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The Grammatical Realization of Polarity Contrast

Theoretical, empirical, and typological approaches

Edited by
Christine Dimroth
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The grammatical realization of polarity contrast

Introductory remarks

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The polarity of a sentence is crucial for its meaning. It is thus hardly surprising that languages have developed devices to highlight this meaning component and to contrast sentences with negative and positive polarity in discourse. Research on this issue has started from languages like German and Dutch, where prosody (nuclear pitch accent on the finite verb or complementizer, referred to as *verum focus*; e.g., Höhle 1992; Blühdorn & Lohnstein 2012; Lohnstein 2016) and assertive particles (e.g., Blühdorn 2012; Hogeweg 2009; Sudhoff 2012; Turco, Braun & Dimroth 2014) are systematically associated with polarity contrast. Recently, the grammatical realization of polarity contrast has been at the center of investigations in a range of other languages as well (e.g., Kandybowicz 2013; Lipták 2013; Martins 2013; Turco 2014).

The contributions in the current volume include analyses of polarity phenomena based on data from German, English, Swedish, Italian, Spanish, French, Serbian, Russian, and Hungarian. Core questions concern the formal repertoire and the exact meaning contribution of the relevant devices, the kind of contrast they evoke, and their relation to information structure and discourse organization. The range of phenomena investigated in the current volume under the label of *polarity contrast* goes beyond the devices emphasizing the expression of the truth of a proposition, even though questions relating to classical verum focus are also addressed.

To date, there is no consensus on the grammatical markers that should count as primary carriers of polarity contrast, on the exact meaning contribution of the relevant devices, on the fate of a potential verum operator if it is not focused (e.g., Gutzmann 2012), and – crucially – on the layers of meaning in which the relevant contrast is situated. Next to *polarity* and *verum/truth* (Höhle 1992), the possibilities under discussion include operators affecting *illocution type* (ibid.), *assertion* (Klein 2006), and *sentence mood* (Lohnstein 2012). Other open issues concern the relation between polarity contrast and focus (e.g., Höhle 1992; Wilder 2013; Gutzmann, Hartmann & Matthewson 2017), the specific parameters of the prosodic

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marking of polarity contrast (e.g., Turco, Dimroth & Braun 2013), and the status of (stressed) affirmative particles (e.g., Sudhoff 2012; Batllori & Hernanz 2013). The relation between affirmative and negative polarity, and in particular the impact of polarity on other elements of grammatical structure is addressed by studies on the representation of polarity contrast in syntax and semantics (e.g., Holmberg 2013; Lipták 2013). Finally, discourse studies deal with the role that polarity plays in discourse organization (e.g., Dimroth, Andorno, Benazzo & Verhagen 2010). In the remainder of this introduction, we briefly address these issues in turn and indicate which contributions to the current volume relate to the individual topics.

Do polarity contrast markers interact with layers of meaning beyond negation/affirmation?

In the first systematic investigation of verum focus accents in German, Höhle (1992) compared an analysis of verum as an illocution type operator to an analysis of verum as a truth operator ranging over propositions. Based on the observation that verum effects also occur in dependent clauses, he concludes that the former analysis must be given up in favor of the latter one. More recently, the issue was taken up by several researchers (see the contributions in Blühdorn & Lohnstein 2012) using Höhle's original claims as their point of departure and extending the analysis to functionally related markers in Germanic languages, in particular stressed particles like the Dutch *wel* (roughly meaning 'indeed').

Being concerned with the stipulation of a verum element that seems to disappear when it is not prosodically highlighted, different authors attempted to associate the observed effects with independently motivated layers of meaning. Klein (2006) links verum to his theory of finiteness and points out that pitch accents on finite verbs can highlight all their meaning components: their lexical content, tense, and a component called *assertion*. According to this account, by transforming a non-finite proposition into a finite sentence, speakers express that the description of some situation is linked to (or asserted about) a topic relative to which it can be true or false. Without finiteness no assertion is made (Lasser 2002). Highlighting the finite linking element can therefore express a contrast between *No Assertion* (1a) and *Assertion* (1b). The assertive "link" is affirmative in the default case. The question arises, though, why markers like *do*-support and verum intonation in (1b) cannot only be used to express an assertion contrast, but also to highlight affirmative polarity, e.g., after a statement like (1c). Note that both (1b) and (1c) are finite assertions.

(1) a. Leah drink beer?
b. Leah DID drink beer.
c. Leah didn't drink beer.

Lohnstein (2012) takes up Höhle's proposal of a relation between verum focus and illocutionary force and connects it to the expression of sentence mood. In the present volume, **Horst Lohnstein** argues that verum focus can be derived from the systematic interaction of sentence mood with the regular properties of focus assignment. Focusing on Russian, **Olav Mueller-Reichau** proposes that the expression of polarity contrast directly interacts with the aspect system in this language.

What is the relation between polarity contrast and focus?

There is an ongoing debate about the need to distinguish between different kinds of focus, in particular presentational focus vs. contrastive focus (Sudhoff 2010a). These two focus types are typically distinguished with reference to the nature of the alternative set that is evoked. Whereas presentational (new information) focus comes with an open alternative set, contrastive focus is defined as having a closed alternative set. The alternative set involved in polarity contrast sentences can be seen as a typical example of a closed alternative set consisting of the proposition and its negation:

(2) $[\![\text{Mary DID kiss Peter.}]\!]_f$ = {m kissed p, m didn't kiss p}

The observation that utterances containing polarity contrast accents can felicitously be used as corrections (Stommel 2012) follows from this property of the involved alternative set. A closed alternative set is also evoked by stressed affirmative particles that typically only have negation as their overt counterpart. In the current volume, **Dejan Matić and Irina Nikolaeva** reject the notion of polarity focus as a fixed form-meaning association altogether and instead propose the concept *salient polarity* to account for the relevant interpretative effects.

Independently of these more theoretical considerations, it is an open question whether the phonetic realizations of the relevant nuclear accents attested in contexts of lexical contrast (or focus) vs. polarity contrast differ in systematic ways (Turco, Dimroth & Braun 2013).

Are affirmative particles and prosodic markings equivalent expressions of polarity contrast?

Recent studies have identified systematic correspondences between verum focus (realized by a nuclear accent on the finite verb or complementizer) and certain (stressed) affirmative particles in German and Dutch, among other languages (Blühdorn 2012; Sudhoff 2012; Turco, Braun & Dimroth 2014). A systematic

relation between polarity and particles has also been discussed for stressed additive particles (Dimroth 2004; Krifka 1999; Sudhoff 2010b) in contexts in which affirmative polarity is maintained but highlighted. Examples (3)–(5) illustrate the relevant phenomena for German and Dutch. Whereas the additive particle *auch* in (5c) is only felicitous in a context of maintained polarity, (6) shows that – in particular contexts – English stressed additive particles can also be used to express negation-affirmation contrasts.

(3) a. Die Studenten HAben das Buch gelesen. [German]
b. Die Studenten haben das Buch WOHL (/SCHON/DOCH) gelesen.
'The students DID read the book.'

(4) De studenten hebben het boek WEL (/TOCH) gelezen. [Dutch]
'The students DID read the book.'

(5) a. Bayern hat nicht gewonnen. [German]
'Bayern didn't win.'
b. Dortmund SCHON/WOHL.
'Dortmund DID.'
c. Schalke NICHT/AUCH.
'Schalke DIDn't/TOO.'

(6) You didn't do your homework! – I did TOO!

There are different views concerning the nature of the relation between prosodic markers of polarity contrast and particles. Nuclear accents are not only relevant in the typical verum focus cases like (3a) above, but they are also crucial in the corresponding variants with particles (e.g., (3b) and (4)), as unstressed particles would not yield a polarity contrast reading. The question arises, however, whether the accent on the particles should be seen as a proper (contrastive) focus accent that is evoking alternatives, or whether it is rather a sort of stopgap owing its location to the fact that the particle is the last new element in the relevant sentences and therefore followed by given and de-accented material only. Another open issue is the exact meaning contribution of the two devices. Whereas it seems to be uncontested that verum focus and stressed particles can produce indistinguishable readings under some circumstances, it is less clear whether this apparent interchangeability should be interpreted as superficial similarity or structural equivalence (see Blühdorn 2012 and Sudhoff 2012 for a discussion). One clear difference between the two types of expressions can be seen in negated sentences that are compatible with verum focus but not with affirmative particles:

(7) a. Das Kind HAT nicht geweint. [German]
b. *Het kind heeft WEL niet gehuild. [Dutch]
'The child DID not cry.'

Neither verum focus accents nor a comparable repertoire of affirmative particles can be found in all languages. Romance languages, for example, seem to lack dedicated markers of polarity contrast. In the current volume, **Davide Garassino and Daniel Jacob** investigate the contribution of other types of syntactic and lexical markers to the expression of contrastive affirmative polarity in Italian, French, and Spanish.

How is affirmative and negative polarity represented in syntax and semantics and what impact does polarity have on other elements of grammatical structure?

Another relevant area of research concerns the representation of polarity in syntax and semantics. With respect to syntax, the question is whether polarity has a direct reflex in syntactic structure, for instance in the form of a designated functional projection in the left periphery of the clause, or whether it is linked to specific lexical elements. With respect to semantics, it has to be determined how the meaning of sentences involving affirmative or negative polarity can be compositionally derived. A closely related issue is the interaction between polarity and other properties of the relevant sentences, in particular the restrictions polarity imposes on the occurrence of lexical elements or grammatical structures or, on the contrary, their licensing by affirmative or negative polarity. In the current volume, four contributions focus on two different aspects of this topic, addressing the relation between polarity and embedded clauses (cf. Danckaert & Haegeman 2012) on the one hand, and polarity phenomena in questions (cf. Romero & Han 2004; Krifka 2017) on the other hand.

With regard to embedded clauses, **Julia Bacskai-Atkari** investigates the role of complementizers as markers of negative polarity in German hypothetical comparatives, and **Peter Öhl** gives an account of the fact that the complementizer *if* can be licensed by polarity-related factors in contexts where *that* is preferred otherwise.

Analyzing declarative questions in Swedish and German, **Heiko Seeliger and Sophie Repp** investigate the interaction between the interpretation of negation and modal particles (*väl* and *doch wohl*, respectively). **Beáta Gyuris** focuses on Hungarian polar interrogatives containing the negative particle *nem* and relates the availability of inside and outside negation readings to prosodic and morphological question marking.

How does polarity contrast relate to discourse structure?

Contrasts involving lexical meaning undoubtedly shape the way in which speakers or writers organize discourses. Can a functional meaning component like polarity contrast also be employed for the enhancement of discourse cohesion? Dimroth, Andorno, Benazzo and Verhagen (2010) suggest that speakers of languages in which polarity contrast is systematically expressed tend to produce stretches of discourse that are replying to an underlying polar question (*Question under Discussion* or *Quaestio*; Roberts 2012; Klein & von Stutterheim 2002), whereas speakers of languages without ready-made means exploit contrasts between other information units (e.g., discourse entities) under the same circumstances. The latter are thus rather replying to underlying WH-questions, as can be seen in Example (8a) from French, where the second sentence seems to answer the unspoken question 'Who was it?', whereas the second sentence of the German translation (8b), occurring in the same context, seems to answer the question 'Was it her?'.

(8) a. From A. Camus: *L'Etranger*, 1942
J'ai pensé que c'était Marie. C'était bien [elle]$_f$.
I have thought that it was Mary. It was indeed her.
'I thought that it was Mary. It was her indeed.'

b. From A. Camus, *Der Fremde* (German translation, 1996)
Ich dachte, dass es Maria wäre. Sie [war]$_f$ es auch.
I thought that it Mary was. She was it also.
'I thought that it was Mary. It was her indeed.'

These different types of contrast probably have an impact on the flow of information and the attention of readers or listeners, and it is possible that enhanced attention to the polarity component has cognitive consequences that could, for example, be captured in reaction-timed truth-value judgment tasks. In this volume, **Cecilia Andorno and Claudia Crocco** investigate the realization of polarity contrast in spoken Italian and show to what degree the use of different markers is unstable and sensitive to discourse factors.

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From polarity focus to salient polarity

From things to processes

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The paper provides arguments against the denotational approach to *polarity focus* (also known as *Verum*), which treats it as a distinct denotation contributed by the dedicated grammatical structures. It shows that the purported category of polarity focus is routinely defined on the basis of faulty analytical procedures, reification of inferential interpretations and suppression of variation. As a result, this approach cannot account for the full range of usages of those grammatical structures that are standardly assumed to instantiate polarity focus. As an alternative to the denotational accounts, the paper proposes an interpretational approach that disposes of the idea of a discrete denotation defining a linguistic category. To emphasize the difference between these two understandings of linguistic meaning, the term *salient polarity* is introduced. Salient polarity is understood as an interpretive effect stemming from the speaker's intention to draw the hearer's attention to the truth value of the proposition. This interpretive effect comes about through different inferential mechanisms and for various communicative reasons, and can be derived from completely unrelated denotations. Thus, salient polarity is not a traditional linguistic category if the latter is defined based on the correspondence between a linguistic form and a denotation, but is rather to be conceived of as a fuzzy set of family resemblances unified by shared communicative intentions.

Keywords: polarity, salience, focus, inference, crosslinguistic categories

1. Introduction

The role of grammatical categories in cross-linguistic research is known to be a highly debated issue (see Nevins et al. 2009; Evans & Levinson 2009; Newmeyer 2007; Haspelmath 2010; Rijkhoff 2009; and a discussion in one the 2016 issues of *Linguistic Typology*, to name just a few). Haspelmath (2010) refers to the two major positions as 'linguistic universalism' and 'linguistic particularism'. The former posits

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a set of universally available categories from which languages can choose, while the latter asserts that each language works 'in its own terms' and cross-linguistic comparison can only be achieved via some sort of abstract concepts with no psychological reality for language speakers.

Most research on categories focuses on phonetics/phonology, semantics and morphosyntax, but less so on a more scantily studied area known as information structure, which is our main concern here. Information structuring is usually understood as the grammatical packaging of information that meets the immediate communicative needs of the interlocutors. The major function of information structure is to manage the shared knowledge referred to as Common Ground by optimizing the form of the message in the relevant context (Krifka 2008, and other work). Since information structuring affects the form of sentences relative to the contexts in which they are used as units of information, it is usually understood as part of grammar and represented either as a separate module or distributed among other modules.

This raises the question of information structure categories, their universal applicability, the range of parametric variation, cross-linguistic comparison, and methodological principles underlying research. There is no shortage of positions here, but the usual procedure of defining categories of information structure consists in identifying meaning effects which occur under similar contextual conditions and then using these effects as indicative of the category itself. It is in this way that, for example, the category of focus is established. It is usually identified as (i) having the effect of indicating the presence of alternatives, newness and (the center of) assertion, and (ii) regularly occurring in a number of diagnostic contexts, the most prominent being answers, explicit contrast, and elaboration (Büring 2010: 178, 2016: 131). Various intricate definitions exist, but in its essence this procedure remains invariable and is equally characteristic of both more formally oriented approaches to information structure, e.g. the influential Alternative Semantics (Rooth 2016, and other work), and linguistic functionalism (e.g. Lambrecht 1994).

However, cross-linguistic research shows that context types are not a reliable indicator of information structuring: languages differ dramatically in how speakers pragmatically structure propositionally identical utterances in identical discourse and situational environments (Dimroth et al. 2010; Matić & Wedgwood 2013; Turco 2014, among others). What is more, the expression of information structuring can vary in the same context within one and the same language (Zimmermann 2008; Zimmermann & Onea 2011). This can be taken to mean that either the categories of information structure have different content across languages and therefore can perhaps be decomposed into smaller sub-units (in relation to focus see e.g. the early work of Dik et al. 1981), or the categories are in fact unitary but discourse

rules that define the structuring of information vary from language to language (this seems to be the underlying thought in Prince 1998 and Birner & Ward 1998). The third, more radical approach developed in the past decade by Wedgwood and Matić (Wedgwood 2006; Matić 2009; Matić & Wedgwood 2013) maintains that information structure categories such as focus are not even linguistic categories, but types of inferentially derived interpretations with no place in grammar.

The present paper argues in favor of this third approach using the example of the information structure category that has been referred to in the literature as *polarity focus* (also: *Verum operator*, *auxiliary focus*, or *predication focus*). Polarity focus differs from other purported types of focus as its interpretations are more diverse and it has been also analyzed as non-focus. It is difficult to pin down within the standard apparatus of focus semantics because it lacks obvious representation in the semantic and syntactic structures, so that various covert entities have to be stipulated. These are the reasons we will avoid using the term 'polarity focus' in the following and adopt the label *salient polarity* instead.

Salient polarity conveys emphasis on the polarity of the proffered proposition and tends to be associated with accented auxiliary or a distinct prosodic pattern on other types of finite verb in many languages of Europe, as shown by the following English examples:

(1) A: *I don't think Peter wrote a novel.*
B: a. *Peter DID write a novel!*
b. *Peter WROTE a novel!*

In many theories this purported category is believed to be directly reflected in syntax in the form of a separate functional projection (a Polarity Phrase, as in Laka 1994 and Lipták 2013), or parasitically placed in Mood or Tense Phrase (e.g. Ortiz de Urbina 1994 and Lohnstein 2012, 2016), or in both (e.g. Duffield 2007, 2013; Danckaert & Haegeman 2012; Kandybowicz 2013). In what follows we will ignore the syntactic aspect of the story because it is largely framework-dependent, and only concentrate on the purported meaning of salient polarity.

To our knowledge, all existing analyses of salient polarity rely on the standard practice of identifying linguistic structures that are assumed to instantiate a (cross-linguistic) category. The assumption here is that the category of salient polarity is associated with a distinct denotation and that this denotation is contributed by the relevant grammatical structure(s), where denotation is understood as an encoded meaning of a linguistic sign, or, more technically, as the relation between a linguistic sign and its extension. We can refer to this line of thinking as *the denotational approach*. The main goal of the present paper is to provide arguments against the denotational approach to salient polarity and to propose an alternative account that will altogether dispose of the idea of a discrete denotation defining

a linguistic category. This account can be called *interpretational*. We use the term 'interpretation' to refer to all kinds of meanings users of language arrive at by way of inference.[1] We will argue that salient polarity must be understood as an interpretive effect of the speaker's intention to draw the hearer's attention to the truth value of the proposition. This interpretive effect can come about through different inferential mechanisms and for various communicative reasons, and it can be derived from completely unrelated denotations. On this understanding, salient polarity does not correspond to anything resembling the traditional linguistic category if the latter is understood as a pairing between a linguistic form and a denotation, but is rather to be conceived of as a fuzzy set of family resemblances unified by shared communicative intentions.

Accordingly, the paper is divided into two large parts (sections). Section 2 discusses the standard denotational approach to salient polarity and argues that it cannot adequately capture the complexity of linguistic facts. It will provide a critical review of the relevant analytical procedure for a number of small-scale case studies and show that ascribing categorial status to salient polarity follows from the analytical practices that are based on the suppression of variation, limited empirical coverage and equating interpretive effects with encoded denotations. We then introduce the essence of our own proposal in Section 3. We will argue that there is no such thing as salient polarity in the sense of a category which pairs a discrete denotation with a discrete linguistic form. We will propose to reconceptualize salient polarity as being derived via inference from quite disparate source denotations and subject to various uses conventionalized to different degrees. The paper concludes with an attempt to frame our observations in the broader context of investigating meaning in natural language in general and conducting cross-linguistic research on information structure in particular (Section 4).

2. Salient polarity and accented verbs

In Section 2.1 we introduce the standard procedure of identifying salient polarity relying on data from two well-studied languages, English and German, and somewhat less studied Serbian. We show that this category is largely associated with a particular prosodic pattern, accent on the lexical finite verb or the auxiliary/modal/functional element (we will often abridge this to *accent on the finite verb*). The

1. We will understand 'meaning' as a hyperonym comprising both encoded denotations and inferentially derived interpretations and will use this term whenever it is not necessary to distinguish between encoded and derived semantic effects.

reason why accented verbs are taken to instantiate the category of salient polarity is that they pass the crucial question-answer diagnostics. We then turn to illustrating some of the more diverse usage contexts in a comparative perspective (Section 2.2). It is not our intention to exhaustively describe salient polarity constructions in the three languages in question, but rather to bring home the point that the range of interpretations of the purported salient polarity structure is much broader than commonly assumed. Since focal, epistemic or similar interpretations are not the only possible readings of accented verbs, there is no evidence that salient polarity is contributed by a linguistic form dedicated specifically to the expression of the relevant meaning. Section 2.3 summarizes our findings so far.

2.1 Identifying salient polarity

Even by standards of information structure research, the range of structures that have been claimed to encode salient polarity is impressive. The empirical basis of research has expanded in the past few years and cross-linguistic evidence suggests that, in addition to prosody, salient polarity can be conveyed by free-standing particles and adverbials, bound morphology, dedicated syntactic constructions or word order configurations. Consider the non-exhaustive lists for German and English:

(2) German

a. accent on auxiliary, modal verb, or complementizer (e.g. Höhle 1992, Lohnstein 2016)

Er HAT das Buch geschrieben.
he has the book written
'He HAS written the book.'

b. accent on lexical finite verb (e.g. Höhle 1992; Lohnstein 2016)

Er SCHREIBT sein Buch.
he writes his book
'He IS writing his book.'

c. emphatic *tun* periphrasis (Abraham & Conradi 2001; Güldemann & Fiedler 2013)

Bücher lesen tut er.
books read does he
'And read books he does.'

d. (full or partial) VP fronting (e.g. Güldemann & Fiedler 2013)

Bücher gelesen hat er.
books read has he
'And read books he did.'

e. (accented) discourse particles such as *doch, schon, wohl* or *ja* (Egg & Zimmermann 2012; Egg 2012; see also Grosz 2014, 2016)
Er ist DOCH gekommen.
he is PTL come
'He did come (after all).'

f. discourse markers (*ich schwöre* 'I swear', *ehrlich*, *ungelogen* 'honestly') (Meibauer 2014)

g. adverbs such as *tatsächich, wahrhaftig* (truly, really), etc.

(3) English

a. accent on auxiliary or modal verb (e.g. Wilder 2013; Samko 2016)
He WILL be on time.

b. accent on lexical finite verb (e.g. Gussenhoven 1983, 2007; Ladd 2008)
He READ it yesterday.

c. emphatic *do*-support (e.g. Wilder 2013)
She did open the door.

d. VP fronting (Samko 2015, 2016)
He went there to learn, and learn he did.

e. adverbs such as *really, definitely* (Romero & Han 2004; Lai 2012)

f. particles *so* or *too* (with emphatic *do*), *indeed* (Klima 1964; Sailor 2014: 79)
He did so finish the paper.

g. *so*-inversion (Wood 2008, 2014)
John plays guitar and so do I.

h. *F*-inversion (Sailor 2015)
He may have luck getting Mary to vote for Tories, but will he fuck convince me!

Other languages have not been so thoroughly described, but they also show variability. Thus, in Serbian, lexical finite verbs and modals can bear the nuclear accent (4a). In periphrastic tenses and moods, clitic auxiliaries are replaced with full forms and accented (4b). A specialized construction with accented verb and postposed subject has also been described (4c), see Matić (2003, 2010), as well as a number of particles and discourse markers (4d) & (4e), see Mišković-Luković (2010).

(4) Serbian

a. accent on finite verb
Ona PIŠE romane, ali su loši.
she writes novels but are bad
'She does write novels, but they're bad.'

b. accent on auxiliary/modal (*jeste* opposed to the clitic non-emphatic *=je*)
On JESTE napisao tu knjigu.
he is.EMPH wrote that book
'He DID write that book.'

c. accented verb and postposed subject
NAPISAĆE on tu knjigu, ali…
write.will he that book but
'He WILL write that book, but…'

d. particles and adverbs (*stvarno* 'really', *fakat, baš*, etc.)
Stvarno / baš mnogo jede.
really / PTL much eats
'He really eats a lot.'

e. discourse markers (*majke mi* 'by my mother', *ozbiljno* 'seriously')
Majke mi sam sâm napisao tu knjigu.
mother me am self written that book
'I swear I wrote that book myself.'

We presume that similar disparate sets of structures can be observed in many, or most, languages. However, ascribing the same denotation to, say, accented finite verbs, intensifiers and discourse particles appears impossible, so the question is whether they represent the same grammatical category, if the category is to be understood as based on a form-meaning correspondence.

At this point we would like to forestall a possible objection that we illicitly equate minor phenomena with limited distribution, such as discourse markers or particles, with such pervasive grammatical devices as nuclear stress assignment or auxiliary insertion. The justification for this follows from the very logic of defining the category of salient polarity. If interpretive effects connected with emphasis on polarity, understood as the exclusion of the opposite polarity alternative (as e.g. in Höhle 1992) or certainty that a proposition is to be added to the Common Ground (as e.g. in Romero & Han 2004), are taken to be definitional, then any linguistic element generating this effect, no matter how distributionally or otherwise restricted, must count as an instantiation of the category. For example, if the assumed epistemic operator is triggered by one sense of *really* and some uses of accented verbs, it is also triggered by discourse markers such as *ich schwöre / I swear*, since they have precisely the same effect. Or, to take another example, if the presupposition of the alternative proposition with opposite polarity is criterial, then the German particles *doch* and *schon* must be included because they can only be used when salient contrary proposition is contextually licensed (Egg 2012; Grosz 2014). Yet another candidate, not mentioned in the literature but fitting the definition, would be expressions like *on the contrary* or *just the opposite*, or complement clauses introduced with *it is true that.* The list seems to be open. This reveals a danger inherent to the standard effect-based approach: the grammatical category gets a blurry extension and must be continuously expanded to encompass all structures carrying the desired effect, since identical effects notoriously arise out of very different sources.

A way out of this quandary is usually found in a reductionist strategy of establishing canonical categorial semantics based on what is taken to be the most central instances of the category. This kind of reductionism lies in the center of the denotational approach and keeps the category small and semantically monolithic. If needed, additional more complex denotations may be derived through a compositional procedure of combining the denotations of its constituent expressions. Following Gutzmann (2012), we can distinguish two traditional accounts of salient polarity that rely on such a strategy: the focus-based account and the epistemic account.

The major line of theorizing is certainly via the notion of focus. Analyses along these lines span from such classical contributions as Halliday (1967), Watters (1979), Dik et al. (1981), Hyman & Watters (1984), Gussenhoven (1983), and Höhle (1992), all the way to Lohnstein (2012, 2016), Büring (2016), and many others. All focus-based accounts share the conception of focus which defines alternatives and asserts a proposition chosen from the relevant set. Given the binary nature of polarity, the alternatives are invariably p and $\neg p$. The problem is that it is not clear what exactly is focused. In order to fall under the scope of the focus operator, which is how focus is standardly analyzed, polarity and/or truth value must be understood as a semantic entity with a defined denotation. This, however, is not how truth value and polarity are usually represented. There have been a number of solutions to this problem, all invariably including covert operators. Höhle (1992) takes polarity focus to be focus on an abstract truth predicate Verum which has the form 'it is true that p'. Zimmermann and Hole (2008) talk about a realis operator and thus define polarity focus as a subtype of mood focus, while Lohnstein (2012, 2016) derives polarity effects from various other sentence mood operators.

Traditionally, the primary diagnostics for focus and the essential component of practically all focus theories is question-answer pairs. According to this criterion, focus is identified as the target of a question (see Matić & Wedgwood 2013 for a critical view on this). If we apply this test to the data in (2)–(4), we can see that the structures with the nuclear accent on the verb are neutral and appropriate in this context in all three languages in question.

(5) English
Q: *Did you open the door?*
A: *Yeah, I* OPENED *it.*

(6) German
Q: *Kaufst Du mir neue Schuhe?* (Will you buy me new shoes?)
A: *Ja, ich KAUF sie dir.*
yes I buy them to.you
'Yes, I'll buy them to you.'

(7) Serbian
Q: *Je l' ti čitaš ove knjige?* (Do you read these books?)
A: *Da, ČITAM ih.*
yes read them
'Yes, I read them.'

We will see in Section 2.2.1 that other purported salient polarity structures either fail the question-answer test or appear to carry additional interpretive load in this context. Now, if the question-answer test is taken as criterial, this in effect means that only accented verbs are the lawful exponents of salient polarity. All structures that fail the test or carry additional interpretations must be excluded from the category or explained otherwise.

One very prominent line of research, starting with Höhle (1992) and going all the way to Lohnstein (2012, 2016), does precisely this: the Verum category (which is how salient polarity is called in this tradition) is realized through accented verbs, accented auxiliaries, and some functional elements (complementizes, relative and interrogative pronouns), to the exclusion of all other structures. The meaning of many other structures is derived compositionally. For example, Güldemann and Fiedler (2013) argue that the polarity reading of the German VP fronting and emphatic *tun*-periphrasis is due to the more primitive device of accenting an auxiliary, while fronting provides for contrastivity, whereas Egg (2012), Egg and Zimmermann (2012) and Grosz (2016) derive the salient polar meaning of the accented versions of the particles *doch* and *schon* from the combination of the denotations of these particles with the Verum accent.

This approach seems to work well for its source language, German (Lohnstein 2016). Nuclear accents occur on finite verbs or functional elements in the way one would expect to find if one assumes a covert structural element. Höhle (1992) and many after him claim that the nuclear stress is always assigned to a left-peripheral position (C or similar), which is also the position of the covert truth (modal, polarity, etc.) operator. In declarative matrix clauses, the Verum position is occupied by a lexical finite verb or an auxiliary; in embedded clauses, it is a complementizer, a relative or interrogative pronoun; some of the options are illustrated in (8) (all examples are construed on the basis of Höhle 1992 and Lohnstein 2016).

(8) a. *Peter SCHRIEB ein Buch.*
Peter wrote a book
'Peter WROTE a book.'
b. *Peter HAT ein Buch geschrieben.*
Peter has a book written
'Peter DID write a book.'

c. *Ich behaupte, DASS er ein Buch geschrieben hat.*
I claim that he a book written has
'I claim that he DID write a book.'

d. *Ich kenne wenige, die es geschafft haben, aber diejenigen,*
I know few who it managed have but those
DIE ein Buch geschrieben haben, wissen, wie schwer es ist.
which a book written have know how hard it is
'I know only a few who managed to do it, but those who did write a book know how difficult it is.'

Accents appear to be obligatory. For instance, polarity readings in embedded clauses can only arise if the accent is on the complementizer, with all other accents resulting in non-polarity readings. This implies that the category responsible for salient polarity (Verum) is assigned an accent by a productive focus-to-accent rule comparable to narrow argument focus: what is focused must bear prosodic prominence.

This structure fully satisfies the question-answer condition, as shown above. In addition, the bulk of the literature employs other limited types of data, characteristically the following three: (i) contradictions: A: *John doesn't like bananas?* B: *He DOES like them*; (ii) discussion-ending questions: A: *John ate the bananas.* B: *Oh well, it's not quite certain, he is a nice guy.* C: *So, DID he eat the bananas?*; and (iii) hesitation-ending directives: A: *I don't know if I should eat a banana or not*. B: *Oh, DO eat one.* This appears to cover the basic types of what is generally agreed to be focus-indicating contexts (answers, contrast, and elaboration) and fits the idea of binary alternative propositions, but it is easy to see that the reasoning is entirely form-based: a certain type of meaning is stipulated in order to explain an observed type of accent distribution.

The second type of account, labelled Lexical Operator Theory (LOT) by Gutzmann (2012), divorces polarity focus from information structure and ascribes it epistemic and/or conversational meanings. LOT is most prominently exemplified in Romero & Han (2004) and, in a somewhat modified form, in Gutzmann & Castroviejo-Miro (2011) and Repp (2013). The idea is that the focus effects of salient polarity are epiphenomenal and secondarily derived from the primary denotation of the relevant structures. This primary denotation is defined as a kind of conversational operator. In the Romero & Han (2004) version, it is epistemic in the sense that it expresses certainty, and conversational in the sense that it is not used to assert speaker's certainty in the truth value of the proffered proposition *p*, but rather their certainty that *p* should be added to Common Ground. Gutzmann and Castroviejo-Miro (2011) downplay the epistemic aspect. They describe the operator

as an indication that, in a given context, the speaker intends to close ('downdate') the current maximal conversational Question Under Discussion (QUD) with *p*, in opposition to the assumed intention to close the QUD with ¬*p*. Focus as the generator of alternatives is unnecessary, since the alternatives arise out of contextual conditions on the use of the operator. The resulting meaning is more specific than the focus-derived binary polar alternatives, but this comes at a price of inflated ambiguity. As we will see below, most relevant structures have additional uses which do not conform to the postulated meaning of the conversational operator. The preferred solution in this approach is to treat them as inherently ambiguous but, crucially, the primary contribution of salient polarity is still associated with one well-defined denotation.

2.2 Against form-meaning correspondence

In this section we adduce some evidence that the reduction of salient polarity to accented finite verbs is neither empirically nor conceptually valid. First, we show that accentuation rules do not always assign nuclear stress to a left-peripheral position on a salient polarity reading (2.2.1). Second, the diagnostic question-answer meaning can be expressed by other forms (2.2.2), and conversely, accented finite verbs express a large variety of other meanings (2.2.3). So, contrary to standard approaches, there is no isomorphism between form and meaning as far as the purported category of salient polarity is concerned.

2.2.1 *Auxiliary constructions*

To begin with, accentuation rules affect different verbs in a different way. In particular, auxiliary constructions show special behavior. Consider the question-answer pairs in (9).

(9) *Have you opened the door?*
   a. accented auxiliary
      German
      Ja, ich HABE sie aufgemacht.
      yes I have it opened
      English
      (#) *Yeah, I HAVE opened it.*
      Serbian
      (#) *Da, JESAM ih otvorio.*
      yes am.EMPH it opened

b. accented lexical verb
German
#*Ja, ich habe sie AUFGEMACHT.*
yes I have it opened
English
Yeah, I have OPENED it.
Serbian
Da, OTVORIO sam ih.
yes opened am it

In German the most natural answer to the question in (9) is the one in which the auxiliary is accented (9a). This is what one would expect on the assumption that what is accented in salient polarity structures is the non-lexical component of the predicate, i.e. some other kind of operator formally associated with the auxiliary and placed in a left-peripheral position in the clause. Accordingly, the accent on the lexical verb is virtually impossible in this context (9b). This corresponds to the classical focus-to-accent rule, which requires focused elements to achieve prominence via accent assignment. However, English and Serbian behave quite differently: the most neutral answers in these languages display an accent on the lexical verb (9b). The accent on the auxiliary (9a) is possible but has a distinct slant of impatient irritated assertion (similar to emphatic *do*-support in a similar context, which we will discuss below).

English and Serbian data show that both the auxiliary and the lexical verb can also be accented in other contexts usually associated with salient polarity, such as confirmations of past intentions in English (10a) or adversative structures in Serbian (10b). In these contexts, however, no difference in interpretation seems to be apparent between the two variants of accent assignment in either language.

(10) a. *He wanted to finish his lunch, and he HAS finished it. /… he has FINISHED it.*
b. *Ona JESTE došla , ali je otišla prerano. / Ona je DOŠLA, ali je otišla prerano.*
she is.EMPH come but is left too.early she is come but is left too.early
'She did come, but she left too early.'

So the distribution of accents in English and Serbian is at least partly independent of the position in the clause. This is further corroborated by the fact that in these languages complementizers and other functional elements cannot receive stress in salient polarity contexts, as exemplified in (11).

(11) *I tell you that he IS writing a book. /*? I tell you THAT he is writing a book.*

The only 'regular' language thus appears to be German. However, there is variation in German, too. Some speakers accept both (a) and (b) variants of (12) without any difference in meaning, even though it is only in (12a) that the accent falls on the left-peripheral element, while in (12b), it is on the finite verb despite that the verb is sentence-final. In actual fact, some speakers reject the expected variant (12a), so the focus-to-accent rule appears to be at least occasionally optional (or, at least for some speakers, invalid) even in German.

(12) *Er schreibt auf keinen Fall ein Buch!*
'He's most certainly not writing a book!'
a. *Ich denke aber, DASS er ein Buch schreibt.*
I think but that he a book writes
'But I think he IS writing a book.'
b. *Ich denke aber, dass er ein Buch SCHREIBT.*

These data demonstrate that accenting a left-most element for the purpose of focusing is subject to various language-particular rules, and there may be language-internal variation: the purported left-peripheral operator-like entity that receives accent seems to irregularly change its position according to rather unclear criteria. This is a problem for the idea that the left-peripheral element is assigned an accent *because* it is focus. While in some cases accents on auxiliaries/functional elements trigger different interpretations to those on lexical verbs, in other cases no difference is apparent. We therefore take Examples (9) through (12) to be evidence against the accounts that combine a covert operator with the focus-to-accent rule to explain accented finite verbs.

2.2.2 *Other structures in question-answer contexts*

In this subsection we show that accented verbs are not the only strategy available in question-answer pairs, even though they are the unmarked option. Although a number of salient polarity constructions fail the relevant test, other constructions are acceptable to a certain degree. Importantly, they all seem to carry additional implications, and we find variation within one language, as illustrated in (13) for English.

(13) English
Did you open the door?
a. *Yeah, I* OPENED *it.*
b. (#)*Yeah, I DID open it.*
c. (#)*Yeah, I really/definitely opened it.*

Emphatic *do*-support is (marginally) possible if the speaker intends to convey impatience and imply that this same answer has been given a number of times before, while the adverbs would (marginally) work if one anticipates a doubt on the part

of the hearer (*really*), or if one wants to imply one's certainty about the answer in light of possible counterevidence (*definitely*).

English is not the only language in which salient polarity structures display variable acceptability in question-answer pairs. Without attempting to be exhaustive, we list a couple of examples from German and Serbian with a short comment on acceptability and the preferred interpretation to illustrate this.

(14) German
Q: *Gehst Du ins Geschäft einkaufen?* 'Will you go to the store to do some shopping?'
A: 'Yes, I will go.'
a. *Ja, ich GEHE.*
yes I go
(accented finite verb; neutral)
b. (#)*Ja, ich gehe DOCH. / Ja, ich GEHE doch.*
yes I go PTL
(particle *doch*; accented: there was some doubt about me going or not; unaccented: impatient, irritated; similar, though distinct, interpretations with other particles)
c. (#)*Ja, ich gehe tatsächlich / wirklich.*
yes I go really /really
(adverbs *tatsächlich/wirklich* 'really'; contrary to expectations, I'm going (*tatsächlich*); reassuring (*wirklich*))

(15) Serbian
Q: *Je l' ti čitaš ove knjige?* 'Do you read these books?'
A: 'Yes, I read them.'
a. *Da, ČITAM ih.*
yes read them
(accented finite verb; neutral)
b. #*Da, ČITAM ja njih.*
yes read I them
(postposed subject; infelicitous)
c. (#)*Da, baš ih čitam*
yes PTL them read
(particle *baš*; implying intensity of the asserted state of affairs)

Other interpretations are perhaps conceivable and speakers' judgements on the diagnostic context are not always clear-cut. The point is that quite a number of salient polarity structures pass the primary test for focushood, but they usually convey more than a simple assertion of positive polarity, so the meaning goes beyond the assumed simple focus denotation.

