts. However, while the less successful writers (with the exception of Ben) utilized approximately the same number of grammatical hedges in both drafts, the more successful writers, with the exception of Leila, nearly doubled their use of grammatical hedges. Another trend that becomes apparent is the presence of a greater variety of hedging types in the first draft of the more successful writers. Even though none of the less

Table 1. Number and types of single and cluster hedges in both drafts*

Writers		First draft					Final draft				
		G	S	L	Clusters	Total number	G	S	L	Clusters	Total number
Less successful	Ben	3	0	0	7 (GS)	11	9	4	2	25 (SL, GS, SLG)	40
	Haley	8	0	0	4 (SG, GS)	12	8	2	5	6 (LL, SG, LG, GS, GG)	21
More successful	Paul	13	0	4	9 (SLG)	26	12	1	1	10 (SLG)	24
	Joy	19	7	1	4 (SG, LG)	31	47	8	2	17 (SLG)	74
	Leila	19	5	2	9 (SLG)	35	16	5	0	4 (LSG)	25
	Olivia	16	0	1	12 (SLG)	29	34	7	7	20 (SLG)	68
	Walter	7	4	5	5 (GL, SGGL)	21	14	8	5	28 (LSG)	55

* Key for types of hedges: G = grammatical; S = syntactic; L = lexical

successful writers use individual syntactic hedges (and lexical hedges are utilized only by Paul), all of the more successful writers take advantage of various hedging types in the first draft, i.e. from the beginning. Also, in the former group, the number of syntactic and lexical hedges does not increase significantly in the final draft. Finally, the hedging clusters used in final drafts demonstrate that by end of semester, all writers became more familiar with combining various hedging devices into whole clusters; however, the more successful writers seemed to be more adept at using them, relying on triple clusters to a greater degree. Table 2 presents select examples from writers in both groups; expressions coded as examples of hedging are underlined.

These examples are representative of the observed trends. Ben more than tripled his use of hedges in the final draft, adding quite a bit of new reasoning and details to the initial narrative. Also, Ben showed mastery of double hedges in his final draft, frequently combining grammatical and syntactic hedges (modals + *if* constructions).

Olivia more than doubled her use of hedges and also expanded her narrative; the example from the final draft shows that triple hedges, combining lexical, grammatical and syntactic elements, are more common than in a comparable excerpt from Ben. More specifically, Olivia exhibits a better command of lexical hedges, such as *likely*, *imply*, *suggest*, *allegation*, combining them with modals and syntactic structures (relative clauses).

Table 2. Examples of single and clustered hedges in first and final drafts

	First draft	Final draft
Ben	Consequently, the gross-up provision does not refer to the principal amount paid over such debt securities. It concerns only the ancillary capital gain that bondholders <u>might have if they are not citizens</u> of Urbania (Ben)	The “gross-up” stipulation ensures investors the right to be reimbursed by Urbania of the amount paid to it as tax – imposed on the interest Urbania pays on the Bonds, <u>if they are not qualified to receive</u> a tax credit in their home countries for the foreign tax already paid. Consequently, the gross-up provision does not alter the principal amount paid on such debt securities. It is only an ancillary capital gain that bondholders <u>might have if they are not citizens</u> of Urbania. As stated in the indenture, unanimous approval only is required if the removal of such tax provision would alter the terms or currency of payment of the principal amount paid on the bonds or the interest rate fixed by the indenture.
Olivia	In our case, there being no express covenant requiring unanimous consent to the deletion of the tax gross up clause, <u>it is likely that the court will dismiss</u> the bondholders claims.	In our case, there is not express clause prohibiting the bonds exchange and the use of exit amendments. Although, the exit amendment <u>might imply</u> a reduction in the bonds’ market price, the holdings in <u>Hartford, Metropolitan and Geren suggest that it is likely that the court will dismiss</u> the bondholders’ claims. The mere <u>allegation by the bondholders that such transaction is coercive or that it might decrease</u> the value of the bonds is not enough to support a <u>claim for breach of covenant</u> of good faith and fair dealing.

Overall, more successful writers relied on triple clusters to a greater extent than less successful writers and had a smaller learning curve along their first-to-final draft trajectory.

If we use the ICM of hedging to explain these results, by relying on a greater variety of means to express their prediction, the more successful writers were more thorough and precise in situating the case on the *realis/irrealis* continuum, which likely provided a more reliable conclusion for the target legal audience.

4.2 Functional changes in hedging patterns

The discourse functions of the hedging devices indicate the discourse orientation of the negotiation between two poles on the *realis* (signaling validity) vs. *irrealis* (signaling uncertainty) continuum, as discussed in the section on ICM of hedging earlier in this chapter. The present section reports how the functional use of hedging may have contributed to a ‘high pass’ memo grade.

The work of the more successful group was considered to be more discourse-appropriate and more likely to meet the legal reader’s expectations. In order to examine where the key of such discourse appropriateness lies in relation to specific hedging devices and their functions, all of the hedges (both individual hedges and hedging clusters) were coded according to one of the eight discourse functions (Appendix B).

Table 3 shows the number of occurrences of each function in every draft.

Within the less successful group, the functional outline of the first draft demonstrates that the hedges were primarily used to discuss and streamline the reasoning about the facts of the case in question. In the final draft, the two highest functions of the less successful writers were making a prediction or restating the rules/rationales of previous case law. All writers also utilize functions #4 and 6, while functions #1, 2, 7 and 8 were not used at all.

On the other hand, the more successful writers implemented a variety of discourse functions beginning from their first drafts: #2, 5, 6, 7, 8 were used by all writers, and functions #1 and 4 were utilized by three writers. On an individual level, Joy used every discourse function with a distinct focus on bringing counter-arguments. In fact, reliance on function #8 separates writers from this group from their less successful colleagues:

The holdouts may contend that, because amount of interest is grossed up by the tax gross-up clause and deletion of such clause may cause decrease of amount of interest, modification such as deletion of tax the gross-up clause need unanimous consent of bondholders.
(Walter, first draft)

The final drafts of the more successful writers demonstrate that, except for Leila, students increased their use of hedging discourse functions by two and a half times. Functions #2–8 were observed in the final drafts of all writers in the group. Compared to the less successful group, these writers employed hedging devices in a wider range of discourse contexts from the outset.

However, the mere number of hedging functions used cannot explain why the more successful writers produced more discourse-appropriate memos. Instead, the types of discourse functions are more revealing in this direction. In light of the common law argumentation patterns, functions #2, 3, 4, 5, and 8 are crucial for

Table 3. Use of hedges by discourse function
(calculated as number of each function's occurrences)

	First draft								
	1. Author's voice	2. Facts of prior cases	3. Rule/ rationale of precedents	4. Compare/ contrast w/ current case	5. Make a legal prediction	6. Reminder of current case	7. Conclusions from prior law	8. Counter-arguments	Total
Less successful									
Ben	–	–	3 27%	–	2 18%	6 55%	–	–	11
Haley	–	1 8%	1 8%	–	1 8%	7 58%	–	2 16%	12
Paul	4 15%	1 4%	8 31%	–	7 27%	6 23%	–	–	26
<u>Average</u>			22%		17.7%	45%			
More successful									
Joy	5 13%	4 10%	1 3%	1 3%	12 30%	1 3%	4 10%	11 28%	39
Leila	1 3%	3 8%	–	–	11 31%	10 28%	7 19%	4 11%	36
29 Olivia	3 9%	4 11%	–	3 9%	11 31%	6 17%	7 20%	1 3%	35
Walter	–	5 22%	–	4 17%	3 13%	3 13%	1 4%	7 30%	23
<u>Average</u>		12.75%			26.25%	15.25%	13.25%	18%	

the successful application of previous fact patterns/reasoning to those of the case in question. The analysis of final drafts reveal that the less successful writers overwhelmingly used hedging devices to express rules and/or rationales of previous case law and to make predictions. While making predictions is certainly one of the most crucial features of a successful memo, prediction alone is not sufficient to convince the legal reader of the projected outcome. Instead, predictions have to be supported by the extensive discussion of precedents and comparisons emphasizing the similarities between precedents and their relevance to the case in question. The less successful writers did not use discourse functions #4 or #8, which may have created an impression to the legal reader that they were not providing sufficient negotiation between the similarities/differences of the cases in question and thus not supporting their predictions adequately.

The more successful writers, on the other hand, based their predictions on a clear comparison/contrast, as well as consideration of counterarguments. For instance, the following quotes represent characteristic examples of skillful use of such functions:

Final draft								
1. Author's voice	2. Facts of prior cases	3. Rule/ rationale of precedents	4. Compare/ contrast w/ current case	5. Make a legal prediction	6. Reminder of current case	7. Conclusions from prior law	8. Counter-arguments	Total
-	-	9 23%	3 8%	13 32%	13 32%	2 5%		40
-	2 9%	5 22%	2 9%	7 32%	3 14%	-	3 14%	22
4 16%	2 8%	8 32%	3 12%	6 24%	1 4%	1 4%	-	25
		25.7%	9.7%	29.3%	16.7			
5 6%	7 8%	14 16%	8 9%	21 25%	12 14%	2 3%	16 19%	85
-	2 7%	2 7%	5 17%	12 41%	1 3%	4 14%	3 10%	
2 3%	8 10%	20 26%	11 14%	20 26%	7 9%	8 10%	1 1%	77
5 7%	6 9%	4 6%	10 15%	16 24%	16 24%	5 7%	6 9%	68
	8.5%	13.75%	13.75	29%	12.5%	8.5%	9.75	

Comparison/contrast (function #4):

the case of Federated Strategic is different and thus could not support minority bondholders contention (Joy)

Counterargument (function #8):

The minority bondholders would probably claim that the exit amendment violates... (Joy)

The mere allegation by the bondholders that such transaction is coercive or that it might decrease the value of the bonds is not enough to support a claim for breach of covenant of good faith and fair dealing... (Olivia)

The closer reliance on functions #4 and #8 by the more successful writers reflected the common law argumentation pattern and, accordingly, presented a greater chance of satisfying the legal reader's expectations than did the combination of hedging discourse functions utilized by the less successful writers.

4.3 Hedging patterns and common law argumentation scores

To address the second research question, the patterns present in the common law argumentation scores of the rubric assessments given to each memo were examined. All of the scores for the first and final drafts are represented in Table 3 below.