If the idea that everything that satisfies the diagnostic question-answer context is polarity focus is to be upheld, then all the structures that trigger this interpretation must count as its instantiations. The undesired corollary of this analytical procedure is that the simple alternative-inducing semantics of polarity focus would have to be abandoned in view of the evidence of question-answer pairs, as we have seen above: some structures do not pass the test, and those that do have variable interpretations which go beyond focus. A possible rescue for the focus analysis could be sought in the popular notions of contrastive vs. non-contrastive focus, such that, for instance, accent on the finite verb in English is non-contrastive and *do*-support contrastive. The problem is that, even if we put aside serious notional and empirical problems with this division in general (Matić & Wedgwood 2013), it is simply inapplicable to salient polarity. Contrast is usually conceived of as a limited set of alternatives and opposed to open sets. But if the set of alternatives is necessarily binary (p and $\neg p$), then it is also necessarily contrastive. Some accounts introduce an additional feature of counterassertivity or counterpresuppositionality (Gussenhoven 1983, 2007), such that, for instance, the accent on the finite verb does not have this feature, while emphatic *do*-support does. This solution seems to capture the intuitions behind answers to polarity questions relatively well: the answer with emphatic *do*-support implies impatience because the speaker counters the presupposition of the hearer that the opposite of the answer is true. However, this would be an *ad hoc* explanation for one particular usage of emphatic *do*-support: as we shall see later, its other usages bear no implication of contradicting presuppositions.

LOT approaches, which dissociate salient polarity from focus, fare even poorer with respect to the data in (13)–(15). As mentioned above, in the Romero & Han (2004) version, salient polarity arises out of an epistemic conversational operator indicating certainty that p should be added to the Common Ground. This meaning is arguably present in all answers in (13)–(15) (and in all sincere answers to questions in general) and is thus not able to account for the observed interpretive differences. The same holds true for the assumed downdating operator à la Gutzmann & Castroviejo-Miro (2011): all answers in (13)–(15) equally downdate the explicit QUD, so that this cannot be the source of the distinction. The meanings of salient polarity operators postulated by LOT approaches are too unspecific to account for finer differences of the kind illustrated above. At the same time, they are also too specific, so that there are a number of uses of purported salient polarity structures which these approaches dispose of by treating them as instances of ambiguity. Thus, Romero and Han (2004) distinguish three senses of *really*, only one of which corresponds to their epistemic conversational operator, while the other two are analyzed as unrelated (see Lai 2012: 101ff. for an alternative account). Accented finite verbs and emphatic *do*-support structures that do not induce any epistemic readings

are viewed as instantiating a distinct category (*dictum* focus à la Creswell 2000), or as simple contrast accents (Romero & Han 2004). However, even armed with this powerful device of multiplying ambiguity, LOT approaches cannot explain the contrasts observed in our data.

In sum, there is no clear solution to the problem that, on the one hand, accented finite verbs are the only constructions that seem to fully fit the diagnostic focus contexts or the operator denotations in LOT approaches but, on the other hand, they are not the only form conveying the meaning which counts as definitional for the category of salient polarity.

2.2.3 *Underspecification*

Accented finite verbs also occur in other types of contexts and carry other types of meanings. It has been repeatedly mentioned in the literature that structures encoding salient polarity tend to be underspecified as to the type and size of focus: polarity/Verum focus is often co-encoded with different types of TAM-focus or with the focus on the lexical content of the verb. For English consider (16):

(16) a. Peter didn't break the Ming vase.
b. Peter will break the Ming vase if he keeps on playing with it.
c. Peter cleaned the Ming vase yesterday.
No, Peter BROKE the Ming vase yesterday.

The context (a) renders the clause in (16) a salient polarity clause. The interpretation triggered by context (b) has been labelled TAM focus (in this particular case, focus on tense), as its main point seems to be to identify the temporal (aspectual or modal) component of the proposition, while the one arising from (c) has been called 'verb focus' or 'focus on lexical verb', as it serves to identify the correct denotation of the finite verb.[2]

The standard focus analysis treats this ambiguity as a corollary of the complex structure of finite predicates. Salient polarity readings arise when the silent truth (Verum, etc.) operator on the left periphery is accented; TAM readings arise when one of the left-peripheral TAM nodes carries the accent, while verb focus is a consequence of accenting the verb itself. These three accent assignments often surface as the accent on the finite verb, even though they are underlyingly distinct. The three readings are thus expressed identically only on the surface: at a deeper level, we are dealing with three distinct structures which obey the standard focus-to-accent rule.

2. This kind of underspecification of the major salient polarity strategy is also typical of non-European languages. For example, Güldemann and Fiedler (2013) show that in Aja (Kwa/Niger-Kongo, Benin) predicate clefts have three readings: focus on the lexical content of the verb, polarity focus, and TAM focus.

This seems to be confirmed by the distribution of accents and interpretations in auxiliary constructions, in which the lexical verb is not in the left-peripheral operator position. In these cases, the accentuation of the lexical verb leads to verb focus interpretation, while accented auxiliaries trigger salient polarity or TAM readings, as shown by the German question-answer pairs in (17).

(17) *Hast Du die Tür geschlossen?*
have you the door closed
'Did you close the door?'
a. *Ja, ich HABE sie geschlossen.* (salient polarity)
yes I have it closed
'Yes, I closed it.'
b. *Nein, ich habe sie AUFGEMACHT.* (verb focus)
no I have it opened
'No, I opened it.'

In English and Serbian, where accentuation patterns are less rigid (Section 2.2.1), the complementarity is less clear-cut but still observable. While most forms are ambiguous between salient polarity, TAM, and verb focus readings, accented auxiliaries, i.e. the left-peripheral accent (*I WILL open the door*), are mostly interpreted as salient polarity or TAM and only very rarely as verb focus. The overlap between verb focus and salient polarity/TAM focus thus seems to be only partial and possibly an instance of accidental homonymy.

There are problems with this simple dichotomy, though. Consider first (18), taken from Gutzmann (2010; Example 39), both in German and English.

(18) A: *David riecht wie ein Zombie.* B: *David IST ein Zombie.*
David smells like a zombie David is a zombie
'A: David smells like a zombie. B: David IS a zombie.'

This example is adduced by Gutzmann as an instance of Verum focus, i.e. salient polarity. Interpreted this way, *David IS a zombie* stands in opposition to 'David is not a zombie'. However, it can also be understood as verb focus, if interpreted as a correct identification of the state of affairs; in this case, *David IS a zombie* is in opposition to 'David smells like a zombie', i.e. 'being x' is in contrast to 'smelling like x'. The periphrastic variant of (18), (18′), can be pronounced with two different accents, on the auxiliary and the lexical verb.

(18′) *David IST ein Zombie gewesen. / David ist ein Zombie GEWESEN.*
David is a zombie been
'David WAS a zombie.'

The speakers of German we interviewed appear to lack any clear intuitions about the distribution of the two possible interpretations across these two accentuation patterns: both readings are compatible with both types of accent. The neat distinction between left-peripheral accent and verb accent with different meanings does not seem to work here.

So the division of labor between salient polarity and verb focus, though easy to pin down in a number of central examples, becomes blurred if more marginal cases are taken into account. Moreover, consider further examples of the semantic indeterminacy of accented verbs:

(19) English
a. *Pat DRESSES!* (to mean Pat dresses well)
(Goldberg & Ackerman 2001, Example 65)
b. *These red sports cars DO drive, don't they?*
(Goldberg & Ackerman 2001, Example 35)
c. *The race LASTED./ It HAS lasted, hasn't it?* (Matthews 1981: 136)

(20) Serbian
Sastanak je TRAJAO. / Sastanak JESTE trajao!
meeting is lasted meeting is.EMPH lasted
'The meeting LASTED (i.e. lasted long).'

(21) German
Das Treffen hat (aber) GEDAUERT. / Das Treffen HAT (aber) gedauert.
the meeting has PTL lasted the meeting has PTL lasted
'The meeting LASTED (i.e. lasted long).'

These examples are interesting for two reasons. First, they show that accentuating finite verbs can result in readings which have little to do with salient polarity, TAM, or verb focus: what (19)–(21) convey is not an emphasis on the truth value, the correct identification of the lexical content of the verb or of the TAM features, but that the situation is being carried out to a full extent. The underspecification of this structure obviously goes beyond information-structural interpretations. Second, they are a clear indication that the dichotomy of verb focus vs. salient polarity/TAM focus is not as clear-cut as the standard approach seems to imply. The examples of auxiliary constructions demonstrate that both the accent on the left-peripheral auxiliary (i.e. on the truth/TAM operator) and the accent on the non-peripheral lexical verb result in identical, non-information-structural readings. This indeterminacy resembles Example (18), in which a salient polarity structure and a verb focus structure result in similar or identical interpretations. This is by no means confined to the three languages exemplified above: Turco et al. (2013) show that

the indeterminacy in accent distribution between the left periphery and the lexical verb is pervasive in the Romance languages.

Focus-based approaches have no explanation for these data: the purported dedicated markers of different types of focus encode non-focal meanings, such as intensification, while the structures which are supposed to arise out of different focus-to-accent rules (accent on the verb, accent on truth operator, etc.) can convey identical interpretations. LOT approaches do not address this kind of structural ambiguity. If they did, their solution is not likely to differ from the focus-based approaches in that they would have to postulate a structural homonymy between accented operators and accented verbs and would therefore be equally incapable of accounting for the data we presented in this section.

So accented finite verbs cannot be taken to be a dedicated expression of salient polarity, even if we try to explain the recognized ambiguity between the verb, TAM and polarity focus as an instance of superficial homonymy. The indeterminacy of interpretations rather indicates that the structure is highly underspecified semantically and that a mechanism other than the focus-to-accent rule is needed. Our take on this issue will be presented in Section 3.1.

2.3 Conclusion

Existing denotational approaches to salient polarity associate it with a well-defined formal strategy often mediated through one (covert) operator-like element. Importantly, this strategy is assumed to exist precisely *because* it conveys the salient polarity meaning. One obvious advantage of this reductionist practice is that the category is internally coherent and easy to describe. The cost at which this comes is lack of comprehensiveness.

We have shown that there is no neat correspondence between the left-peripheral accents and salient polarity readings. Accent placement on the verb is regulated by independent rules that are only indirectly linked to evoking alternatives opened by the context. These findings can be interpreted in at least two ways. A conservative account would take them as a sign that a more elaborate analysis is needed in order to capture the focus-accent relationship. A radical account would understand them as a possible indication that no cross-linguistically valid salient polarity category can be postulated based on form-meaning correspondence. Of course, with enough syntactic and prosodic know-how, the conservative account can be upheld for each individual language, but this will make cross-linguistic comparability questionable as far as categorial semantics is concerned. In view of this and based on other evidence that we will discuss below, we opt for the radical alternative, to be elaborated upon in the following section.

3. Salient polarity and interpretive effects

In this section we advance a proposal which disposes of the form-meaning isomorphism and the category of salient polarity altogether, and argue that it can accommodate more empirical evidence than any approach that relies on pre-established categories. We first briefly outline an alternative analysis of the accented verb strategy (Section 3.1). Essentially, it maintains that many of its more specific interpretations arise through non-compositional enrichment added on top of productively derivable meanings. They are conventionalized to various degrees, and Section 3.2 addresses conventionalization in more detail. In Section 3.3 we discuss the set of interpretive effects relevant for some other structures commonly associated with salient polarity and show that, once the contexts of their use are observed in their entirety rather than selectively so as to fit semantic preconceptions, their semantic and pragmatic disparity becomes clearly patent. The next step is to demonstrate the variability of source denotations used to the effect that polarity become salient. It is illustrated with a couple of small case studies from a wider typological array of languages (Section 3.4). The overall conclusion of this section is that salient polarity can only be postulated as semantic entity in the sense of interpretive effects that arise when otherwise quite disparate linguistic structures are produced in communication.

Before laying down our proposal in detail, a notional clarification is in order. As we indicated in Section 1, we use the term *denotation* to refer to encoded meanings, while *interpretation* is a cover term for all kinds of meanings derived inferentially; *meaning* itself is a cover term for both. In this section, we also introduce the notion of *conventionalized interpretation* (usually shortened to *conventionalization*). Conventionalizations are those inferentially generated interpretations that normally occur under certain contextual conditions, but are not encoded denotations, since they are cancellable and usually less than fully regular. They are similar to Gricean *generalized conversational implicatures* (see Levinson 2000 for a comprehensive account) and should not be confused with *conventional implicatures*, which have to do with non-truth-conditional aspects of meaning and are of no relevance for the present paper.

3.1 Accented verbs and all-given propositions

An alternative account of accented verb structures is based on the principle which was probably first formulated by Gussenhoven (1983). The main idea is that verbs and functional elements are targeted by accents not due to an active focus-to-accent rule but rather as a kind of last resort operation. The focused element, polarity, has no word-size phonological realization, and languages resort to different solutions to the problem of foci that are smaller than word. According to Gussenhoven

(1983, 2007), the apparent regularity of German (and Dutch) stems from the language-specific accent placement rule which states that the accent is assigned to the element that co-encodes the focused polarity operator (auxiliary, if present; if not, a finite lexical verb), or to the functional element in the C-position in embedded contexts. In English, the rule is that the accent goes on the penultimate element of the VP, which is most commonly the finite verb, but it can also be the object, a part of a multi-word expression, or any other element that happens to be in this position. This elegantly captures the cross-linguistic differences in question-answer pairs and embedded clauses illustrated in Section 2 (if we assume that Serbian behaves similarly to English), but it still does not explain the observed variation within one and the same language. German embedded contexts do occasionally allow for accents on finite verbs instead of the predicted C-position, as in (12); English and Serbian often display nuclear stress on a 'polarity operator', i.e. auxiliary, in addition to the one on the penultimate element of the VP, partly depending on the context, as in (10). Gussenhoven's solution for English is to posit a different rule: in counterassertive contexts, English uses the German-style accent on the auxiliary. The problem is, as apparent from (10), that counterassertivity, i.e. denial of a previously uttered sentence, is not the feature responsible for different accent assignments. Even worse, both possible accents, on the penultimate element of the VP (lexical verb) and the operator (auxiliary) can sometimes have the same interpretation, as in (10), but they can also differ in meaning, as in (9), for no apparent reason.

However, most of Gussenhoven's generalizations can be upheld with a different conceptual basis. We can dispose of focus altogether and describe accent assignment solely via rules of deaccentuation (in the sense of Ladd 2008 and Baumann 2006; a related idea with respect to the German accented particle *doch* was advanced by Egg & Zimmermann 2012). Our proposal capitalizes on the rather universally recognized observation that salient polarity clauses are all-given, i.e. they only contain given information, the only newsworthy element being the polar/modal/etc. operator. They are therefore claimed to be impossible in out-of-the-blue contexts:

(22) German accent on the finite verb in out-of-the-blue contexts
Hey, hast Du es schon gehört? # Karl SCHREIBT ein Buch.
hey have you it already heard K. writes a book
'Hey, have you heard the news? # Karl IS writing a book.'
(Gutzmann 2012: 19)[3]

3. Of course, (22) is perfectly felicitous if the issue of Karl's writing a book had been topical before the utterance was produced, but in this case we can no longer speak of an out-of-the-blue context (see more on this point in Lai 2012: 123ff).

All-given propositions must be present in the cognitive model of the interlocutors, but they lack truth value prior to the assertion contributed by salient polarity, so they cannot be in Common Ground. They are therefore a problem for Common Ground-based accounts of focusing. In order to account for them, Portner (2007) introduces the notion of Common Propositional Space, understood as a set of propositions that the participants of an utterance situation are mutually aware of without committing themselves to their truth value. Common Propositional Space is a superset of Common Ground, which only comprises those propositions that are mutually believed to be true. Obviously, salient polarity utterances can only be informative if they belong to Common Propositional Space, but not to Common Ground (see Repp 2013).

Our reasoning runs roughly as follows. Clauses with accented finite verbs or functional elements are not associated with a specific focus structure, but are merely identified as being all-given: they only contain the given material and are therefore fully deaccented (we use 'deaccented' in the technical sense as defined by Ladd 2008: 175ff.). Since the nuclear stress must be placed somewhere, it lands on a site specified by the grammar of the language, *not* by focus. Deaccentuation is always more or less optional, so that doublets with identical interpretative properties are always possible. The discourse meaning of such clauses is maximally underspecified: by deaccenting them, the speaker merely signals that the whole proposition is to be interpreted as known to both interlocutors. Asserting (questioning, etc.) a proposition of which both interlocutors are aware can lead to a number of additional interpretive effects. Salient polarity is the most frequent interpretation, but not the only possible reading. The structure can also indicate salient TAM features, intensification, and meanings other than those we have discussed by now.

How does the idea of givenness operate at the interpretive level, and how does it account for the variability of forms and meanings? One important point is that givenness is a matter of presentation: a proposition can be given in the context or it can be *presented* as given; in the latter case givenness arises through the use of a givenness-marking structure, in the same way in which presuppositions arise via presupposition accommodation (see Example (22) and Footnote 3). Accented finite verbs/functional elements serve as instructions to the hearer to treat the proffered proposition as an element of Common Propositional Space, something both interlocutors have been aware of. Salient polarity readings will arise – as an interpretation, not as a denotation – every time the issue of a mutually known proposition being true or not is relevant at the current point of conversation. Yes/no questions, to take a simple example, render the issue of truth explicit. Asserting a proposition marked as all-given as an answer automatically leads to the salient polarity reading. The same holds true *mutatis mutandis* for other salient polarity contexts, such as

confirmation of past or conditional intentions (10a), adversative assertions (10b), or polarity corrections (12).

In German all-given clauses the nuclear stress falls on the left periphery, as we have seen, but as this accent is a product of deaccentuation and as such partly optional, deviations like the one illustrated in (12) above are always possible. English, and probably Serbian, allow for doublets in a more systematic way, with a left-peripheral type and a VP-penultimate type. But if salient polarity is just a reading of all-given sentences, why is there variability in interpretation in languages with systematic doublets? We have seen that in question-answer pairs, VP-penultimate accents (lexical verb) result in unmarked polarity, while left-peripheral accents (auxiliary) trigger additional implicatures, as shown in (8). In other contexts, such as adversative sentences (10), no such differences arise, and the two structures are interchangeable. An elegant solution to this is to assume, following Zimmermann (2008) in spirit though not in detail, that alternative prosodic realizations of all-given sentences are not equal in markedness, so left-peripheral accents are more marked than VP-penultimate ones. When speakers assume that the polarity of the proposition they intend to assert (question, order, etc.) is interpersonally more loaded, less expected, or more difficult to process, they resort to more marked structures; otherwise, the unmarked structures are used. In answers to questions, when the speaker believes that the answer is already known to the hearer, the 'irritated' emotional load is the additional interpretation they want to convey. It is therefore indicated by the marked structure, the accent on the auxiliary. The marked options of emphatic *do*-support that we mentioned earlier in Section 2.2.2 are probably subject to the same considerations: simple polarity assertions employ the unmarked VP-penultimate structure, while such marked structures as emphatic *do*-support imply additional interpersonal import. This effect disappears in the contexts in which no additional interpersonal implications are possible, so that the use of either structure cannot produce interpretive differences. In adversative contexts, where salient polarity is embedded in a particular rhetorical relation and the givenness of the proposition projects rightwards, the two structures are interchangeable because no additional knowledge or expectation can be assumed.

In Section 2.2.3 we discussed the ambiguity of accented finite verbs which are often claimed to encode polarity, TAM or verb focus, and showed that both focus-based and LOT accounts fail to explain the data. As we have argued above, the deaccentuation-based explanation of accented finite verbs can account for many salient polarity usages of this structure. The TAM focus reading is also amenable to this kind of explanation. This reading, illustrated in (16b), has a highly restricted distribution and normally only occurs in contradictions (see Wedgwood 2006 on its borderline acceptability). It is derivable from the all-given meaning

of clauses with nuclear stress on finite verbs. In a corrective context where an all-given clause does not single out polarity, which remains constant across turns, it is plausible to assume that the main point of the utterance must be its temporal or modal update. This seems to indicate that the variation between salient polarity and TAM focus readings is a result of genuine semantic underspecification of deaccented clauses.

The relationship between salient polarity and verb focus readings is more complex. Verb focus updates information about the relation that exists between given participants, as in (16c), where the type of action that Peter performed on the Ming vase is identified as breaking. As we have seen in Section 2.2.3, in some central examples of accented verbs, such as question-answer pairs in (17), there is a clear formal distinction between salient polarity/TAM focus on the one hand, and verb focus on the other. Concerning the central types of examples, it seems plausible to assume that verb focus is not derivable from the all-given meaning. It does, after all, identify a relation between discourse referents which is not represented in Common Propositional Space. We can suspect that verb focus interpretations are a different kind of animal: they are not a product of deaccentuation, but rather derived via standard focus-to-accent procedure, not unlike other types of focus assignment. The nuclear accent on finite verbs can then arise out of two sources: deaccentuation (salient polarity, TAM focus) and accent assignment to the verb (verb focus).

We have, however, seen in Section 2.2.3 that the distinction between these two structures gets rather fuzzy as soon as one moves away from the central examples and considers other, non-information-structural, readings such as intensification. We will explain this as a consequence of the conventionalization of certain interpretations, to which we turn in the following section. What we can take from the discussion up to this point is that predicting the use of the salient polarity structure on the basis of its inherent denotational properties is largely impossible. Rather, its presence depends on the communicative requirements at each specific point in the discourse, speaker's assumptions about the knowledge state of the hearer, and speaker's individual intentions and psychological state.

3.2 Conventionalized interpretations

This brings us to the question of conventionalization. We have seen that two processes are responsible for accented finite verbs, deaccentuation and the focus-to-accent rule. The resulting structure is heavily underspecified and subject to pragmatically conditioned interpretations: the meanings of salient polarity, TAM focus, verb focus, intensification and so on are all due to different interpretive processes that take

place in communication. These readings vary greatly across languages. We propose that this is due to different interpretive conventionalizations.

As we have indicated at the beginning of Section 3, we rely on the notion of generalized conversational implicatures in the sense of Levinson (2000) to formalize the idea of conventional interpretations: these are pragmatic inferences which commonly occur in connection with a linguistic form under certain conditions and are as such conventional, though they are defeasible and not fully regular. This assumption ensures that same pragmatic processes do not necessarily result in identical interpretations, as conventionalizations arbitrarily favor one type of interpretation over another, equally plausible one. The interplay of underspecified denotations, pragmatic inferences and arbitrary conventionalizations accounts for the range of inter-language and intra-language variation that we have discussed on the way. While the three languages we compare all arguably have two distinct formal devices, the all-given deaccentuation and the verb-focus accented finite verbs, the division of labor between them is fuzzy precisely because they do not *encode* salient polarity, TAM focus, verb focus, intensification, and so on. Instead, these meanings arise out of pragmatic processes which are constrained by more or less conventional interpretive routines.

Let us consider the intensification readings illustrated in (19) to (21) as an example. One possible analysis of these sentences is that they are verb-focus structures pragmatically enriched to indicate a high degree because a simple identification of the action would be uninformative. People generally dress, cars drive and events last, so these assertions are not newsworthy, but with enrichments such as 'dress well', 'drive well' or 'last long' they become so (Matić 2003: 190). The problem is that this reading can also be conveyed by structures which we have identified as unequivocally all-given (i.e. salient polarity), such as accented auxiliaries. Another possible analysis is that we are still dealing with salient polarity and the intensifying reading comes about by the very fact that the positive polarity of an uninformative predicate is asserted via pragmatic enrichment (Goldberg & Ackerman 2001). This explanation has the same problem as the previous one: intensifying readings are conveyed not only by salient polarity clauses, but also by unequivocal verb-focus structures with nuclear stress on the lexical component of a periphrastic predicate, which is especially clear in the German examples in (21). The two structures seem to overlap in a way that cannot be accounted for compositionally, but we see conventionalized interpretations as a solution of this quandary. Let us take a closer look at this possibility.

English allows for a wide range of constructions and predicates to occur with intensified readings. This includes, in addition to predicates in (19), mediopassives like *These bureaucrats bribe* and exclamatives like *Did that mountain climb!*

(Goldberg & Ackerman 2001). Serbian appears to be more restricted. The only predicates for which intensification works with accented finite verbs are verbs of temporal extension, like *trajati* 'last' in (20). Other predicates usually get a different interpretation under accent, roughly 'just enough, barely enough', as shown in (23).

(23) Serbian
a. *Knjiga se PRODAJE.*
book REFL sells
'The book sells (just enough).'
b. *Ovaj crveni auto IDE.*
this red car goes
'This red car drives (barely, but it does).'

The English and Serbian accented finite verbs are arguably derived by the same processes of deaccentuation and verb accenting. However, while in English the intensified readings are conventionalized under appropriate contextual and lexical conditions for a wide range of predicates, similar conditions usually produce 'just enough' readings in Serbian. In other words, similar or identical source denotations and similar interpretive processes do not suffice to explain the use of the structures at hand.

We thus need an additional aspect of description, conventionalized interpretations. We will maintain that (i) interpretations can be conventionalized in one way or the other, and (ii) similar readings can arise out of different denotations (and vice versa), so that both all-given deaccented clauses and verb-focus clauses can be interpreted as intensified situations, TAM focus, or with any other plausible interpretive effect. The two relevant structures overlap in a significant number of contexts due to homonymy and similar conventions of usage. This can result in a transfer of interpretations, such that, for instance, the salient polarity interpretation can be transferred from one type to the other even when there is no homonymy, although it cannot be plausibly derived from the denotation of verb-focus structures.

There is abundant cross-linguistic variation in conventionalization patterns, as shown by the comparative studies of salient polarity in the Germanic and Romance by Dimroth et al. (2010), Turco (2014), and Turco et al. (2014). Another nice example illustrating how arbitrary conventionalizations can influence deaccented clauses is provided by what has been described as *dictum* focus (Creswell 2000). English has a wide range of uses of accented auxiliaries in *wh*-questions, some of which are illustrated in (24) and (25).[4]

(24) A: *How are we getting there?*
B: *I don't know. How ARE we getting there?*

4. These examples are cited after Creswell's paper and stem from Switchboard Corpus.

(25) A: *Well, we have our band practices on Monday night, and during the summer we have concerts every Monday night in the park, and we have, you know, some concerts during the year, and various people in the communities want us to play for things, but those are usually on the weekend, so that isn't too bad.*
B: *How big IS your band?*
A: *Well, we gotta pretty good size band.*

In Creswell's taxonomy, the response question in (24) functions as a repetition of the first question, while the response question in (25) is a request to specify a salient property of an entity that the speaker feels has been left out in the preceding description. These and other uses of accented auxiliaries squarely fall into the range of all-given clauses: as Creswell shows in a painstaking analysis of her data, all tokens contain questions that have been explicitly or implicitly evoked in the conversation. Importantly, what is marked as given is not just the propositional content, as in standard salient polarity clauses, but also the illocutionary force. It is always the question itself that is a part of Common Propositional Space, due to the explicit mention (24) or due to the assumption that it must be inferable given the knowledge of the world (25). This interpretation of all-given clauses has little to do with polarity, but this is not a problem for our proposal that salient polarity is just one of their possible interpretations.

What is more interesting is that this interpretation has a wide range of discourse functions in English, while it is mostly restricted to discussion-ending questions in German, for instance, in cases where an all-given question ends a sequence of repeated negative assertions; both the expected accent on the functional element (question word) and on the finite verb are possible in this case (26). When questions are repeated as in (24), only the accent on the finite verb is possible (27a), while questioning a missing property as in (25) is normally not achieved through accentuating the finite verbs or functional elements (27b). The variant in (27b) with the accent on the finite verb does seem to be acceptable to some speakers of German, but only with additional interpretive effects (irritation or puzzlement), which are completely absent in English.

(26) A: Peter didn't break the vase, Mary didn't break it either.
B: *WER hat sie (denn) zerbrochen? / Wer HAT sie (denn) zerbrochen?*
who has it PTL broken
'Who did break it?'

(27) a. (in the context of (24))
#*WIE kommen wir denn hin? / Wie KOMMEN wir denn hin?*
how come we PTL there
b. (in the context of (25))
#*WIE groß ist (denn) deine Band? / (#)Wie groß IST (denn) deine Band?*
how big is PTL your band

The difference has nothing to do with the encoded meaning of questions with accented finite verbs/functional elements, and it does not stem from any restrictions on inferentially derived interpretations, as both are arguably similar to those in English. So the reason the two languages differ goes beyond what is determined by compositionality and inferential pragmatics.

This discussion indicates that, although the grammar enables certain options by providing potential directions for conventionalization, it does not require their appearance. All other things being equal, conventionalization works in a fairly random manner, hence the resulting patterns occur in the languages where they occur and are precluded from appearing in others only in a probabilistic sense.

3.3 Other salient polarity structures

Section 2.2.2 has demonstrated that a number of structures commonly associated with salient polarity are either incompatible with question-answer contexts or result in marked readings when used in these contexts. We mentioned that this effect cannot be explained by resorting to the standard dichotomy between contrastive vs. non-contrastive foci, and that the stipulation of an additional feature, such as counterassertivity or counterpresuppositionality, would not be able to capture the whole gamut of their uses. In this section, we will look at some of these constructions in more detail in order to show that they are subject to the same variation as accented finite verbs.

Let us begin with emphatic *do*-support in English, which is structurally and denotationally close to accented finite verbs: an auxiliary is introduced in clauses normally based on synthetic verb forms in order to bear the nuclear stress in an otherwise all-given sentence. As noted above, emphatic *do*-support triggers additional meanings when used in question-answer pairs. Also similar to accented finite verbs is the highly productive mechanism of producing intensified readings via emphatic *do*-support (28). These readings probably represent the most frequent interpretation of this structure that is fully independent of any kind of salient polarity.

(28) A: *I think he'd want to have some kind of little business. And then he can go off and pick it up.*
B: *And he* ***does like*** *to travel.*
A: *I know he is thinking of going to France.* (British National Corpus)

Perhaps even more characteristically, emphatic *do*-support can be used to produce a number of inferences in directive sentences. In his classical study of English imperatives, Davies (1986) differentiates two typical readings of emphatic *do*, 'contrastive' (29a) and persuasive (29b), to which one can add the polite usage (29c).

(29) a. A: *I know you don't like him, but Bill will be insulted if I don't invite him to the party.*
B: *Oh well, do invite him then, if you must.*
b. A: *Bill and his family are so boring.*
B: *Oh, do be kind to Mary, please!*
c. *Do take a cup of tea, please.*

Davies' contrastive reading (29a) can be analyzed as one of the typical instances of salient polarity, whereby a discussion is put to an end by placing a mutually known proposition under an illocutionary operator and thus indirectly contrasting it with its negative counterpart. The other two usages are less directly connected to polarity. This holds true especially for the polite reading (29c), which appears to instantiate a fully conventionalized non-compositional type of all-given clauses.

Characteristically, other languages only partly overlap with these uses. Thus, while the 'contrastive' salient-polarity reading would be perfectly felicitous if rendered by a corresponding all-given imperative clause with an accented verb in German (30a), the persuasive and, especially, the polite directives would be preferably expressed with the particles *doch* (in its unaccented form) or *bloß*, while accented finite verbs would result in different readings and are infelicitous in the given contexts (30b and 30c).

(30) a. *Gut, LADE ihn dann ein, wenn's sein muss.*
good invite him then VM if=it be must
b. *Sei doch / bloß nett zu MARIA, bitte. / #SEI nett zu Maria, bitte.*
be PTL/ PTL nice to Maria please be nice to Maria please
c. *Nehmen Sie doch eine Tasse TEE. / #NEHMEN Sie eine Tasse Tee.*
take you PTL a cup tea take you a cup tea

As discussed in Section 3.1, accented finite verbs in German and English are markers of maximally underspecified all-given clauses, whereas the salient polarity reading arises under appropriate conditions via inferential reasoning. The particle *doch* has a much more specific denotation, as shown by Grosz (2014, 2016) and Egg & Zimmermann (2012), among others. Roughly, *doch* signals that the proposition in its scope is uncontroversial in the given context and that it is thus safe to discard any proposition which directly or indirectly contradicts it. The particle has a complex interactional meaning that includes inducing an alternative contradictory proposition and its exclusion due to the uncontroversiality of the proffered proposition.

The relatedness of this meaning to salient polarity is obvious, and the use of *doch* does indeed often induce various polarity readings. It is, however, entirely different from the encoded meaning we proposed for accented finite verbs: the latter denote all-given propositions, while *doch* is a negation of the contradictory proposition, a double negative, as it were. This shows that languages achieve similar interpretive effects through different source denotations, and the distribution of forms across meanings is to some extent arbitrary.

Yet another example of different source denotations with similar interpretations and different conventionalized uses is provided by the Serbian intensifying particle *baš* and the English adverb *really*. The particle *baš* is a classical intensifier inducing various intensified readings and combinable with various lexical classes, as shown in (31), construed after Mišković-Luković (2010). When modifying a verb, it often triggers salient polarity interpretations in addition to intensifying meanings (32).

(31) *baš dobar* [PTL good] 'really good'
baš brzo [PTL quickly] 'really fast'
baš taj [PTL this] 'precisely this one'
baš konzulat [PTL consulate] 'consulate and nothing else'

(32) a. intensifying:
Baš se naljutio.
PTL REFL grew.angry
'He got very angry.'

b. salient polarity:
A: *Nije pala.* B: *Baš je(ste) pala!*
not.is failed PTL is.EMPH failed
'A: She didn't fail the exam. B: She did fail it!'

One salient polarity reading involves an additional indication of spite via contradicting the preceding directive utterance:

(33) A: *Ne treba ići napolje, hladno je.*
not should go outside cold is
B: *Baš ću ići napolje!*
PTL will go outside
'A: One shouldn't go outside, it's cold. B: I WILL go outside (as a matter of principle, to spite you, etc.)'

The closest counterpart of *baš* in English is *really*, which has played a prominent role in the literature on salient polarity (e.g. Romero & Han 2004 and Lai 2012: 101ff.). Similar to *baš*, *really* functions as an intensifier with adverbs, verbs and adjectives (34a), and can also trigger a salient polarity interpretation (34b). What *really* cannot do, however, is induce the spite reading in its salient polarity function (34c).

(34) a. *really good, really fast*
b. A: *I'm not sure she failed the exam.*
B: *I'm telling you, she really failed it.*
c. A: *One shouldn't go outside, it's cold.*
B: #*I will really go outside!*

Instead, it can trigger what Romero and Han (2004) call an 'actuality reading', indicating roughly that things are not what they seem to be by asserting a 'real' proposition against the background of the opposite proposition encapsulating the apparent state of affairs (35a). This interpretation is inaccessible to the particle *baš* (35b).

(35) a. *Mary really is an alien.* (even though she looks human)
b. (#)*Marija je baš vanzemaljac.*
Marija is PTL alien
(only possible with the intensifying interpretation 'She's a proper alien.')

It is immaterial for our purposes whether intensifiers are analyzed truth-conditionally, as a kind of operator that selects a high degree of gradable predicates (Lai 2012: 101ff.) or relevance-theoretically, as indicators of the intended literal interpretation (Mišković-Luković 2010). The point is, like for the previous examples, that the Serbian particle *baš* and the English adverb *really* encode some kind of intensifying meaning, which is quite distinct both from the all-given semantics of accented finite verbs and the 'double negative' meaning of the German particle *doch*, and that, despite these different source denotations, they can trigger identical salient polarity effects. Furthermore, the usage of *baš* and *really* shows again that the difference between English and Serbian cannot be accounted for by compositionality plus inference. Although *baš* and *really* have similar encoded meanings and both are able to generate salient polarity, their availability in different contexts is due to different conventionalizations.

This discussion could potentially be extended to a number of other structures somehow connected to salient polarity with similar results: none of them directly *encodes* polarity focus, a Verum or any other kind of operator, but they all have their own distinct denotations instead. These denotations are employed to convey salient polarity under appropriate conditions, but no single structure can be singled out in the relevant languages as a dedicated means for encoding it.

3.4 Source denotations

We have shown that the reductionist strategy of defining the category of salient polarity by selecting a linguistic form and providing it with a formal and semantic content might be *prima facie* successful for a description of one language, but it generally collapses when applied cross-linguistically. Instead, we have identified

a handful of denotations that can give rise to salient polarity readings, such as all-given propositions, 'double negation', intensification, and so on. In this section, we adduce evidence from a typologically more diverse selection of languages to show that the range of possible source denotations is in fact much broader. In contrast to English, German and Serbian, these languages are rather poorly documented and only allow for coarse generalizations; however, we feel this suffices to illustrate the potential range of variation.

3.4.1 *Existential quantifiers*

The first language we adduce is Tundra Yukaghir, an isolate spoken in north-eastern Siberia. In this language, in the answers to yes/no-questions, the finite verb must be preceded by the proclitic particle *mə(r)=,* as illustrated in (36a); these answers are infelicitous without it (36b). This particle is also obligatory in a number of other typical salient polarity contexts, such as contradictions (37).[5]

(36) A: *Nime mə=weː-ŋa?*
house мə(r)=do-tr.3pl
a. B: *Mə=weː-ŋa.*
мə(r)=do-tr.3pl
'A: Did they build a house? B: Yes, they built (it).'
b. B: #*Weː-ŋa.*
do-tr.3pl

(37) A: *Eldʼə, tuŋ köde əl=amudʼiː-mək?*
ptl this man not=love-tr.2sg
B: *Mər=amudʼiː-ŋ.*
мə(r)=love-tr.1sg (Kurilov 2005: 304)
'A: What, don't you like that man? B: I do like him.'

These distributional facts have led a number of researchers to define this particle as a dedicated marker of polarity focus or a more general predicate focus (Maslova 2003; Matić & Nikolaeva 2008). However, in Matić and Nikolaeva (2014) we show that this analysis is based on the cherry-picked litmus contexts, chosen in order to render this kind of interpretation possible, not unlike the situation with the better known European languages discussed above. Once a larger set of data is taken into account, the polarity/predicate focus analysis loses all plausibility. More specifically, the particle *mə(r)=* on the verb is incompatible with focus marking and focus interpretation on non-verbs (38). On the contrary, it is obligatory when the proposition is realis and the predicate is inherently dynamic irrespective of the place and size of focus (39).

5. Here and elsewhere, if the source of an example is not cited, it comes from our own field data (2008–2013).

(38) *laːmə-ləŋ (*mə=)paːj-mələ.*
dog-FOC MƏ(R)=hit-OBJ.FOC.3
'He hit a dog.'

(39) a. *tude tuːriː-ɣanə mər=aɣarəj-m.* (Maslova 2001: 58)
he.POSS trousers-ACC *mə(r)*=tear-TR.3
'(He took out one of his traps. While doing that,) he [tore his trousers.]$_{FOC}$'
b. *qajčeː-təgə ńawńikleː-ńəŋ mə=ńinuː-ŋi.*
bear-AUG polar.fox-COM MƏ(R)=meet-INTR.3PL
'(beginning of a story) [A bear and a polar fox met.]$_{FOC}$
(Kurilov 2005: 240)

With non-realis propositions and stative predicates, *mə(r)=* is generally not used outside of salient polarity contexts (40):[6]

(40) a. *tət amučə brigaďir ət=ŋoďək.*
you be.good.PTCP foreman COND=be.INTR.2SG
'You would be a good foreman.'
b. *taɣoːďə ńanmə-pul oɣ-oːl-ŋi.*
be.dense.PTCP willow-PL stand-STAT-INTR.3PL
'Willow thickets stood there.'

In order to account for these distributional facts, we have proposed that *mə(r)=* is an existential quantifier, which, when applied to predicates, performs the operation of unselective existential quantification over eventualities. Its quantifying nature is quite clearly seen in combination with question words that receive a specific indefinite interpretation when they are in the scope of *mə(r)=*.

(41) a. *neme* 'what/who' *mə=neme* 'something'
b. *qoːdəgurčiː?* *mə=qoːdəgurčiː-j.*
what.happen.INTERR.3 MƏ(R)=what.happen-INTR.3SG
'What happened?' 'Something happened.'

The existential denotation of *mə(r)=* is employed to assert the existence of an eventuality in the real world, which sufficiently explains its obligatoriness in realis contexts. *Mə(r)=* is mostly incompatible with stative predicates because it also has an aspectual component which requires the eventualities in its scope to be fully contained in the Topic Time (in the sense of Klein 1994), and this is not the case with statives. *Mə(r)=* is redundant and therefore impossible if focus falls on a non-verbal element because the relevant propositions are strongly presupposed and anchored to the real world via presupposition.