The rubric scores demonstrate that originally, with the exception of Paul, the common law argumentation scores of the less successful writers were twice as low as those of the more successful writers. Paul, given a score of 4, seemed to be approximately on the same level as Leila. The hedging devices used by these two students in their first drafts both favored the prediction and current case discussion functions, with slight differences concerning the use of other functions. Also, Joy had the highest common law argumentation score on her first draft, which is also reflected in the chart with discourse functions of hedging use, where Joy is the only writer utilizing all of the available functions. Ben and Haley have the lowest common law argumentation scores and also have the least number of hedging functions used in their first drafts. While Olivia and Walter are given scores of 4.5 and both used most of the functions important for common law argumentation in their first drafts.

Table 4. Rubric scores on first and final memo drafts

Writer		Grammar		Lexicon		Global org.		Local org.		Supporting ideas		Common law arg.		Total	
		First	Final	First	Final	First	Final	First	Final	First	Final	First	Final	First	Final
		Less successful	Ben	5	6	5	6	4	6	4	6	3	5	2	5
	Haley	5	6	5	6	3	5	4	5	3	5	2	4	22	31
	Paul	6	7	6	7	6	7	5	6	4	5	4	5	31	37
More successful	Joy	5	7	6	7	5.5	7	5	6	5	7	5	7	31.5	41
	Leila	4	5	5	6	4.5	6	4	5.5	4	6	4	6	25.5	34.5
	Olivia	6	6	6.5	7	5.5	7	6	6	6	6.5	4.5	7	34.5	39.5
	Walter	3	4.5	3	5	3	5.5	3.5	5	4.5	6	4.5	6.5	21.5	32.5

The common law argumentation scores on the last draft are indicative of the pattern associated with the hedging functions. All of the more successful writers received a score of 6 or above on the final draft, while the less successful writers received a 4 or 5. Even though the predictive component was present in both groups' memos, it was not sufficiently supported by other common law argumentation steps in writing

from the less successful group. In contrast, the more successful writers tended to include almost all of the steps of common law argumentation, which signals that their predictions were adequately supported by preceding reasoning.

It should be noted that the score for common law argumentation does not fully reflect these students' overall language proficiency, which is also indicated by other components of the legal writing rubric (e.g. grammar, lexicon, local organization). For instance, Paul has an overall score of 37; however, his common law argumentation score of 5 is lower than the scores of Leila (6) and Walter (6.5). In other words, Paul's final memo was considered less appropriate by the target audience despite his solid language proficiency (as reflected by corresponding rubric category scores). This disparity supports the previously discussed criterion of 'high pass' grades reflecting the functional appropriateness of legal discourse rather than the writers' proficiency/ linguistic skills per se.

5. Discussion

The analysis demonstrated that the hedging patterns preferred by each of the two groups were indicative of the overall success of their final drafts at the end of the semester. In response to the first research question, successful legal writers seem to use hedges quantitatively and qualitatively differently than their less successful colleagues do. On the textual level, the former tend to utilize a greater variety of linguistic types of hedges and use them in clusters.

Most importantly, the two groups of writers demonstrated differences in their functional usage of hedging devices. While both groups used hedges to signal a prediction and to restate and analyze the rules/rationales of previous law in their final memo drafts, the more successful writers used hedges to compare and contrast case law and to introduce counterarguments to a greater degree than their less successful colleagues. Overall, a wider array of discourse functions used by the more successful writers showed that they had thought of case development possibilities and negotiated those appropriately. Considering the ICM of hedging, the more proficient writers showed that they had thought of a greater range of possible realities when making a final prediction about the case, which made their final drafts more convincing to a target reader. This finding promotes hedging as a crucial feature of target genre moves and is consistent with previous researchers' (Takahashi 2009; Vass 2004) conclusions that successful hedging is necessarily positioned within the target audience genre expectations, as well as the writer's own stance within the genre.

In regard to the second research question, the functional hedging patterns appear to align with the common law argumentation scores assigned to each draft.

While the sample is too small for statistical measurement, a comparison of scores demonstrates that all less successful writers received a score of 5 (out of 8 possible) or less on their final draft, while the more successful writers received a score of 6 or more (out of 8 possible).

In summary, the results of the analysis indicate that hedging devices are not very straightforward structures and that their successful acquisition takes time. The memos of the more successful writers exhibited a greater amount of hedging usage, reflected in the textual representations of linguistic hedging types and in the discourse functions, in their first drafts than in the corresponding drafts of their less successful colleagues. The analysis of prevalent discourse functions of hedging suggests that the more successful writers used hedging devices in ways that mirrored the steps of common law argumentation.

Writers coming from a background of civil law argumentation must essentially acquire a new prototypicality setting for their argument-writing methodology. They can employ the cognitive mechanism of schema transfer to acquire the concepts of reporting previous rules/rationales and making predictions, but they have to construct a new piece of schema for the comparing and contrasting aspect of common law argumentation. These cognitive processes are clearly demonstrated in the patterns of functional uses of hedging: the writers who are able to create a new cognitive construct in their schematic knowledge are able to produce more functionally appropriate writing than the writers who are struggling to make such a mental connection.

These findings suggest the need for a number of changes in how hedging is taught within the legal writing context. A greater focus should be placed on helping L2 writers acquire the cognitive constructs that would allow them to use hedging successfully for the purpose of common law argumentation. Given that the latter is crucial for the success of the legal memo as a genre overall, more attention should be paid to translating cognitive considerations of hedging into straightforward and transparent pedagogical practice.