6. It can only be used under special conditions and for special effects, see Matić & Nikolaeva (2014) for detail.

Why, then, does the existential quantifier necessarily occur in salient polarity contexts? We argued that this has to do with the semantic affinity between salient polarity and existential quantification. Salient polarity readings arise every time the question whether a proposition from Common Propositional Space holds true or not is at issue in discourse. Existential quantification over events in realis contexts can furnish precisely this type of semantic information: by asserting that an eventuality exists in the real world, the speaker entails that the proposition that describes it is true. Importantly, this is not the only communicative effect of *mə(r)=*, as we have seen above (Examples (39) and (41)), but one of its possible interpretations which arises if the necessary contextual conditions are given. So *mə(r)=* does not encode polarity focus, certainty, or any other polarity related meaning. It is merely interpretable as indicating that the polarity of a mutually known proposition is at issue, via interaction of its existential denotation with contextual considerations.

3.4.2 *Miratives, evidentials, and epistemic stance*

Another possible source of salient polarity readings is the somewhat diffuse family of categories comprising evidentials, epistemics and miratives. Let us begin with the relationship between miratives and salient polarity. Miratives are known to encode the speaker's surprise at the course of events (DeLancey 1997), i.e. they contrast the proffered proposition with a contextually salient set of epistemically accessible propositions (Rett & Murray 2013). This is nicely illustrated with the Albanian mirative, whose major function is to encode contrast between the observed situation and the expected ones, as in (42), where the mirative shows that eating soup without bread runs against cultural expectations.

(42) *(…) e hëngërki ju gjellën fare pa bukë!*
it eat.MIR.2PL you.PL soup.ACC.DEF completely without bread
'(…) You are eating the soup without any bread!'
(Friedman 1986: 181; glosses modified)

As Behrens (2013) points out, the contrast between the proffered and the (expected) background propositions can, and often does, result in salient polarity interpretations. As a matter of fact, salient polarity is one of the most frequent readings of the Albanian mirative (43). Clearly, the salient polarity reading in (43) is not encoded, but derived via inference from a more general denotation of contrast between the expected and actual situation.

(43) *E shoh që paska pasur të drejtë.* (Behrens 2013: 231)
it see.1SG that AUX.MIR.3SG have.PTCP LK right
'I see that he actually WAS right after all.'

A similar inferential path of arriving at salient polarity interpretations is apparent in a number of languages with more elaborate evidential systems, such as Quechua

(Quechuan; Behrens 2013) and Nupe (Benue-Kongo; Kandybowicz 2013). Quechua is a particularly good example. The direct evidential in *-mi* in Cuzco Quechua is analyzed by Faller (2002) as an illocutionary operator which adds a sincerity condition to the speech act by encoding that the speaker has the best possible evidence in relation to the type of information conveyed. The use of *-mi* is optional, in the sense that a sentence without any evidential marker has the same evidential value as the one with the 'best evidence' marker *-mi*. Speakers employ *-mi* only when they want to make a particularly strong point, i.e. to persuade their interlocutors. In other words, *-mi* is an interactional device communicating persuasive intention and is as such particularly frequent in those assertions in which the speaker expects contradiction from the audience (Faller 2002: 145ff.; Behrens 2013: 210). The implicit division of Common Propositional Space into contrastive propositional sets (proffered content and expected contradiction), along with the persuasive usage, often leads to the rise of polarity effects, as in (44).

(44) [A consultant of mine was talking about a condor in the city of Cuzco itself (…), to which I replied, surprised, that I thought there were no condors in the city. She insisted with:]
Ka-sha-n-mi. (Faller 2002: 151)
be-PROG-3-DIR.EVID
'There IS!'
[indicating that she had good evidence and that it would be fruitless for me to question her.]

Here salient polarity is indicated through the interplay of the encoded meaning of direct evidentiality (best evidence) and the interactional constraints on the use of the evidential marker. It occurs merely as an effect of the conditions under which evidence for an assertion comes to be at issue.

The final example of the relationship between epistemic stance and salient polarity comes from Burmese (Tibeto-Burman). Our data stem from Ozerov (2012, 2014) and from personal communication with the author. In Burmese, verbs nominalized with *-ta* can function as main, stand-alone predicates and indicate salient polarity, as shown in (45) and (46).

(45) *Mə-houʔ-pʰù pʰwî-tʰà-ta.* (Ozerov 2014: 263)
NEG-be.so-NEG2 open-KEEP-R.NMLZ
'No! I did open it! (correcting a wrong impression)

(46) [I offered to my mother to go together to Bodh Gaya (…), but she said: "I heard it is very hot there. I do not want to go yet."]
Nauʔ=tɔ́ θwà-t̲a=p̲ɔ́. (Ozerov 2014: 273)
after=SEQ go-R.NMLZ=RINF
'In the future, I WILL (definitely) go!'

However, nominalized verbs have a range of other functions as main predicates: they are used in exclamations (47), rhetorical questions, convey something similar to constituent focus, provide explanatory comments to previous utterances (48), indicate subjectively viewed stretches of narratives, and more.

(47) *Tó ʔàlə̀ou maiʔ-laiʔ-tɕá-t̲a.* (Ozerov 2014: 271)
1.PL all stupid-FOLLOW-PL-R.NMLZ
'We are all so stupid!'

(48) [Whenever the lion saw the bulls, he started drooling.]
θu-t̲ó-t̲we-k̲o sà-t̲ɕ^{h}ī-laiʔ-t̲a. (Ozerov 2014: 272)
3-PL-PL-OBJ eat-want-FOLLOW-R.NMLZ
'He wanted to eat them.'

These apparently disparate meanings can be explained if we take stand-alone nominalizations at face value: they are chunks of information comparable to simple nouns used in isolation and are void of the assertive component of commitment to the propositional content due to the lack of finiteness. As such, they are interpreted as indicators of subjective epistemic stance and probably partly conventionalized to function as explanations, exclamations, report emotions, and so on (Ozerov 2014: 282ff., see also Merin & Nikolaeva 2008 specifically on exclamations). Among other things, this can have an effect of emphasizing polarity. Due to their subjective component, they trigger the division of Common Propositional Space into the proffered subjective description of the world and other possible descriptions. If these propositions differ in their potential truth value, the salient polarity effect arises.

3.4.3 *Other source denotations and a summary*

Existential quantifiers, miratives, direct evidentials, and markers of subjective epistemic stance do not exhaust the possible sources of salient polarity effects. We can briefly mention two other denotations we came across. In some dialects of Even, a Tungusic language spoken in north-eastern Siberia, highly grammaticalized negative tags in the postverbal position can often have a salient polarity reading, as in (49)

(49) A: Why don't you call the neighbors? They haven't left, have they?
B: *Hor-če-l e-s-ten!*
leave-PST.EVID-PL NEG.AUX-NON.FUT-3PL
'They HAVE left!' (lit. 'They have left, haven't they.')

Negative tags have a specific value in Even, marking the element that precedes them as uncontroversial, often with the interactional purpose to signal to the interlocutor that they should be aware of this fact (Matić 2015). The occasional salient polarity

interpretation seems to arise out of the contrast between this expected awareness of the interlocutors and their manifest lack thereof.

In Hungarian, one of the standard ways of expressing salient polarity consists in placing the aspectual verbal modifiers (VM) in the preverbal focus position:

(50) a. *Nem hív-ta meg a szomszédokat? De, MEG hívta.*
not invited VM the neighbors PTL VM invited
'Didn't he invite the neighbors? – He DID invite (them).' (Lipták 2013: 73)

b. *Nem fogja meg hívni a szomszédokat? De, MEG fogja*
not AUX.3SG VM invite the neighbors PTL VM AUX.3SG
hívni. (adapted from Lipták 2013: 80)
invite
'He won't invite the neighbors? – He WILL invite (them).'

We suspect that aspect anchors the eventuality to the world roughly in the same way as Wedgwood (2006: 266) suggested for tense: "[…] the contribution of tense to the description of any eventuality provides the essential 'anchor' point […].This means that the temporal anchor is uniquely suited to asserting the existence of an eventuality whose descriptive content is entirely presupposed […]." In other words, we take it that VMs locate the eventuality in the world by mapping the Event Time to the Topic Time (Klein 1994). When these world-anchoring aspectual elements are focused, one possible interpretive effect is the emphasis on the existence of the eventuality. For instance, in (50), the Event Time of the eventuality of someone's inviting the neighbors is aspectually located relative to the Topic Time via the VM *meg*. Since this aspectual operator is placed in the focus position, one plausible reading is that the main point of the utterance is the anchoring of the eventuality with respect to the world, i.e. the assertion of its existence, which is precisely what salient polarity is about. If this idea is correct, the principle of deriving polarity readings from the existential import of aspectual operators in Hungarian is similar to the workings of the existential quantifier in Tundra Yukaghir, but the mechanism of deriving the inference of salient polarity is quite different.

We have no doubt that taking a broader array of languages and constructions into account can uncover many more source denotations, inferential mechanisms and conventionalized uses than we have surveyed. Nevertheless, we hope to have shown at least a few recurrent patterns that participate in polarity interpretations: givenness, negation, existence, and various meanings related to epistemic stance seem to occur with some regularity in a number of languages. The inference that triggers polarity readings often comes in the form of dividing Common Propositional Space into two opposed sets, one of which is the proffered proposition, but other inferences are possible too. The general point is that salient polarity arises from quite different sources and on different inferential paths.

4. Final remarks

It is fairly uncontroversial that both Common Ground and the interlocutors' states of attention must be regulated in the process of communication and that, despite significant differences among languages, there are persisting cross-linguistic patterns in this area. This does not imply, however, that they automatically qualify as categories of grammar, as is often assumed (cf. Matić & Wedgwood 2013). The usual strategy of establishing categories takes a certain type of linguistic form associated with a limited range of contexts and meanings as its starting point, ascribes it a discrete denotation often associated with the syntactic presence of one relevant element, and then merely seeks to confirm its existence in language after language. However, it strikes us as methodologically implausible to assume that any particular form-meaning correspondence is a likely explanatory prism through which all other meanings should be viewed. In our view, the danger of this kind of procedure is that, by singling out one salient interpretation and suppressing recalcitrant usages, one can easily fall victim to reification fallacy and treat diffuse interpretive effects as discrete categories, as things among things. This analytical practice produces generality where there is none. It ignores many of the empirical phenomena by disregarding the full range of contexts and interpretations and downplays the massive underspecification of meaning. It is therefore incapable of explaining micro-variation within and across languages. What is more, the understanding of information structure categories as discrete denotations tends to obscure the difference between communicative processes and real grammatical knowledge because it focuses on the outcome of interpretive processes rather than the processes themselves.

In contrast to this kind of analysis, this paper advocated a more dynamic approach, partly informed by the methodological assumptions adopted in some recent literature on language variation (Evans & Levinson 2009; Goldberg 2009; Ackerman & Nikolaeva 2013; Matić & Wedgwood 2013, among others). We proposed to treat information-structural patterns as outcomes of multiple interacting factors within specific linguistic systems, namely, as recurrent types of interpretations which come about in an interplay of speaker's intentions, contextual cues and linguistic forms. We have used the example of the so-called polarity or Verum focus, which we referred to as *salient polarity*, to demonstrate this point. The evasive nature of salient polarity makes it particularly suitable for the study of the analytical procedures that normally lead to the postulation of an information structure category.

We first dealt with accented finite verbs and/or functional elements, a formal strategy that passes the question-answer test in a number of languages and is generally associated with the meaning of polarity focus, alternatives, newness, and contrast. The way this meaning has been translated into encoded denotation – roughly,

an operator that interacts with focus and produces a set of two alternative propositions differing in polarity – is symptomatic of the standard analytical procedure of establishing the form-meaning correspondence. We proposed that this structure results from two grammatical processes, deaccentuation of given material and accent assignment to the verb. These two processes generally tend to convey two different readings, salient polarity/TAM focus and verb focus, but there are also significant overlaps and interpretive indeterminacies which, we argued, are a product of variable conventionalizations of underspecified structures. Salient polarity is just one of the possible interpretations that can be inferred from the use of deaccented clauses, but it does not represent their denotation. We then looked at other structures usually assumed to denote salient polarity and showed that they vary greatly both within and across languages in terms of their compatibility with context types and, ultimately, in their denotations. If these additional usages are taken seriously, the clear picture of binary polar alternatives becomes even blurrier, to say the least. This suggests that denotational approach cannot account for all micro-restrictions in usage and divergences in meaning.

We proposed that variations arise out of complex interactions between encoded denotations, paradigmatic relationships between structures within a given linguistic system, speaker's intention, and various interpretive effects. The only common denominator of the many structures that have been associated with salient polarity is the direct or indirect connection to the communicative intention of the speaker to draw hearer's attention to the polarity of the conveyed proposition when, for one or another reason, the relationship of the proposition to the reference world or Common Propositional Space is at issue. This communicative act can be signaled by means of disparate denotations mediated through inferential reasoning. Importantly, inferential meanings are not unconstrained, but rather conventionalized for certain types of interpretation and certain types of discourse functions. Semi-arbitrary conventionalizations of usage may in their turn become entrenched and give rise to further inferences. This, together with structural differences, accounts for a great deal of cross-linguistic variability.

This result indicates that salient polarity cannot stand closer scrutiny as a universal category of information structure with a distinct denotation. The reasons for this lie in the nature of the conveyed meaning itself, which in many respects surpasses the simple denotational approach. Instead, we can understand salient polarity as a (possibly universal) type of communicative intention manifested through a number of interpretative effects. As such it has no place in grammar, and can only be analyzed as a category if we assume that cross-linguistic categories can be entirely interpretation-based.

Our proposal does not preclude the possibility that languages may differ greatly in what interpretative mechanisms produce salient polarity effects; indeed, this

is the expected outcome of the comparative empirical studies of particular languages. However, we also believe that the variation is systemically constrained and motivated. Some of the sources and paths occur in more than one language and appear to represent recurrent patterns of signaling the communicative intention of drawing attention to the polarity of proposition. We have mentioned negation, givenness, various existential and epistemic denotations, the partition of Common Propositional Space and persuasive intention, but we suspect that this may only be a fraction of processes through which salient polarity can be derived in languages.

We see the investigation of these and similar mechanisms as a very legitimate line of a typological inquiry. A major object of this inquiry, as we tried to show, should be processes, not things. The strategy therefore is not to search for the 'right' denotational properties of the purported category, but rather to show how source denotations interact with recurrent inferential mechanisms, variable contextual conditions and patterns of conventionalization, and to investigate the common cognitive basis of this interaction.

Abbreviations

ACC	accusative
AUG	augmentative
AUX	auxiliary
COM	comitative
COND	conditional
DIR	direct
EMPH	emphatic
EVID	evidential
FOC	focus
FUT	future
INF	infinitive
INTERR	interrogative
INTR	intransitive
LK	linker
MIR	mirative
NEG	negative
NMLZ	nominalizer
OBJ	object
PL	plural
POSS	possessive
PROG	progressive
PST	past
PTL	particle
PTCP	participle
R	realis
REFL	reflexive
SEQ	sequential
STAT	stative
SG	singular
TR	transitive
VM	verb modifier

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Verum focus, sentence mood, and contrast

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Verum focus is a phenomenon which results from accentuation of a specific component (finite verb, complementizer, relative or wh-element) in the left peripheral position of a clause. It invokes the effect of *emphasizing the expression of truth of a proposition* as Höhle (1988; 1992), who coined the term, characterized the phenomenon. In German, verum focus typically appears in the left periphery in main as well as in embedded clauses. The distribution of the accent at the surface is driven by rather sophisticated conditions which relate the syntactic surface position of the accent to its PF and LF effects in systematic ways.

The close connection of the phenomenon with the concepts of *truth, contrast,* and *sentential force* calls for a theory which interrelates these notions. This leads to a perspective that connects verum focus to the part of the sentence that spells out the intention (not the intension) of the sentence meaning: *sentence mood.* The proposed line of reasoning intends to promote the view that verum focus can be derived from the systematic interaction of sentence mood with the regular properties of focus assignment. Since focus assignment relates *accent* and *contrast, 'truth'* is achieved by verum focus, if the sentence mood function is fulfilled.

Keywords: verum focus, contrast, sentence mood, finiteness, truth

1. The phenomenon

Höhle (1988, 1992: 112) labeled a focus phenomenon in German which is realized in the position of the finite verb or a complementizer in left peripheral clausal position as *verum focus.* The phenomenon is based on the functional effect of an accent produced by the speaker; in emphasizing, the speaker wants to affirm the truth of his thought, cf. already Höhle (1982: 90) without using the term 'verum focus'. In German – the language in which Höhle investigated this phenomenon –, verum focus is indicated through a pitch accent in the left periphery of main (1i)–(1iv) as well as embedded (1v)–(1vii) clauses. In the case of verb final structures, a verum effect can be observed if the finite verb bears the accent and is – at the same time – semantically rather light as for instance in the case of auxiliaries (1viii)–(1x):

https://doi.org/10.1075/la.249.02loh

(1) i. Karl HAT den Hund gefüttert.
Carl HAS the dog fed
'Carl DID feed the dog.'
ii. HAT Karl den Hund gefüttert?
HAS Carl the dog fed
'DID Carl feed the dog?'
iii. Wer HAT den Hund gefüttert?
who HAS the dog fed
'Who DID feed the dog?'
iv. FÜTter jetzt den Hund!
FEED now the dog
'FEED the dog right now!'
v. (Aber Maria glaubt,) DASS Karl in Urlaub gefahren ist.
(but Mary believes) THAT Carl in vacation driven is
'(But Mary believes) that Carl DID go on vacation.'
vi. (Jetzt will ich wissen,) WEN Karl eingeladen hat.
(now want I know) WHO Carl invited has
'Now, I want to know who Carl DID invite.'
vii. (Das ist der Wagen,) DEN Karl gefahren hat.
(this is the car) WHICH Carl driven has
'This is the car which Carl DID drive.'
viii. (Aber Maria glaubt,) dass Karl in Urlaub gefahren IST.
(but Mary believes) that Carl in vacation driven IS
'But Mary believes that Carl DID go on vacation.'
ix. (Jetzt will ich wissen,) wen Karl eingeladen HAT.
(now want I know) who Carl invited HAS
'(Now I want to know) who DID Carl invite.'
x. (Das ist der Wagen,) den Karl gefahren HAT.
(this is the car) which Carl driven HAS
'(This is the car) which Carl DID drive.'

The examples in (1i)–(1iv) carry different sentence moods. (1i) is a declarative, (1ii) a y/n-interrogative, (1iii) a wh-interrogative, and (1iv) is an imperative. The embedded clauses in (1v)–(1vii) are a declarative complement clause in (1v), a wh-complement clause in (1vi) and a relative clause in (1vii). The same kinds of clauses are given in (1viii)–(1x) with the focus on the auxiliaries in final position.

Höhle describes the function of the specific accent in (1i)–(1iv) as follows: An element VERUM – the so called F-verum focus – is assigned to the finite verb. This triggers the effect that this element is emphasized in case the finite verb carries this exact accent:

(2) Höhle's (1992: 114) characterization:
In the observed cases, the finite verb is associated with a semantic element VERUM such that accentuation of the verb emphasizes this element.
[Translation by HL][1]

For the data in (1v) (C-verum focus), (1vi) (W-verum focus), and (1vii) (R-verum focus), the characterization in (2) does not prove to be right because the finite verb is not involved in the focus structure at all. Due to this circumstance, Höhle discusses several possibilities of theoretical reconstructions: especially the illocution type operator analysis and the verum predicate analysis, which will be discussed in more detail in Section 2.

A focus accent on the fronted finite verb does not always lead to a verum focus interpretation, but instead allows for contrastive readings on the verb's lexical meaning (3i) as well as on the inflectional categories – tense (3ii), agr (3iii), (verbal) mood (3iv) – the finite verb bears (cf. Rooth 1992, Krifka 2008):

(3) i. A: (Karl streichelt den Hund nicht.) Er FÜTtert ihn.
A: (Carl pets the dog not) he FEEDS him
A: 'Carl doesn't pet the dog. He FEEDS it.'

ii. A: (Karl WIRD den Hund nicht füttern.) Er FÜTtert ihn.
A: (Carl WILL the dog not feed) He FEEDS him
A: 'Carl WILL not feed the dog. He FEEDS it.'

iii. A: (Karl fütterst den Hund.) B: Nein, er FÜTtert ihn.
A: (Carl feed+(2.SG) the dog) B: No, he FEEDS him
A: 'Carl feed the dog. No he FEEDS it.'

iv. A: (Wenn Karl doch den Hund fütterte …)
A: (if Carl but the dog feed+(SUBJ.2))
B: Aber er FÜTtert ihn doch.
B: But he FEEDS him but
A: 'If only Carl would feed the dog!
B: But, he FEEDS it.'

As demonstrated in (3ii)–(3iv), the inflectional categories can be focused by a pitch accent on the finite verb. But in none of the cases a verum effect occurs. These data suggest that verum focus is independent not only of the lexical content but also of those verbal inflectional categories.

It is rather difficult to localize the syntactic or semantic position of the underlying element VERUM in the respective structural components. One reason for

1. "In den betrachteten Fällen ist dem Verb ein Bedeutungselement VERUM zugeordnet, so dass dieses Element durch die Betonung des Verbs hervorgehoben wird."

this is that the element VERUM – as far as it exists at all – is phonetically silent and always appears with lexical elements which do not show verum properties when they are realized in other syntactic or semantic environments. However, it can be observed that VERUM is used not to emphasize truth at all. It rather is the case that it is an effective means to stop disputations about the verum focused issue. Consider the example in (4) after the election of president Yanukovych of Ukraine on February 25, 2010:

(4) Die Wahl WURde korrekt durchgeführt.
the election WAS correctly carried out
'The election WAS carried out correctly.'

Similar effects appear in questions and imperatives, too, as we will see in more detail in Section 4.

The present article is organized as follows. The next section presents Höhle's (1988; 1992) treatment of the phenomenon and his attempts concerning an analysis seen from a grammatical perspective.

Attached to that, Section 3 concentrates on general properties of sentence moods, since they appear to play a crucial role in verum focus constructions. An essential property of main clauses is their relatedness to the discourse. Section 4, therefore, focuses on the connection between sentence moods of main clauses and the structure of the context of discourse. Moving on, the examination of embedded clauses and their distributional possibilities of realizing verum focus is addressed in Section 5. In order to get an adequate understanding of what the proper meaning of VERUM can be, Section 6 discusses some theories of truth from the philosophical tradition and argues that the concept of VERUM as a verum predicate is not appropriate. Finally, Section 7 introduces a compositional theory of verum focus which derives its general properties from the regular grammatical means referring solely to the constitution of sentence mood and the principles of focus assignment.

The line of reasoning to pursue an adequate understanding of what verum focus is, will follow the idea that verum focus not only depends on sentence moods, but – in fact – IS sentence mood focus.

2. Höhle's theoretical reconstructions

Höhle (1992) discusses two theoretical variants to capture the semantic properties of verum focus, where the second variant comes in two versions:

(5) i. VERUM is an illocution type operator. (IT-analysis)
ii. VERUM is a truth-predicate ranging over propositions
As such it can be realized
a. segmentally or
b. non-segmentally.

The following sections present these analyses together with a critical review of their consequences.

2.1 Illocution type operator analysis

The analysis of verum focus as an illocution type operator (IT-operator) has the advantage to account for VERUM as an independently founded semantic element. But – as Höhle argues –, the IT-explanation fails due to mainly two reasons: First, although embedded clauses allow for verum focus, they surely do not contain an illocution type operator. Second, the IT-analysis fails – as Höhle argues – in terms of scope. An illocution type operator should have scope over all other operators – especially negation – in a clause. As can be seen from the examples in (6), only (6i) is an adequate reaction, but its scopal relation is just inverse with respect to the condition just mentioned because NEG has scope over VERUM. However, (6ii) is not adequate in a conversational sequence with respect to (6), although it has the expected scopal relation (cf. Höhle 1992: 124f):

(6) Ich hoffe, dass er ihr zuhört.
I hope that he her listens to
'I hope that he listens to her.'
i. a. Aber Hanna denkt, er HÖRT ihr nicht zu.
but Hanna thinks he LISTEN TO her not V-PART
'But Hanna thinks he doesn't listen to her.'
b. Hanna denkt, dass es nicht zutrifft, dass er
Hanna thinks that it not proves right that he
ihr zuhört.
her listens to
'Hanna thinks that it does not prove right that he listens to her.'
Scope: Hanna thinks [… NEG … [VERUM …]]

ii. a. #Aber Hanna denkt, DASS er ihr nicht zuhört.
but Hanna thinks THAT he her not listens to
'But Hanna thinks that he doesn't listen to her.'
b. #Hanna denkt, dass es zutrifft, dass er ihr
Hanna thinks that it proves right that he her
nicht zuhört.
not listens to
'Hanna thinks that it proves right that he doesn't listen to her.'
Scope: Hanna thinks [VERUM … [… NEG …]]

Due to these observations Höhle concludes that verum focus should not be analyzed as an IT-operator. Instead, he proposes an analysis which treats VERUM as a truth predicate. Later on, we will argue that the IT-analysis is basically correct if one carries out some slight modifications. But before turning to these issues, let us first look at Höhle's second variant.

2.2 VERUM as a truth predicate

Because – for Höhle – the IT-operator analysis of verum focus fails, he suggests another approach which makes use of a *verum predicate*. Generally, two versions are available to make this proposal work:

(7) a. a segmental localization of VERUM
b. a non-segmental localization of VERUM

2.2.1 *Segmental localization of VERUM*

The segmental localization of VERUM assumes a syntactic position (in the left periphery of German clauses) which bears a syntactic feature [+VER]. Pursuing this line of reasoning, Höhle (1992: 131f) assumes a functional projection φ with the following properties [Translation by HL]:[2]

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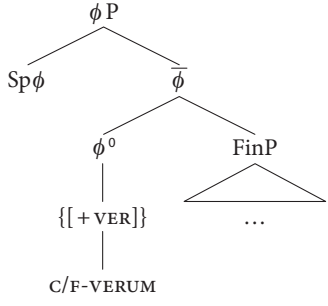
2. Höhle (1992: 131f):
„*[+VER]* in φ
i. An der Peripherie deutscher Sätze befindet sich eine funktionale Kategorie φ. φ nimmt immer eine Konstituente Π zu sich und baut eine X-Bar-Projektion auf.
ii. φ kann mit (den Merkmalspezifikationen von) C-Wörtern unifiziert werden.
iii. φ kann mit (den Merkmalspezifikationen von) finiten Verben, die eine Spur binden, unifiziert werden.
iv. Die Head-Merkmale aller Projektionsstufen von φ sind durch die freien Head-Merkmale der Unifikation von φ mit der Belegung von φ (C-Wort, finites Verb) determiniert.
v. Ein Merkmal M eines Ausdrucks a ist 'frei' i. S. von (iv) g.d.w. a nicht eine Spur mit dem Merkmal M bindet.
vi. φ kann die Merkmalspezifikation [+VER] tragen."

(8) [+VER] in φ
   i. In the left periphery of German clauses there is a functional projection φ. φ always combines with a constituent Π and projects an X-bar-structure.
   ii. φ is unifiable with feature specifications of complementizers.
   iii. φ is unifiable with feature specifications of finite verbs binding a trace.
   iv. The head features of all X-bar-levels of φ are unifiable with the free head features of φ if φ is either filled by a complementizer or by a finite verb.
   v. A feature M of an expression α is 'free' in the sense of d., if α does not bind a trace bearing feature M.
   vi. It is possible for φ to have the feature specification [+VER].

These assumptions lead to an X-bar-projection φP in which the feature [+VER] can be assigned to the head position φ^0, that is, [+VER] is segmentally localized:

(9) Segmental localization of VERUM:



Looking at R/W-verum focus, Höhle (1992: 134f.) suspects that the segmental analysis is insufficient because besides the realization of verum focus in the position φ^0 an accent in the position Spφ delivers a verum focus, too. This can be seen in the examples in (10ii) and (11ii) with the respective contexts in (10i) and (11i):

(10) i. Da stehen die Leute, die du NICHT getroffen hast.
there stand the people who you NOT met have
'There are the people who you have NOT met.'
   ii. Aber dort stehen die Leute, DIE du getroffen hast.
but there stand the people WHO you met have
'But there are the people who you DID have met.'

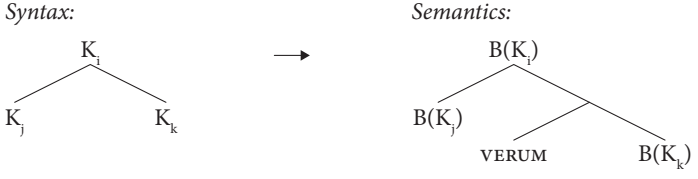
(11) i. Du hast mir erzählt, wen du NICHT getroffen hast.
you have me told who you NOT met have
'You have told me who you have NOT met.'
   ii. Jetzt möchte ich wissen, WEN du getroffen hast.
now want I know WHO you met have
'Now I want to know who you DID have met.'

Because of the empirical shortcomings with respect to these data, Höhle (cf. 1992: 134f.) discusses a variant he calls the non-segmental localization of VERUM.

2.2.2 *Non-segmental localization of VERUM*

The following analysis proposes to replace a syntactic representation by a semantic one. Moreover, this idea involves the introduction of VERUM into the semantic structure in the course of the translation process of the syntactic structure into a semantic form. (12i) delivers an explication of this translation, where K_j can be given by the elements in (12ii) (cf. Höhle 1992: 138):

(12) i. Non-segmental localization of VERUM:

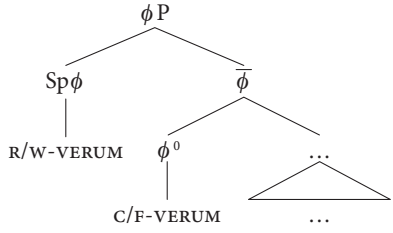


ii. K_j can be:
   a. a finite verb,
   b. a complementizer,
   c. a relative pronoun,
   d. a wh-pronoun in an embedded clause.

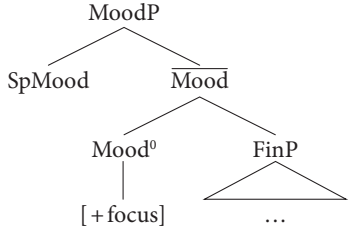
B(K) stands for the *meaning of K*. VERUM is in a position that has scope over the propositional core $B(K_k)$, from which – for independent reasons – a constituent may be extracted. VERUM on the semantic level becomes a predicate over propositions as one may expect. Later on in this article, it will be shown that this analysis is not adequate either and that VERUM cannot be treated as a predicate over propositions

The main issue being presented in this contribution consists in a theory of the verum focus phenomenon which combines various aspects of Höhle's analysis and relates it to the concept of sentence mood together with a theory of focus assignment. From the interaction of these two grammatical components the phenomenon of verum focus will be derived in a compositional manner. While Höhle's account postulates the structure and the assumptions represented in (13i), the approach presented here will merely consist of a mood phrase MoodP and the assignment of a focus feature [+F] to the head M^0 of MoodP as is illustrated in (13ii):

(13) i. Höhle (1992):



ii. Lohnstein (2012):



Closing this section, we now move to the left peripheral positions of clausal structure and their interpretation with respect to intentional meaning.

3. Sentential force and sentence mood

This section outlines general properties of sentence moods in the languages of the world (cf. Stenius 1967; Lewis 1970; Bierwisch 1980; Zaefferer 1979; Searle & Vanderveken 1985; Altmann 1987; 1993; Brandt et al. 1992; Lohnstein 2000; Truckenbrodt 2006a,b), in particular, declaratives, interrogatives and imperatives which appear to exist in all languages of the world as Sadock & Zwicky (1985) have illustrated. Although the basic semantic concepts are relevant for the constitution of sentence moods in all languages, the theory is presented for German. This has some consequences for the syntactic operations and their interpretation, as the verb second property plays a crucial role. The semantic structures on the other hand remain unaffected and appear to be valid universally, as the conception of the level of logical form (LF) in generative grammar wants it to be.

Before characterizing sentence moods, let us return shortly to Höhle's idea in order to theoretically reconstruct the phenomenon. Three aspects appear to be of special relevance to Höhle's approach:

(14) i. The IT-analysis provides an independent motivation for a sentential subcomponent which is responsible for verum focus.
ii. The approach of a segmental localization provides an x-bar-structure with a head position in which the relevant [+VER]-feature can be positioned.
iii. The approach of a non-segmental localization is independent of the syntactic distribution, in that the semantic element VERUM enters the semantic structure throughout the translation process.

The following considerations maintain (14i), but need to transfer the concept of 'illocution type operator' to the concept of 'sentence mood'.[3] Because verum focus is possible in embedded clauses which do not bear an illocution type operator, but rather a sentence mood, the transfer of this category appears to be necessary. Höhle's scope argument concerning VERUM and NEG will be considered later on. To capture the syntactic regularities of verum focus assignment, (14ii) has to be maintained, too. But a slight change has to be made because there is no need for a feature [+VERUM], as will become clear in due course. For the theory proposed here, (14iii) is of no relevance at all. The relation between a proposition and its truth does not have to be reconstructed as a relation between a predicate and its argument. Rather, as Frege (2001: 88) illustrated, it can be reconstructed as the relation between 'sense' and 'reference'. This means that a proposition is an intensional function from possible situations (worlds) into truth values. For this reason, a verum predicate appears to be superfluous.

Let us now look at Höhle's second (scope) argument against the illocution type operator analysis more closely. On the basis of the data in (6) touching upon scope relations between VERUM and NEG, Höhle (1992: 114) claims first that the thought expressed by the speaker is familiar, and second that if the thought is familiar, its negation need not be familiar as well. The second assumption appears to be problematic for the simple reason that the negation of a thought is recoverable by a primitive logical operation (namely negation) if the thought is known. However, a far more serious objection to Höhle's explanation consists in the fact that there appears to be no difference in meaning with respect to the scope relations of (6i–b) and (6ii–b), repeated here as (15i) and (15ii) for convenience:

3. An *illocution type operator* represents in a holistic manner the *pragmatic* properties of illocutionary interpretation. In contrast, a *sentence mood* is a *semantic* object representing a proposition (declarative), partition (interrogative), or a property (imperative) which are the precursors of illocutionary interpretation. Sentence moods can be derived compositionally from the grammatical means and their respective semantics, while illocution type operators like ASS (assert), ERO (erotetic), DIR (directive) represent the illocutionary interpretation without using any grammatical means.

(15) i. Hanna denkt, dass es nicht zutrifft, dass er ihr zuhört.
Hanna thinks that it not proves right that he her listens to
'Hanna thinks that it does not prove right that he listens to her.'
Scope: Hanna thinks [… NEG … [VERUM …]]

ii. #Hanna denkt, dass es zutrifft, dass er ihr nicht zuhört.
Hanna thinks that it proves right that he her not listens
'Hanna thinks that it proves right that he doesn't listen to her.'
Scope: Hanna thinks [VERUM … [… NEG …]]

This point becomes even clearer if we translate VERUM as 'being true', since this is the core meaning of the verum predicate:

(16) i. It is true that he does not listen to her.
Scope: [VERUM … [… NEG …]]

ii. It is not true that he listens to her.
Scope: [… NEG … [VERUM …]]

Obviously, there is no situation that (16i) can describe which (16ii) at the same time cannot (and vice versa), which indicates that the two scope relations are semantically equivalent. Since Höhle assumes verum focus to be a semantic focus, the difference in scope cannot account for the difference between (15i) vs. (15ii) (resp. (6i) vs. (6ii)). This fact is a direct consequence of the analysis of VERUM as a predicate over propositions, which we will thus abandon in the next sections.[4]

But how can one account for the difference between (6i) vs. (6ii) paraphrased as (15i) vs. (15ii)? Obviously, the major difference lies in the sentence type of the clauses involved. While (6i) is a verb second clause with the finite verb fronted, (6ii) is introduced by a complementizer and its verb is in the final position. There is a

4. An anonymous reviewer remarked further problems with the account proposed here. Indeed, these data appear to be problematic in further ways, since it is not clear how to account for them if the status of the negation of the thought as given in the background does not really matter. A possibility one can think of is the difference in the structural integration of (6i) vs. (6ii). While the clause in (6ii) is fully integrated into the matrix structure, the V2-clause in (6i) is relatively unintegrated (cf. Reis 1997: 138). This syntactic difference can lead to a kind of shielding preventing the negated thought from being accessible in the discourse situation.

Another reason for the difference between (6i) and (6ii), which Höhle (1992) discusses in footnote 7, can consist in the possibility of reconstructing the finite verb into a position the negation can take scope over (cf. also Bayer 2010), while this option is not available for the conjunction *dass* for obvious reasons. Hence, there is a syntactic difference between (6i) and (6ii).

A further way of accounting for the disparity can be related to the V2 property of (6i). If V2 binds the proposition to the discourse situation, while (6ii) does not, the asymmetry in suitability is derivable in terms of the theory proposed here. In the rest of the contribution, I will follow this way of thinking.

crucial difference between clauses of these two types in German. While fronting of the finite verb signals relevance for the discourse situation (which means that the clause can unfold illocutionary force), clauses with the verb in final position are related to elements in their grammatical environment (nouns in the case of relative clauses, matrix predicates in the case of argument clauses) (Lohnstein 2000, 2007; Truckenbrodt 2006a). Therefore, the negation in (6i) appears to be a rejection of the assertive claim *that he listens to her.* While this communicative act requires illocutionary force, it has to be realized as a verb second clause.[5] For this reason, the reply in (6i) appears to be appropriate. In contrast to that, the verb final clause in (6ii) that is introduced by a complementizer is inappropriate because it lacks this discourse relating property in its sentence mood component. Seen this way, the argument Höhle proposes in terms of scope relations against an IT operator analysis turns out to be an argument exactly for this kind of analysis.

The IT operator analysis is too strong as we already mentioned earlier. But, as we will see immediately, a sentence mood analysis of verum focus has all required properties necessary for an exhaustive explanation of the phenomenon. All finite clauses (main and embedded) bear a sentence mood and can be marked with verum focus.

In German, sentence mood is a compositionally determinable category which results from the grammatical ingredients of verbal mood, Ā-movement of a [+wh]- or a [−wh]-phrase to a left peripheral Ā-position, verb fronting in the case of main clauses, and verb final structure in the case of embedded clauses. In terms of the syntax and the semantics of these regular grammatical means and their systematic interaction, the main properties of sentence moods in German can be derived in a compositional fashion (cf. Lohnstein 2000, 2007; Truckenbrodt 2006a,b).

Replacing the traditional CP-notation by a mood phrase MoodP, which selects a finiteness phrase FinP, a structural configuration results similar to Höhle's 'segmental localization of verum'-approach in (9) in which MoodP replaces φP and the landing sites for possible syntactic movement processes (or lexical insertions) are complemented:[6]

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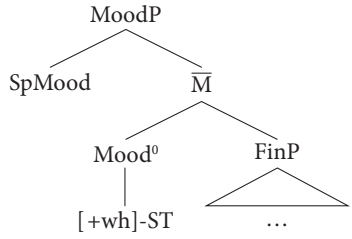
5. See Lohnstein (2000, 2007, to appear) for the theoretical reconstruction of the relation between V2 and discourse anchoring. Discourse anchoring is the necessary prerequisite for the activation of illocutionary force. An independently motivated approach in the same vain is developed in Antomo (2013). See especially Antomo (2013: 142) for an analysis of V2 as a marker for at-issueness.

6. Concerning the semantic content, MoodP may be similar to what Rizzi (1997) labeled ForceP, but in contrast to Rizzi's (and his follow ups) proposal(s), which assume some version of a holistic force operator, the MoodP approach derives sentential force compositionally, which means that the ingredients of syntactic structure and their systematic interaction account for the intentional side of sentence meaning, namely sentential force or sentence mood.

(17)



Mood^0 is the head of the mood phrase MoodP. SpMood is its specifier position, the landing site for Ā-movement. Mood^0 is the position of complementizers in embedded clauses or the landing site for fronting the finite verb in main clauses via head movement. This position is lexically empty in the case of embedded wh-interrogatives and relative clauses. Note, that R/W-verum focus is possible only in these two sentence types because only in these cases the Mood^0-positions are phonetically empty.

Turning to the distribution of elements in the left peripheral sentence positions, the following fillings are possible for the class of the epistemic verbal moods *indicative* or *conjunctive 2*:

(18)

	SpMood	**Mood^0**		**Fin^0**	
embedded clauses	—	dass	Karl gestern Äpfel gepflückt ~~hab~~	hat	*C^0 -introduced*
	der	—	~~der~~ gestern Äpfel gepflückt ~~hab~~	hat	*relative*
	wer	—	~~wer~~ gestern Äpfel gepflückt ~~hab~~	hat	*wh-interrogative*
main clauses	—	hat	Karl gestern Äpfel gepflückt ~~hab~~	~~hat~~	*y/n-interrogative*
	Gestern	hat	Karl ~~gestern~~ Äpfel gepflückt ~~hab~~	~~hat~~	*declarative*
	Wann	hat	Karl ~~wann~~ Äpfel gepflückt ~~hab~~	~~hat~~	*wh-interrogative*

The position SpMood can be occupied by [+wh]- or [−wh]-phrases or nothing, while the M^0- position has as possible contents a complementizer or a finite verb or it can be left empty. Not every combination is allowed, for instance there are no embedded constructions with a [+wh]-XP in SpMood and the finite verb in Mood^0.

The factive verbal moods *imperative* and *conjunctive 1* behave differently with respect to the occupation of the position SpM, while the finite verb is distributed in the same way as in (18) – as far as embedded structures are possible at all. This is the case for conjunctive 1 – typically used for indirect speech –, but not for imperative verbal mood, since it is not embeddable. To make these considerations a bit more concrete, consider the main clause examples in (19):

(19) Imperative verbal mood:
i. Fahr den Wagen in die Garage!
drive the car in the garage
'Drive the car into the garage!'
ii. Den Wagen fahr in die Garage!
the car drive in the garage
'The car, drive it into the garage!'
iii. *Was fahr in die Garage!
what drive in the garage
'What drive into the garage'

(20) Conjunctive 1 verbal mood:
i. Fahr-e er den Wagen in die Garage!
drive-Conj1 he the car in the garage
'He should drive the car into the garage!'
ii. Den Wagen fahr-e er in die Garage!
the car drive-Conj 1 he in the garage
'The car, he should drive into the garage!'
iii. *Was fahr-e er in die Garage!
what drive-Conj1 he in the garage
'What should he drive into the garage?'

The SpMood-position may be empty in (19i) and (20i), or filled with a [−wh]-XP (19ii) and (20ii), respectively. It is remarkable that the sentence moods of the imperative clauses in (19) as well as those of the subjunctive 1 clauses in (20) do not change if a [−wh]-phrase occupies the position SpMood. This differs crucially from the constructions in (18) where the occupation of the position SpMood by a [−wh]-phrase discriminates between y/n-interrogatives and declaratives.

For a [+wh]-XP in SpMood, short [+wh]-movement (19.iii) is ungrammatical in general, but it is allowed for long [+wh]-movement, as is witnessed by the following [+wh]-imperative:

(21) [Mit welchem Auto]$_i$ sag mir, t_i dass du nie wieder
[with which car tell]$_i$ me that, t_i that you never
t_i fährst!
again drive
'With which car, tell me that you will never drive again!'

The sentence mood of the matrix clause is not interrogative, but remains imperative as convincingly argued by Reis & Rosengren (1992). This shows that SpMood can be occupied by a [+wh]-XP in principle (21), even if the verbal mood is imperative. But it needs to be restricted in cases like (19iii). I cannot go into more details here, but it appears to be clear that the constitution of sentence moods is

a combinatorial process interconnecting verbal moods with [±wh]-XPs and the position of finite verbs.

The following passage gives an explication of syntactic and semantic structure building and their relation to each other.

A thought – Frege's notion of what is called a proposition today – induces a bipartitioned set of possible states of affairs. Frege identifies the grasping of a thought with a yes/no-question:

(22) Frege (1919/1956: 293f.)[7]
"We expect to hear 'yes' or 'no'. The answer 'yes' means the same as an indicative sentence, for in it the thought that was already completely contained in the interrogative sentence is laid down as true. […] Consequently we may distinguish:

the apprehension of thought	–	thinking
the recognition of the truth of the thought	–	judgment
the manifestation of this judgment	–	assertion

We perform the first act when we form a sentence-question."

Accordingly, a bipartition consists of one class of states of affairs described correctly by the proposition, and a second class, which contains the states of affairs described correctly by its negation:

(23) i.

λs[p(s)]	λs[¬p(s)]

ii. a. $\lambda s[p(s)](@) = p(@) = true$[8]
b. $\lambda s[\neg p(s)](@) = \neg p(@) = true \rightarrow p(@) = false$

A judgment results if the bipartition is reduced to the class of situations the proposition describes correctly; as Frege put it: the affirmation of the truth of the thought ('die Anerkennung der Wahrheit des Gedankens').

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7. Wir erwarten 'ja' zu hören oder 'nein'. Die Antwort 'ja' besagt dasselbe wie ein Behauptungssatz; denn durch sie wird der Gedanke als wahr hingestellt, der im Fragesatz schon vollständig enthalten ist. […]
Wir unterscheiden demnach:

das Fassen des Gedankens	–	das Denken
die Anerkennung der Wahrheit eines Gedankens	–	das Urteilen
die Kundgebung dieses Urteils	–	das Behaupten

Indem wir eine Satzfrage bilden, haben wir die erste Tat schon vollbracht. (Frege 1919/1986: 35)

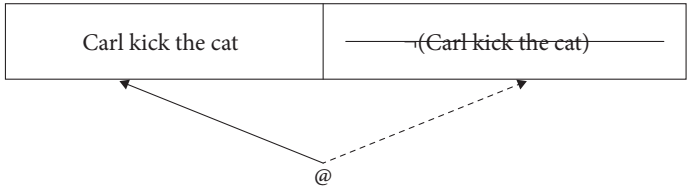
8. @ signifies the current world. The expression λs[p(s)](@) indicates the application of the intensional function λs[p(s)] to the current world.

The syntactic correlate corresponding to the semantic operation of judging can be considered to be Ā-movement of a [−wh]-XP to the SpMood-position (cf. (18)). This leads to a declarative clause through the following semantic operations:

(24) Declarative clause: Carl kicked the cat.
Application of an intentional function to the actual situation (world) @ leads to a reduction of the bipartition to the class of situations the proposition characterizes correctly. Because the two classes are equivalence classes, the assignment of the situation under discussion to one class marks all elements in it equivalent to this situation, which, thereby, constitutes a representative of this class. The result of this operation leads to the denotation of a proposition as the set of those situations the proposition truly characterizes:

i. $\lambda s[\ \text{kick}(s, \text{Carl}, \iota x[\text{cat}(x)]\ ](@) = \text{true}$

ii.

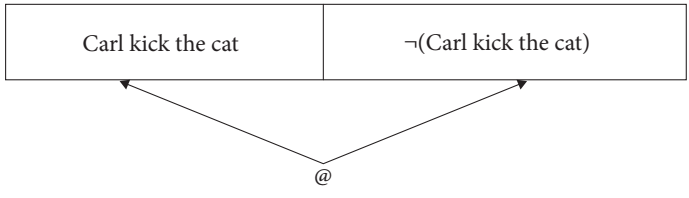


In the case of y/n-interrogatives, the position SpMood remains empty (cf. (18)). As a consequence, the bipartition remains unmodified, and a y/n-question results:

(25) y/n-interrogative: Did Carl kick the cat?
Bipartition remains unmodified:

i. $\lambda @ \lambda i[\ \text{kick}(@, \text{Carl}, \iota x[\text{cat}(x)]) = \text{kick}(i, \text{Carl}, \iota x[\text{cat}(x)])\ ]$

ii.



The semantic properties of Ā-moved wh-phrases (cf. (18)) lead to further differentiation of the bipartition by the sortal restrictions of the wh-phrase in the case of wh-interrogatives. Assuming that wh-phrases denote sets of entities (cf. Hamblin 1976), the Cartesian product of this set with the two cells in the propositionally induced bipartition allows for the construction of the complete space of possible answers, as proposed by the concept of an 'index dependent proposition' by Groenendijk & Stokhof (1982, 1984) or Higginbotham (1986). This is exemplified in (26) starting with an index dependent proposition in (26.i), using functional application for denotation sets in (26.ii), via the construction of the Boolean lattice in (26.iii) to the complete space of possible answers in (26iv):

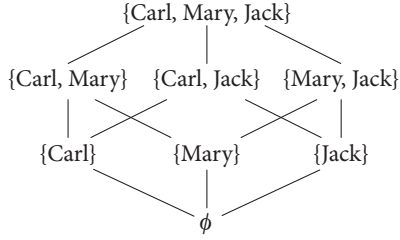
(26) wh-interrogative: Who kicked the cat?
Bipartition undergoes differentiation (cf. Groenendijk & Stokhof 1982; Lohnstein 2007):

i. $\lambda@\lambda i[\ \lambda x[kick(@, x, \iota x[cat(x)])] = \lambda x[kick(i, x, \iota x[cat(x)])\ ]$

ii.

$\lambda s[\lambda x[p(s)(x)]\left(\left\{\begin{array}{l}\text{Carl,}\\\text{Mary,}\\\text{Jack}\end{array}\right\}\right)]$	$\lambda s[\lambda x[\neg p(s)(x)]\left(\left\{\begin{array}{l}\text{Carl,}\\\text{Mary,}\\\text{Jack}\end{array}\right\}\right)]$

iii. Boolean lattice of possible answers:



iv. Space of possible answers:

$$\left\{\begin{array}{l}\text{Carl, Mary, Jack}\\\text{Carl, Mary, (not Jack)}\\\text{Carl, Jack (not Mary)}\\\text{Mary, Jack (not Carl)}\\\text{Mary (not Jack, not Carl)}\\\text{Carl (not Jack, not Mary)}\\\text{Jack (not Mary, not Carl)}\\\text{Nobody}\end{array}\right\}\text{ kicked the cat.}$$

Summarizing the facts about the occupation of SpMood in German, we get the following correlations between the syntactic distributions of [±wh]-phrases and the semantic objects they lead to:

(27)

SpM	M^0	*semantic object*	*sentence mood*
Ø		↷ unmodified bipartition	(y/n-interrogative)
[−wh]-XP		↷ reduced bipartition	(declarative)
[+wh]-XP		↷ differentiated bipartition	(wh-interrogative)

The distribution of complementizers and finite verbs in the Mood^0-position leads to the general distinction between clauses that are evaluated in correspondence to the context of discourse – roughly speaking: main clauses – and those which are evaluated with respect to their grammatical environment – the various types of argument and relative clauses, as well as embedded wh-interrogatives. The following table captures these properties:

(28)

SpM	M^0	*location of evaluation*
	Fin^0	↷ context of discourse
	Conj, Ø	↷ grammatical context

Thus, a picture emerges that extends Frege's analysis of the assertion to a general view on sentence moods including indicative sentences as a special case: The filling of the SpMood-position determines a semantic object (cf. (27)), while the filling of the $Mood^0$-position specifies the domain of evaluation for this very semantic object (cf. (28)).[9] In the case of main clauses, one can think of this domain as the 'table' in the sense of Farkas & Bruce (2010). If the finite verb is fronted in German, the clause is *put on the table*; otherwise the clause is related to some element or construction in the grammatical environment.

Turning next to the properties of verbal moods, it is perfectly plain that declarative and interrogative formation in German is possible with the verbal moods *indicative* or *conjunctive 2* only. It is not possible with the verbal moods *imperative* or *conjunctive 1*. The reason for this consists in the fact that the former determine the domain of evaluation for a proposition as 'epistemic', while the latter restrict the domain of evaluation as 'factive' (cf. Lohnstein 2000, 2007). Because epistemic contents can be true or false, they can be questioned or asserted. These options are not available for clauses marked with imperative or conjunctive 1, which relate them to the factive domain, because facts do not allow for a true vs. false distinction. Facts – one can argue – constitute the structure of a model (of the world), the factive domain. Knowledge about this model constitutes the epistemic domain. Verbal moods systematically address these respective domains, similar to tenses which address specific temporal areas in relation to the time of speech. In terms of Searle's (1969) classification of speech acts, it seems to hold that the epistemic moods have the word to world direction of fit, while the factive moods have the world to word direction of fit.

Thus, the factive moods block bipartitions, while – at the same time – they express the attempt to make the addressee do what the proposition expresses.

From these considerations the functions of sentence moods can – roughly – be characterized along the following lines:

9. A distinction between various kinds of semantic objects inside a clause is made by Blühdorn (2012) and Blühdorn & Lohnstein (2012) on the basis of work from Sweetser (1990).

(29) Functional characterization:

sentence mood:		*function:*
declarative	↷	believe p
y/n-interrogative	↷	give a true answer (out of a 2-fold partition)
wh-interrogative	↷	give a true answer (out of a n-fold partition)
imperative	↷	make p a fact in @

We will see in the following that verum focus interrelates directly with these functions of sentence moods.

4. Verum focus in discourse situations

Moving on to the analysis of the realization of these sentence mood functions in discourse situations, it can be observed that verum focused clauses are – first of all – not appropriate as out-of-the-blue utterances. The propositions expressed by these clauses need to be 'given' in some way in the discourse situation:

(30) i. Situation: Peter returns from vacation and enters the room. No aforementioned talk concerning the cat has taken place:
ii. Peter: # John DID kick the cat.

Without a controversial discussion (or known disputed positions) of the topic, verum focused clauses are inappropriate in a discourse. Even if those opposing propositions do not explicitly exist, it seems to be necessary to accommodate them together with some disputation about their acceptance.

Next, it is noticeable that utterances containing verum focused clauses are useful means to not tell the truth at all. Consider the example in (4) again repeated here as (31):

(31) Die Wahl WURde korrekt durchgeführt.
the election WAS correctly carried out
'The elections WERE carried out correctly.'

Obviously, verum focus here is an effective means to not tell the truth at all, and to stop arguments and discussions to the contrary. There are only two alternatives on the part of the addressee having legal efficacy or force: first, he believes that everything was correct, or second, he does not. Yet (31) depicts the intention to minimize all opinions different from the speaker's one about the election by verum focusing the sentence mood 'declarative'. Thus, the verum focused 'declarative' imposes a strong tendency on the addressee not to behave otherwise than believing the proposition expressed. Verum focus in this view is focus on the mood component

with the effect that alternatives to the expressed mood function are obliterated in the situation of discourse.

Likewise, the function of y/n-interrogatives is to get a true answer out of the binary space of possible answers (cf. Hamblin 1976; Karttunen 1977; Groenendijk & Stokhof 1982 among others). In this case, the speaker is not able to judge the truth or falsity of the proposition expressed. If the y/n-interrogative is provided with verum focus, the corresponding utterance is suitable to demand the addressees not to discuss the possibilities in the space of a 2-fold partition. It rather intends to extract the true answer from the addressee – which means again: fulfill the sentence mood of the y/n-interrogative (cf. (29)):

(32) A: Karl hat die Katze getreten.
Carl has the cat kicked
'Carl kicked the cat.'
B: Karl hat die Katze NICHT getreten.
Carl has the cat NOT kicked
'Carl did NOT kick the cat.'
C: HAT er die Katze getreten?
HAS he the cat kicked
'DID he kick the cat?'

What C demands from A or B is the true answer by reducing the alternatives A and B propose to the function of the y/n-interrogative.

Similarly, the same mechanism appears to be at work in the case of wh-interrogatives with the special condition that wh-interrogatives have an n-fold differentiated space of possible answers, while the space of possible answers in the case of y/n-interrogatives is 2-fold only. In order for a verum focused wh-interrogative to be adequate in a discourse situation, their condition of use needs some attention:

(33) A: Karl hat die Katze getreten.
Carl has the cat kicked
'Carl kicked the cat.'
B: Nein, das war Fritz.
no that was Fritz
'No, Fritz did it.'
C: Das kann nicht sein, Fritz war im Kino, Otto muss es
that can not be Fritz was in the movies Otto must it
gewesen sein.
been be
'That can not be the case, because Fritz was at the movies. So Otto must have done it.'

D: Wer HAT die Katze (denn nun) getreten?
who HAS the cat (then now) kicked
'Who actually DID kick the cat?'

What D tries to evoke with the verum focused wh-question, is to boil down the alternatives to the function of the wh-interrogative, which means not to discuss the topic any further, but rather give a true answer out of the n-fold space, which means: fulfill the sentence mood of the wh-interrogative.

Moving on to imperatives, their prominent function is to make the addressee do what the proposition expresses. Note, that imperatives do not allow for the assignment of a truth value at all. What appears to be happening is – again – that the speaker using a verum focused imperative tries to diminish the alternatives of the addressee's behavior to the function of the imperative clause. Consider the following setting in (34) together with the verum focused imperative given by speaker A:

(34) B walks around the room hesitating to take a chair.
A: Jetzt NIMM dir (endlich) einen Stuhl!
now TAKE you (after all) a chair
'TAKE a chair already!'

The verum focused imperative requires no *verbal* behavior on the part of the addressee, due to the properties of the imperative verbal mood which directs the proposition's evaluation to the factive domain. It suffices that the addressee behaves in a way which is in line with what the verum focused imperative clause expresses. From these considerations together with the interpretation of focus as reduction of alternatives, it follows that verum focus on the imperative component tries to put an end to the addressee's hesitation and wants him to fulfill the demanded act which is expressed by the imperative sentence mood, and this means again: fulfill the sentence mood of the verum focused clause.

As it appears, verum focus seems to be a suitable grammatical tool to reduce alternatives which belong to the class of (verbal) behavior characterized by the functions of the respective sentence moods. The diminution of alternatives in the discourse situation is a regular function of focus, as Krifka (2008) elaborated.

These observations suggest that in verum focus constructions the regular properties of sentence moods are strongly related to regular principles of focus interpretation. Seen from this point of view, verum focus is a result of the regular interaction of independently motivated properties of grammatical structure building.

5. Verum focus in embedded clauses

5.1 Verum focus in the left periphery

Beside F-verum focus on fronted finite verbs in German, a complementizer can carry the accent, or in the case of indirect wh-questions and respectively relative clauses, the phrase in the Spec-Position. In these embedded cases, only a pure true/false contrast seems to be possible.[10] Consider the following examples:

(35) i. Maria glaubt, DASS Paul das Buch gelesen hat.
Mary believes THAT Paul the book read has
'Mary believes THAT Paul read the book.'

ii. Aber Clara glaubt, dass er das Buch NICHT gelesen hat.
but Clara believes that he the book NOT read has
'But Clara believes that he did NOT read the book.'

(36) i. Du hast mir erzählt, WEN Du eingeladen hast.
you have me told WHO you invited have
'You have told me WHO you invited.'

ii. Jetzt will ich wissen, wen du NICHT eingeladen hast.
now want I know who you NOT invited have
'Now, I want to know who you did NOT invite.'

(37) i. Das sind die Bücher, DIE Paul gelesen hat.
these are the books WHICH Paul read has
'These are the books Paul HAS read.'

ii. Und das sind die Bücher, die er NICHT gelesen hat.
and these are the books which he NOT read has
'And these are the books he has NOT read.'

Furthermore, R/W-verum focus is possible only if the head of the mood phrase is phonetically silent. This can be seen in the examples in (1v)–(1vii). Peculiarly, the non-embedded variants in (38i) and (38ii) which correspond to the embedded clauses in (1.vi) and (1vii) do not show a verum effect, if the accent is assigned to the wh- or the d-pronoun while the finite verb is fronted:

(38) i. WEN hat Karl eingeladen?
WHO has Carl invited
'WHO did Carl invite?'

ii. DEN hat Karl eingeladen.
THAT ONE has Carl invited
'that one Carl DID invite.'

10. Cf. also Sudhoff (2012).

Similarly, the R- and W-verum effects disappear in embedded clauses if the C-position is lexically filled as is possible in some German dialects, for instance Bavarian (39i) and (39ii), or in V/2-relative clauses (39iii) (cf. Gärtner 2001). As far as these constructions are interpretable at all if they bear an accent on the element in the position SpMood, they surely do not show a verum effect:

(39) i. (Ich weiß nicht,) WEN dass Karl eingeladen hat
(i know not) WHO that Carl invited has
'I don't know who Carl DID invite.'

ii. (Dort steht der Mann,) DER wo kommt.
(there stands the man) WHO where comes
'(There is the man) who DOES come.'

iii. (Das Buch hat eine Seite,) DIE ist ganz schwarz.
(the book has a page) WHICH is entirely black
'(The book has a page) which IS entirely black.'

These data suggest that the accent inducing verum focus is situated in the head position of the left peripheral phrase only. If this position is phonetically empty, it seems to be the case that the accent shifts to the string adjacent specifier position in the same syntactic projection. Thus, R/W-verum focus appears to be a pure PF-phenomenon restricting verum focus exclusively to the head position of the mood projection. But this is not the whole story, since in the case of complex relative or [+wh]-phrases an accent shift to the next leftward position does not lead to a verum effect at all. Rather – as it appears – the accent has to be placed on the relative or [+wh]-pronoun inside the XP – a property which is unpredicted under the accent shift analysis:

(40) relative XPs:

A: Dort steht der Autor, dessen Buch du nicht gelesen hast.
there stands the author whose book you not read have
'There is the author whose book you did not read.'

B: Und dort steht der Autor, …
and there stands the author
'And there is the author …'

i. DESSEN Buch ich gelesen habe. (verum focus)
WHOSE book I read have
'whose book I DID read.'

ii. #dessen BUCH ich gelesen habe. (no verum effect)
whose BOOK I read have
'whose BOOK I have read.'

(41) [+wh]-XPs:

A: Du hast mir erzählt, wessen Buch du nicht gelesen hast.
you have me told whose book you not read have
'You told me whose book you haven't read.'

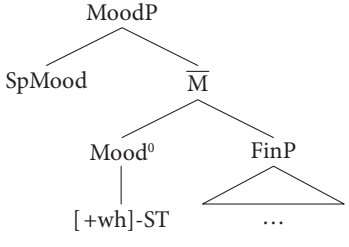
B: Nun sag doch mal, …
Now tell but once …
'Now tell me …'

a. WESSEN Buch du gelesen hast. (verum focus)
WHOSE book you read have
'whose book you DID read.'

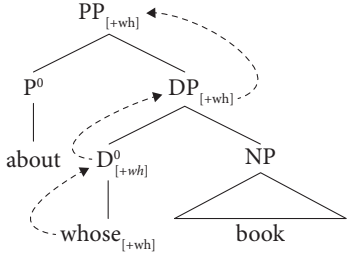
b. #wessen BUCH du gelesen hast. (no verum effect)
whose BOOK you read have
'whose BOOK you have read.'

The examples in (40ii) and (41b) – although the accent is on the closest syllable left to M^0 – do not show any verum effects. Rather, it appears that in a relative clause the relative pronoun and in a [+wh]-interrogative clause the [+wh]-pronoun inside the respective maximal projections has to bear the accent. So, some kind of grammatical relation has to exist between the $Mood^0$-position and the pronouns inside the XP which is positioned in SpMood. What seems to be at hand is some spec-head relation. But how is it established? It is plain from the beginning that [+wh]-features appear as sentence mood features in the $Mood^0$-position (Katz & Postal 1964; Rizzi 1996; Brandt et al. 1992) of clauses (cf. (42)). We call this kind of feature a sentence type (ST) feature. However, [+wh]-features also appear in phrases, but need not necessarily be head features. This kind of feature, we call phrase (P) feature. They can percolate from other than head positions to the maximal projection, as – for instance – in the case of [+wh]-PPs (cf. (43), details aside):

(42)

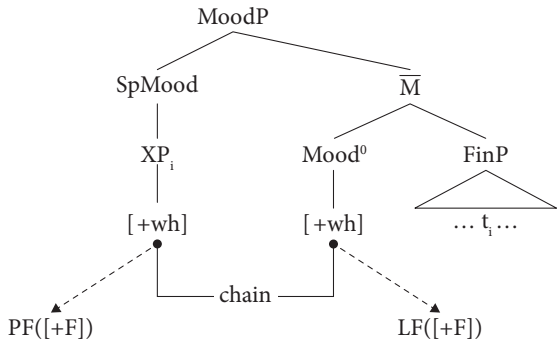


(43)



ST- and P-feature agree in a spec-head-relation[11] and form a chain. The [+F] focus feature is assigned to the foot of the chain in Mood^0. Since Mood^0 contains no lexical content in the case of relative and embedded wh-interrogative sentences (cf. (28)), [+F] has to be interpreted on the head of the chain at the level of phonetic form PF, but logically its interpretation takes place in Mood^0 at the level of LF:

(44)



This analysis predicts that the exact element with the feature [+wh] – as the head of the chain – has to be pronounced at PF if the foot of the chain in M^0 is phonetically empty – the standard situation for chain interpretation at PF and LF. The analysis carries over directly to relative clauses, since there must be a [+rel]-ST feature in M^0. It enters into the chain relation with the [+rel]-P feature of the relative pronoun in (complex) relative phrases.

From these assumptions the distribution of the focus feature [+F] in complex [+wh]- and relative phrases follows without further stipulation from general principles of chain interpretation.

5.2 Verum effects at the right periphery

In this section cases will be scrutinized for which it appears that an accent on the finite verb in final position leads to verum effects. First of all, this verum effect is possible only if the finite verb is either an auxiliary or another semantically 'light' verb. Main verbs do not yield verum effects in final position in German. From this fact, it follows that a general treatment of verum focus as 'focus on finiteness' or 'focus on agreement' does not work. The only promising way to capture the general properties of the phenomenon appears to be that verum focus – in its classical

11. A possible explication of this relation is given by Rizzi's (1996: 64) wh-criterion:
Wh-Criterion:
a. A wh-operator must be in a spec-head configuration with X^0 [+wh].
b. An X^0 [+wh] must be in a spec-head configuration with a wh-operator.

understanding as proposed by Höhle – is bound to the left sentence periphery. Other verum effects have to be derived from other grammatical or lexical means. In the case of verb final verum effects, this can be achieved in the following way. Take a look at the examples:

(45) i. (Hans behauptet,) dass Karl den Hund gefüttert HAT.
(Jack claims) that Carl the dog fed HAS
'(Jack claims) that Carl HAS fed the dog.'
ii. (Hans behauptet,) dass Riesenzwerge existIEREN.
(Jack claims) that giant dwarfs EXIST
'(Jack claims) that giant dwarfs DO exist.'
iii. (Hans behauptet,) dass Karl ihm die Leviten LIEST.
(Jack claims) that Carl him the 'Leviten' READS
'(Jack claims) that Carl DOES read him the riot act.'
iv. (Hans behauptet,) dass Karl den Hund FÜTtert.
(Jack claims) that Carl the dog FEEDS
'(Jack claims) that Carl FEEDS the dog.'

In all cases the finite verb is in final position. (45i)–(45iii) show verum effects, but (45iv) does not.

The crucial difference between positionally related verum focus in the left periphery and predicate related verum effects in final position seems to be that the former has an effect on the whole proposition, while the latter relate to the predicate only.[12] The following contrast structures illustrate the situation:

(46) contrast to left peripheral verum focus:
i. (Aber Maria hat gesehen,) DASS Peter die Katze gefüttert hat.
(but Mary has seen) THAT Peter the cat fed has
'(But Mary has seen) that Peter DID feed the cat.'
ii. { Peter has fed the cat | Peter has not fed the cat }

(47) contrast to right peripheral predicate focus:
i. (Aber Maria hat gesehen,) dass Peter die Katze gefüttert HAT.
(but Mary has seen), that Peter the cat fed HAS
'(But Mary has seen) that Peter DID feed the cat.'
ii. Peter { has fed | has not fed } the cat.

12. Cf. also Stommel (2011) and Lohnstein & Stommel (2009).

While in (46) whole propositions enter the set of contrastive alternatives, in (47) it is only the opposite poles of a complementary predicate. In (45i) the finite verb is an auxiliary carrying light semantic content only. Because of the focus accent alternatives are evoked (cf. Krifka 2008). What candidates are possible? Because of their light semantics, the only alternative is their negation. With focus on the auxiliary, the affirmative part is selected from the alternative set, excluding the negated part. This appears to derive the verum effect in this construction, which is not a verum focus in the sense discussed, but the result of a contrastive focus on a complementary predicate. Exactly the same analysis captures the cases in (45ii) and (45iii). The full verb 'exist' has as sole alternative to its abstract meaning 'not exist' and focus on the affirmative part leads to a verum effect. Similarly, in idioms like 'read him the riot act', there are no alternatives except the negation of the whole idiom 'don't read him the riot act'. It is simply not possible to 'mail him the riot act' or 'sing him the riot act'. The accents on the finite verb in final position in (45i)–(45iii) cause verum *effects*, because it is not possible to construct alternatives other than their negation. Main verbs as in (45iv), however, permit a variety of alternatives. Verb final focusing, therefore, does not lead to a verum focus interpretation in principle, but only in the marginal special case of abstract or semantically light verbs. Consequently, it should not be treated on a par with left peripheral verum focus.

Summarizing this section, the following can be concluded: Left peripheral verum focus in embedded verb final clauses in German is possible on the left peripheral head position only; a focus accent on a [+wh]- or relative phrase leads to verum focus if this head position is phonetically empty. In this case, the head of the chain bears the accent.

Verum effects on verbs in the final position are restricted to complementary predicates which do not have alternatives other than their negation, as witnessed by auxiliaries, abstract verbs and verbs in idiom chunks.

6. Deriving the intuition about 'truth'

The conception of 'truth' has been discussed throughout centuries in the philosophical tradition. Four theories seem to be rather prominent and worth examining in the context of verum focus.

The 'redundancy theory of truth' was inter alia proposed by Frege: "The sense of the word TRUE does not provide a relevant contribution to the thought. If I claim 'it is true that seawater is salty', I claim the same as if I assert 'seawater is salty'. […] Therefore, one can suspect that the word 'true' does not have a sense. But then, a clause containing the word 'true' as a predicate would not have a sense. One can

only say: the word 'true' has a sense which does not contribute anything to the sense of the clause in which it appears." [Translation of Frege 1976: 271[13] by HL] This remark suggests that there is no difference respecting the meaning between a clause introduced by *It is true that* … and the corresponding (declarative) clause itself. The predicate 'to be true', thus, does not contribute a relevant meaning component to the whole clause.

The 'correspondence theory of truth' takes a proposition to be true iff the conditions expressed by the proposition correspond to the facts in (a model of) the world. The tradition of this theory reaches back to Aristoteles: "To claim that existing things do not exist, or that not-existing things exist is false. But to claim that the existing things exist, and the not-existing things do not exist is true. Therefore, someone who claims that something exists or does not exist, says the truth or the falsity." [Translation of Aristoteles: Metaphysik, Book 4, Section 7, Paragraph 1011b, 26–29 by HL][14] Its use in modern logic and semantics can be traced back to Tarski's (1944) prominent definition of 'truth' as the fulfillment of a formula of the object language.

The missing link between objects of language and situations in the world leads to the 'coherence theory of truth' (cf. Hempel (1935); Davidson (2000) among many others). This theory states that a proposition is true iff it is compatible with a set of other propositions given by some theory or the epistemic system of an individual, for instance. In terms of possible world semantics, the intersection of the set of worlds denoted by proposition p with the set of worlds denoted by the set P of propositions must not be empty:

(48) $[\![P]\!] \cap [\![p]\!] \neq \emptyset$

This definition is in a sense independent of the way the world actually is. Nevertheless, neither of these theories captures the effects induced by verum focus. As it appears, the only possibility of deriving them seems to be by way of the 'consensus theory of truth': "'Truth', we call the assertive claim we connect with constative speech acts. A statement is true if the assertive claim of the speech acts

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13. "Das Wort WAHR liefert […] durch seinen Sinn keinen wesentlichen Beitrag zum Gedanken. Wenn ich behaupte 'es ist wahr, daß [sic] Meerwasser salzig ist', so behaupte ich dasselbe, wie wenn ich behaupte 'das Meerwasser ist salzig'. […] Danach könnte man meinen, das Wort 'wahr' habe überhaupt keinen Sinn. Aber dann hätte auch ein Satz, in dem 'wahr' als Prädikat vorkäme, keinen Sinn. Man kann nur sagen: das Wort 'wahr' hat einen Sinn, der zum Sinne des ganzen Satzes, in dem es vorkommt, nichts beiträgt."

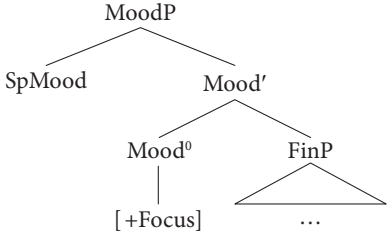
14. "Denn zu behaupten, das Seiende sei nicht oder das Nicht-Seiende sei, ist falsch. Aber zu behaupten, dass das Seiende sei und das Nicht-Seiende nicht sei, ist wahr. Es wird demnach der, der behauptet, dass etwas sei oder nicht sei, die Wahrheit sagen oder die Unwarhrheit."

with which we use the clauses claiming that statement is justified." [Translation of Habermas 1973: 218[15] by HL] According to this theory, a constative speech act holds to be true if its truth is accepted by the participants of a principally infinite and violence free discourse. Verum focus – under this perspective – appears to be a means to put an end to a discourse (often in an authoritarian fashion). Because the infinite discourse together with the various argumental positions is reduced to the function of the expressed sentence mood by verum focusing, the intuition of truth results as a consequence in the closing statement in the discourse situation.

7. The sentence mood theory of verum focus

Recapitulating all parts from the preceding sections, the following syntactic configuration together with the semantics of sentence moods allow for a compositional derivation of the verum focus phenomenon:

(49) Syntactic structure:



The [+Focus]-feature has its usual interpretation in the sense of Krifka (2008) as inducing alternatives (to the functions of the respective sentence moods, cf. (29)), leading to an alternative set along the following line:

(50) Focus assignment:
Let *mood* be a sentence mood with structure (49) and f(*mood*) its function from (29), and let $[[\ldots]]_A$ be the alternative meaning.
Then, (49) has the interpretation: $[[_{[+F]}\ f(mood)]]_A = ALT(f(mood))$,
where ALT is the function mapping f(mood) onto the set of alternatives to it.

Conflating sentence mood constitution and focus assignment, we attain the 'sentence mood theory of verum focus'. In informal terms, it can be stated as follows:

15. "Wahrheit nennen wir den Geltungsanspruch, den wir mit konstativen Sprechakten verbinden. Eine Aussage ist wahr, wenn der Geltungsanspruch der Sprechakte, mit denen wir unter Verwendung von Sätzen jene Aussage behaupten, berechtigt ist."

(51) Sentence mood theory of verum focus:
The main syntactic, semantic and discourse pragmatic properties connected with the phenomenon called 'verum focus' are derivable from the properties of sentence moods together with the regular function of focusing as reduction of alternatives given in the context of discourse.

This theory brings together the various aspects of verum focus mentioned in this contribution:

(52) i. The syntactic distribution of the assignment of [+Focus] in the case of verum focus in German is restricted to the head position $Mood^0$ of the functional category MoodP. The theory, thereby, answers the question which element is the focus exponent in verum focus constructions.
ii. The theory maintains the relevant advantages of Höhle's IT-analysis, but omits their failure with respect to embedded sentences at the same time: embedded as well as main clauses bear a sentence mood.
iii. The sentence mood analysis avoids the disadvantages of the verum predicate analysis because sentence moods are reconstructed as intensional functions which can be applied to actual states of affairs.
iv. The theory assumes verum focus not to be a distinct focus phenomenon with ideosyncratic properties, but, instead, interprets the phenomenon as a regular focus construction. Its properties are derived by the regular means of sentence mood constitution together with the regular properties of focus assignment.

Proposing this theory does not mean that there are no other grammatical ways to get verum effects. As Gussenhoven (1984) has illustrated, it is often the case that semantically empty (or light) elements allow for verum effects if they bear an accent. So, for instance in German, semantically light verbs allow for verum effects, even if they are in the final position (cf. Section 5.2). The reason for this is based on the fact that focus assignment involves the construction of alternatives (cf. Krifka 2008). This need together with semantic lightness leads to a binary contrast between 'affirmation' vs. 'negation' as elements of the set of alternatives. The affirmative part of this contrast is one half of a complementary predicate's denotation, as is illustrated by the examples in (45).

Modal particles, as analyzed for instance by Gutzmann (2010), can carry accents inducing verum effects, too. But these cases are different from verum focus on the mood component because lexical properties of modal particles account for these effects.

Hence, the phenomenon designated as *verum focus* – viewed under the perspective of this theory – should better be labeled as *sentence mood focus*.

Acknowledgements

This article is an extended and at the same time shortened version of Lohnstein (2016). The part containing the current state of research and the typologically distinct ways of marking verum focus has been truncated in favor of a more precise analysis of embedded verum focus phenomena.

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Complementizers and negative polarity in German hypothetical comparatives

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The article examines the synchronic and diachronic relation between German hypothetical comparatives and ordinary comparatives. While the presence of an overt equative complementizer is not universally obligatory, it is so in hypothetical comparatives, whereas a conditional complementizer may be absent. This is because the equative complementizer in hypothetical comparatives functions as the licenser of the conditional clause in monoclausal hypothetical comparatives, and in this sense, it is a polarity marker. This difference regarding function accounts for the fact that German allows *als* in hypothetical comparatives but not in equatives: while the combinations *als ob* and *als wenn* historically derive from biclausal constructions, the reanalysis into monoclausal constructions allowed the fossilization of a complementizer without reference to changes affecting ordinary equatives.

Keywords: complementizer, conditional clause, equatives, hypothetical comparatives, reanalysis

1. Introduction

There are two basic types of comparative clauses: equatives and comparatives proper, as illustrated for English in (1) below:

(1) a. Mary is as tall **as** Peter is.
b. Mary is taller **than** Peter is.

In (1), both of the subclauses are degree clauses: they are selected by the degree element in the matrix clause (see Bresnan 1973; Izvorski 1995; Lechner 2004; Bacskai-Atkari 2014) – *as* in (1a) and *-er* in (1b) – and in both cases there is a gradable property expressed by the lexical AP *tall*. However, there are also instances of non-degree comparisons, as in (2):

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(2) a. Mary is pale **as** a ghost.
b. Mary is pale, **as** is Peter.
c. He is rather my sister's friend **than** mine.

In (2a), there is no matrix degree element and the sentence expresses similarity rather than degree comparison (naturally, the comparison to the color of a ghost implies a high degree of paleness, yet there is no equation expressed between the paleness of Mary and the paleness of a ghost). In (2b), again mere similarity is expressed: the two entities Mary and Peter are similar in that both of them are pale, yet the respective degrees of paleness and their difference or sameness is not specified.[1] Finally, in (2c) the element *rather* is not a degree element proper in that there is no gradable property expressed here (as the AP *tall* in (1) above), and the sentence rather expresses a choice between two possibilities. The importance of examples like (2) lies in that they indicate that comparison does not necessarily involve the presence of a degree relation.

A special construction related to comparatives is that of hypothetical comparatives.[2] Consider:

(3) My daughter is shouting **as if** she were at the dentist's.