6. Conclusion

This chapter investigated the boundaries of the concept of hedging and provided a glimpse into the acquisition of textual representations of hedging by L2 legal writers. Previously, hedging as a textual function and hedges as the realizations of that function have been associated with specific contexts, which is why the development of a single definition of hedging has been a problematic endeavor. In this chapter, I used tools from Cognitive Linguistics to address that gap. I propose a ideal cognitive model of hedging which profiles a negotiation between two types of reality – the

prototypical and highly likely “*realis*”, or something that has been supported by experience and can thus be trusted as valid, and “*irrealis*”, or an infinite hypothetical range of possibilities inherent to any life situation. Additionally, textual representations of the stance of hedging have highly context-specific pragmatic functions.

I then applied this understanding of hedging to the context of legal memo writing, where L2 writers are supposed to make common law predictions based on the negotiation of case and ruling patterns from relevant legal precedents. I compared the use of hedging devices in two legal memo drafts produced by L2 writers within the context of the course where they received uniform explicit instruction and feedback on American legal discourse. The use of hedging in the writing of the more and less successful (as defined by the ‘high pass’ mark awarded by target legal readers at the end of the semester) writers (total $N = 7$) was coded for linguistic types and discourse functions, as well as single vs. cluster usage of hedging. The ICM of hedging directly informed the range of criteria considered for coding and analysis. The analysis demonstrated that both groups made noticeable progress in how they used hedging devices over the course of the semester, which supports the benefits of the instruction they received. The biggest difference between the less and the more successful writers lay in the fact that the more successful ones used hedging to signal discourse functions in a more target-like way: the use of hedging was aligned with the pattern of constructing a common law argument. The less successful writers, on the other hand, despite internalizing the crucial discourse function of prediction, were not able to provide salient textual support for that prediction. The use of hedging devices in the writing of the two groups generally corresponded to their common law argumentation scores: the more successful writers invariably received a higher score on common law argumentation than their less successful colleagues did. Language proficiency did not seem to play a crucial role in this context; however, because the present sample is small and there are no comparable prior studies on the topic, these results need to be confirmed by additional research.

While these findings align with previous research emphasizing the interdiscursive/interpersonal nature of hedging and its role in supporting a discourse-appropriate argument (Bhatia et al. 2004), the present study is limited by a small sample size and a highly specialized analytical context, which means that the results might not be easily generalizable into other ESP settings. Further research on the nature of hedging in other discourse fields is needed in order to draw more conclusive observations on L2 acquisition and the use of hedging in written discourse.

Consequently, directions for future research include conducting larger scale quantitative studies examining the differences between more and less successful writers regarding the numbers/types of hedges used and the relevance of their

functional realizations in text. On the qualitative level, the use of hedges in legal memos represents a prototypically different reality from what most non-native legal writers are trained in and are therefore accustomed to. It would be beneficial for a greater understanding of the process of hedging acquisition to conduct individual interviews with L2 writers in order to gain their perspectives on the process. Last, relying on corpus-based comparisons of L1/expert and L2 data could allow us to determine how hedging is used at different stages of target genre acquisition and whether cross-genre transfer may be possible.

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Appendix A. Analytic rubric used for legal writing assessment

Aspect	Scoring
Grammar:	1–2. Uses simple sentence constructions, but there are still numerous errors in morphosyntax (e.g. articles, tense, agreement)
	3–4. Uses simple sentences; only minor errors in morphosyntax
	5–6. Uses complex sentence constructions and longer sentences, with minor errors
	7–8. Effective use of complex constructions; uses a variety of sentence types effectively; writing not significantly different from a good NS model
Lexicon/register:	1–2. Control of basic vocabulary and legal terms, but may have serious and frequent word errors in word choice and register (e.g. using personal pronouns, colloquial forms and other forms of informal English inappropriate for a legal document)
	3–4. Satisfactory control of basic vocabulary and legal terms, as well as register, but may have minor errors
	5–6. Uses more sophisticated vocabulary and a wider range of legal terms and solid control of register, but has minor errors in word choice
	7–8. Sophisticated and effective range of vocabulary and legal terms, solid control of register; not significantly different from good NS models

Aspect	Scoring	
Global organization:	1–2.	Rudiments of organization apparent, but may at points be illogical, ineffective or difficult to understand the sequencing of ideas
	3–4.	Satisfactory organization of sections, but the sequencing of paragraphs within sections may occasionally be problematic or difficult to understand
	5–6.	Fairly effective method of organization for both sections and for paragraphs within sections
	7–8.	Highly effective/sophisticated organization of sections and paragraphs; logical by U.S. standards and easy to follow; not significantly different from good NS models.
Local organization:	1–2.	Some apparent sequencing of sentences within paragraphs, relying primarily on a limited set of cohesive devices (e.g. enumeration [<i>first, second, third</i>] and basic connection words [e.g. <i>however, also, because</i>]); however, there may be frequent points in which the reader has difficulties understanding sequencing of ideas
	3–4.	Writer sequences ideas, relying primarily on a limited set of cohesive devices; some errors or unclear transitions, but they do not significantly impair understanding of the text
	5–6.	Coherent and logical sequencing of ideas, using a wider range of cohesive devices (e.g. pronominalization, passives, etc.); only minor and occasional errors
	7–8.	Coherent and logical sequencing of ideas, using a wide and sophisticated range of cohesive devices effectively; reader clearly understands sequencing of ideas; not significantly different from good NS models
Supporting ideas:	1–2.	Minimal use of cases to support predictions and to discuss the strengths/weaknesses of the client's position
	3–4.	Supports predictions and discusses strengths/ weaknesses of client's position using both rulings and facts of previous cases, but may have difficulties (1) choosing appropriate facts; (2) sufficiently explaining those facts; and (3) connecting them to the case at hand
	5–6.	Effectively supports predictions and discusses the strengths and weaknesses of the client's position (and/or uses counterarguments); generally effective use and choice of examples and facts, although some material may be extraneous or not adequately explained.
	7–8.	Persuasively supports predictions and discusses the strengths and weaknesses of the client's position (with appropriate use of counterarguments where relevant and/or necessary), using appropriate and sufficient examples and facts from previous cases; discussion well supported and convincing and not significantly different from good NS models