Here the hypothetical comparative clause is introduced by the combination *as if*. The first complementizer, *as*, is used regularly in degree comparison, see (1a), and in non-degree comparison, see (2a) and (2b). The complementizer *if* is used in conditionals, as in (4) below:

---

1. The types given in (2a) and (2b) are subsumed under the label *open comparison* (*offener Vergleich*) by Jäger (2010), indicating that comparison is involved, without binding a degree. The type in (2a) is an instance of *comparison of mode* (*Modalvergleich*): Mary's paleness is compared to the color of a ghost; the type in (2b) is a *comparison of factivity* (*Faktizitätsvergleich*): two facts (Mary is pale and Peter is pale) are compared. The type in (2b) is in this respect similar to additive coordination: indeed, in German the additive particle may appear in the subclause. Consider:

(i) Maria ist blass, **wie (auch)** Peter.
Mary be.3SG pale as too Peter
'Mary is pale, as is Peter.'

See also Thurmair (2001: 165–182).

2. Hypothetical comparatives are often referred to as *conditional comparatives* or *unreal comparatives* in the literature. I will consistently refer to the constructions as *hypothetical comparatives*, for the following reasons. First, as opposed to the notion *unreal comparatives*, this term suggests that the clause type is a complex one involving a conditional/hypothetical and a comparative specification. Second, while the notion *conditional comparative* may seem even better in this respect, it has unfortunately been used in the literature for comparative correlatives that have a conditional meaning component, also called *comparative conditionals* or *proportional correlatives* (e.g. *the richer you are, the more you can travel*).

(4) Mary would be pale **if** she saw a ghost.

Hence, at the first sight, it appears that the combination *as if* in (3) is compositional: it involves the mere combination of the regular equative complementizer expressing similarity and the regular conditional complementizer. One might wonder whether combinations of the form AS IF are always compositional cross-linguistically. However, there is counter-evidence for this from German hypothetical comparatives with *als ob*:[3]

(5) Meine Tochter schreit, **als ob** sie beim
my.F daughter shout.3SG than if she at.the.M.DAT
Zahnarzt wäre.
dentist be.SBJV.3SG
'My daughter is shouting as if she were at the dentist's.'

The pattern in (5) demonstrates a combination that is not compositional in the way (3) appears to be. On the one hand, the complementizer *als* is used in comparatives proper in Modern High German but not in equatives. Consider:

(6) a. Maria ist größer **als** Peter.
Mary be.3SG taller than Peter
'Mary is taller than Peter.'
b. Maria ist so groß **wie/*als** Peter.
Mary be.3SG so tall as/than Peter
'Mary is as tall as Peter.'

On the other hand, the complementizer *ob* is used, similarly to English *if*, in embedded interrogatives in Modern High German, see (7a), but not in conditionals, where the complementizer is *wenn*, see (7b):

(7) a. Ich frage mich, **ob** sie auch in Berlin wohnt.
I ask.1SG myself.ACC if she too in Berlin live.3SG
'I wonder if she also lives in Berlin.'
b. Maria würde erschrecken, **wenn/*ob** sie ein Gespenst
Mary would.3SG frighten if/if she a.N ghost
sehen würde.
see would.3SG
'Mary would be frightened if she saw a ghost.'

3. Since there is no one-to-one relationship between the German elements involved in hypothetical (and other) comparatives and their English counterparts, I will keep glossing them by using the English word that is generally possible as an equivalent; in turn, I will refrain from translations in the text as they may be confusing. Keeping the differences in the glosses, however, may help the reader better follow where the relevant differences are. I will use the following glosses: *als* 'than', *wie* 'as', *so* 'so'.

Hence, hypothetical AS IF is not the mere combination of an AS-clause and an IF-clause. In languages like English, the combination is indeed compositional, while in languages like German, non-compositional combinations are attested as well. At the same time, *als* (a cognate of English *as*) is attested in equatives in earlier stages of High German,[4] and *ob* (a cognate of English *if*) is likewise attested in conditionals earlier,[5] see Jäger (2010), which indicates that compositionality was given originally (and hence *als ob* was essentially similar to present-day German *wie wenn* 'as if' and to English *as if*).

The data discussed so far raise two important research questions regarding hypothetical comparatives. First, the question is how a transparent construction is grammaticalized into a non-compositional one. This presumably has a structural reflex, too. A transparent construction can be viewed as a combination of two clauses (hence: biclausal structure), where the first clause is regularly elided except for the complementizer (e.g. *my daughter is shouting* AS ~~*she were shouting*~~ IF *she were at the dentist's*). By contrast, a non-transparent construction necessarily involves a single clause (hence: monoclausal structure) with two complementizers immediately following one another (e.g. *my daughter is shouting* AS IF *she were at the dentist's*). Second, it must be clarified how the relevant grammaticalization processes are related to polarity, as both comparative and conditional subclauses constitute negative polarity environments.

In the present article, I propose the following analysis. First, I assume that grammaticalization is essentially governed by transparency (the idea going back to the "Transparency Principle" of Lightfoot 1979; see Biberauer & Roberts 2017 for a recent discussion): if the original derivational processes are no longer transparent for the language learners based on primary linguistic data during language acquisition, then they will assign a more transparent structure to the surface string which involves fewer derivational steps. Second, clause union is possible since both degree clauses and conditional clauses are negative polarity environments (as they are downward entailing environments, see Ladusaw 1979 on the relation between downward entailment and negative polarity contexts, and the later analyses

4. As described by Jäger (2010), the element *(al)so* was present in Old High German equatives already and it started to be replaced by *wie* in Early New High German, from the second half of the 16th century onwards.

5. The element *ob* as a conditional complementizer is attested in Old High German (see the data of Schrodt 2004: 157–158 and the recent corpus study of Bacskai-Atkari 2016c), and it continued to be the dominant pattern until Middle High German, when it started to be replaced by *wenn*, see Rudolph (1996: 388), citing Paul (1920). As described by Ferrell (1968: 109), citing the data of Behaghel (1928: 347–348), there are instances of *ob* as a conditional complementizer even in Early New High German but the number of examples diminishes drastically in this period.

of von Stechow 1984 and Heim 1985, 2000, and for newer analyses, Hohaus & Zimmermann 2014; Bacskai-Atkari 2016b). Third, by way of this clause union, the original matrix clausal licensor of the embedded conditional clause is lost (the licensor is regularly elided), and the equative C head takes over the function. Fourth, an equative C head may be grammaticalized for polarity marking.

2. The typology of hypothetical comparatives

Regarding the various types of hypothetical comparatives attested cross-linguistically, there are three major aspects that have to be taken into consideration: first, the transparency of the combination (if there is any combination at all); second, the reconstructability of the comparative clause; third, whether the conditional clause has realis or irrealis mood.

The English patterns are illustrated in (8) below (cf. the data in Pfeffer 1985):[6]

(8) a. My daughter is shouting **as if** she were at the dentist's.
b. My daughter is shouting **as though** she were at the dentist's.
c. %My daughter is shouting **like** she were at the dentist's.

As can be seen, two of the patterns involve a combination: *as if* in (8a) and *as though* in (8b); the substandard pattern with *like* in (8c) involves only a single element. A full clause can be reconstructed if the combination is transparent: this is possible in the case of *as if* but not in the case of *as though*.[7] Consider:

(9) a. She walks **as** she would walk **if** she were afraid.
b. *She walks **as** she would walk **though** she were afraid.

The difference between realis versus irrealis mood is illustrated in (10):

(10) a. She walks **as if** she were afraid.
b. She walks **as if** she is afraid.

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6. The symbol "%" indicates that the acceptability of the given sentence is subject to dialectal variation: while it is perfectly possible in certain dialects, it is ruled out in others.

7. As described by Rudolph (1996: 388) and Chen (2000: 104), in line with the earlier claims of Quirk (1954) and contrary to König (1985), the element *though* most probably started as a general concessive marker, appearing in both factual and hypothetical concessions: based on data from the OED, Chen (2000: 104) claims that the concessive use is attested in Old English already (around 888), while the conditional use in the combination *as though* 'as if' appears only around 1200. In this way, the combination *as though* was never a transparent combination of a comparative complementizer and a conditional complementizer.

As can be seen, the verb in the subclause has irrealis mood in (10a) and realis mood in (10b); there is no difference in their meaning.[8]

The possible German patterns[9] are illustrated below (cf. Jäger 2010; Eggs 2006):

(11) a. Sie schreit (so), **als wäre** sie beim Zahnarzt.
she shout.3SG so than be.SBJV.3SG she at.the.M.DAT dentist
'She is shouting as if she were at the dentist's.'

b. Sie schreit (so), **als ob** sie beim
she shout.3SG so than if she at.the.M.DAT
Zahnarzt wäre.
dentist be.SBJV.3SG
'She is shouting as if she were at the dentist's.'

c. Sie schreit (so), **als wenn** sie beim
she shout.3SG so than if she at.the.M.DAT
Zahnarzt wäre.
dentist be.SBJV.3SG
'She is shouting as if she were at the dentist's.'

d. Sie schreit (so), **wie wenn** sie beim
she shout.3SG so as if she at.the.M.DAT
Zahnarzt wäre.
dentist be.SBJV.3SG
'She is shouting as if she were at the dentist's.'

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8. English is not exceptional in this respect: there are several languages where both the indicative and the subjunctive are licensed, without there being any difference in the meaning. Jensen (1990: 393–394) makes a similar observation concerning Old French (in clauses introduced by the combination *com se* 'as if').

9. The issue of realis versus irrealis mood in German will be addressed below (this section), as the indicative is used in so-called *complex comparatives*, which are surface-similar to proper hypothetical comparatives, yet they do not constitute a single clause type. Apart from these cases, the indicative is restricted in Standard German and rarely shows up in the written language, see Duden-Grammatik (2009: 522–532). Consider:

(i) Vor der Wohnung stehend hörten wir ein Scheppern, **als ob**
before the.F.DAT flat standing heard.1PL we a.N bang than if
jemand gefallen ist.
someone fallen be.3SG
'Standing in front of the flat, we heard a bang, as if someone has fallen.'
[*Berliner Zeitung* 2005] (Duden-Grammatik 2009: 523)

The subjunctive mood was the only possibility in German hypothetical comparatives historically, up until the beginning of the New High German period, as pointed out by Jäger (2016: 72), quoting Behaghel (1928: 623f.). Note that hypothetical comparatives originally did not show combinations at the left periphery but were introduced by exactly the same complementizers as equative clauses (see the discussion in Section 4), and hence subjunctive mood had an important function in distinguishing clause type, see Jäger (2016: 72).

As indicated, the matrix correlative element *so* is optional in all these cases (cf. the data in Jäger 2016: 16). This contrasts with degree equatives such as (6b), where matrix *so* is obligatory, appearing together with a gradable argument. In (11), the fact that there is no gradable predicate in the matrix clause and *so* is optional indicates that hypothetical comparatives are closer to similative constructions and cannot be analyzed on a par with degree comparatives (see also the discussion concerning (14) below).

Importantly, all of the patterns in (11) involve some combination: (11a) is different in that the complementizer *als* is followed by a fronted verb, while (11b)–(11d) all include the combination of two complementizers.[10]

Full transparency is attested only in (11d), where the entire structure can be reconstructed:

(12) Sie schreit (so), **wie** sie schreien würde, **wenn** sie
she shout.3SG so as she shout would.3SG if she
beim Zahnarzt wäre.
at.the.M.DAT dentist be.SBJV.3SG
'She is shouting as if she were at the dentist's.'

As can be seen, both *wie* and *wenn* take a finite clause of their own. This indicates that there are two independent subordinate clauses in (11d) as well underlyingly. The reconstruction of the AS-clause is not possible for (11a)–(11c). In (11a)–(11c),

---

10. The fronting of the verb is, as will be discussed later, a way of filling a lower C otherwise filled by the lower complementizer (English *if*, German *ob* and *wenn*). The same phenomenon can be observed in Dutch, where hypothetical comparatives are either introduced by *alsof* 'as if', in which case the verb occupies a clause-final position, or by *als* 'as' and a fronted verb. Consider:

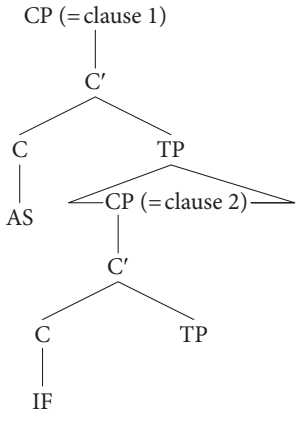
(i) **als ware** het een verplichting
as was.SBJV.3SG it a commitment
'as if it were a commitment'
(Thieroff 2004: 338, Example 50a, quoting Klooster 2001: 115)

(ii) **alsof** het een verplichting **was**
as.if it a commitment was.3SG
'as if it were a commitment'
(Thieroff 2004: 338, Example 50b, quoting Klooster 2001: 115)

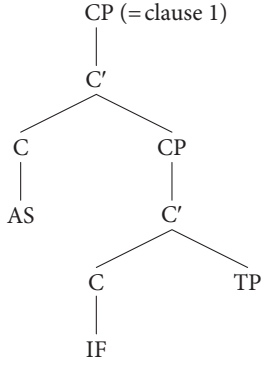
As can be seen, the verb is in the subjunctive only in the fronted position in (i) and in the indicative in (ii). Dutch is in this respect more innovative than English inasmuch as the subjunctive has completely disappeared from (ii), unlike in English, see (10) above. Note also that, as Thieroff (2004: 338) describes, the preterite subjunctive is essentially a fossil in Dutch and is reduced to constructions like (i) and to certain fixed expressions; Dutch is in this respect more similar to English than to German. As Stefan Sudhoff mentions (p.c.), in Dutch (i) is rather old-fashioned and/or confined to the written language, as opposed to what can be observed in German.

the lack of transparency and the impossibility of reconstruction suggest that the hypothetical comparatives in these cases represent a complex clause type involving multiple CPs in the same clausal periphery.[11] The difference is schematized in (13):

(13) a.



b.



I will return to the details of the analysis in Section 4. For the time being, the point is just that combinations in AS IF clauses either involve two clauses (biclausal structure), as in (13a), or a single clause with a double CP (monoclausal structure), as in (13b). Importantly, while there are two CPs in both (13a) and (13b), they are located in two different clauses in (13a) but not in (13b), where they constitute a complex left periphery of a single clause. Note that the higher clause indicated in (13a) is typically elliptical (as it is redundant) and hence the element lexicalizing AS is immediately followed by the element lexicalizing IF in the linear string, as in

11. Note that I adopt a non-cartographic approach and assume that the number of projections is as minimal as possible, cf. Sobin (2002) and Bacskai-Atkari (2015b). Contrary to Rizzi (1997), the analysis proposed here does not assign pre-defined, designated functions to the individual CPs and various features can be present on the same head simultaneously.

(11d). Nevertheless, in underlyingly biclausal structures a full first clause is always an option, see (12) above. Further, it must be stressed that, as discussed above, the element lexicalizing IF can be a fronted verb in languages like German in (13b), thus (13b) applies not only to (11b) and to (11c) but also to (11a).

However, even *wie wenn* in (11d) is different from *complex comparatives* (Eggs 2006: 167–168). In complex comparatives, a *wenn*-clause is in the scope of *als* or *wie*, depending on whether equation or comparison proper is expressed. In these cases, a degree-like element (e.g. *so*) is always present in the matrix clause, just like in ordinary comparatives (see the examples in (6) above). With the combination *wie wenn*, the *wenn*-clause is in the indicative (realis), while with the combination *als wenn*, the *wenn*-clause is in the subjunctive. In the latter case, an irrealis conditional clause is in the scope of *als*, which is an overt marker of negative polarity (see Bacskai-Atkari 2016b) and licenses irrealis mood, too. Both cases represent true comparative clauses, which are always recoverable (cf. Kaufmann 1973). An example for each type is given in (14) below:

(14) a. Das Geräusch klang so, **wie** (es klingt,) **wenn** eine
the.N noise sounded.3SG so as it sound.3SG if a.F
Säge hartes Holz zerschneidet.
saw hard.N wood up.cut.3SG
'The noise sounded like a saw cutting up hard wood.'
(based on Eggs 2006: 167–168, Examples 1/1′)

b. …dann reagieren die Menschen anders, **als** (sie reagieren,)
then react.3PL the.PL people other than they react.3PL
wenn der Nachbar (…) das Opfer des Verbrechens
if the.M neighbor the.N victim the.M.GEN crime.GEN
wäre oder sein könnte.
be.SBJV.3SG or be can.SBJV.3SG
'(…) then people react differently from how they react when the victim is (or could be) a neighbor.' (based on Eggs 2006: 167–168, Examples 4/4′)

In these cases, the *wenn*-clause stands for the standard value of comparison.

Hypothetical comparatives differ from the patterns in (14) in two major respects. First, the standard value is regularly not in the indicative, contrary to (14a); second, the standard value is not in the scope of a complementizer expressing difference, contrary to (14b). Hence, the element AS in hypothetical comparatives has different properties from those of ordinary equative complementizers: it is not selected by a matrix degree-like element and it does not introduce regular equative clauses.

3. Operators and polarity

As generally established in the literature on comparatives, there is operator movement in ordinary equative/comparative clauses because the comparative operator is a relative operator itself. The comparative operator moves to the left periphery of the subclause by virtue of its relative feature and not specifically because it is comparative, see Bacskai-Atkari (2016b). The analysis of operator movement in comparatives as a kind of relative operator movement goes back to Chomsky (1977); see also Kennedy & Merchant (2000), Kennedy (2002). Naturally, comparative operators are special due to the fact that they are associated with degree as well, but this does not affect their distribution as relative and not as interrogative operators. In the same vein, comparative clauses are standardly taken to be kinds of relative clauses, not just in generative grammar (see the references above) but also descriptively (Duden-Grammatik 2009: 1040–1041). While in Standard English the comparative operator is zero, overt operators are also possible cross-linguistically (with considerable cross-linguistic and intra-language variation, see Bacskai-Atkari 2014). Consider:

(15) a. %Mary is as tall **as how tall** Peter is.
b. %Mary is taller **than how tall** Peter is.

On the other hand, there is an operator in conditional clauses, too: a covert yes/no operator ('whether') is located at the left periphery of the clause, marking the scope of a covert *or* (Larson 1985, taken up by Bhatt & Pancheva 2006; Danckaert & Haegeman 2012); in effect, conditionals are free relatives, see Bhatt & Pancheva (2006), Arsenijević (2009). The operator *whether* is essentially a *wh*-operator; the negative polarity of the clause is regularly given.

As demonstrated already by Seuren (1973), comparatives also have negative polarity. This is shown by the availability of negative polarity items such as *lift a finger* in (16) below:

(16) She would rather die than **lift a finger** to help her sister.

The licensor of negative polarity elements is ultimately located in the CP-domain, where the operator is located, too. However, the comparative operator itself is not a negative operator; hence, the negative polarity marker in comparatives has to be lexicalized by a different element, which is the complementizer (cf. Bacskai-Atkari 2015a, 2016b). Moreover, this element has to be overt, as negation and negative polarity always have to be marked overtly (morphologically), as shown by the typological study of Dryer (2013).

Regarding the relationship between complementizers and negative polarity, the following points can be established. An overt complementizer is obligatory in

comparative clauses expressing inequality (but not in equatives, where an overt operator may suffice, see Bacskai-Atkari 2015a, 2016b).[12] This is presumably related to the fact that the maximality operator (which is ultimately responsible for negative polarity in the particular clauses, since it creates downward entailing environments) can be lexicalized by various projections (cf. the semantic analysis of Hohaus & Zimmermann 2014). While it can be tied to the matrix equative element in equatives, the matrix element in comparatives is unable to function in the same way, thus comparatives expressing equality must always have an overt complementizer fulfilling this function. The idea is that in hypothetical comparatives an element in the comparative (non-degree equative) clause has to fulfil this function: there is no matrix equative element, as hypothetical comparatives are not degree clauses. Hence, it is either a predicate in the comparative clause that serves as a matrix predicate for the conditional clause, or, when there is a single clause only, involving a double CP, the equative complementizer has to fulfil the function of licensing negative polarity in the clause.[13]

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12. There are various languages in which the equative subclause can be introduced by an overt operator, and in certain languages this is in fact the only option, there being no equative complementizer. Consider the following data from Czech (cf. the discussion in Bacskai-Atkari 2016b: 398–399):

(i) Ten stůl je stejně dlouhý, **jak široká** je ta kancelář.
the table is same long how wide is the office
'The table is as long as the office is wide.'

(ii) Ten stůl je stejně dlouhý, **jak** je ta kancelář **široká**.
the table is same long how is the office wide
'The table is as long as the office is wide.'

(iii) ?Ten stůl je delší, ***(než) jak široká** je ta kancelář.
the table is longer than how wide is the office
'The table is longer than the office is wide.'

(iv) Ten stůl je delší, ***(než) jak** je ta kancelář **široká**.
the table is longer than how is the office wide
'The table is longer than the office is wide.'

As shown by (i) and (ii), degree equatives in Czech contain the operator *jak* 'how', which either takes the AP to the [Spec,CP] position as in (i), or the AP is stranded as in (ii). The availability of (i) clearly indicates that *jak* is an operator located in [Spec,CP] and not a C head. (Note that the stranding option is preferred due to information structural properties of Czech: the AP is contrastive and preferably occupies the clause-final position where main sentence stress falls.) The examples in (iii) and (iv) show degree comparatives: while the operator *jak* is possible, just like in equatives, the presence of the overt complementizer *než* 'than' cannot be obviated.

13. See the analysis in Section 4. Note that the two negative polarity environments (comparatives and conditionals) cannot cancel each other out either in a biclausal or in a monoclausal configuration. In the biclausal structure, the comparative complementizer licenses negative polarity in the

In hypothetical comparatives, the combination of a comparative C and a conditional C is well attested, but the conditional C may be absent, which indicates that the actual polarity marker is the comparative (equative) C head. Evidence for this comes from German hypothetical comparatives, which may be introduced by the combination of *als* and a fronted verb, see (11a), and from English hypothetical comparatives involving *like*, see (8c), where a single comparative element is overt in the left periphery. Historically, both single *as* and single *als* are attested. In English, *as* 'as if' is attested even in Early Modern English, and is still preserved in the frozen form *as it were*, see Kortmann (1997: 318). An example is given in (17) below:

(17) What's he that knocks **as** he would beat down the gate?
[Shakespeare, *Taming of the Shrew*]
(Kortmann 1997: 318, Example 28f, quoting Franz 1939: 464)

In German, *als* 'as if' without verb movement is attested in Middle High German (see Jäger 2010; Eggs 2006). Consider:

(18) so ligit er, **also** er tôt sî
so lie.3SG he as he dead be.SBJV.3SG
'He is lying as if he were dead.' [*Physiologus*] (Jäger 2010: 472, Example 17)

Hence, the comparative C head can license the irrealis in itself: there is no separate head for attracting the polar operator and no visible polar operator either.

A final point to be made in this section concerns the etymology of German *als* and English *as*. As pointed out by Jäger (2010), German *als* stems from Old High German *also*, which in turn stems from the Old High German combination of *all* 'all' and *so* 'so'. The various patterns can be observed in the history of English, too: apart from *as* 'as if' mentioned before, the forms *swelce* (*swilce, such*) and *so* (*swa*) were also possible, and the form *as* derived from *eallswa* (*all* + *so*), similarly to German *als*. See Kortmann (1997: 315–317); see also López-Couso & Méndez-Naya (2014: 312–314) and references there. What matters for us here is that clause types introduced by *so* or *als*, including hypothetical comparatives, are essentially the same regarding their status.

comparative clause (there being no matrix degree element), while the conditional clause (together with its negative polarity) is licensed by a predicate in the comparative clause (the comparative clause is a matrix clause with respect to the conditional clause in biclausal configurations). In the monoclausal structure, there is no comparative clause, and the comparative complementizer licenses the conditional CP as its complement.

4. Syntax and grammaticalization

As given in (11), there are four variants in German hypothetical comparatives in the present-day standard language; first, let us discuss their diachronic relation (based on Jäger 2010, and Eggs 2006: 178, following Dückert 1961). The variants are: single *als* (with or without verb movement to the CP), *als ob*, *als wenn*, and *wie wenn*.

Regarding the variant involving only single *als*, Eggs (2006: 178), following Dückert (1961), mentions that this variant appeared occasionally in Middle High German already, though most typically without verb movement to the left periphery (the verb occupying a clause-final position). The position of the verb changed during Early New High German (Jäger 2010: 473–474). Contrary to Eggs (2006: 178), Jäger (2010: 471) shows that the variant involving single *als*, more precisely, *(al)so*, was present already in Old High German (with the verb at the end of the clause): hypothetical comparatives show exactly the same clause-initial elements as regular equative clauses do in the same period (Jäger 2010: 470–471). Recall that *als* stems from Old High German *also*, the combination of *all* 'all' and *so* 'so', hence hypothetical comparatives introduced by *so* and its cognates, including *also*, should be regarded as the same type as hypothetical comparatives introduced by *als*. For this reason, I follow Jäger (2010) in identifying single *als* as the earliest of the hypothetical comparative patterns.

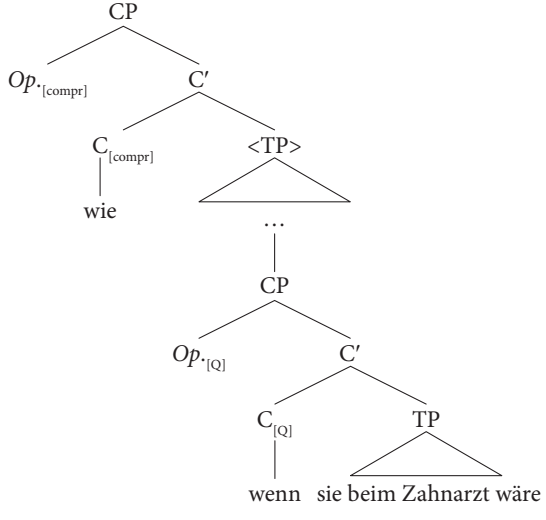
The second oldest pattern, involving the combination *als ob*, which Eggs (2006: 178) identifies wrongly as the first one, appeared already in Middle High German, and continues to be used in Modern German, too. The pattern involving *als wenn* is attested since Early New High German (Eggs 2006: 178; see also Jäger 2010). Finally, the combination *wie wenn* is attested since the 17th century, first only in complex comparatives (in parallel with the replacement of *als* by *wie* in equatives), then also in hypothetical comparatives (Eggs 2006: 178; cf. also Jäger 2010). At the time of the appearance of *wie* in hypothetical comparatives, *ob* was already obsolete in conditional clauses; hence, the combination *wie ob* was not possible.

Regarding the grammaticalization of complementizer combinations such as *als ob*, *als wenn* and partly *wie wenn*, I suggest that a reanalysis from a biclausal into a monoclausal structure took place. As mentioned before, the comparative clause is generally elliptical in hypothetical comparatives (since it expresses redundant information that can be recovered from the conditional clause, too), hence the only remnant is the C head itself, which cliticizes onto the embedded C head. Reanalysis is driven by transparency: the structure is more transparent if the higher C takes the lower CP as a complement and no ellipsis is needed. This is an instance of clause merge, and it is possible because both clauses represent negative polarity contexts, whereby the comparative complementizer marks negative polarity and as such is

able to overtake the function of licensing the IF-CP (headed by e.g. *wenn*) from the original underlying predicate. With the disappearance of the original comparative clause, into which the conditional clause was embedded, the higher C head takes up the function of licensing the polarity context (the conditional clause is dependent on a matrix clause otherwise). Note that the comparative complementizer in hypothetical comparatives is not associated with degree at all, there being no matrix degree element, and the C head encodes mere similarity/comparison (see Bacskai-Atkari 2016a on the differences between degree comparatives and non-degree similatives/equatives). In this way, the comparative C head in hypothetical comparatives may fossilize a complementizer that is no longer used in equatives.

Let us now look at the syntactic representation of the biclausal structure (with an elided TP):

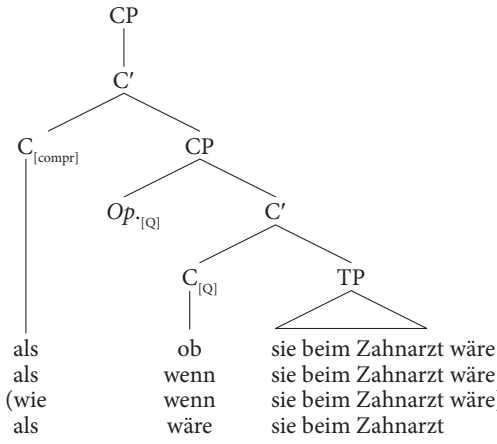
(19)



As can be seen, each C head licenses a separate operator in its specifier. This underlying structure is available only in the case of *wie wenn* in Modern High German.

Let us now have a look at the monoclausal structure (with two C heads on the same clausal periphery):

(20)



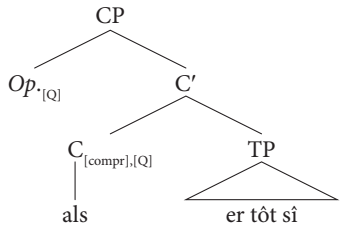
In this case, the lower C head licenses the invisible polar operator (disjunctive operator). Further, the lower CP is an embedded clause with a [Q] specification (standing for disjunction more generally, hence not only applicable to interrogatives but also to conditionals); hence, it must be licensed. Licensing is carried out by the higher C head, since there is no matrix predicate (which used to be present in the elided TP). Therefore, the higher C head has to be overt for two reasons. First, it lexicalizes the negative polarity licenser. Second, it lexicalizes the comparative nature of the clause, which cannot be done by any other element, as there is no matrix element or operator. The structure in (20) is the only valid option for the combinations *als ob* and *als wenn* and for the combination of *als* and a fronted verb. Further, the combination *wie wenn* can most probably be assigned this structure as well, yet in this case (20) has not taken over (19), which is still productive, as can be seen from the availability of non-elliptical examples, too.

Regarding the overtness of the lower C head, the following points can be established. An operator with a [Q] specification (the disjunctive operator) has to be located in a position specified for this feature, but the comparative C head is not [Q] in itself. Hence, the lower CP is generated to host the operator, but, just like in regular conditional clauses, the operator is covert. In turn, again like in regular conditional clauses, the lower C head has to be filled by an overt element to license the projection and to lexicalize the [Q] property. However, the element responsible for lexicalization does not have to be [Q]: while it can be a [Q] complementizer (such as *ob* or *wenn*), it can also be a moved verb.

The question arises whether it is possible that a single C head encodes both [compr] and [Q] (note that I adopt a model of a feature-based, flexible left periphery, see Bacskai-Atkari 2015b). In that case, the comparative C head has to acquire the [Q] feature, resulting in a single CP. A single CP structure is underlying hypothetical comparatives involving a single element *(al)so* without verb movement

in Old High German and Middle High German. The construction is illustrated in (21) below:

(21)



The pattern illustrated in (21) ultimately disappeared from the language (not just in German but also in English). First, regarding German, the pattern *als ob* continued to be used, and the new patterns *als wenn*, *wie wenn* and *als* + fronted V similarly involved two CPs. Hence, the original pattern involving a single CP was exceptional in the syntactic paradigm (compare (21) to the representations in (19) and (20) above), and it was considerably less transparent than all the other ones, where the properties [Q] and [compr] are encoded on separate C heads. Second, related to transparency, there is yet another issue with patterns like (21): single *als* in hypothetical comparatives, specified as [Q] and [compr], is not morphophonologically distinct from the general equative complementizer *als* (before the Early New German period) lacking the [Q] specification. Naturally, this does not mean that such homophony would be principally excluded or disfavored, since the pattern survived both in German and in English for a long time; the point is rather that if there are other, more transparent patterns available in the language, the homophonous pattern is more likely to disappear. Third, the feature specification of a [Q] and [compr] comparative complementizer is peculiar inasmuch as comparative complementizers are otherwise associated with relative clauses, not with interrogative/conditional clauses (which require the [Q] feature, also in hypothetical comparatives), the comparative operator being a relative operator and not an interrogative one.[14] The three factors mentioned above all contributed to the loss of configurations like (21), even though none of them made this necessary by itself.

Regarding English, the situation is similar in terms of single *as* marking hypothetical comparatives: the complex forms *as if* and *as though* eventually contributed to its loss. The element *like*, mentioned in Section 2, is different in that

14. As was established earlier (see Section 3), comparative operators are special kinds of relative operators and not interrogative operators. Note that comparative operators are not licensed in situ even in languages that allow *wh*-in-situ precisely because they are relative operators, see Bacskai-Atkari (2014). On the other hand, several languages allow relative complementizers in comparatives in combinations, see Bacskai-Atkari (2016b).

it does not appear as the regular equative complementizer, contrary to the case of *as*.[15] Hence, while it is unique in the paradigm inasmuch as it constitutes the only non-compositional form, its morphophonological properties distinguish it from the proper equative complementizer,[16] eliminating the second and the third issue discussed above in connection with German *als*.

5. Conclusion

This article examined the syntax of German hypothetical comparatives, concentrating on the differences between compositional and non-compositional combinations. Biclausal structures represent a combination of a comparative (more precisely, a non-degree equative) clause and of a conditional clause, both of which are polarity contexts. Biclausal structures may grammaticalize into monoclausal ones: this is governed by economy and transparency, in that the surface structure is more faithful to the base-generation structure, and hence the derivation involves

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15. Consider the following sentences (cf. the observations of Pulgram 1983: 124):

(i) *Mary is as tall **like** Peter is.
(ii) %Mary is tall **like** Peter is.

As can be seen in (i), *like* is not grammatical in degree equatives, but it may occur (as a substandard variant) in non-degree comparisons such as (ii), a construction similar to (2b) discussed in Section 1.

16. The phenomenon of a single C head appearing in hypothetical comparatives but not in ordinary degree equatives is not restricted to English but can be detected cross-linguistically. In Latin, for instance, the elements *quasi* and *tamquam* became specialized for the introduction of hypothetical comparatives, and they were also available as non-degree equative complementizers appearing in "generic similatives" (Tarriño 2011: 400–407). Note that both of these elements are morphologically complex, though:

(i) *tamquam* 'as if' < *tam* 'so' + *quam* 'how, as, than'
(ii) *quasi* 'as if' < *quam* 'as' + *si* 'if'

Hence, these examples represent a loss of transparency of the original combination and this loss is also morphophonologically represented. As described by Tarriño (2011: 407), in Late Latin the combinations *quamodo si* and *quemadmodum si* appeared, both of which are transparent:

(iii) *quamodo si* 'as if' < *quamodo* 'how, in what way' + *si* 'if'
(iv) *quemadmodum si* 'as if' < *quemadmodum* 'how, in what manner' + *si* 'if'

The Latin patterns indicate two important directions in the changes of elements introducing hypothetical comparatives quite clearly. First, the grammaticalization of biclausal into monoclausal structures may preserve non-transparent combinations, which in turn may lead to the fusion of the original heads. Second, if there are new elements appearing in the source clause types, these will also appear in hypothetical comparatives in biclausal structures.

fewer steps and is more transparent for the learner. Still, a monoclausal structure may retain some degree of compositionality, as there are two CPs with two distinct functions, but the changes affecting grammaticalized combinations in hypothetical comparatives are independent from those affecting the original source types (equative clauses and conditional clauses). In this way, the fossilization of older patterns no longer attested in the source types is possible in hypothetical comparatives.

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Veridicality and sets of alternative worlds

On embedded interrogatives and the complementizers *that* and *if*

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This paper explores three related phenomena. First, not all embedded formal interrogatives (i.e. clauses introduced by *if* or *whether*) have the function of an indirect question. Second, the complementizers *if* and *that* may occur in identical syntactic contexts. Third, *if*-clauses may be licensed by certain (discourse) semantic factors, like negation, modality, and also verum focus, where otherwise *that*-clauses are preferred. The approach taken is based on epistemic logic, especially on the notion of relativized veridicality, the notion of possible worlds and the formal semantics of the complementizers *that* and *if*.

Keywords: interrogative semantics, complementizers, epistemic logic, veridicality

1. Introduction

In this paper, the modular view of *clause mood* is adopted, assuming a fundamental distinction between logical properties of clauses that are encoded by specific grammatical structures on the one hand, making sentences suitable to fulfill certain discourse functions, and the *discourse function* as such, on the other hand. Formal interrogatives, for example, may be used as exclamations or statements (sometimes then termed rhetorical questions), as in (1a) and (1b) below.

(1) a. Are you crazy?
b. Did you ever lift a finger to help me? (Krifka 2011: 1743)

Instead of assuming here a pragmatic re-interpretation as an indirect speech act (as might be appropriate in other cases), I take clause mood (*declarative, interrogative, …*) as a logical property of sentences restricting them to certain types of speech acts (*erotetic*, but also others).

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I am not intending to join the discussion of this matter with respect to independent clauses (cf. Meibauer et al. 2013; Lohnstein 2007; Reis 1999; Altmann 1987; Bierwisch 1980). My contribution concerns embedded formal interrogatives that are, in my view, non-questions that are characterized by specific logical features[1] that they have in common with questions.

(2) a. Bill knows who will come. (Krifka 2011: 1743)
b. Bill specified who had called.
c. I know if/whether zero is a prime number.[2]
d. Homer is not convinced[3] if/whether zero is not a prime number.
e. The library has determined if/whether books can be returned on Sundays.

My approach is based on the logical analysis of the complementizers *if*[4] and *that*, which have been observed to be used alternately in certain epistemic contexts (cf.

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1. A formal view of clause mood that is independent of illocutionary force allows us to regard it as a logical feature of the compositional semantics of matrix clauses and also of embedded clauses.

2. It should be mentioned that not all speakers of English accept if-clauses in these contexts the same way as they do whether-clauses.

3. Similar sentences with NEG+convinced+if (and also convinced+wh) can be found on the internet:

(i) a. I was not convinced if it was for my benefit or his uncle's.
https://books.google.de/books?isbn=145026462X (2016/02/18); Linda Schel Moats, Men from Cribaar, p. 47.
b. I was not convinced if it was a great investment.
https://www.tripadvisor.de/ShowUserReviews-g 189180-d2470983-r280841912-Funicular_dos_Guindais-Porto_Porto_District_Northern_Portugal.html (2016/02/18)

(ii) a. The embassy was not convinced what you are going to do in Poland.
https://www.lonelyplanet.com/thorntree/forums/europe-eastern-europe-the-caucasus/poland/schengen-visa-appeal-how-to-solve-and-eliminate-unfair-refusal-reasons?page=1#post_19940391 (2016/02/18)
b. Still I was not convinced what side to believe.
http://csdb.dk/forums/index.php?roomid=7&topicid=26329&firstpost=23 (2016/02/18)
c. She was convinced what she had to do and it all started with the path at the end of the road. https://books.google.de/books?isbn=1630049301 (16/02/18); Jermaine Bethea, The Weed and the Flower, end of Chapter 1.

4. This builds on work on the German complementizers ob and dass (Öhl 2017, 2018). It is often assumed (cf. Eckardt 2007: 457) that Gm. ob logically corresponds to Eng. whether because if seems to trigger a bias towards a positive answer in some contexts; for discussion see Bolinger

Lahiri 2002: 284–287; Adger & Quer 2001) or even to be in competition (Eckardt 2007) – of course, under alternating logical interpretations.

(3) a. Bill knows **that** Mary wants to come to the party. (#I don't.)
b. Bill knows **if** Mary wants to come to the party. (I don't.)

This is true for all kinds of *if*-clauses that I regarded as non-questions above.

(4) a. I know **if/that** 39719 is a prime number.
b. Homer is not convinced **if/that** zero is not a prime number.
c. The library has determined **if/that** books can be returned on Sundays.