Aspect	Scoring	
Common law argumentation:	1–2.	Includes a statement of facts and a brief overview of relevant statutory and case law but relies heavily on quoting rather than on summarizing, analyzing and paraphrasing the precedents. Provides limited or no explanation of how precedents are relevant to the given case.
	3–4.	Uses relevant statutory and case law, includes the facts of cases and possibly the rationale behind previous court decisions, but fails to explain how the case in question is different from or similar to each precedent. Argumentation does not always sound authentic; facts and rules might be developed to a limited degree. May rely too much on statutory, rather than case law, when developing the argument.
	5–6.	Includes well-developed and relevant facts and rationale behind previous court decisions and discusses similarities/differences between precedents and the case in question but does not include an application of previous court rules to the case in question. Might include a prediction that is not fully supported by argumentation (conclusory argumentation).
	7–8.	Includes an in-depth analysis of how previous case law is similar to or different from the case in question; applies previous decisions to the case in question, and makes a solidly-grounded prediction of the court's decision in the given case

Appendix B. Examples of hedging type and discourse purpose coding categories

Hedging type:

- **lexical:** epistemic modality lexical items, such as *possible*, *likely*, *probable*, *allege*, *assume* and others of similar kind, coded as hedges only when their function was to negotiate outcomes.
- **syntactic:** *if...then* and *when...conditional* constructions; *although...constructions* of concession; *that* clauses following a lexical hedge (*likely*, *assume*, *possible*); *rather than...* constructions.
- **grammatical:** modal verb constructions (*may*, *can*, *should*, *must*, etc) referring to epistemic modality, i.e., predictions and stating a degree of possibility of something happening. Root meaning uses of modal verbs (referring to the social or physical world interactions) were excluded from the analysis, as they lack the pragmatic function of hedging in the legal discourse context.

Discourse function: Discourse function refers to the contextual functions of syntactic hedges or the syntactic units in which specific lexical and/or grammatical hedges are used:

- author's voice or connective reasoning between the discussion of precedents;
- reformulating and/or analyzing the facts of previous cases;

- reporting rules/rationales of precedents;
- comparing and contrasting precedents with the current case;
- making a prediction/stating a course of legal action or stating consequences of certain factual patterns;
- discussion/reminder of facts in the current case and/or streamlining the thinking regardless of other cases;
- stating conclusions from precedents or statutory law without analyzing the entire case pattern;
- expressing counterarguments.

Select hedging occurrences had multiple discourse functions, which is reflected in the results.

The theoretical and applied foundations of Andrea Tyler's approach to the study of language

Salvatore Attardo and Lucy Pickering

Andrea Tyler's work has been a significant factor in the development of applied cognitive linguistics and interactional sociolinguistics. In this essay, we set ourselves the task of briefly summarizing how this work is situated within sociolinguistics and cognitive linguistics while at the same time drawing some parallels to the chapters collected in this volume. Our starting point in establishing the concise set of principles underlying Tyler's work begins with Ortega and Tyler (2016) and Tyler (2012) where the tenets of the approach are spelled out in a particularly cogent way. We supplement this with information of a slightly more technical nature, gleaned from Tyler and Evans (2001) and additional publications. We make no claim of comprehensiveness, but rather of tying up the strands of the various discussions in the book and presenting an overview of the most salient aspects of Tyler's oeuvre.

Language is grounded in social processes (Tyler 2012) and therefore language is usage (Tyler 2010). Thus, broadly speaking, the work is situated within the usage-based approach to the study of language. A corollary of this is the primacy of text, understood both as spoken and written language use, for analysis. Textuality implies contextualization, and texts occur only in context (Tyler and Davies 1990; Tyler 2012: 23). Tyler has consistently argued that what can emerge from a situated contextual analysis of discourse tells us far more about how we constrain our interpretations of the text to allow for a roughly mutual understanding between interlocutors. Her view of context is expansive, coming ultimately from the Berkeley "ethnography of communication/interactional sociolinguistics" approach particularly Hymes' (1972) "speech event" as the basic unit of analysis and Gumperz' (1982) idea of "contextualization cues," more specifically.¹ From the social grounding of language follows the critical factor that downplays the importance of both

1. Both John Gumperz and Dell Hymes were faculty members at Berkeley between 1960 and 1965, when the seminal work on the ethnography of communication was developed, as was Erving Goffman. As Bauman and Sherzer (1975: 99) note, 10 out of 14 authors contributing

genetic factors in language (a central tenet of the Chomskyan paradigm) and of the idea that cognitive processes are somehow encapsulated and thus do not have access to each other's output (the so-called modularity hypothesis, associated with Fodor).

Language is meaning-based and so is language learning. This point may appear unremarkable today, but it should be contextualized within the near-absence of meaning from the concerns of generative linguistics inherited from the behaviorist tradition of structural linguistics in America. The obvious exception to the observation of the disinterest in meaning in American linguistics is the generative semantics movement and its offshoots. These include, broadly speaking, a good part of pragmatics as a discipline and cognitive linguistics with its corresponding focus on meaning with the work by Langacker, on cognitive grammar, and Lakoff and Fillmore on construction grammar. Tyler adopts this cognitive linguistic stance toward the primacy of meaning-based analysis since her work, begun in 1999, on prepositions and tense.

Meaning is negotiated among speakers. The purpose of language is to establish "mental contact" (Langacker 1987), i.e. shared meaning. This is crucial to understanding Tyler's work with ITAs and US undergraduates (see Tapper et al., this volume), which explores the premise that these cross-cultural exchanges fail because of mismatched contextualization cues, including textual coherence ones. Since all meaning is negotiated, miscommunication can be remedied by negotiation, provided that the subconscious implicatures and inferences drawn by the speakers are made explicit and problematized.

Language learning is exemplar and frequency based (Tyler 2010: 281). The notion of prototypicality, famously introduced by Rosch and her associates, e.g. Rosch and Mervis (1975), dethroned the entrenched Aristotelian categorical definition of class membership (either you are a bird or you are not), in favor of the idea of a central exemplar (the prototype, i.e. a robin or sparrow) surrounded by radial expansions that present increasingly "worse" examples of birds (penguins, ostriches, emus). Children's learning of L1 is influenced by the degree of prototypicality of the lexical item they encounter. One of the determinants of prototypicality and of salience is of course frequency. Linguists have always known that lexical change, for example, was sensitive to frequency, but a wealth of research has shown that frequency plays a very significant role in the organization of language at large (e.g. Bybee 2006).

Linguistic items underdetermine the interpretations that the speakers generate based on them. We have seen the central role that context plays in interpretation. Linguistic items, (lexical items, syntactic constructions, etc.) play a role in activating

to a special issue of *American Anthropologist*, co-edited by Gumperz and Hymes in 1964, were employed at Berkeley or Stanford.

semantic information from lexical schemas/frames of course, but they also play a role “as prompts from the speaker to the listener to access pertinent schemas and construct particular relational configuration among concepts” (Tyler 2010: 281).² These expansions are directed by both Gricean implicatures and by Gumperzian contextualization cues.

Language is not directly referential. Reference is mediated by conceptual structures (concepts, frames, metaphorical schemata, etc.). A good example of this can be seen in the analysis of the semantics of English prepositions by Tyler and Evans (2001, 2003, 2004), which mobilizes polysemy networks (“principled polysemy”) and metaphoric extensions. Metaphoric extensions, both for primary and conceptual metaphors, are guided by embodiment, which leads us to our next point.

Conceptual structure is embodied, i.e. “mediated by the (...) nature of our bodies and our unique neuro-anatomical architecture” and the ways in which we “experience and interact with the spatio-physical world we inhabit” (Tyler and Evans 2001: 3, Tyler 2012)

Revisiting these principles in light of the chapters in this volume, the reader will immediately recognize the influence of the social aspect of Tyler’s theory of language in the chapters in Part I (Discourse perspectives), which offer rich, contextualized descriptions of discourse taking place within its respective contexts. We also see the usage-based principle applied repeatedly, in later sections, such as in Bardovi-Harlig’s methodology for the creating of teaching materials for pragmatic routines (Bardovi-Harlig et al. 2015a/b) where she and her co-authors start by checking what previous textbooks have done, but then turn to the MICASE corpus (Simpson et al. 2002) to establish that previous textbooks show *both* errors of omission and over-inclusion. While errors of omission may be more readily justifiable, since space constraints necessarily limit the capacity of a textbook to include all possible idiomatic pragmatic responses, errors of over-inclusion are indefensible theoretically and particularly damaging to L2 learners, who may produce contextually inappropriate responses while believing they are expressing themselves idiomatically *and* appropriately.

We also see in the social foundation of language an idea that goes back to Tyler’s early work on international teaching assistants (ITAs), conducted in part in partnership with Catherine Evans Davies (e.g. Davies and Tyler 1994, 2005; Tyler

2. Lexical items are essentially “handles” that activate subsets of a complex network of semantic information, specifically not limited to “dictionary” entries, but expanded to include “encyclopedic” information. These subsets of the semantic network are variously called schemas (or schemata), scripts, frames, memory organization packets, often with subtle differences between the terms. Generally speaking, this approach is referred to as the encyclopedic theory of lexical items (Tyler 2012: 19).

et al. 1988; Tyler and Davies 1990). The study of ITAs is particularly interesting, because it starts from a cultural anomaly:

International teaching assistants in charge of undergraduate classes in American universities are non-native speakers in the role of higher authority and institutional status, but the American native-speaker undergraduates have greater communicative resources and institutional and/or local cultural knowledge.