I will take and defend the view that the instances of *if* selected by rogative predicates on the one hand, and by non-rogative ones on the other hand, still have the same denotation.[5]

(5) a. I wonder if zero is a prime number. (rogative predicate)
b. I know if zero is a prime number. (non-rogative predicate)

The fact that in sentences like those in (4) the *if*-clauses do not have a rogative interpretation is a matter of the embedding context, not of the complementizer. Rogative predicates like *wonder* embed intensions, whereas predicates like *know* embed extensions (cf. Lahiri 2002: 287; Groenendijk & Stokhof 1982: 177, and the discussions below in Sections 2 and 3). Similar, intensional and extensional interpretations of nominal expressions vary with the predicate. Assuming that they are polysemous per se would be paradoxical.

(6) a. I am looking for a unicorn. (intensional predicate)
b. #I found a unicorn in the garden. (extensional predicate)

All expressions are intensional in the first place. Extensionalization must be regarded as a matter of the context. I proceed by comparing the use of *that* and *if* in different contexts of embedding.

(1978). On the other hand, whether is a phrasal operator possibly denoting a wider range as compared to a syntactic head. Since they are of the same category, I think it is more appropriate to compare the two complementizers if and that.

5. A stronger hypothesis would even include conditional if, but that is another discussion and, in my view, improbable anyway: in contrast to complementizers of argument clauses, connectors of adverbial clauses must render quantificational operations on elements of the matrix clause possible, which is a basically different logical property. (See below, Section 3.)

2. Embedding clause types

2.1 The use of *that* and *if*

The fact that there are verbs selecting declaratives and verbs selecting interrogatives has led to the assumption that clause type embedding is a case of 's(emantic)-selection' (cf. Grimshaw 1979).

(7) a. Homer claims **that** zero is a prime number.
b. Homer regrets **that** zero is not a prime number.
c. *Homer claims/regrets **if** zero is a prime number.
d. *Homer claims/regrets **what** prime numbers are.

(8) a. Homer wonders if zero is a prime number.
b. Homer asks **what** prime numbers are.
c. *Homer asks/wonders **that** zero is not a prime number.

It has often been observed, however, that there is a whole range of verbs like *know* or *see* that seem to be underspecified.

(9) a. Homer sees **if** zero is a prime number.
b. Homer sees **what** prime numbers are.
c. Homer sees **that** zero is not a prime number.

Taking a classification of 'question-embedding predicates' such as that of Karttunen (1977: 6; changed order) as a basis for comparison, it is easy to see that only a small number of predicates only take interrogative complements; the majority (bold letters) can also have *that*-clauses as a complement.

(10) a. inquisitive verbs (*ask, wonder, investigate, …*)
b. **verbs of retaining knowledge** (***know, remember, recall, forget …***)
c. **verbs of acquiring knowledge** (***learn, notice, discover, …***)
d. **verbs of communication** (***tell, show, inform, …***)
e. **decision verbs** (***decide, determine, specify, …***)
f. **verbs of conjecture** (***guess, predict, estimate, …***)
g. **opinion verbs** (***be certain, be convinced, …***)
h. **verbs of relevance** (***matter, care, …***)
i. **verbs of dependency** (***depend on, be relevant to, …***)

The statistic evaluation of the ZAS-Database[6] shows that the majority of the 1,750 clause embedding predicates take different clause types as their complements in

6. Last evaluation 9/2016. I would like to thank Kerstin Schwabe from ZAS (Zentrum für Allgemeine Sprachwissenschaft, Berlin) for allowing me to use these statistics (cf. Schwabe 2016a, b;

German as well. In fact, just 1% only take interrogatives, and it is questionable whether fewer than 20 predicates out of 1,750 justify the assumption of predicational selection of interrogatives.

(11) a. *ob-* and *w*-clauses (*fragen/'ask'*, *umhören/'ask around'*, …): ~1%
b. *dass-*, *w-* and *ob*-clauses (*wissen/'know'*, *bedenken/'consider'*, *nachdenken/'reflect'*, …): 36%
c. *dass-* and *w*-clauses (*bedauern/'regret'*, *sich freuen/'rejoice'*): 19%
d. *dass* and *ob*-clauses (*zweifeln/'doubt'*, *garantieren/'guarantee'*, …): <1%
e. only *dass*-clauses (*beweisen/'prove'*, *glauben/'believe'*, *annehmen/'assume'*, …): 43%

The set-of-answers model of interrogative semantics points to a solution (Hamblin 1976: 'possible answers'; Karttunen 1977: 'true answers'; Huddleston 1994: 415: "Normally, sentences containing embedded questions have meanings involving 'the answer to the question'."); it captures all non-interrogative predicates termed *responsive* by Lahiri (2002: 287). Predicates may be proposition-selecting, and the restriction to either one proposition (*that*) or a proposition set (*if*) could just be lexical.

I do not think, however, that this accounts properly for cases such as the following:

(12) a. He takes care **if** everyone is seated.
b. **If** I find linguistics exciting is my decision.
c. The library has determined **if** books can be returned on Sundays.

Whereas responsive predicates may embed true or possible answers, these predications do not concern the truth values but the truth conditions themselves, as specified for possible worlds. Thus, what is documented is not the evaluation of the truth of a proposition against an epistemic background but the creation of a factual background (cf. Lohnstein 2007 on *imperative* vs. *interrogative*). What they have in common is that the speaker does not state the truth value of the embedded proposition when choosing an *if*-clause. This might justify a common classification, but not as a primitive: instead these kinds of predicates and the 'responsive' ones form subclasses of a more abstract category.

It is obvious that *if*-clauses are polyfunctional. This paper argues that the interrogative complementizer *if* is not polysemous but underspecified. Independent clauses have illocutionary force. Embedded clauses, in contrast, are interpreted within the logical context created by the embedding predicate and other factors.

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see also: ZAS Database of Clause-Embedding Predicates, <http://www.owid.de/plus/zasembed2017/main> (31 March 2017).

If-clauses may refer to questions, but they do not denote questions (cf. Bayer 2004: 66). Thus, a semantic account of *if* must allow for the interpretation of the embedded clause according to the logical class of the embedding predicate.

2.2 Interrogative clauses as syntactic objects

The logical account used here is based on the interrogative semantics first proposed by Groenendijk & Stokhof (1982), where questions are treated as index dependent propositions. An *index* is defined as an ordered pair of a world *w* and a time *t*. The particular index *a* is the *actual index* where the truth of a proposition is evaluated (cf. Groenendijk & Stokhof 1982: 177, 186–189).

(13) a. i = <w,t>
b. a = <w^a,t^a>

If we relate truth conditions for any possible index *i* to the same truth conditions for the actual index *a*, the result will be two alternative sets: *p*, if *p* = 1 in *a*, and ¬*p*, if *p* = 0 in *a*. Since one and the same question should have the same meaning in all possible actual worlds (i.e. be consistent also with worlds and times where zero is a prime number, if the definition of *prime number* were changed or whatsoever),[7] an *intensional reading* is created by lambda-quantification over *a* as well. E.g.:

(14) a. Is zero a prime number?
b. λiλa[prime-number'(i,zero') = prime-number'(a,zero')]

The meaning of this sentence consists in the set of indices *i* where the truth of zero being a prime number corresponds to the truth of zero being a prime number at any actual index *a*. Such an *index dependent proposition* is mapped to a syntactic object that can be embedded by specific predicates.

(15) a. Homer wonders if zero is a prime number.
b. wonder'(Homer', λiλa[prime-number'(i,zero') = prime-number'(a,zero')])

Non-interrogative predicates like *know*, however, embed *if*-clauses in their *extensional* reading. The meaning of the embedded clause in the following sentence consists in the set of indices *i* where the truth of 39.719 being a prime number corresponds to the truth of 39.719 being a prime number at the fixed actual index *a*.

7. The worlds in question are epistemic worlds, not alethic ones; whereas in alethic modality, the definition of prime numbers yields an absolute truth by means of the accessibility relation between possible worlds, epistemic worlds may diverge. Otherwise, asking this question wouldn't make sense or would even be impossible.

(16) a. Homer knows if 39.719 is a prime number.
b. know'(Homer', λi[prime-number'(i,39.719) = prime-number'(a,39.719)])

Extensional epistemic or perceptional predicates like *know* or *see* are also called *veridical* (Lahiri 2002: 287; Montague 1969; cf. Giannakidou 2013: 1).

Def.: *veridicality* = property of *utterances* or *perceptions* to be assumed as true or real (abstracted from Borchert 2006: 188, 193)

(17) a. ⟦I see a unicorn⟧ = 1
b. ⇒ There are unicorns.
c. → *see*' is a veridical predicate.

It seems reasonable to assume that the denotation of these predicates is characterized by a logical feature such as [+ver], fixing the actual index.

(18) λa » ιa

Thus, the intensional reading of *if*-clauses is their neutral interpretation, whereas extensionalization belongs to the function[8] of certain predicates that embed them. However, the use of an extensional *if*-clause may be context dependent: it is used only if it is not excluded because of logical inconsistency and if it is informative (cf. Eckardt 2007: 462).

In the following Example (19a), the matrix implies a common ground where it is known that zero is a prime number.[9] An *if*-clause, on the other hand, presupposes alternative worlds. Thus, it is logically incompatible with the presupposition of the matrix. (19b) is much better, since *Homer* is introduced as a discourse referent who evaluates the truth of the embedded proposition, whereas others may have differing judgments. Thus, there are alternative worlds established.

(19) a. It is clear that/#if zero is a prime number.[10]
b. To Homer, it is clear if zero is a prime number.

In the next example, the *if*-clause must be licensed by informativeness:

(20) He has found out if 39.719 is a prime number.

The truth of ⟦he has found out if 39.719 is a prime number⟧ depends on the truth of ⟦39.719 is a prime number⟧; thus, an *if*-clause is a logical option. However, the

8. I take predicates as denoting functions operating on their arguments.

9. The whole sentence is false, of course, since in fact, it is common knowledge that zero is not a prime number.

10. I use the symbol '#' to indicate logical and/or communicative markedness.

if-clause is informative only if this truth is not known to the hearer, and it is used if for any reason it is not reported to her or him.

This means that if predicates are not specified as to whether to embed an *if*-clause or a *that*-clause, the logical and the pragmatic context must license the use of the *if*-clause. Otherwise, an alternative *that*-clause is always preferred.

(21) He has found out that/#if zero is not a prime number.

It is an interesting and not yet fully explained fact about these predicates that, as soon as such a predication is modified by an operator like NEG, the *if*-clause is not subject to further restrictions and thus seems to be grammatically licensed.[11]

(22) a. It isn't clear if zero is a prime number.
b. He hasn't found out if 39.719 is a prime number.

It seems reasonable to assume that NEG is an operation potentially blocking the extensionalization of the embedded proposition, such that the *if*-clause is just a natural option – much like NEG licensing intensional objects also with DP-selecting extensional predicates.

(23) I have not found any unicorn in the garden.

(24) a. ¬clear'(λiλa[prime-number'(i,39.719)=prime-number'(a,39.719)])
b. ¬found-out'[he',(λiλa[prime-number'(i,39.719)=prime-number'(a,39.719)])]

However, in all of these cases an extensional *that*-clause is also an option. The logical difference is explained in the following paragraphs.

(25) a. It isn't clear that zero is a prime number.
b. He hasn't found out that 39.719 is a prime number.

In short, the licensing conditions are complex and cannot be purely grammatical. In the following section I develop my proposal by taking a closer look on the notion of *veridicality*.

2.3 Polarity and relativized veridicality

Following Giannakidou (1998, 2013), I regard *veridicality* as an epistemic (and also perceptual) dimension that is subject to the world models of individuals (cf. Öhl 2017).

11. See Adger & Quer (2001) for a syntactic account and Eckardt (2007), Öhl (2007) for discussion and critique.

(26) *Veridicality and nonveridicality* (cf. Giannakidou 2013: 220)
   i. A propositional operator *F* is veridical iff *Fp* entails or presupposes that *p* is true **in some individual's model** M(x).
   ii. If (i) is not the case, *F* is nonveridical.

(27) *Epistemic model of an individual i* (Giannakidou 1998: 45)
An epistemic model M(*i*) ∈ M is a set of worlds associated with an individual *i* representing worlds compatible with what *i* believes or knows.

Utterances or perceptions may be interpreted as real or true in relation to the model of an epistemic agent.

(28) *Subjective veridicality and agent commitment* (Giannakidou 2013: 121)
   i. Truth assessment is relativized to epistemic agents.
   ii. In unembedded sentences the epistemic agent is the speaker.
   iii. *In embedded sentences, possible epistemic agents are the speaker and the embedding clause subject* (italics: PÖ). In embedded sentences generally the number of epistemic agents is +1 from the base case.
   iv. In texts, an additional epistemic agent is the hearer/reader.
   v. Nothing else is a relevant epistemic agent.

Whereas Lahiri (2002: 287) classifies predicates such as *certain, conjecture, agree on* (implicitly also *sure, convinced, promise* a.o.) as nonveridical, Öhl (2017) argues that they are *subjectively veridical.*

What all of these predicates have in common is the fixing of the truth value in relation to the world model of an epistemic agent. This is exactly what Giannakidou proposes for (non)veridical operations: the logic of epistemic predicates is not primarily a matter of truth in the alethic sense. In the first place, it is a matter of truth assessment relativized to epistemic agents (i.e. the speaker, the hearer and, in embedded contexts, also the subject of the matrix clause).

Moreover, there is an empirical argument: the predicates I call *subjectively veridical* allow *if*-clauses whenever they undergo a nonveridical operation (such as negation; Giannakidou 1998).

(29) a. Being sure **that/#if** zero was a prime number, Homer failed the exam.
   b. Not being sure **if** zero was a prime number, Homer failed the exam.

If those predicates as such were absolutely nonveridical, why should an additional nonveridical operation bring about the license for an *if*-clause?

I suggest that among the *epistemic* predicates, the *subjectively veridical* ones constitute a proper subclass by denoting the interpretation of the truth value relative to the *model* of the subject of the matrix clause. The reason why these predicates as such do not embed *if*-clauses is simply that they denote truth commitment by the epistemic agent, i.e. the embedding clause subject, which is marked by *that*.

(30) Homer is sure/convinced that/*if 39.719 is a prime number.

Use of an *if*-clause would be maximally uninformative, since its combination with a predicate denoting truth commitment would simply mean that nothing were being reported.

In contrast, objectively veridical predications in fact denote the truth assessment by the matrix subject in the alethic sense. It may be known to the speaker, but the relevant factor for the use of an *if*-clause is that it is not reported to the hearer.

(31) He has found out if 39.718 is a prime number.

The *if*-clause can be informative under these circumstances, since the truth of a proposition such as ⟦he has found out that 39.718 is a prime number⟧ depends on the truth of the proposition ⟦39.718 is a prime number⟧. This is not the case with propositions embedded by subjectively veridical predicates.

(32) a. ⟦ 39.718 is a prime number ⟧ = 0
b. ⇒ ⟦ he has found out that 39.718 is a prime number ⟧ = 0
c. ⇏ ⟦ he is sure/convinced that 39.718 is a prime number ⟧ = 0

It can be syllogized that the complementizer *if* can be used whenever a set of alternative indices λi is related to any evaluation index λa. Propositions undergoing veridical functions are extensionalized, which means that the set of evaluation indices is reduced to the actual index a. If the set of alternative indices λi logically corresponds to the evaluation index a, which is the case when a is defined by the matrix proposition headed by a subjectively veridical predicate, an *if*-clause is uninformative or even paradoxical.

What happens if a (subjectively) veridical predicate is negated? I would like to suggest that, in certain cases, negation cancels the truth commitment of the relevant epistemic agent. In formal terms this means that the extensionalization of an embedded proposition is blocked. For a subjectively veridical predicate this means that it is under exactly these conditions that an *if*-clause is licensed. E.g.:

(33) a. He has not found out if 39.719 is a prime number.
b. He is not sure if 39.719 is a prime number.

In both cases, the matrix subject as the epistemic agent has neither access to nor has he/she committed him/herself to the truth of p(a) (39.719 being a prime number). The knowledge of other potential agents seems to be irrelevant. This may be explained by the scope of the nonveridical operation, which will be discussed in the next paragraph.

The relevance of the epistemic agent is also very obvious with predicates such *tell*, which is classified as ambiguously veridical by Spector & Egré (2015: 1738) and thus can embed interrogative extensions in some cases.

The following example makes clear that the relevant epistemic agent is the speaker, who is at the same time referred to by the object of the matrix clause.

(34) a. Homer told us **that** zero was not a prime number.
b. #Homer told us **if** zero was a prime number.
c. Homer **did not** tell us **if** zero was a prime number.

(34b) is not ungrammatical but (at least in the average case) excluded for the lack of informativeness. The use of *if* requires an external reason why the truth is not reported to the hearer (e.g. if the speaker has forgotten it).

The reason is that *tell* can be nonveridical only if it selects a *that*-clause:

(35) a. He told us **that** zero was (not) a prime number (but it is (not)). (±ver)
b. He told us **if** zero was a prime number (*but it is not). (+ver)

In (35b), *tell* must be (subjectively) veridical since we can conclude that the subject of *tell* had access to the truth of the embedded proposition. In this case, there is no cancellation of the truth assessment, if the predicate is negated. Instead, the relevant epistemic agency shifts to the speaker, who does not have access to the truth of p(a) (zero not being a prime number).

(36) He did not tell us **if** zero was a prime number (−ver)

In the following paragraphs, I will turn to the structural conditions of subjectively veridical predication by showing that subjectively veridical predicates and other predications denoting the commitment to a truth value, such as impersonal *clear*, take intensional index dependent propositions as a complement if they are directly operated on by nonveridical functors such as negation or, as another example, modal auxiliaries.

(37) a. Now it is clear **that/#if** zero is (not) a prime number.
b. It is *not yet* clear **#that/if** zero is (not) a prime number.

(38) Before dividing it by three, it should be clear that/if zero is not a prime number.

2.4 Scope of the nonveridical operation

There is some direct evidence from German that the relevant operations are immediate operations on the predicate, thus changing the predicate function. The first data I would like to analyze are from German negation: if NEG is adjacent to the

predicate, there is preference for *ob*, whereas an intervening frame adverbial yields markedness of *ob* compared to *dass*.

(39) a. Es ist [schon seit JEher] nicht sicher, **ob**/dass das stimmt.
it is already since ever NEG *sure if/that this is-right*
b. Es ist nicht [schon seit JEher] sicher, **dass**/#ob das stimmt.

If the same predicate is derivationally negated by a negative prefix, a *that*-clause is even ungrammatical.

(40) es ist [unsicher **ob**/*dass das stimmt]
it is unsure if/that this is-right

Since predicate negation in a complex German *Vorfeld* also leads to a strong preference for *ob*, Öhl (2007: 420ff.) applies the term *coherent negation*, which means that NEG forms a complex predicate with the verb (41b), rather than negating the whole proposition (41c).

(41) a. Unsicher ist, **ob**/*dass das stimmt.
uncertain is if/that this right-is
b. Nicht sicher ist, **ob**/#dass das stimmt.
not certain is if/that this right-is
c. Sicher ist nicht, **dass**/#ob das stimmt.

It can be assumed that an operation such as NEG can immediately compose with the predicate, which *cancels the commitment* of the relevant epistemic agent to a truth value for the embedded proposition.[12]

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12. One of the reviewers suggested comparing inherently antiveridical predicates such as 'negate' or 'refute'. If my assumptions are right, the same operation should yield a similar effect with these predicates if they denote the commitment to a negative truth value, which should also be able to be cancelled. This can be tentatively confirmed with data from both German and English:

(i) Krugman himself would not be able to refute if he was in fact so influenced
<http://www.zerohedge.com/article/mit-billion-price-project-confirms-us-prices-surging> (31 March 2017).

(ii) (…) dass die Wissenschaft eben auch nicht endgültig widerlegen kann, ob an diesen Dinge[n] nicht auch etwas dran sein kann.
(ZAS Database of Clause-Embedding Predicates (public beta); <http://www.owid.de/plus/zasembed2017/main> (32 Mach 2017).
≈ "that science cannot definitely refute if there isn't anything to this."

In fact, further studies on a broader database seem promising and shall be carried out in future research.

Even though there is no *coherent negation* in English, a similar effect can be reconstructed: with a *that*-clause, NEG is preferably interpreted as taking wide scope; with *if,* in contrast, the scope of NEG is interpreted as narrow.

(42) a. He did not tell **that** he would come.
b. ⟦ told(he,[come(he)] ⟧ = 0
c. → It is not true that he told that he would come.

(43) a. He did not tell **if** he would come.
b. ⟦ ¬told[he,come(he)] ∧ ¬told[he,¬come(he)] ⟧ = 1
c. → It is true that he did not tell (i.e. he concealed) whether he was planning to come or not.

I assume that the option of immediate composition of NEG and specific predicates can be taken as universal. *Coherent negation* just means that this composition is overt.

German provides some more direct evidence from the scope of modals: epistemic modals, which always take wide scope, yield preference for *dass* (44a). Deontic modals, which scope directly over the predicate, produce preference for *if* (44b).

(44) a. [$_{VP}$ sicher sein, **dass/#ob** das stimmt] soll es angeblich bereits
sure COP *that/if this is-right is-said it allegedly already*
"Allegedly, it is already said that it is certain that this is true."
b. [$_{CP}$ **#dass/ob** das stimmt] muss zunächst sicher sein
that/if this is-right must at-first sure COP
"At first, it should be certain if this is true."

Other modifiers licensing *if*-clauses are future tense and non-indicative verbal mood (cf. Öhl 2007: 417), which also indicates that nonveridical operations on the predicate function change the selectional properties.

(45) a. Time will make clear **if** 39.719 is a prime number. (FUT)
b. I wished I could make clear **if** 39.719 is a prime number. (IRR)

Embedding into interrogative matrix clauses creates an intensional reading, as well, which is to be expected if the matrix is already characterized by abstraction from possible actual indices.

(46) a. Is it clear **if** 39.719 is a prime number?
b. λiλa[clear'([prime-number'(i, 39.719) = prime-number'(a, 39.719)],i) = [clear'([prime-number'(i, 39.719) = prime-number' (a, 39.719)],a)]

It is especially telling that certain focus effects may also lead to intensionalization and the embedding of an *if*-clause. What they have in common is a contrast

established between the actual index and potential alternative evaluation indices. The so-called *'verum focus'* (Höhle 1988; cf. Lohnstein 2016, this volume) may induce such an alternative set by means of contrasting the truth values, just like focus on the negation.

(47) a. It IS clear **if** zero is a prime number. (contrasting *true* to *false*)
b. It is NOT clear **if** zero is a prime number. (contrasting *false* to *true*)

So called 'only-focus', on the other hand, contrasts the model of the epistemic agent (the matrix subject in the following example) with those of other potential individuals.

(48) Only to Homer, it is clear **if** zero is a prime number.

In both cases, two sets of alternative worlds are contrasted, which is, again, informative and not counterintuitive.

3. *That* vs. *if*: What do the complementizers denote?

A unified semantic account of both *that* and *if* must allow for the interpretation of the embedded clause according to the logical class of the embedding predicate, which may be operated on by additional truth functional elements.

(49) a. He claims/regrets **that** …
b. He asks **if** …
c. He knows **that/if** …
d. He is **not** sure **if** …

This means the denotation of the complementizer must contain variables that can be operated on by elements of the matrix clause. I would like to propose a formalization based on Lohnstein's (2005: 124) earlier proposal of a basic semantic form (SF) for clause connectors (CONN):

(50) Basic-SF of CONN: $\lambda p \lambda q$ [[$OP_{w,t}$: $H(w_0) \wedge p(w,t)$] $q(w,t)$]
– $H(w_0) \wedge p(w,t)$ = restriction for quantification over proposition *q*
– $OP_{w,t}$ = quantifier over world- or time variables
– *H* = modal basis in the actual world w_0 (*epistemic, doxastic, bouletic, deontic, factual*).

In this model, adverbial clauses are taken as restricted quantificational operations (as first suggested for conditionals by Kratzer 1978) over the *world*, the *time* or the *world-time-index* variables of the matrix clause. Besides the proposition(s) given by the adverbial clause, the kind of background (*epistemic, doxastic, bouletic, deontic,*

factual) serves to restrict the quantification, which can be either *universal* or *existential*. Lohnstein (2005: 124) also lists *intensionalization* vs. *extensionalization* of the propositions involved as further parameter distinguishing adverbial connectives:

(51) CONN: logical parameters
  A. the quantificational force of the operator $OP_{w,t}$ (universal vs. existential quantification)
  B. the types of the variables: *world* vs. *time*
  C. the specification of the background H(w)
  D. intensionalization vs. extensionalization of the propositions involved

The German conditional complementizer *falls* may serve as an example for a short explanation of the formalism (also taken from Lohnstein 2005: 124). Conditionals are taken as universal quantifications over possible worlds. Lohnstein suggests that the quantification is restricted by an epistemic background.

(52) a. Egon lacht, falls Paul arbeitet.
  'In case Paul is working, Egon laughs.'
  b. $[\forall w: H(w_0) \wedge work'(w, Paul)]\ laugh'(w, Egon')$
  c. H epistemic: $H^{ep}(w) = \{p|p \text{ is known in } w\}$
  d. 'In all epistemically accessible worlds where Paul is working, Egon laughs.'

(53) SF(/falls/): $\lambda p \lambda q [[\forall w: H(w_0) \wedge p(w)] q(w)]$

From the basic SF proposed by Lohnstein, other connectives can be derived. The SF of the temporal connective *nachdem* ('after') would be constituted by existential quantification over a time variable t_1 that is restricted by the anteriority condition $t_2 < t_1$, t_2 being the event time of the adverbial clause.

(54) a. Egon lacht, nachdem Paul gearbeitet hat.
  'Egon laughs after Paul was working.'
  b. $[\exists t_1: H(w_0) \wedge work'(t_2, Paul') \wedge (t_2 < t_1)]\ laugh'(t_1, Egon')$

Building on this system, Öhl (2009: 399) proposes a SF for the German complementizer *dass* ('that'), which I slightly modify in the following paragraphs, adapting to the observations made in the preceding paragraphs.

One major difference between complementizers introducing argument clauses and adverbial connectives is the direction of quantification. Whereas adverbials quantify over the world/time of the matrix, complementizers such as *that* allow quantification over the *index* of the embedded clause. Whatever predicate we choose for the matrix proposition *q*, it will specify the background for evaluating the embedded proposition *p*. Epistemic predicates such as *know* provide an epistemic background, others provide doxastic, bouletic, deontic or factual backgrounds for the evaluation of the embedded *p*.

(55) a. q = λp.know'/believe'/hope'/demand'/regret' (Homer,p)
b. H EP/D OX/BOUL/DEON/FACT (a) = {p| know'/believe'/…'/…'/…' (a,x,p)}

Another basic conjecture is that *p* of the embedded clause is evaluated as true, assumed to be true, potentially true, or just claimed to be true in the worlds contained in the matrix *q* – relative to the specification of the background by the matrix predicate.

(56) Homer *knows/believes/hopes/demands/regrets* that (it is true that) zero is (not) a prime number.

This means at those indices *i* contained also in the proposition *q*, *q* specifying the background for interpreting *p*(i), *p*(i) is evaluated as true. This yields the desirable implication that *a* and *λi* for which *p*(i) is evaluated as true belong to the same set of indices restricted by the truth conditions of *q*. The SF for *that* can then be formalized as follows:

(57) SF(/that/): λpλqλa [[λi: i ∈ q(a) = H(a)] p(i) = 1]

All propositions are intensional before their index is fixed. This means even though the index of the embedded proposition *p* is defined as belonging to the same set as that of the matrix by means of the truth conditions of *q*, it is evaluated separately. The evaluation is carried out in relation to *q*, however. For the sake of illustration let us consider the indices as $\lambda\alpha \subseteq \lambda a$. Just like predications over individuals, specific predicates trigger extensionalization of the clause by one of their predicate functions.

(58) a. I am looking for a prime number. (function on λx)
b. I have found a prime number. (function on ∃x)

(59) a. I hope that zero is a prime number. (function on λα)
b. I know that zero is a prime number. (function on ια)

As above, extensionalization must be a matter of the background, which builds on the semantics of the matrix predicate. I suggest that extensional predicates *identify* the evaluation indices ($\lambda\alpha$: $\alpha = \alpha$). Note also that by defining the specification of the background by the matrix proposition, this variable *H* in the SF of the complementizer is trivially saturated by embedding the clause as a complement. On the other hand, defining $\lambda\alpha$ by the truth conditions of the matrix means that the matrix index[13] belongs to the same set ($\lambda\alpha \subseteq \alpha$).

Thus, the two hypotactical structures can be formalized as follows:

13. I presuppose that any way of realizing a matrix proposition relates it to one evaluation index, which means it is extensionalized by illocutionary force.

(60) a. [hope'(I,[(λα) ⊆ a) (prime-number'(α,zero') = 1)])]^{a}
b. [know'(I,[prime-number'(a,zero')^{14} = 1])]^{a}

If we also allow 'truth de dicto' as a quality of the background, the same can be said to hold even for utterance verbs:

(61) a. Homer claims that zero is a prime number.
b. [claim'(Homer',[prime-number'(a,zero') = 1])]^{a}

Not only *that* but also *if* expresses the relation between the actual indices of the connected clauses, and both *that*-clauses and *if*-clauses occur either in intensional or in extensional reading. *That*-clauses denote truth conditions for a definite set of indices constrained by a relation λi[p(i)=1]. *if*-clauses, on the other hand, denote truth conditions for an indefinite set related to a set of possible actual indices *λα* via equation (see above 2.2). Thus, *if* yields propositional disjunction by relating the sets of all possible indices to possible evaluation indices. Let us again assume that the evaluation index of the embedded clause is related to that of the matrix via the implication relation *λα: α α q(a)*. Then the SF for *if* can be formalized as follows:

(62) SF(/if/): λpλqλaλi[[λα: α ∈ q(a) = H(a)] p(i) = p(α)]

This means that whereas *that*-clauses denote definite sets of worlds constrained by the relation to one truth value, *if*-clauses denote indefinite sets of worlds, or even indefinite sets of sets of worlds in the intensional reading. Extensionalization indeed reduces the set of actual indices to *a*, but the set of indices related to *a* is still indefinite. This can be illustrated as follows:

(63) a. I wonder if zero is a prime number. (function on *λα*)
b. I know if zero is a prime number. (function on ια)

(64) a. [wonder(I,[(λα ⊆ a) (prime-nr(i,zero) = prime-nr(α,zero))])]^{a}
b. [know(I,[prime-nr(i,zero) = prime-nr(a,zero)])]^{a}

The use of *if* is licensed whenever the alternative set of possible indices is not empty – which would be equivalent to restricting the set *λi* to *a*, thus defining a definite set of worlds. This definite set would be encoded by the complementizer *that*, however. Looking at negated veridical predicates such as *know*, this becomes evident through the different options for the material in the scope of NEG:

(65) a. He does not know that zero is a prime number. (cf. 57)
b. ¬[know'(he',[prime-number(α,zero) = 1])]^{a}

14. This follows simply from the identification operation λα: α = a. The whole sentence is therefore false.

(66) a. He does not know if zero is a prime number. (cf. 62)
b. [¬know'(he',[(λα ⊆ a) (prime-nr(i,zero) = prime-nr(α,zero))])]^{a}

Note that only the sentence in (65) yields an effect of paradox. Even under negation, the veridicality of *know* triggers the truth-presupposition of zero being a prime number, which is, of course, false. In (66), however, negation as a nonveridical operation on the predicate blocks the extensionalization. There can't be any truth-presupposition effecting in a paradox.

Note that this view implies that the SF of *if*-clauses embedded by rogative predicates and by (subjectively) veridical predicates that undergo a nonveridical operation is identical. This, however, is a strong argument for a formal and modular view of clause mood: in certain epistemic contexts, nonveridical operations promote the use of *if*-clauses, which in fact denote sets of alternative epistemic worlds (Öhl 2017). References to questions or to sets of answers, however, are just options of interpreting them.

4. Conclusion

Complementizers such as *that* and *if* express a relation between the indices of the matrix and the complement clause. The complementizer *if* yields propositional disjunction by relating complementary sets of possible indices *i* to possible evaluation indices *a*. What is often called an intensional reading is in fact the denotation of sets of complementary sets of indices.

Veridical predications fix the evaluation index *a*, which is often referred to as *extensionalization*. In fact it is reduction to two complementary sets of indices. An *if*-clause is licensed when neither of the sets is logically excluded.

Nonveridical operations on the predication, such as NEG, block the extensionalization. Subjectively veridical predications denote commitment of the matrix subject to the truth of the embedded proposition. Therefore, *if*-clauses must be licensed by a nonveridical operation or other means yielding reference to complementary sets of alternative indices, such as the verum focus indicated by contrastive accentuation of the finite matrix verb.

All *if*-clauses denote sets of alternative epistemic worlds. Reference to questions or to sets of answers, however, are just options of interpreting the logical properties of complementizers such as *if*.

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Biased declarative questions in Swedish and German

Negation meets modal particles (*väl* and *doch wohl*)

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This paper investigates a class of biased questions with declarative syntax in Swedish and German that differ in their bias from the familiar class of declarative questions: *rejecting questions* (RQs), which may occur with or without negation. We provide a semantic-pragmatic analysis of RQs and show for negative RQs that the negation is non-propositional. We analyze the non-propositional negation as the speech-act modifying operator FALSUM (Repp 2009a, 2013). In both languages, FALSUM interacts with modal particles whose meanings relate to contrast and the epistemic state of the speaker. We propose that the illocutionary operator in RQs is REJECTQ, which is an operator that comes with presuppositions that are the source of the particular bias of RQs.

Keywords: non-propositional negation, question bias, modal particles, illocutionary operator, negative polarity item

1. Introduction

This article investigates a class of declaratives in Swedish and German that are used as questions but systematically differ in both form and function from the declarative questions (*DQs*) that have been described in the literature (Gunlogson 2003, 2008; Šafářová 2006; Trinh 2014; Gyuris 2017). See (1) for examples of negative questions with a declarative syntax. (1a) illustrates the familiar kind of DQ. (1b) illustrates an English rendering of what Seeliger (2015) called *rejecting question* (*RQs*)[1] for reasons that we will discuss further below.

1. Seeliger coined the term for RQs containing a negation. We will use it here to refer both to negative and to positive declaratives that are used as RQs.

https://doi.org/10.1075/la.249.05see

(1) a. Peter isn't coming? *'simple' declarative question*
b. Surely Peter isn't coming? *'rejecting' question*

(1a) and (1b) have in common that they cannot be uttered in out-of-the blue contexts, and that they express that the speaker had particular assumptions with respect to the true state-of-affairs before s/he asked the question. So, questions like (1a, b) are *biased*. Seeliger (2015) argued that the biases of negative questions with a declarative syntax like those in (1a) vs. (1b) differ. We will provide a systematic discussion of question bias in cases like (1a) vs. (1b) in the present paper, and extend the discussion to positive questions with a declarative syntax.

Formally, English (1a) and (1b) differ in the presence of the epistemic adverb *surely* and in their prosody. Whereas (1a) tends to have a rising contour (cf. Gunlogson 2003; Šafářová 2006), (1b) ends more reliably in a fall, with a L+H* pitch accent on *coming*. In Swedish and German, the languages under investigation in the present paper, the formal differences concern the position of the negation (in Swedish), the presence of modal particles, which do not occur in the familiar negative DQs, see (2a) vs. (2b), and prosody.

(2) a. (i) Peter kommt nicht? *German*
(ii) Peter kommer inte? *Swedish*
Peter comes not
'Peter isn't coming?'
b. (i) Peter kommt doch wohl nicht? *German*
Peter comes MP MP not
(ii) Inte kommer Peter? *Swedish*
not comes Peter
'Surely Peter isn't coming?'

The modal particles *doch* and *wohl* are obligatory in German RQs.[2] Since their meaning in RQs seems to be different from the meanings that have been identified for them in assertions (see Section 4), we will not give translations for them here. In Swedish, the necessity of the presence of a modal particle depends on the position of the negation. In (2b.ii), the negation occurs in the clause-initial position, Spec,CP, which is an unusual position for the negation in the Germanic languages and thus has attracted some attention in the literature (Christensen 2005; Lindström 2007; Petersson 2008; Østbø 2013; Brandtler & Håkansson 2012, 2014). In (2b.ii) no particle is required. However, as we will see later on, the negation can also take its

2. A declarative containing only doch which is followed by the question tag oder? can also be used as a RQ. Since question tags raise a number of independent issues, we will gloss over this variant here. We will say more about the precise readings with and without individual particles in German in Section 4.

ordinary clause-medial position, but then a RQ requires the presence of the modal particle *väl*, or, in positive RQs in specific contexts the particles *visst* or *nog*. We will discuss the meaning of the Swedish particles in Section 5. Prosodically, DQs and RQs differ as follows. In German, DQs tend to come with rising intonation (von Essen, 1966 and subsequent literature)[3] but RQs always end in a fall. Their nuclear accent (which in (2b.i) is on the main verb) is a prominent L*+H pitch accent, which intuitively is more prominent than a run-of-the-mill nuclear accent in an ordinary assertion. However, this claim needs experimental back-up. In Swedish, DQs do not end in a fall but are differentiated from assertions by other means, viz. DQs are characterized by higher peaks of the lexical accents (e.g. Gårding 1979), a later peak on the prefinal accent and a longer duration of the prefinal syllable (House 2003). RQs, when compared to rejections, largely share these question-marking features (Seeliger & Repp 2017). Whether or not DQs differ from RQs prosodically in Swedish is an open issue.

In this paper, we investigate how the morpho-syntactic formal markers in German and Swedish (modal particles, fronted negation) contribute to the interpretation of declaratives as RQs. We provide a detailed empirical discussion of German RQs and the speech-act-characteristic particle combination *doch wohl*, which raises an issue of compositionality because the two particles individually have meanings that do not seem to combine compositionally in RQs. Similarly for Swedish, we explore the contribution of modal particles. We also present experimental evidence on Swedish RQs that verifies quantitatively Seeliger's (2015) proposal about the relation between the syntactic position of the negation / the presence of the modal particle *väl* in the declarative on the one hand, and question bias on the other. On the basis of the empirical findings, we make a theoretical proposal for the semantic-pragmatic and syntactic analysis of RQs. Importantly, this analysis takes into account specific characteristics of the negation in negative RQs, which we show to be non-propositional.

The paper is structured as follows. Section 2 discusses the notion of *question bias* in greater detail and introduces a classification scheme for *bias profiles*[4] that was proposed by Sudo (2013). Section 3 discusses the bias profile of RQs. Section 4 explores the morpho-syntactic properties of RQs in German and makes a preliminary proposal for the syntactic and semantic-pragmatic analysis of RQs in that language. Section 5 explores the morpho-syntactic properties of Swedish RQs and presents the experimental evidence on Swedish negative RQs. Section 6 offers a

3. This is a tendency. As has been shown by Petrone & Niebuhr (2014), there are pre-nuclear prosodic means to distinguish declaratives and declarative questions that end in a fall.

4. The term bias profile was coined by Gärtner and Gyuris (2017) but they use a different notation for bias profiles than we do.

detailed analysis of the negation in negative RQs and argues that the (un)acceptability of polarity-sensitive items in these questions supports the assumption that the negation is non-propositional. It then proposes a semantic-pragmatic and a syntactic analysis for RQs in Swedish and German. Section 7 concludes.

2. Question bias

The normal way to ask a neutral question that expects a *yes*- or *no*-answer is to ask a positive polarity question with an interrogative syntax, which in English involves subject-auxiliary inversion as in *Is Peter coming*? The same holds for equivalent interrogative structures in Swedish and German. Formal deviations from these structures produce questions that express some kind of bias. For instance, asking a negative polar question like *Isn't Peter coming?*, asking a positive question with declarative syntax like *Peter is coming?* or asking a negative question with declarative syntax like (1a) is not possible in a neutral out-of-the-blue context, and/or without certain speaker assumptions about the true state-of-affairs. For negative polar questions with an interrogative syntax, question biases were investigated first by Ladd (1981), Büring & Gunlogson (2000) and Romero & Han (2004). Declarative questions received a first detailed investigation in Gunlogson (2003).