(Davies, this volume)

Generally, cross-cultural communication is either between a non-native speaker (NNS) in a subordinate position (e.g. NNS is a student in a class taught by a NS teacher) or the NNS is in a superior position (e.g. tourists ordering food or service from NS speakers). In this sense, then, ITAs are an anomalous case, which leads to tensions between the NS students and the NNS teachers. Not only is the situation intrinsically problematic, but, as Davies stresses “the core problem is the implicit and out-of-awareness nature of communication, which is of course grounded in culture”. Neither the ITAs nor the students they teach are typically aware of the nature of the cross-cultural clash. Davies’ solution is to create “a situation in which people can actually give each other feedback oriented to pragmatics, to facilitate a conscious language socialization process from the perspective of each participant” through a set of role-play practices detailed in her article.

By framing the communicative problems of ITAs not as linguistic deficiencies, but as interethnic miscommunication (Tyler 1994: 122, Tyler and Davies 1990), Davies and Tyler are able to direct the attention of both the researchers and the ITAs whose livelihood depended on their performance as communicators to “conventionalized implicatures associated with particular phrases or syntactic construction as well as paralinguistic phenomena” (1994: 123).

Tapper et al. (this volume) focus on the related issue of discourse management, also seen as interethnic (mis-)communication: “listeners have culturally and linguistically-based expectations about how they should be led to understand instances of discourse”. In other words, what may appear clear and well-organized (both cohesive and coherent) to the speaker of one language, may be less so, or completely non-coherent and/or cohesive, to the speaker of another language (or another variety, even). For example, among the results that Tapper et al. find is that ITAs and NSTAs both use repetition, but whereas NSTAs do it to achieve prominence for a given topic, ITAs may do it as a result of disfluency, or just repeat verbatim the same utterance. The final chapter in this section by Diana Boxer also goes back to the communicative Gumperz/Hymes framework deployed in the ITA studies, but applies it to a different type of discourse community, seniors volunteering as park rangers in Florida. Boxer returns to her previous work on humor, the well-received Boxer and Cortes-Condé (1997), analyzing happy hour confessions

(self-disclosure). The participants in the conversations use self-disclosure to negotiate a relational identity that is transient as it “is created for that configuration of individuals at that point in time, in the conversations and narratives they utter” (this volume).

Several chapters in the present collection reference the cognitive semantics developed by Tyler around the beginning of the new millennium, largely in collaboration with Vyvyan Evans. The claim that language is meaning-based is one of the central tenets of cognitive linguistics, which is that all aspects of language are meaning-related, even those that have been traditionally seen as purely formal. Even syntax is semantics: sentence patterns are only very abstract, very general, semantically “bleached” constructs. This is not to say that there is no form in language: meaning has to be expressed somehow, hence put in some form. Linguistics is then seen as the study of these meaning/form pairings, known as constructions. As an example, we can consider the unaccusative constructions examined in Ortega et al. in this volume.

Perlmutter (1978) first used the term unaccusative in print; (he credits Jeff Pullum for its invention in a footnote). Perlmutter’s explanation is based on relational graphs that represent the various roles, akin to Fillmore’s cases, with the predicate in first place, followed by the agent and the patient of the action, so that a passive is reduced to a switch of position in the graph, from ate(P) children(1) cheese(2), we get ate(P) cheese(2/1) children (1/2) (Perlmutter 1978: 159).³ Thus, for Perlmutter, an unaccusative verb is a verb that lacks a (1) and has only a (2) in its roles (p. 160). Perlmutter does acknowledge that the semantics of the verb play a part and provides a list of verb classes (p. 162–163) that have unaccusative constructions. He states that “to predict initial unergativity vs. unaccusativity on the basis of meaning, an approach that seems promising, is to characterize precisely the class of meanings that determine initial unergative strata” (p. 163) and leaves it at that. It is instructive to compare Perlmutter’s treatment with Ortega et al. who describe their theoretical standpoint as follows:

[I]nstead of locating explanations in the semantics of verb classes in interaction with their syntactic deep and surface structure, Ju [2000] shifted the lens onto the semantics of the event as construed by a language user at the moment of pairing a given utterance with a given mental scene (Ortega et al., this volume)

Note how the defining factor suggested here is the social interactional usage of language and not an abstract relational grid completely disconnected from a set of

3. Perlmutter uses a stratal representation to indicate that the first role is inactive (chomeur) and its place is taken by the formerly second role. We replace it by the slash to indicate that in the example cheese was a 2 but is now a 1.

lexical semantic values that determine which roles are active or inactive. There are also, of course, different methodological starting points: Perlmutter is operating from a set of sentences in Dutch that he has presumably elicited from a speaker and resorts to introspection and or comparison with other languages (Turkish, for example, in this article). Ortega et al. operate instead on a set of judgments elicited from a pool of 63 participants and use corpora to determine the frequencies of the unaccusative verbs. Moreover, and perhaps even more significantly, Ortega et al. are interested in solving an applied problem: teaching L2 learners how to handle these constructions.

In part two of the volume, Strauss et al. explore the semantics of phrasal verbs such as “drag on and on” and “doze off”, using as their starting point the analysis of prepositions developed by Tyler and Evans (2001, 2003) and rely heavily on polysemy networks and metaphoric extension, deriving the aspectual meanings of *on* and *off* from their concrete “proto-scene” (primary) meanings of “connection” and “disconnection,” respectively.

Mahpeykar (this volume) also has as its starting point Tyler and Evans’ Principled Polysemy Model, but applies it to high and low frequency particles in phrasal verbs, coming to the conclusion that high-frequency particles correlate with “a larger set of embodied experiences and a more complex semantic network”. As Mahpeykar reminds us, the embodiment principle assumed by Tyler and Evans is paramount in determining the extensions of meaning from the proto-scene. Take, for example, the meaning of *up* defined as a trajector “directed toward the top of an oriented LM [landmark]” (Tyler and Evans 2003: 136), wherein the orientation of the landmark (the background on which the trajector is moving) is asymmetrical (i.e., it has a top and a bottom) much like the human body is asymmetrical, i.e. oriented (we have feet and a head, which is located at the top of the body).

Tsujita (this volume) examines synesthetic metaphors using a cognitive conceptual framework that goes back to Grady’s (1997) work on primary metaphors. Grady finds that primary metaphors operate on “primary source concepts” (p. 264), which are cognitive representations of perceptions, which he terms “image-content” (they need not be visual of course, but the term “image” is common in psychology for mental representations). Image content is the source of the metaphor, while the target is operational content, i.e. “responses to bodily experience, including judgments, affective reactions, and inferences” (p. 265). Tsujita states that “Tyler and Evans (2003) support the notions of image content and response content through an in-depth analysis of English prepositions”. This is true, but it should be noted that Tyler and Evans avoid the terminology and speak of “redescriptions” (Tyler and Evans 2003: 31). Finally, Tsujita also invokes the semantic network approach, advocated by Tyler and Evans, albeit only as an expansion of her current research.

Alongside Tyler, Vyvyan Evans developed the theory of semantic networks referenced repeatedly above. This theory was designed to account for the polysemy of such words as prepositions – a “tough” case of lexical polysemy, as the meaning of prepositions is bleached out, compared to words such a “tree” for example. In his contribution to this volume, Evans develops a new theory (the Theory of Lexical Concepts and Semantic Models), which distinguishes conceptual, non-linguistic structures and semantic, hence linguistic, structures. Under this new analysis, the frame-semantics (a.k.a., encyclopedic information) contributes to the structuring of the semantic network. While distinct from the principled polysemy model, Evan’s TLCSM is not incompatible with it with regard to its fundamental tenets. For example, the primacy of meaning, the mediated nature of linguistic meaning, and embodiment remain among the core tenets of the theory.

In the third section of the volume, Nakahama returns to the idea of the social construction (negotiation) of meaning among speakers inspired by Gumperz and Hymes, but this time in the context of second language learning, and more specifically Nakahama et al. (2001) which considered the choice between a structured information gap task and unstructured conversation. Nakahama et al. (2001: 381) point out that an examination focused on repair negotiation may overlook other significant features of naturally occurring interaction including discourse markers, contextualization cues, and discourse management. When these factors are taken into account, Nakahama et al. find that unstructured conversations between NS and NNS offer a “larger range of opportunities for language use” (Nakahama et al., 2001: 401). Here, Nakahama applies this insight to the investigation of differences between the use of discourse markers by ESL and EFL learners engaged in narrative storytelling.

Finally, Dolgova (this volume) applies the cognitive linguistic process of categorization to “hedging,” i.e. the use of linguistic devices to avoid a full commitment to the (illocutionary or perlocutionary) force of one’s utterance, in the context of L2 writers producing legal memos. Hedging is seen as an idealized cognitive model (ICM; Lakoff 1987) consisting of the content of the utterance in its fully assertory mode (e.g. John owes Mary \$50) at one end of the continuum and its negation at the opposite end (John does not owe Mary). This hedging may occur with modals (John may owe Mary \$50; John would owe Mary \$50), or may be metalinguistic and discursive: “I am not saying that John owes Mary \$50.” Dolgova concludes that the more successful writers were able to use hedging to signal discourse functions in a more target-like way. This finding is in line with the “interdiscursive/interpersonal nature of hedging” stressed by Dolgova, which again arcs back to Tyler’s interests and work in these areas.

The last point we wish to make is more general, and concerns the epistemological stance of Tyler’s oeuvre, which can be summarized a recursive style of

investigation “that emphasizes interactions between theory and practical application”.⁴ This dialectic between theory and praxis, to use the Aristotelian distinction, is a theme that is present through the volume. In this sense, language learning is a testing ground for how well theoretically motivated models of language reflect language in use. Theoretical linguistics informs applications to teaching and in turn, the insights gathered in teaching practice and in individual instances of the parole (performance) inform theoretical constructs. This recursive epistemological stance, surprisingly uncommon in academe, is perhaps one of the secrets that may explain a career so rich and fruitful, one that has benefitted both theoretical and applied linguistics in ways hard to equal.

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Language Learning, Discourse and Cognition: Studies in the tradition of Andrea Tyler comprises a collection of original empirically and theoretically motivated studies at the nexus of discourse analysis, cognitive linguistics and second language learning. The thematic relationships between these subfields and links between the studies are laid out in introductory and concluding chapters. This edited volume is intended for both researchers and graduate students in linguistics and second language learning and teaching.

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