Questions biases have been suggested to come in different types. Sudo (2013) proposed that for an adequate description of different question types, it is necessary to distinguish *evidential* and *epistemic* bias. Evidential bias concerns contextual evidence. Some question types are only felicitous in contexts where there is evidence for one of the propositions denoted by the question $\{p, \neg p\}$,[5] for other questions it is necessary that there be evidence against one of these propositions, for yet other questions it is necessary that there be no evidence for one or the other of these propositions. For instance, certain negative polar questions, e.g. *Isn't there a vegetarian restaurant around here?*, cannot be asked felicitously if there is contextual evidence for the positive proposition *p,* i.e. *that there is a vegetarian restaurant* (cf. Büring & Gunlogson 2000 and subsequent literature).

With respect to epistemic bias, Sudo (2013) observes that most question types allow inferences about the epistemic state of the speaker, in particular about his/her previous assumptions. For instance, a speaker might have thought that the positive proposition is true and wishes to double-check that this is indeed the case, or s/he thought that the negative proposition is true, has started doubting, and now checks whether the positive proposition is true (cf. Ladd 1981). For the moment we are assuming that the actual intentions of the speaker – to double-check one or the

5. For ease of exposition we will assume in these introductory sections that questions expecting a yes- or no-answer, denote {p,-p} independently of their syntactic form.

other proposition – are not part of the pragmatics that licenses the use of biased questions. Plausibly, these intentions arise as a consequence of a conflict between evidential and epistemic bias.

To encode evidential and epistemic bias, Sudo (2013) proposes the following scheme. Both types of bias can take the values [+positive] (bias for *p*), [neutral] (no bias), and [+negative] (bias for ¬*p*). Evidential bias can furthermore take the values [−positive] for questions that are incompatible with evidence for *p*, and [−negative] for questions that are incompatible with evidence for ¬*p*. This is illustrated by (3). It gives possible contexts for a question denoting *{Peter is coming; Peter is not coming}*, and shows what values the evidential bias of the question might take in these contexts. (4) gives possible speaker assumptions.

(3) **Evidential bias**: Relevant contexts for Maria asking the question *{Peter is coming; Peter is not coming}*

a. **Evidence for *p***: Paul and Maria are looking at a list of guests for tonight's dinner party. Maria sees Peter's name on the list.
compatible with [+positive]; [−negative]

b. **Evidence for ¬*p***: Paul and Maria are looking at a list of guests for tonight's dinner party. Maria sees that Peter's name on the list is crossed out.
compatible with [+negative]; [−positive]

c. **Evidence for neither *p* nor ¬*p*:** Paul is looking at a list of guests for tonight's dinner party. Maria is watching him from the other end of the table, where she cannot see the list. *compatible with [neutral]; [−negative]; [−positive]*

(4) **Epistemic bias**: Speaker assumptions for the question *{Peter is coming; Peter is not coming}*

a. Peter is coming. (= p) *compatible with [+positive]*
b. Peter is not coming. (= ¬p) *compatible with [+negative]*
c. {p, ¬p} *compatible with [neutral]*

In the following we will apply this scheme first to 'simple' DQs (this section) and then to RQs (Section 3). A summary of this discussion with an overview of the bias profiles of the individual question types can be found in Table 1 at the end of Section 3. Note that throughout this paper, we will use the variable *p* to refer to the positive proposition in the question denotation {*p*, ¬*p*} and ¬*p* to refer to the negative proposition. Thus, a negative declarative denotes ¬*p*, and a positive declarative denotes *p*. Both types may come with a bias for e.g. *p*, which in our notation means that they would have the same bias, viz. for the positive proposition in the question denotation {*p*, ¬*p*}.

Starting with positive declarative questions (*PDQs*), consider (5) for an example in English, German and Swedish. All three PDQs are only felicitous in contexts comparable to (3a). Their evidential bias is [+positive], i.e. they require contextual evidence for *p*. This is also the proposition that is denoted by the declarative.

Furthermore, (5a–c) can only be uttered in this context if Maria thought beforehand that Peter would not be coming, or if she had no specific assumptions (she might not have thought about whether Peter would be coming or not, or she might have had doubts).[6] In other words, the only epistemic bias that is excluded for the PDQs in (5) is [+positive]. This type of bias currently cannot be encoded in Sudo's (2013) bias system because biases that cover two out of three polarities – [–positive] in our case – are only allowed as values for evidential biases, not for epistemic biases. We will amend the system accordingly and allow 'minus'-biases for epistemic biases, too (also see Gärtner & Gyuris 2017).

(5) *Positive declarative questions (PDQs)*
evidential: [+positive]; *epistemic:* [–positive]
Maria:
a. Peter is coming?
b. Peter kommt? *German*
c. Peter kommer? *Swedish*
Peter comes

Let us next turn to the negative declarative questions (NDQs) in (6a–c). These questions can only be uttered felicitously in contexts comparable to (3b), that is if there is contextual evidence for $\neg p$. This is (again) the proposition that is denoted by the declaratives, which in (6) contain a negation. The evidential bias of the NDQs is [+negative]. Turning to the epistemic bias of (6a–c), the NDQs allow the conclusion that Maria had assumed p to be true, or that she had no assumptions about $\{p, \neg p\}$, i.e. the epistemic bias of (6) is [–negative].[7]

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6. An anonymous reviewer suggests that this is the epistemic bias of these questions when realized with a L*H% contour on the verb. If they are realized as a H*H% contour, they can be used as confirmation questions with a [+positive] epistemic bias. The role of intonation in DQs will have to be investigated in detail in future research.

7. The felicity of a NDQ with the speaker having no epistemic bias for p seems to depend on particular characteristics of the context and on the prosody of the NDQ. In the contexts that we have been considering for (6), the interlocutors were considering a list, which could have a person's name or a person's crossed-out name on it, or the person's name could not be on the list at all. As a consequence, asking about a person whose name is crossed out can be a question which expresses that the speaker just noticed that that person was relevant for the list at all and had not previous bias. In such a context, (6) is a clarification question. It can be followed by OK. I didn't even know that he was considered for the guest list. Intuitively, clarification questions have a slightly different prosody from DQs that are uttered in a situation where a speaker had an epistemic bias for p. The rise that is characteristic of DQs involves a less low target before the high tone (i.e. no L* H-H% contour) and is more gradual. Obviously, this issue needs to be explored experimentally. The relevance of the context for the two types of epistemic bias of (6)

(6) *Negative declarative questions (NDQs)*
evidential: [+negative]; *epistemic:* [−negative]
Maria:
a. Peter isn't coming?
b. Peter kommt nicht? *German*
c. Peter kommer inte? *Swedish*
Peter comes not

Comparing the PDQs in (5) and the NDQs in (6) we find that they are identical in terms of their evidential and epistemic biases in the sense that both types of questions require contextual evidence for the proposition that is denoted by the declarative, and both require that the speaker must not have already assumed what is denoted by the declarative.[8] In what follows we will apply these insights about different kinds of question biases to RQs.

3. Bias in rejecting questions

Consider (7), which is repeated from the introduction. (7a–c) intuitively are only felicitous in context (3a) from Section 2, viz. the context where Maria is looking together with Paul at a list of guests for a party and where she finds Peter's name on the list. The evidential bias is [+positive].

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can be seen rather clearly if we compare (i) and (ii) below. The epistemic bias of (i) is [+ positive] rather than [−negative].

(i) Context: Someone is coming into a windowless room dry and wearing sunglasses.
Maria: It's not raining?

(ii) Context: For the last 10 weeks, Peter has been recording in a list when it rained. For several days there is no 'rain'-mark in the list. Maria is curious because she collects weather data from different places.
Maria: On 10 September it didn't rain? OK, I'll mark that down in my list too.

The difference between (i) and (6ii) is that in (i) the context only makes the possibility that the sun is shining salient, not the possibilities that it is raining or not raining (although, of course, the outfit of the person entering is not suggestive of rain). In the list scenario in (ii) both 'rain'-possibilities are made salient. The negation in (ii) is 'licensed' by the specific form of the contextual evidence – namely, by the absence of a mark in a list of rainy days. Thus, there is overall evidence for two polarities concerning rain, which is compatible with neutral epistemic bias. In (i), on the other hand, the contextual evidence does not 'prime' the predicate rain, so asking a question about (the absence of) rain implicates that the speaker had previous assumptions about the weather, specifically that it is raining.

8. An exception are so-called expert contexts (Beun 2000; Gunlogson 2003), e.g. when somebody buying a train ticket at a counter is verifying that a train is departing at a certain time: And the train is leaving at 5 p.m.?.

(7) *Negative rejecting questions (NRQs)*
evidential: [+positive]; *epistemic*: [+negative]
Maria:
a. Surely Peter isn't coming?
b. Peter kommt doch wohl nicht? *German*
Peter comes MP MP not
c. Inte kommer Peter? *Swedish*
not comes Peter

So (7a–c) pattern with the PDQs in (5) in terms of evidential bias. Note that this is the case although the proposition that is denoted by the declarative is $\neg p$ in the negative RQs, and p in the PDQs. This means that a generalization that was recently proposed for polar interrogatives and DQs, viz. that the proposition denoted by the prejacent of the question (i.e. the meaning of the TP without the question operator) must not contradict the contextual evidence (Trinh 2014), is not valid for RQs.[9]

With respect to epistemic bias, the two question types differ. While a PDQ allows for the possibility that the speaker of the question had no previous assumptions about the questioned proposition (i.e. neutral epistemic bias), a negative RQ (= NRQ) obligatorily expresses that the speaker of the question was (and continues to be) opinionated about the questioned proposition – specifically that s/he took $\neg p$ to be true. While the latter is also a possibility for PDQs, it is just one of two possibilities. Thus, whereas the epistemic bias for PDQs is [−positive], for NRQs it is [+negative]. Comparing PDQs to NDQs, we found in the last section that the epistemic bias of NDQs is [−negative], that is the speaker must not have assumed that $\neg p$ is true. The epistemic bias of PDQs is [−positive], that is the speaker must not have assumed that p is true. Thus, in both NDQs and in PDQs the speaker must not have assumed that the proposition that is denoted by the declarative (NDQ: $\neg p$, PDQ: p) is true. DQs pattern with each other, NRQs are different.

We mentioned in the introduction that that there are also positive RQs (PRQs), which hitherto had not been observed. Consider (8). (8a–c) are felicitous in context (3b) from Section 2, viz. the context where Maria finds Peter's name on the list to be crossed out. So the evidential bias is [+negative], the counterpart to that of the NRQ. As for the epistemic bias of (8a–c), Maria must have assumed that Peter would be coming, viz. the bias is [+positive], the opposite of the epistemic bias of the NRQ. Note that the Swedish question must either contain the modal particle

9. We will see in Section 6.1 that the negation in negative RQs is not propositional negation, so these questions are not actually problematic for Trinh's generalization, from which questions with so-called high negation (Ladd 1981), which has been analyzed as being outside the proposition (e.g. Romero & Han 2004; Repp 2009a, 2013) are excluded. However, the same observation obtains for positive RQs, which are discussed below, and these do pose a problem for Trinh's generalization.

väl and a clause-initial *men* ('but'), or a modal particle in clause-initial position. We will come back to this observation in Section 5.

(8) *Positive rejecting questions (PRQs)*
evidential: [+negative]; *epistemic*: [+positive]
Maria:
a. Surely Peter is coming?
b. Peter kommt doch wohl? *German*
Peter comes MP MP
c. Men Peter kommer väl? *Swedish*
but Peter comes MP
c′. Visst/Nog kommer Peter?
MP comes Peter

The bias profiles of the four question types are summarized in Table 1. We see that RQs differ from DQs in that RQs are 'more biased' than DQs. The speaker of a RQ assumed a specific proposition to be true, viz. $\neg p$ (NRQ) or p (PRQ), whereas the speaker of a PDQ and a NDQ is less 'prejudiced' as it were. As a consequence, the conflict between what seems to be real (as suggested by the contextual evidence) and what the speaker believed to be true is more drastic in RQs. Overall, the speaker of a RQ might be said to reject what s/he sees and to insist on what s/he believed – hence the term *rejecting question*.[10,11] As we already mentioned, there is some overlap in the situations where RQs and DQs can be used, notably with 'criss-crossing'

10. We take the rejecting component of the meaning of RQs to be conventionalized in the sense that RQs usually express that the speaker would prefer keeping their prior commitment, but this preference can be overridden. In (i), the RQ indicates that the speaker had a strong expectation that the sun would not be shining, but there does not seem to be any indication that s/he would prefer to keep this expectation, i.e. that the bias would be buletic. Instead, the RQ indicates surprise or puzzlement. The bias is 'merely' epistemic (see Section 4 for more on this issue).

(i) Context: It has been raining non-stop for weeks. The speaker now sees that the sun is shining.
Es scheint doch wohl nicht die Sonne?
it shines MP MP not the sun
'Surely the sun isn't shining?'

11. We would like to point out here that RQs are different from non-wh-echo questions, which are also sometimes called incredulity questions (e.g. Cohen 2007). The terminology might suggest that the two question types are the same. However, as (i) illustrates, in contrast to incredulity questions, RQs are not coherent in a discourse that echoes the previous utterance (as is expected on the basis of the bias profiles of RQs summarized in Table 1).

(i) A: Peter kommt.
B: Peter kommt? (= incredulity question)
B′: #Peter kommt doch wohl? (= RQ)

polarities. A NRQ is used in a subset of the situations where a PDQ can be used. For both types of questions there must be contextual evidence for *p*, but in NRQs the speaker is more restricted in his/her assumptions: she/he must have assumed ¬p, which is a subset of the situations where the speaker did not assume *p*. Similarly, a PRQ is used in a subset of the situations where a NDQ is used.

Table 1. Overview over types of questions with declarative syntax

Question type		Declarative denotes*	Evidential bias	Epistemic bias	Example
Declarative	*PDQ*	*p*	[+positive]	[−positive]	*Peter is coming?*
	NDQ	¬*p*	[+negative]	[−negative]	*Peter isn't coming?*
Rejecting	*PRQ*	*p*	[+negative]	[+positive]	*Surely Peter is coming?*
	NRQ	¬*p*	[+positive]	[+negative]	*Surely Peter isn't coming?*

* We will argue in Section 6.1 that the negation in NRQs is not actually propositional negation, so that the declarative does not denote ¬p. The above notation is thus simplified.

4. Rejecting questions in German

4.1 The meaning of the modal particles *doch* and *wohl* in isolation

In the previous sections we saw that in German, RQs differ from DQs in that they contain the modal particles *doch* and *wohl*. We will see in this section that both of these particles are required to mark a declarative as RQ.[12]

On its own, *doch* is typically used – in declarative assertions – to remind the addressee that the proposition that the modal particle scopes over is part of the common ground already, and that that proposition is in conflict with a previous proposition, e.g. one that was just uttered by the other interlocutor, or one that was presupposed, entailed or implicated by a previous utterance (e.g. Thurmair 1989; Lindner 1991; Jacobs 1991; Karagjosova 2004; Zimmermann 2011; Repp 2013). Furthermore, a recent investigation of the role of *doch* for the interpretation of discourse relations (Döring 2016; Döring & Repp to appear) suggests that speakers often employ the reminding function of *doch* to signal that they consider the proposition *doch* scopes over as uncontroversial, and thus to strengthen the argument that they are trying to make.

12. As we mentioned in Footnote 2, a declarative containing only doch which is followed by the question tag oder?('or') can also be used as a RQ. An anonymous reviewer points out, that for him/her oder is not even needed. We do not share this judgement. The issue needs to be tested quantitatively in future research.

For the particle *wohl* it has been argued that if it occurs in declaratives it has an epistemic meaning. The speaker hypothesizes that the proposition that *wohl* scopes over is true but s/he is not absolutely certain (e.g. Abraham 1986, 1991; Asbach-Schnitker 1977; Doherty 1979, 1985; Gast 2008). The particle has also been suggested to restrict the validity of the speech act (Thurmair 1989). Zimmermann (2004) suggests that *wohl* is a speech-act modifying particle which indicates that the speaker's commitment to the proposition is weakened.

What is particularly relevant for the present context is that Doherty (1985) observes that declaratives with *wohl* can be used as assertions or as questions (also cf. Thurmair 1989). Zimmermann (2004) suggests that the question meaning arises via pragmatic reasoning from a clash of the meaning of the particle with the meaning of the speech act in certain contexts. He provides an example where a *wohl*-declarative conveys a hypothesis about who the addressee's boyfriend is (lit. *Peter is* wohl *your boyfriend?*), i.e. about something the addressee obviously is already informed about. By implicature this means that the declarative cannot be intended as an assertion: it is not informative. So it is plausibly intended as a question. We think that this reasoning is problematic because declaratives with *wohl* can also be uttered if it is not obvious that the addressee knows the answer. Consider (9), where the most plausible interpretation of the context is that neither interlocutor knows anything about 'the guy' apart from what they are seeing. Still, Maria's utterance most plausibly is interpreted as a question – as Paul's reaction indicates.

(9) Paul: Look, the guy from this morning is still standing by Ann's door.
Maria: Der weiß wohl nicht, dass sie im Urlaub ist?
he knows MP not that she in vacation is
'Doesn't he know that she is on vacation?'
Paul: We could ask him.

So, we think that Zimmermann's (2004) account does not explain why *wohl* can 'turn' an assertion 'into' a question. Instead, we will assume that the function of *wohl*, to indicate speaker uncertainty and a weakened commitment to a proposition, is easily interpreted as an invitation for the addressee to settle whether the proposition should be part of the common ground or not (also cf. Thurmair 1989; and see Gast 2008, who suggests that hypotheses prompt the hearer to react). Obviously, this idea raises the issue of why not every *wohl*-utterance is a question. We would like to suggest here – in opposition to claims in Zimmermann (2004) – that *wohl*-utterances that are intended as questions get a little help from prosody. We agree with Zimmermann that such utterances do not necessarily end in a rise. However, we know from the prosodic literature that declarative questions might end in a fall and still be distinguishable from assertions, e.g. by the nuclear accent and by the shape, slope, and alignment of the preceding prenuclear pitch accents

(see Petrone & Niebuhr 2014). So, it is very likely and in our view intuitively correct that declarative questions with *wohl* are marked prosodically. How they are marked exactly is a matter of future research. In sum, we will assume that *wohl* can occur in declaratives that due to the presence of *wohl* are fairly readily interpreted as questions. As a short-hand, we will say that *wohl* has a question-inducing function but we will be assuming throughout that the question meaning additionally is marked by prosody.

Another meaning shade of *wohl* that will become important later on is what we may call an *evidential* or *reportative* meaning. In (10) Ann uses *wohl* to indicate that she has heard by word-of-mouth that the person in the picture is Maria's boyfriend.

(10) Context: Bea is pointing at a photograph.
Bea: Weißt du wer das ist?
'Do you know who this is?'
Ann: Das ist wohl Marias Freund.
that is MP Maria's boyfriend
'That's Maria's boyfriend (or so I've heard).'

The reportative meaning does not necessarily imply a weak commitment. This can be seen if we compare *wohl* to the modal verb *sollen* ('should'), which may have a deontic or a reportative meaning. For the reportative meaning of the modal verb it has been observed that a speaker may be committed to the truth of the proposition or not, or that s/he might even be committed to its falsity (Öhlschläger 1989; Diewald 1999; Mortelmans 2000; Faller 2017). Although *wohl* cannot be used in all of these cases, it can certainly be used in the first case, i.e. if the speaker is committed to the truth of the proposition. Consider (11) from Faller (2017: 58), which illustrates that a speaker can be committed to the proposition that is denoted by a sentence which also contains *sollen* (i.e. the speaker is committed to the prejacent). The *sollen*-sentence is given in italics. The final sentence in the example presupposes the truth of the prejacent of the *sollen*-sentence, which indicates that *sollen* is only used to express the reportative character of the statement. (12) is an equivalent of the *sollen*-sentence with *wohl* rather than with *sollen*. Replacing the *sollen*-sentence in (11) with (12) is coherent.

(11) In Offenburg ist ein kurioser Diebstahl in einem Seniorenheim aufgefallen. *Ein Dieb* ***soll*** *aus dem Seniorenheim innerhalb von drei Monaten rund 500 gebrauchte Wischmopps entwendet haben.* […] Was genau der Dieb mit den 500 Wischmopps vorhat, ist nicht bekannt.
'In Offenburg, a curious theft in a home for senior citizens has attracted attention. *A thief reportedly stole around 500 used mops from the home over three months.* […] What exactly the thief plans to do with the 500 mops is not known.'
<http://www.anwalt-strafverteidiger.de/strafrecht-meldungen/strafrecht/diebstahl/> (4 June 2014)

(12) Ein Dieb hat **wohl** aus dem Seniorenheim innerhalb von drei Monaten rund 500 gebrauchte Wischmopps entwendet.

Thus, we may assume that *wohl* may be used to indicate that the speaker has some kind of reportative evidence for his/her assumption (also cf. Modicom 2012 on the assumption that *wohl* may mark hearsay evidentiality; and Haumann & Letnes 2012 on the role of evidentiality for *wohl* in general). The reportative meaning shade is not present in DQs with *wohl*. Thus, the speaker is not asking the addressee for evidenced truth in such questions.

4.2 Combining *doch* and *wohl*

Let us now return to RQs and explore the combination of *doch* and *wohl*, which discerns RQs from other declaratives that have a question meaning. Recall from Section 3 that RQs come with an evidential bias that is opposite to what the speaker had assumed to be true. The speaker utters a RQ to express the conflict and his/her wish to verify what the true state-of-affairs is. Intuitively, we might therefore say that in RQs *doch* signals that there is a conflict between the proposition *doch* scopes over and the contextual evidence, and that *wohl* has its question-inducing function. It might be the case that the question-inducing function, which we argued above may be a consequence of *wohl*'s hypothesizing function, is strengthened because there is a conflict.

There are a few aspects that are worth noting about this scenario. First, the reminding meaning of *doch* intuitively seems to be absent in RQs and does not figure in the above scenario. However, as it turns out, RQs are not actually special in this respect. The reminding function of *doch* is not present in other contexts either, for instance in contexts where the speaker expresses surprise about something that s/he just realized (e.g. *Das ist doch Peter!* 'Oh, wow, that's Peter!'). Kaufmann and Kaufmann (2012: 211) call this meaning shade *realizing the obvious*. We might hypothesize that the conflict-indicating meaning component of *doch* lends itself to mark surprise because there is a contrast with a previous knowledge state. This seems to be compatible with the biases of RQs. What about the 'obvious'-part in *realizing the obvious*, that is, what is marked as being obvious? The c-command relations suggest that *doch* scopes over *wohl*, and both scope over the proposition. If *doch* and *wohl* combine compositionally we would expect one of the two following readings. On the one hand (a), *doch* may signal that the speaker just realized, and is surprised about the obvious state-of-affairs that the proposition in the scope of *wohl* is true or not (i.e. *wohl* induces a question meaning). On the other hand (b), *doch* may signal that the speaker just realized, and is surprised about the obvious state-of-affairs that there is an uncertainty with respect to the proposition (i.e. *wohl* does not induce a question meaning). The problem with both of these interpretations is that

they do not capture what a RQ seems to express. Interpretation (a) is trivial in the sense that it would be odd for a speaker to signal that s/he just realized that a proposition may be true or not because that is the case for all contingent propositions. Interpretation (a) would be saying something like *Oh, wow, I am only realizing now that Peter arrived or didn't arrive!* With respect to interpretation (b) we observe that the uncertainty, which (reportative uses ignored) lies at the heart of *wohl*, intuitively is very different from the uncertainty that is signalled in declaratives with *wohl* but without *doch*, i.e. the cases discussed in the previous subsection. So, there seems to be a compositionality problem here.

Particle combinations are somewhat notorious for compositionality problems. For instance, it is perfectly fine to combine *ja* and *doch* in a sentence (Doherty 1985; Lindner 1991; Müller 2017a), although the meaning of the latter seems to subsume the meaning of the former (viz. *ja* expresses the reminding / uncontroversiality meaning of *doch*, but not the conflict-indicating meaning; also see Müller 2017b for comparable redundancy effects in the combination of *halt* and *eben*). Still, some particle combinations are compositional, as was observed for instance for *ja wohl* by Zimmermann (2004) for sentences like *Peter kommt ja wohl* ('Peter is coming'). Here *ja* indicates that speaker and addressee share the hypothesis that Peter is coming – probably because of some rumour that they heard together (= the reportative use of *wohl*). In other words, the weak commitment to the proposition is already part of the common ground.

In the following we will explore the compositionality issue for *doch wohl* by comparing this particle combination to *ja wohl* as well as to isolated occurrences of the three particles (*ja, doch, wohl*) in speech acts that involve a conflict but are not questions: we will look at rejections both without and with negation. This exploration will give us some better insight into the role of modal particles in rejective speech acts. To start, consider (13). (13) is a dialogue where Ann makes a claim that is rejected by Bea by way of challenging a condition that needs to be fulfilled for Ann's claim to be possibly true: Noah can only come to the party if he is available, i.e. if he is not at sea. To render these dialogues more natural, we added a continuation, which gives a motivation for Noah's being at sea. As (13a–c) show, Bea's rejection may include the particle *doch,* or no particle, but it may not contain *ja* unless the rejection is followed directly by an explicit statement like *Therefore he cannot come to the party.*

(13) Ann: Noah kommt morgen zur Party. ('Noah is coming to the party tomorrow. ')
Bea: a. Noah ist auf See. Sein Chef hat den Dienstplan geändert.
Noah is at sea his boss has the roster changed.
b. Noah ist doch auf See. Sein Chef hat den Dienstplan geändert.
c. #Noah ist ja auf See. Sein Chef hat den Dienstplan geändert.
'Noah is at sea (b./c. – as you should know). His boss changed the roster.'

A straightforward explanation for the infelicitous use of *ja* in (13) suggests itself if we assume with some of the previous literature on *ja* and *doch* (e.g. Kaufmann & Kaufmann 2012; Grosz 2014b; Döring 2016), that the meaning components of the particles described above are presuppositions. We may assume that in a context where there is a conflict like in (13), *doch* is preferred over *ja* due to the principle *Maximize Presupposition* (Heim 1991) because in that context the additional presupposition of *doch* (indication of conflict) is met. The difference between (13a), which has no particle, and (13b) with *doch* is that (13a) lacks the additional meaning that the proposition *Noah is at sea* should have been known to the addressee already.

Let us next turn to *wohl* in rejections. (14) illustrates that it is possible to insert *wohl* into the kind of rejection we just considered. However, only the reportative reading of *wohl* is available, (14a). The (likely) source of the information is given in the second sentence: Noah's boss. The question reading, see (14b), unsurprisingly is incoherent in this context – with or without the second sentence.

(14) Ann: Noah kommt morgen zur Party. ('Noah is coming to the party tomorrow.')
Bea: Noah ist wohl auf See. Sein Chef hat den Dienstplan geändert.
a. 'I heard that Noah is at sea. His boss changed the roster.'
b. #'Noah is at sea, isn't he? His boss changed the roster.'

Next, consider the combination of *doch/ja* and *wohl* in the rejections in (15). Comparing (15) to (13) shows that if *doch/ja* are combined with *wohl*, their contextual appropriateness is inverted. This suggests that the meaning of these two particle combinations is not compositional. The combination *doch wohl*, if it were compositional, should have a reading in which the conflict plus reminder meaning (seen in (13)) combines with the reportative use of *wohl* (seen in (14)), which prima facie should be able to combine. However, a declarative with *doch wohl* is not felicitous as a rejection in this context. In contrast to this, although *ja* on its own is not felicitous in rejections (seen in (13)), it may combine with *wohl* to insist on the truth of a proposition that contrasts with a meaning aspect of a previously asserted proposition.[13]

13. An anonymous reviewer does not share our judgement here. For him/her both replies are equally bad. For us, the contrast is quite sharp. Note that the intonation of (15b) must be one where there is a L*+H L-% contour, with the L*+H on See ('sea'). Overall, it is quite likely that there are interindividual differences with respect to the acceptability of modal particles / particle combinations in German. These need to be investigated in quantitative research, which is beyond the scope of the present paper.

(15) Ann: Noah kommt morgen zur Party. ('Noah is coming to the party tomorrow.')
Bea: a. #Noah ist doch wohl auf See.
Intended: 'Noah indisputably is at sea – as you should know.'
b. Noah ist ja wohl auf See.
'Noah indisputably is at sea – as you should know.'

On a speculative note, what might be happening in (15b) is that the reminding meaning of *ja* is employed to imply uncontroversiality (see above: Döring 2016; Döring & Repp to appear), which in conjunction with the reportative use of *wohl* leads to a high, 'certified-by-others' certainty reading. So there might be room for a compositional derivation of *ja wohl* in rejections (which requires closer scrutiny of reportative *wohl*). It is important to note, however, that this interpretation still is rejection-specific. As we mentioned above, in other contexts (recall the rumour scenario for an utterance with *ja wohl*, discussed above Example (13)), sentences like (15b) can express that the speaker wishes to remind the addressee that they share a weakened commitment, i.e. *un*certainty with respect to the proposition.

In principle, the reasoning for *ja wohl* in terms of signalling high, evidence-based speaker certainty should also apply to *doch wohl.* However, the only reading that (15a) may have is as a positive RQ.[14] Thus, the addition of *wohl* to a rejection with *doch* like (13b) turns the rejection into a RQ. The reportative meaning of *wohl* does not surface in the RQ. Instead the question-signalling meaning arises. The reminder meaning component of *doch*, which was part of the rejection, is no longer present. The conflict meaning component is present. The precise role of the contrastive meaning component of *doch* needs closer scrutiny. It is interesting to

14. (15a) is actually not terribly good as a PRQ although the contextual evidence should license such a reading. We think that this is because RQs very often have a reproachful flavour in the sense that the speaker complains about what s/he is seeing and that his/her original expectations are not met. In (15a), complaining about Noah's apparently not being at sea is not very plausible if no additional context is given. If the speaker had ordered Noah to set sail to do a certain job and now learns that Noah is not actually at sea, there would be a good reason for complaining and (15a) would be felicitous as a PRQ. The reproachful flavour of RQs can be seen very well in conventionalized phrases with future tense, e.g. du wirst doch wohl ('surely you will…'), man wird doch wohl … dürfen ('surely one may'), see (i) and (ii).

(i) Context: Ben is not offering his seat to an old woman on the tram.
Mary to Ben:
Du wirst der alten Frau doch wohl einen Platz anbieten?
you will the.DAT old.DAT woman MP MP a seat offer
'Surely you will offer that old lady a seat?'

(ii) Man wird doch wohl noch fragen dürfen?
one will MP MP still ask may
'Surely one may ask a question?'

note in this connection that (15b) with *ja wohl*, which differs from (15a) in the lack of the contrastive component, becomes less rejective and more question-like if it is preceded by the conjunction *aber* ('but'), which also indicates contrast (see Repp 2013 for a close comparison of *doch* and *aber*). Although such judgements are extremely subtle and need to be investigated quantitatively in future research, they receive some indirect support from Swedish RQs, where the modal particle *väl*, which is very similar to *wohl*, combines with the Swedish variant of *but*, see Section 5.3 further below.

Overall, it seems that the combination of *wohl* with the particles *doch* and *ja* in rejections proceeds somewhat in a pick-and-mix fashion. Some meaning components of the individual particles are part of the particle combinations, others are not. Which ones are, and which ones are not, essentially seems to be conventionalized. Note that this does not only hold for rejections without a negation, which we concentrated on up to now, but also for rejections with a negation, see (16), which shows that a sentence with *doch wohl* cannot be used as a rejection whereas a sentence with *ja wohl* can.

(16) Ann: Noah kommt morgen zur Party. ('Noah is coming to the party tomorrow.')
Bea: a. Noah ist nicht in der Stadt.
b. #Noah ist ja nicht in der Stadt.[15]
b′. Noah ist ja wohl nicht in der Stadt.
c. Noah ist doch nicht in der Stadt.
c′. #Noah ist doch wohl nicht in der Stadt.
d. Noah ist wohl nicht in der Stadt.
Sein Boss hat den Dienstplan geändert.
'Noah is not in town. His boss changed the roster'

We conclude from our discussion that the particle combination *doch wohl* does not receive a compositional interpretation but has a conventionalized meaning which signals that the speech act it occurs in is a RQ. Having said this, it is still reasonable to assume that the use of *doch* and *wohl* to signal the RQ reading is (historically) motivated in the way that we described at the beginning of this subsection. In the next subsection we make a preliminary proposal for how RQs can be modelled at the semantics-pragmatics interface.

15. Like (13c), (16b) improves if it is followed by some additional information that highlights the relevance of the utterance to the antecedent.

4.3 Proposal for German rejecting questions

When the sentence type does not match the speech act type – as is the case with any kind of declarative that is used as a question, and other 'minor' speech act types – the issue arises of how the pragmatic question meaning can be derived from the syntax and semantics of the declarative sentence. In Sections 2 and 3 we saw that, depending on their morpho-syntactic and prosodic properties, declaratives of the same polarity have completely different conditions for their use as questions. In the previous two subsections we saw that the morpho-syntactic means that are employed to mark declaratives as RQs in German do not determine these conditions in a direct compositional way. In Section 5, we will see that the formal means employed to mark declaratives as RQs in Swedish do not lend themselves freely to a compositional analysis either. Furthermore, the means that are used in Swedish are not the same means as in German, although there is some overlap. All this suggests that the formal means that mark a RQ should be considered as *cues* for the speech act that is expressed, rather than compositional building blocks (cf. Grosz 2014a for a recent proposal on cues). However, considering that the particle combination *doch wohl* is obligatory in RQs – which is not a typical characteristic of speech act cues (they often are optional) –, and considering that syntax brings meaning and form together, we think that there must be a syntactic representation of the particular speech act in terms of an illocutionary question operator that interacts with the morpho-syntactic marking.

On the basis of our discussion on question bias in Sections 2 and 3, we assume that illocutionary question operators always carry information about the evidential and epistemic biases of the question, i.e. they encode the question's bias profile.[16] Concretely, we will assume that there is an illocutionary operator REJECTQ, for which we give a preliminary definition in (17), to be revised in Section 6.2. In (17) q stands for the proposition denoted by the declarative, irrespective of whether it contains a negation or not. The superscripts are shorthand for evidential bias, and for epistemic bias of the speaker. So, REJECTQ applies to a proposition q and requires the context to provide a proposition with the opposite polarity from q, and it requires the speaker to have assumed q. REJECTQ then provides a set of propositions as the meaning of the RQ.[17] After our discussion of Swedish we will see that

16. This kind of information essentially encodes the felicity conditions of the speech act, so encoding it in the speech act operator in our view is highly appropriate.

17. Krifka (2015) suggests that declarative questions are monopolar, i.e. only offer one proposition to the interlocutor (the one denoted by the declarative) so that s/he may commit to that proposition. Commitment is considered likely if there is contextual evidence for the offered proposition. As it stands, the proposal cannot account for the bias profile of RQs, especially the

REJECTQ does not operate 'directly' on a proposition and that its meaning therefore needs to be adapted, Section 6.2.

(17) [[REJECTQ]] = λq: $[\neg q]^{evid}$ & $[q]^{epist}$.{q,¬q} *(To be revised)*

REJECTQ imposes language-specific restrictions on the formal means that must be present in a declarative if that declarative is to be used as a RQ. In German this is simply a requirement for the presence of the modal particle complex *doch wohl*. We assume that REJECTQ probes for this complex and enters an Agree relation with it. Note that this implementation is a simple feature checking mechanism for morphological units that does not require semantic or pragmatic evaluations. The situational appropriateness of REJECTQ will be verified at the level of semantics/pragmatics, not syntax.

5. Rejecting questions in Swedish

Turning our attention to Swedish RQs, we need to extend the scope of our investigation beyond modal particles. As mentioned in Section 1, Swedish RQs can be marked by the non-canonical, clause-initial position of the negation. We will therefore begin our analysis of Swedish RQs by giving some background on clause-initial negation in Section 5.1 before turning to modal particles, particularly *väl*, in Section 5.2.

5.1 Fronted negation

We pointed out in the introduction that in Swedish NRQs the negative marker *inte* occurs in the clause-initial position. Recall that this was not the case in Swedish NDQs. We will use the term *fronted negation* here because there are good arguments that the negation is moved to the clause-initial position rather than being base-generated there (Zeijlstra 2013; Seeliger in prep.). As already mentioned, fronted negation is quite rare in the Germanic languages.[18] In Swedish, fronted negation only occurs in declaratives and has been claimed to come in different subtypes. Lindström (2007) differentiates *responsive*, *interrogative* and *additive* fronted

evidential bias, which is the opposite of what is expected under Krifka's analysis. We will leave this issue for future research.

18. However, contrary to common assumptions, German does allow fronted negation in certain contexts, see (i) for an example from an autobiographical work, where the fronted negation contrasts with the positive polarity of the previous sentence. (*continued*)

negation. Seeliger (2015) argues that the former two are restricted to rejective utterances, viz. to rejections (responsive negation) and to NRQs (interrogative negation), i.e. the type of utterances at issue in the present paper. The difference between NRQs and rejections is marked prosodically (Seeliger & Repp 2017). Additive negation differs from the type of fronted negation described here considerably (and will therefore be excluded from the scope of this article). Among other differences, the negative marker in additive negation is stressed, arguably a means of marking information structure in relation to previous context, and it only occurs in highly parallel utterances that are non-rejective (e.g. *Inte gick jag till London, och inte gick jag till Paris*. 'I didn't go to London, and I didn't go to Paris.').

The type of fronted negation at issue in this paper has been claimed to be quite marked in current Standard Swedish, but to be more idiomatic in Northern Swedish and Finland Swedish (cf. Lindström 2007; Brandtler & Håkansson 2014 on the historic development of fronted negation, as well as Østbø 2013 on the acceptability of fronted negation in Swedish and Norwegian). However, even in varieties of Swedish in which fronted negation is marked, it is acceptable, which stands in stark contrast to the non-Scandinavian Germanic languages, in which this type of fronted negation is unacceptable. In the experimental study to be presented in Section 5.4, we will show that fronted negation is highly acceptable in RQs in Swedish.

As we mentioned in Section 1, it has been claimed that declaratives with fronted negation that are intended as questions (i.e. NRQs) can be paraphrased by declaratives with the negative marker in its canonical position left of the vP edge combined with the modal particle *väl* (Petersson 2008), see (18a).

(18) a. Peter kommer väl inte? *Swedish*
Peter comes MP not
b. Inte kommer Peter?
not comes Peter
'Surely Peter isn't coming?'

(i) Ich verschonte die Bonner Politik auch dort mit offenem Widerspruch, wo deutlichere Kritik angezeigt gewesen wäre. Nicht verschonte ich sie allerdings mit einer Initiative, die – so bescheiden sie war – die Mauer einen Spalt öffnete
(Willy Brandt: Erinnerungen. Propyläen-Verlag. 1989. p. 70)
'I spared Bonn open disagreement even regarding those issues in which more explicit criticism would have been appropriate. I did NOT, however, spare them an initiative that – humble though it might have been – opened a crack in the wall.'
(Willy Brandt: Memories)

A corpus analysis carried out by the first author shows that polarity contrast regularly licenses nicht in a fronted position and is not completely uncommon in German (see Seeliger in prep.); cf. also Ulvestad (1975).

Swedish *väl* is quite similar to German *wohl* in non-rejective utterances. Therefore, it is remarkable that it also seems to be able to occur in RQs. The following section will explore the function and meaning of *väl* in detail.

5.2 The modal particle *väl*

There is not much literature on Swedish *väl* outside descriptive grammars and translation studies (e.g. Teleman et al. 1999; Aijmer 1996). In the existing literature, *väl* is described as a particle that expresses that the speaker is not certain that the proposition *väl* scopes over is true but that s/he suspects that it is true. Aijmer (2015: 174) gives the paraphrases 'I guess that' and 'I suppose that', and Alm (2012: 47) assumes that *väl* "both marks the proposition as uncertain and signals that the hearer is the source of knowledge". All this is very reminiscent of the meaning of German *wohl*. Crucially, *väl*-utterances are very often characterized as expecting from the addressee to take a stance towards the respective proposition, i.e. essentially to answer it. So, what for German *wohl* has been described as one of several functions seems to be a central meaning component for *väl*: *väl* seems to signal regularly that its host utterance is intended as a question, or at the very least requests input from the addressee in the sense that the proposition that it scopes over requires explicit ratification from the addressee before it can be added to the common ground. To illustrate, (19) without *väl* is a commitment of the speaker to the proposition *that Peter is coming*. With *väl*, the speaker tentatively assumes (i.e. hypothesizes) that Peter is coming and expects a confirmation by the addressee. The English paraphrase makes this meaning component explicit by the use of a tag question.

(19) Peter kommer (väl). *Swedish*
Peter comes MP
'Peter is coming(, isn't he?)'

In essence, we propose that declaratives with *väl* cannot be assertions. They are declarative questions. Positive declaratives with *väl* have the bias profile of PDQs, viz. there must be (contextual) evidence for the denoted proposition *p*, and the speaker must not have assumed *p* beforehand (recall that the speaker of a *väl*-utterance in the moment of the utterance only *hypothesizes p* to be true). We must leave open here what exactly the difference between a PDQ without *väl* and one with *väl* is.

When negation enters the picture, the issue gets more complicated. If *väl* and *inte* combine compositionally, the negative declarative version of (19) should roughly express *Peter isn't coming, is he?*. In terms of bias profiles, this negative declarative should have the same bias profile as a NDQ without *väl*. However,

if Petersson (2008) is right, i.e. if a sentence like (18) above, which is a negative declarative with *väl*, can be used to paraphrase a sentence with fronted negation and without *väl*, *väl* and *inte* do not combine compositionally. The reading that Petersson suggests for (18) is that of a rejecting question. In the experiment presented in Section 5.4, we test Petersson's claim quantitatively, viz. we tested whether negative declaratives with *väl* can have the bias profile of RQs.

Note that Swedish *väl* does not seem to have the reportative meaning of German *wohl*. The Swedish Example (20), which is the translation of German (10) in Section 4.1, does not have the reportative meaning that (10) has. In (20) Maria only utters a hypothesis. Further input from Bea is required. In German (10), Ann provides a complete answer, which clearly marks the epistemic source of the asserted proposition as hearsay. In Swedish, this evidential marking must be marked by a different modal particle: by clause-medial *visst* (which has a different meaning from clause-initial *visst* (cf. Aijmer 1996; Petersson 2008; Scherf 2017), see Section 5.3 for discussion).

(20) Context: Bea is pointing at a photograph
Bea: Vet du vem det är?
'Do you know who this is?'
Ann: Det är väl Marias pojkvän.
that is MP Maria's boyfriend
'That's Maria's boyfriend, isn't it?'

5.3 Combining fronted negation and modal particles

To investigate the meaning contribution of *väl* and negation in rejective utterances we will proceed as we did for German, that is we will explore how rejections can be marked morpho-syntactically in Swedish. First consider the rejections in (21), which are the translations of German (13) in Section 4.2, and which do not contain a negation. (21) shows that the rejecting utterance can come without any particle, see (21a),[19] or with the clause-medial particle *ju*, see (21b). Clause-medial *ju* has the same meaning as German *doch* but can also be used in contexts where there is no conflict, i.e. in contexts where German *ja* would be used (Aijmer 1996). In (21b) the speaker not only rejects the assumption that Noah is able to come to the party because he is not at sea, but also reminds the addressee that Noah's being at sea should have been known to him/her.

19. Rejections without a particle usually are a little better with the conjunction men ('but'). We are glossing over this issue here.

(21) Ann: Noah is coming to the party tomorrow. [positive rejection]
Bea: a. Noah är till sjöss.
Noah is to sea
b. Noah är ju till sjöss.
'Noah is at sea (b. – as you should know).'

Turning to rejections containing a negation, consider (22), which shows that they can occur without a particle or with the particle *ju*. Furthermore, the negation can be fronted (recall Section 5.1), and combine with *ju* or not. As before, we assume that *ju* has a reminding function. The fronting of the negation in (22c) and (22d) marks the proposition *that Noah is not at sea* as uncontroversial and as conflicting with the context, i.e. in this case it conflicts with Ann's assumption that Noah is in fact at sea.

(22) Context: Whenever Noah is on shore leave, he visits every party.
Ann: Noah is not coming to the party tomorrow. [negative rejection]
Bea: a. Noah är inte till sjöss.
Noah is not to sea
b. Noah är ju inte till sjöss.
c. Inte är Noah till sjöss.
d. Inte är ju Noah till sjöss.
'(But) Noah is not at sea (b./c./d. – as you should know).'

Turning to RQs, recall that we observed in Section 3 (Example (8)) that Swedish positive RQs can be marked in several ways. (23) shows how RQs may be marked in the context that we have been considering in the sections on German. In (23a) we see that a declarative without any additional morpho-syntactic marking cannot express a RQ reading. This is the same as in German. The particle *väl* can occur in a positive RQ but ideally combines with the conjunction *men* ('but'), i.e. the contrast that is part of the rejective meaning ideally is expressed overtly, see (23b).[20] This is similar to German, where *wohl* combines with the contrast-marking modal particle *doch*. The preference for *men* in such RQs also parallels our observation for German that the particle combination *ja wohl*, if combined with *aber* ('but')

20. There is some corpus evidence that suggests that men is not always required, see (i) for an Example (from the Språkbanken corpus of the University of Gothenburg, <https://spraakbanken.gu.se/>) of an utterance with väl that arguably has a PRQ reading without men:

(i) Hört på H&M's barnavd av ca 7-åring: "Jag vill ha den tröjan!" Mamman: "Det är väl en tjejtröja?" Han: "Är du från stenåldern eller?"
'Overheard in H&M's children's department from a 7-year-old: "I want that sweater!" The mother: "Surely that's a girls' sweater?". Him: "Are you from the stone age or something?"'

more readily receives a RQ reading in that language (recall the discussion below Example (15) in Section 4.2).

(23) Ann: Noah is coming to the party tomorrow. [positive RQ]
Bea: a. #Noah är till sjöss?
b. Men Noah är väl till sjöss?
c. #Visst/Nog är Noah till sjöss?
d. #Visst/nog är väl Noah till sjöss?
MP is MP Noah to sea
'Surely Noah is at sea?'

Turning to clause-initial *visst/nog*, which we showed in Section 3 to be able to mark positive RQs, (23c) and (23d) show that they are infelicitous in the present context. This discrepancy obviously is remarkable. For clause-initial *visst/nog*, Petersson (2008) lists three types of meaning, which are identical for both particles.[21] *Visst/nog* can express that the speaker is completely sure of the embedded proposition's truth (e.g. *Noah is definitely coming to the party.*), or that the speaker considers the embedded proposition likely to be true and appeals to the addressee for confirmation (with *visst/nog* having a similar question-inducing function like *väl;* e.g. *Surely Noah is coming to the party?*), or that the speaker concedes that a previously asserted proposition is true but has reservations, which are typically expressed in a subsequent sentence (e.g. *Noah is certainly coming to the party, but…*). On the basis of these characterizations we expect that (23c/d) should be felicitous on the second type of meaning – which is what we found in Example (8) in Section 3, which was a PRQ in the context where the speaker saw that someone's name was crossed out on a list of party guests but had expected that the person would come to the party. The difference between the earlier example and the present example is the explicitness of the contextual evidence. In the earlier example the contextual evidence that was rejected was explicit. In the present example the contextual evidence only has an indirect relation to the proposition that is rejected in the RQ. So, it seems that although clause-initial *visst/nog* in the literature have not been related to any kind of evidential meaning, such a meaning is present (also cf. Scherf in prep.). That this should be so is plausible at least for *visst* because *visst* in clause-medial position is an evidential marker. For *nog* the issue is somewhat less clear because *nog* in clause-medial position meanders between a high certainty and a weak certainty reading. We leave the latter issue to future research.

With respect to negative RQs, we observed above that there are several issues regarding the acceptability of various formal means to indicate that a declarative

21. Note that visst and nog have no overlap in their meanings if they are in clause-medial positions.

has a RQ reading. We observed that fronted negation in rejective utterances overall seems to be marked. Furthermore, we predicted that the combination of fronted negation with the particle *väl* should give a negative declarative the bias profile of a NDQ rather than the bias profile of a NRQ. These issues require closer scrutiny. The previous literature on the different readings of fronted negation leaves many questions open. The (various) question contexts in which fronted negation can occur have been largely put aside by previous investigations (e.g. Brandtler & Håkansson 2012, 2014). The similarities between (in our terminology) rejections and RQs or (in the terminology of Lindström 2007 responsive and interrogative negation) have been overlooked.[22] There is one earlier investigation of the acceptability of declaratives with fronted negation, Østbø & Garbacz (2014), but this investigation is restricted to declaratives with clause-final doubling of negation (e.g. *Inte är Noah till sjöss inte*), whose role in our view is not yet well-understood.

In the next subsection we will present an acceptability judgement study that investigated the acceptability of RQs with fronted negation, and explored whether a RQ reading can also be indicated by means of a combination of low negation and the modal particle *väl*, as was claimed by Petersson (2008). Thus, the paradigm that we investigated is the one given in (24) except that the contextual evidence was not provided by another speaker (Ann in (24)) but by a prose passage. Note that *men* ('but') did not feature in this paradigm. The hash sign in (24a) and its lack in (24b–d) anticipate the results.

(24) Context: Whenever Noah is on shore leave, he always visits every party.
Ann: Noah is not coming to the party tomorrow. [negative RQ]
Bea: a. #Noah är inte till sjöss?
b. Noah är väl inte till sjöss?
c. Inte är Noah till sjöss?
d. Inte är väl Noah till sjöss?
not is MP Noah to sea
'Surely Noah is not at sea?'

5.4 Experiment on the interaction of negation and the modal particle *väl* in Swedish negative rejecting questions

The experiment tested declaratives denoting a negative proposition ¬p that were marked with fronted vs. clause-medial negation and with vs. without the modal particle *väl* in contexts that would support a NRQ reading of the declarative. Thus, the context was such that it would be appropriate for a question with the bias profile

22. Østbø (2013) hypothesizes that fronted negation in questions and rejections is formally the same.

evidential: [+positive], *epistemic:* [+negative], that is a question where the illocutionary operator REJECTQ as defined in Section 4.3 takes a negative declarative as its complement. We hypothesized that declaratives with fronted negation would be more acceptable than declaratives without fronted negation unless the latter contained the modal particle *väl* (Petersson 2008).

5.4.1 *Method*

Participants. 24 native speakers of Swedish (21 to 48 years, $M = 27.8$) participated in the experiment. They took part in the study voluntarily, without payment.

Materials and design. The materials consisted of 16 experimental items, 32 filler items and four practice filler items. Every experimental item introduced a scenario in which it was natural to utter a rejecting question, see (25) for an example item. The items started with a scene description, which provided contextual evidence for a proposition with positive polarity, i.e. the evidential bias that Seeliger (2015) postulates for RQs, [+positive], was met by the context. In (25), the context provides evidence for the positive proposition *that it will rain*: The father in the scenario grabs an umbrella. Then one of the interlocutors, in (25) this is the mother, asks a question about that proposition: *{it will rain, it will not rain}*. This is the target question. It always had declarative syntax, contained the negative marker *inte*, and ended in a question mark.

The target question came in four different versions. It either did or did not contain the modal particle *väl*, and the negative marker *inte* was either in its canonical low position, or in the preverbal, fronted position. The experiment had a 2v2 within-subjects within-items design, with the factors MODAL PARTICLE (*väl* present or not) and NEGATION (fronted or low). We used a Latin square design so that participants were randomly assigned to one of four groups, which differed in the order of filler and experimental items. Participants saw each experimental item once, in one of the four conditions, and four items per condition.

(25) **Sample item**
Det är söndag och familjen Johansson tänker ta en promenad just nu. Alla tar på sig kläderna, men pappan också tar med sig ett paraply. Mamman säger: 'It is Sunday and the Johanssons are about to go for a walk. Everyone is getting dressed, but the father also grabs an umbrella. The mother says:'

Condition	NEGATION	MP						
[1]	low	–	Det	ska	inte	regna	idag?	
[2]	low	+	Det	ska	väl	inte	regna	idag?
[3]	fronted	–	Inte	ska	det	regna	idag?	
[4]	fronted	+	Inte	ska	det	väl	regna	idag?
			not	will	it	MP	rain	today

The filler items were *wh*-questions and verb-first polar questions in contexts with no contextual evidence for the questioned proposition.

Procedure. The experiment was web-based. Participants worked through it at their own pace. The items were presented visually on a computer screen in the following way. At the very top, there was the instruction in Swedish: *Please read the following context and question.* Below the instruction, there were the scene description and the target question. In the lower half of the screen, there was the Swedish version of the following question: *How fitting is this question in this context?*. Underneath it there was a 7-point scale which consisted of numbered radio buttons. The end points of the scale were labelled with *helt lämplig* ('very fitting'; (= 7), *helt olämplig* (*'very unfitting'*; = 1). Participants were asked to give their judgement on the scale by clicking on the appropriate button. Note, that the word *question* (Swedish *fråga*) was used explicitly in the instruction and in the request to give the judgement. This was done to make a reading of the target question as a rejection less likely. In principle, such a reading is possible for conditions [1] and [3], where there is no modal particle, if participants additionally ignored the question mark at the end of the target question.

5.4.2 *Results*

The distribution of the ratings is shown in Figure 1. The statistical analysis was conducted by using cumulative link mixed models (R package ordinal; Christensen 2015) with random intercepts for subjects and items. The model parameters are

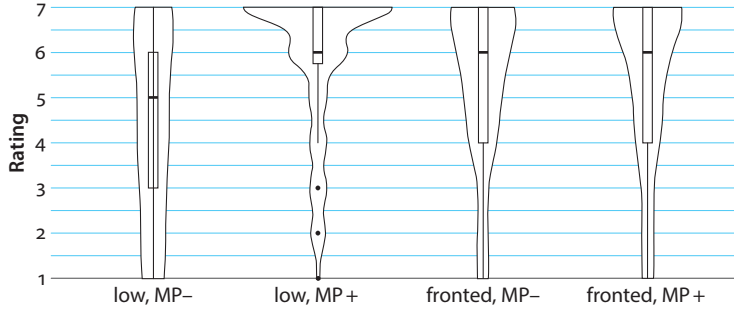

Figure 1. Distribution of ratings (on the y-axis) in each of the four conditions as a *violin plot*, overlaid with *box-and-whiskers plots*. The width of the violin at a particular rating indicates the number of judgements for that rating. A wider violin means that there were more judgements for that rating. The box-and-whiskers plots show means (bold horizontal line), quartiles (lower and upper end of the box) and 1.5 times the interquartile range (vertical lines /whiskers) of the ratings in each condition. The dots are judgements that lay outside the 1.5 / interquartile range. Note that the means did not enter any statistical analysis. The box-and-whiskers-plots are here only for illustrative purposes

given in Table 2. There was a main effect of MODAL PARTICLE, and an interaction of NEGATION and MODAL PARTICLE. Overall, items that included *väl* received higher acceptability ratings than items that did not include *väl*. However, this effect was only reliable for conditions where the negation was low. When the negation was fronted the presence or absence of *väl* had no effect on the (already quite high) acceptability.

Table 2. Model parameters for the experiment

	estimate	*se*	*z*	*p*
NEGATION	.115	.099	1.16	.25
MODAL PARTICLE	.442	.104	4.27	<.0001
Interaction	−.328	.100	−3.29	<.001

5.4.3 *Discussion*

We take these results to largely confirm our predictions that a Swedish negative declarative with fronted negation comes with an evidential bias for the positive proposition, [+positive]. The results indicate that such declaratives are highly acceptable in a context that provides evidence for the positive proposition. In contrast to this, negative declaratives containing low negation are much less acceptable in such a context if they do not contain the modal particle *väl*. Thus, without *väl*, the evidential bias of a negative declarative with low negation is different. This is predicted by our considerations about the context sensitivity of RQs vs. NDQs. The results of our experiments also support the claim by Petersson (2008), according to which negative declaratives may receive the same reading as negative questions with fronted negation if they contain the particle *väl*. In the experiment, such negative declaratives were judged to be highly acceptable. We conclude from this result that these declaratives also have the evidential bias [+positive], and are, in fact, RQs.

6. Proposal

In Section 4.3, we proposed that RQs come with the illocutionary operator REJECTQ. REJECTQ takes the proposition denoted by a declarative sentence, *q,* which can be positive or negative, as complement, forms a question meaning $\{q, \neg q\}$ and presupposes that there is contextual evidence for $\neg q$ and that the speaker had assumed q to be true. Furthermore, we proposed that in German, REJECTQ enters a syntactic Agree relation with the modal particle complex *doch wohl*. For Swedish, the results of the experiment presented in the previous section suggest that the meaning definition of REJECTQ also applies to Swedish but that REJECTQ requires a

different syntax. To repeat, in Swedish NRQs either the negation is fronted, or low negation is combined with the particle *väl*; *väl* may also occur with fronted negation. So, in Swedish there are three ways of marking NRQs, rather than only one, as in German. For PRQs we observed in Section 5.3 that the conjunction *men* ('but') combines with *väl*, and that if the contextual evidence is 'direct' (see Example (8), Section 3), one of the modal particles *visst* or *nog* may occur in clause-initial position. So, overall, Swedish has a rather large variety of morpho-syntactic means to express RQs. However, it seems that at least one of them must be used (in addition to intonation), in the sense that a declarative with just low negation cannot well be used as a NRQ and a positive declarative without *men* and *väl* cannot well be used as a PRQ. This means that RQs must come with some kind of morpho-syntactic cue (cf. Grosz 2014a) but which cue it is, is not determined by syntax.

Now, the fact that there is syntactic movement of the negation to the clause-initial position, i.e. a very high position, both in NRQs and in rejections in Swedish is in itself remarkable. It has been claimed that the negation in rejections is not propositional (Van der Sandt 1991; Repp 2009a) but takes speech-act level scope. As a consequence, it also has a higher position in the clause. Furthermore, some negative polar questions (NPQs) have been argued to come with non-propositional, so-called *high negation* (Romero & Han 2004; Repp 2009a, 2013). This raises the issue if the negation in NRQs possibly is non-propositional. If the negation is non-propositional it should not license negative polarity items (NPIs) that require negation, that is a NRQ should not be able to host NPIs. In the next subsection we will explore this issue in detail by investigating the acceptability of polarity-sensitive items in NRQs. In Subsection 6.2 we will present our final proposal for the syntax and semantics of RQs.

6.1 Polarity-sensitive items in rejecting questions: Evidence for non-propositional negation

In Swedish, there is good evidence that the negation in NRQs is non-propositional. A first piece of evidence is presented by Seeliger (2015), who shows that Swedish NRQs cannot host negative polarity items (NPIs) like *någonsin* ('ever'), see (26) for a NRQ with fronted negation.

(26) Context: Peter and Mary are about to travel to Greenland.
Mary: It will be nice to see Greenland again.
Peter: *Inte har du någonsin varit på Grönland?
not have you ever been on Greenland
Intended: 'Surely you haven't ever been to Greenland?' Seeliger (2015: 582)

Another indication for non-propositional negation in Swedish NRQs comes from the acceptability of the Swedish counterparts of the 'negative' and 'positive' English additive particles *either/too*, which have featured prominently in the investigation of the above-mentioned negative polar questions (NPQs) in English (Ladd 1981; Romero & Han 2004). The particle *too*, which must not be c-commanded by propositional negation in ordinary assertions, can occur under high negation in NPQs. The particle *either*, which requires propositional negation, cannot occur in NPQs with high negation. Romero and Han (2004) analyse high negation as the negation outscoping the epistemic conversational operator VERUM (inspired by Höhle 1992, see further below). High negation is thus too 'high up' to license NPIs like *either*. Repp (2006, 2009a, 2013) proposes that high negation is the illocutionary operator FALSUM, which does not license NPIs because it does not operate on the propositional level (see further below for details). Thus, the acceptability of *either* and *too* under a negative marker will be indicative of propositional vs. non-propositional negation. In Swedish, the element corresponding to *too* is the PPI *också* ('too'). (27) illustrates that *också* can occur in NRQs. The element corresponding to *either* in Swedish, *heller*, according to Brandtler & Håkansson (2014) is only felicitous in additive fronted negation (i.e. not in the contexts we are considering here).

(27) The party list context from the introduction: Maria sees that Noah is on the list and then discovers that Peter, whom she hates, is also on the list.
Inte kommer Peter också?
not comes Peter too
'Surely Peter isn't coming, too?'

Turning to German and starting with the *either/too*-test, the element corresponding to *too* is *auch* if c-commanded by the negation, viz. *nicht auch* ('not also') – rather than *auch nicht* ('also not'), which corresponds to *either* (Repp 2009a). (28) shows that *nicht auch* is acceptable in a NRQ.[23]

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23. It should be noted here that auch nicht is possible in NRQs, see (i).

(i) The party list context from the introduction: Maria sees that Noah's name on the list is crossed out, but Peter, whom she hates, is on the list.
Peter kommt doch wohl auch nicht?
Peter comes MP MP also not
'Surely Peter isn't coming, either?'

The difference between (27a) and (i) is the proposition that satisfies the presupposition of also. In (27a), it is presupposed that someone in addition to Peter is coming, which is satisfied by the contextual evidence (Noah is coming). In (i), it is presupposed that someone in addition to Peter is not coming, which is satisfied by the speaker's previous assumption (epistemic bias). The negation in (i) is low. We will leave these interactions for future research.

(28) The party list context from the introduction: Maria sees that Noah is on the list and then discovers that Peter, whom she hates, is also on the list.
a. Peter kommt doch wohl nicht auch?
Peter comes MP MP not also
'Surely Peter isn't coming, too?'

As for the German counterpart of the NPI *någonsin* ('ever') from (26), we cannot apply the same test in German because German *jemals* ('ever') must be licensed by a negation in a higher clause or by interrogative syntax. Therefore, we will discuss a number of different NPIs. This discussion will show that German NPIs show rather varied acceptability patterns in NRQs – and as we will see, do not necessarily show the same acceptability pattern in NRQs and in NPQs with high negation. In what follows, we will look at three NPIs that seem to be representative of (at least) three types of NPIs that exist in German,[24] see (29), (30) and (32). In (29) we test a verbal NPI without a direct object: *sich lumpen lassen* ('to let oneself be considered poor', with negation: 'to splash out'), in (30) a verbal NPI that takes a direct object: *(etwas) ausstehen können* ('to be able to stand (something)'), and in (32) a nominal NPI with the negative determiner *kein: ein Schwein* ('a pig').

The examples show that all these NPIs are unacceptable in NPQs with high negation (bias profile: *evidential:* [-positive]; *epistemic:* [+positive]), see the b-examples. In NRQs (bias profile: *evidential:* [+positive]; *epistemic:* [+negative]), the NPIs are not all unacceptable, see the a-examples.

The verbal NPI without a direct object, (29a), is acceptable in a NRQ. The contrast with the NPQ is quite sharp.

The acceptability of the verbal NPI with direct object in the NRQs in (30a) depends on the position of the negation. If the negation occurs before the definite direct object *Godard*, see (30a.i), the NRQ is unacceptable just like the NPQ in (30b.i). (31a&b) show that the negation in principle may occur before the definite object in both types of question, so it must be the particular context in (30a&b.i) that rules out this word order. If the negation occurs after the direct object – which is the default position of the negation in ordinary declarative assertions if there is no object focus (Büring 1994)[25] – the NRQ is fine, see (30a.ii). With that word order,

24. There are also adverbial NPIs, which we will ignore here for reasons of space. Overall, the landscape of German NPIs is rather underexplored and to our knowledge, there are no systematic studies. However, there is a corpus of polarity-sensitive items, the CoDII database (Trawiński & Soehn 2008; <https://www.english-linguistics.de/codii/codiinpi/de/list-complete.xhtml>) which also offers information on various licensing environments.

25. Definite objects leave the scope of negation unless they are focussed (Büring 1994). If they are part of a (VP) focus, they may occur to the left of the negation if they are topical, as has been shown for correction structures (Repp 2009b).

the NPQ also is acceptable, see (30b.ii). Importantly, however, the NPQ in (30b.ii) is no longer a question with high negation but with low negation, i.e. propositional negation. It is felicitous in different kinds of contexts, i.e. it has a different bias profile from a NPQ with high negation (see Domaneschi, Romero & Braun 2017 for a discussion of German NPQs). We suggest that the NRQs in (30a.i&ii) differ from each other in a similar way. It seems that we are dealing with propositional negation in (30a.ii) and that this is not a bona fide NRQ but rather a "PRQ" with low negation. This issue requires closer scrutiny, and we think that a proper investigation of the word order in NPQs and NRQs must include a detailed investigation of their information structure (focus and givenness). Note that *Godard* is given and not focussed in (30a&b.i), whereas in the examples in (31a&b), *Godard* intuitively is focussed. This issue is beyond the scope of the present paper.

Finally, the *kein*-NPI in (32a/b–i) is unacceptable in NPQs with high negation and in NRQs. (32a/b–i) show that the unacceptability is not due to the fused negation in *kein* ('no' = *nicht* + *ein* ('not + a')), whose acceptability has been suggested to be linked to low vs. high negation in NPQs (Büring & Gunlogson 2000).

(29) a. *NRQ:* Ben tells Ann that Peter and himself had a great night out at the pub the previous evening, celebrating Peter's new job. Ben says that he was worried a bit at first because the pub was quite an expensive one. Ann, who knows that Peter is normally very generous, cuts in:
Ann: Peter hat sich doch wohl nicht lumpen lassen?
Peter has REFL MP MP not rags.verb let
'Surely Peter has splashed out?'

b. *NPQ high negation*: Ben tells Ann that at last night's party Peter bought drinks for everybody. She is surprised because normally Peter is not very generous.
Ann: *Hat sich Peter nicht lumpen lassen?
has REFL Peter not rags.verb let
Intended: 'Hasn't Peter played the poor man?'

(30) a. *NRQ:* Ann always thought that Peter hates French films because he always mocks her for her great interest in them. Now Ben tells her that Peter invited him to go and see an old Godard film at the film museum.
Ann: (i) *Peter kann doch wohl nicht Godard ausstehen?
Peter can MP MP not stand
(ii) Peter kann Godard doch wohl nicht ausstehen?
'Surely Peter cannot stand Godard?'

b. *NPQ with high negation:* Ann always thought that Peter loves French films because he always shows great interest in them. Now Ben tells her that Peter turned down his invitation to go and see an old Godard film at the film museum, and scoffed at the suggestion.
Ann: (i) *Kann Peter nicht Godard ausstehen?
can Peter not Godard stand
(ii) Kann Peter Godard nicht ausstehen?
'Surely Peter cannot stand Godard?'

(31) a. NRQ: Peter mag doch wohl nicht Godard?
Peter has MP MP not the
'Surely Peter doesn't like Godard?'
b. *NPQ with high negation:* Mag Peter nicht Godard?
Peter likes Godard
'Doesn't Peter like Godard?'

(32) Ben tells Ann that the headmaster of the school knows everything about last week's secret meeting of the special occasions committee…
a. *NRQ:* …He suggests that someone must have told the headmaster's wife about the party that they are planning for his jubilee. The wife is known for being quite a blabbermouth. Still, Ann thinks that the information did not go via the wife – because everybody knows that she gives away secrets.
Ann:
i. ??Der vertraut doch wohl kein Schwein so ein Geheimnis an?
her entrusts MP MP no pig such a secret to
'Intended: Surely nobody under the sun would trust her with such a secret?'
ii. Der vertraut doch wohl niemand so ein Geheimnis an?
her entrusts MP MP nobody such a secret to
'Surely no one would trust her with such a secret?'
b. *NPQ with high negation:* …He considers that the headmaster's wife might have told him but then dismisses this idea because he thinks that nobody would tell her. Ann is surprised.
Ann:
i. *Vertraut der kein Schwein so ein Geheimnis an?
entrusts her no pig such a secret to
'Intended: Wouldn't a living soul trust her with such a secret?'
ii. Vertraut der keiner so ein Geheimnis an?
entrusts her nobody such a secret to
'Would nobody trust her with such a secret?'

Briefly summarizing these data, we find that NRQs and NPQs with high negation share the following characteristics. (i) They allow positive-polar *too*. (ii) They do not allow *kein*-NPIs. (iii) They allow a non-default high position of the negative marker with respect to definite objects but from that position the negation does not license a lower NPI. All these characteristics speak for an analysis of the negation in NRQs as non-propositional. The challenges for an analysis of the negation in NRQs as non-propositional are the acceptability of fused *kein* because that has been associated with low negation in NPQs, and the difference between NRQ and NPQs with high negation with respect to the acceptability of purely verbal NPIs, which are only licensed in NRQs.

Starting with the latter difference, we suggest that it is a consequence of the different communicative contribution that NPQs and NRQs make. NRQs are closer in meaning to rhetorical questions than are NPQs with high negation, and rhetorical questions allow a wider range of NPIs than information questions do (Borkin 1971 and subsequent literature). Rhetorical questions allow strong NPIs (e.g. English *lift a finger*) and weak NPIs (e.g. English *any*, *ever*), whereas information-seeking questions only allow weak NPIs. This difference has been accounted for in terms of balancing the answer options (Krifka 1995) and increasing the entropy of the question, that is its informativity (van Rooy 2003). The less biased a question is the higher is its informativity because the *average* informativity of the answers is largest when the answers are equally likely to be true (van Rooy 2003).

Weak NPIs in information-seeking questions serve the purpose of reducing the bias for a negative answer that would be present in the question if it did not contain the NPI (Krifka 1995; van Rooy 2003). For instance, if a speaker thinks that a question like *Has John been to Peru?* is more likely to receive a negative answer when considering a standard temporal domain (e.g. in the last few years), that bias can be reduced by extending the domain with the NPI *ever*. With the NPI, the question is 'more general' (rather than quite specific), which will increase its information gain.

For strong NPIs in rhetorical questions, van Rooy (2003), following Kadmon & Landmann (1990) suggests that they 'unsettle' a settled question. For instance, a question without a NPI may be settled because the speaker takes the negative answer to be true, or considers the positive answer extremely unlikely. As a consequence, such a question would have an extreme bias for one answer option. The NPI is then used to reduce this extreme bias by making a positive answer more likely – the NPI denotes something minimal so that a positive answer is more likely to be true. As a consequence, the question is 'unsettled' and it has an increased entropy. Krifka (1995) also says that by using a NPI, the speaker makes the positive answer more likely. The purpose is to signal that the addressee will be unable to truthfully assert this answer, suggesting that the negative answer is true.

These ideas can be transferred to NRQs. NRQs are more insisting than NPQs: the speaker is less prepared to give up his/her opinion. The epistemic bias is

[+negative]. This makes them very similar to rhetorical questions. For NPQs with high negation, the epistemic bias is [+positive], i.e. not what would be required for rhetorical questions. Of course, the existing accounts of NPIs in questions do not distinguish between epistemic and evidential bias. This is something that needs to be investigated in greater detail in future research. However, we can show here that the verbal NPI *sich lumpen lassen*, which is possible in NRQs but not in NPQs, can indeed occur in a bona fide rhetorical question, see (33). The speaker of (33) is very certain that the answer to his/her question is 'nobody'. By using the NPI, the speaker maximizes the probability of an answer to the contrary, i.e. that 'sich lumpen lassen' is in fact true of someone, thus challenging the addressee to provide such an impossible answer.

(33) Wer hat sich da schon lumpen lassen?
who has REFL there MP rags.verb let
'Who played the poor man in that situation, after all'

The NPI *sich lumpen lassen* can also occur in positive polar rhetorical questions expressing a firm belief in the truth of the negative answer. The NPI cannot occur in non-rhetorical polar questions. So, it seems that the rhetoricity of a question is important for the acceptability of NPIs in NRQs. The main difference between rhetorical questions and NRQs is that rhetorical questions are used to insist that the *addressee* should hold a specific belief, while NRQs point out that the *speaker* is in a specific epistemic state. More specifically, a rhetorical question conveys that the addressee cannot truthfully assert *p*; while a NRQ conveys that the speaker cannot truthfully assert *p*. This results in a weaker, less 'insisting' bias for NRQs in comparison to 'ordinary' rhetorical questions.

Before we turn to the other challenging piece of data, viz. the acceptability of fused *kein(er)* outside of NPIs, let us look at *kein*-NPIs. Crucially, these are not licensed in rhetorical questions, as is illustrated for constituent questions in (34) for the familiar *pig*-NPI and the *kein*-NPI *eine Menschenseele* ('a human soul'), and for corresponding polar rhetorical questions in (35).

(34) a. *Wem hat damals schon ein Schwein seine
whom has then mp a pig his
Geheimnisse anvertraut?
secrets entrusted
Intended: 'Whom did anyone at all trust with their secrets back then, after all?'

b. *Wer hat an diesem Abend schon eine Menschenseele gesehen?
who has on this evening mp a soul seen
Intended: 'Who saw anyone at all on that evening, after all?'

(35) *Hat den ein Schwein / eine Menschenseele angerufen? Siehste!
has him a pig / a human.soul called you.see
'After all, did anyone call him? Told you so!'

We suggest that *kein*-NPs are what Giannakidou (2011) calls *strict NPIs*. They are only licensed in anti-veridical environments, viz. under negation and with *without*. That the latter is true for the above NPIs is illustrated in (36):

(36) Paul ging ohne {einem Schwein / einer Menschenseele}
Paul left without a pig a soul
Bescheid zu sagen.
information to say
'Paul left without telling anyone.'

The fact that *kein*-NPIs can neither occur in NRQs nor in NPQs with high negation is evidence for our conclusion that the negation in these questions is non-propositional.

Let us now consider our observation that *keiner*, which is a fusion of the negation with an indefinite pronoun, can occur in NRQs. Such a fusion has been suggested to be impossible in NPQs with high negation. Büring & Gunlogson (2000) observe that the negative determiner *kein* is split into negation + indefinite determiner (*nicht* + *ein*) in these questions. So we would expect the same to be the case in NRQs, contrary to fact. Taking a closer look at the negative determiner/pronoun we find that *kein(er)* seems to be fairly flexible and that the fusion does not seem to depend entirely on the negation being propositional or not. In default declaratives with propositional negation that are used as negative assertions, *kein(er)* must occur before the highest non-specific indefinite. Corrections – which arguably contain non-propositional negation – may contain the fused form (Repp 2009a), or the split form see (37).

(37) Peter hat {kein / nicht ein} Auto gekauft, sondern ein Motorrad.
Peter has no not a car bought but a motorbike
'Peter didn't buy a car but a motorbike.'

Furthermore, in NRQs it does not seem to make a difference whether the fused or the split form occurs. There is no meaning difference between *nicht ein* and *keiner* in (38a, b). In both cases the speaker receives evidence for a positive proposition (the addressee has ordered a coffee) and indicates previous belief in the truth of a negative proposition (the addressee would not order coffee).

(38) It is 8 o'clock at night. Ben is in a café. He has been having sleeping problems because he has been drinking too much coffee in the evenings. Ann arrives. She knows about Ben's sleeping problems and can't believe her eyes: There is a cup of coffee in front of Ben:

Ann a. Du hast doch wohl nicht einen Kaffee bestellt?
you have MP MP not a coffee ordered
b. Du hast doch wohl keinen Kaffee bestellt?
'Surely, you haven't ordered a coffee.'

These observation suggests that the negation may be interpreted as high negation even when it occurs in the fused form. In other words, non-fusing is a diagnostic for high negation, but fusing is not a diagnostic for low negation.

To summarize, there is considerable evidence that the negation in rejections and in RQs is non-propositional. Intuitively this makes sense because non-propositional negation is a reflex of the speaker rejecting (evidence for) a positive proposition in both cases.

6.2 REJECTQ and FALSUM: Illocutionary operators in rejection questions

On the basis of our discussion in the previous subsection we propose, following Seeliger (2015), that the negation in rejections and in RQs denotes the operator FALSUM from Repp (2009a, 2013). FALSUM is an epistemic speech-act level operator (here simply referred to as *illocutionary modifier*) which signals that the speaker is essentially not committed to the proposition *q* that is at issue – because there are zero degrees of strength for sincerely committing to *q* and for adding *q* to the common ground. The counterpart of FALSUM in PRQs is VERUM (originally proposed in Höhle 1988, 1992;[26] cf. also Lohnstein 2012, 2016; Romero & Han 2004; Repp 2013) – or an evidential version of it: the particles *visst/nog* occur clause-initially in PRQs. They signal high certainty but require direct contextual evidence. We assume that the illocutionary modifiers FALSUM and VERUM occur in the specifier position of ForceP: at LF in German, and in Swedish either at the surface or at LF. ForceP is headed by the speech act operator REJECTQ,[27] thus:

(39) $[_{\text{ForceP}}$ FALSUM/VERUM $[_{\text{Force'}}$ REJECTQ $[_{\text{TP}} \ldots]]]$

26. Note that VERUM is not a category that is related to focus anymore, as it was originally proposed by Höhle, cf. Romero & Han (2004) for the original definition of VERUM as an epistemic conversational operator.

27. We deviate here from the proposal in Repp (2009a) where FALSUM scopes over the proposition and speech act operators scope over FALSUM. However, the semantic composition of the two elements is similar.

The definition of REJECTQ is given in (40). REJECTQ takes a proposition *q* and an illocutionary modifier (*IM*) as its arguments. It comes with two presuppositions. The first is that on an evidential basis there is the degree of commitment to add ¬*q* to the common ground that is expressed by the respective IM. Thus, if IM is FALSUM, the evidence is such that it does not support commitment to ¬*q*; if IM is VERUM the evidence is such that it supports high commitment to ¬*q*. The second presupposition of REJECTQ is that on an epistemic basis (i.e. according to the speaker's previous assumptions), there is the IM-determined degree of commitment to add *q* to the common ground. The non-presuppositional meaning contribution of REJECTQ is to form a set of propositions that are modified by IM such that one set is the complement set of the other. Thus, a rejecting question essentially asks the addressee what the commitment to a specific proposition should be in the face of conflict with contextual evidence.

(40) $[\![\text{REJECTQ}]\!] = \lambda q \lambda \text{IM: } \underline{[\text{IM}([\neg q)]^{\text{evid}} \,\&\, [\text{IM}(q)]^{\text{epist}}}. \{\text{IM}(q), \neg\text{IM}(q)\}$

Sample derivations for the PRQ *Peter kommt doch wohl?* ('Surely Peter is coming?') and for the NRQ *Peter kommt doch wohl nicht?* ('Surely Peter isn't coming?') are given in (41). For better readability, the presupposition is underlined. Note that both in the PRQ and in the NRQ, the proposition *p* is non-negative because FALSUM and VERUM are not propositional operators.

(41) a. Peter kommt doch wohl? ('Surely Peter is coming?')

$\underline{[\text{VERUM}\ (\neg\text{Peter kommt})]^{\text{evid}} \,\&\, [\text{VERUM}\ (\text{Peter kommt})]^{\text{epist}}}.$

{VERUM(Peter kommt), ¬[VERUM(Peter kommt)}

λq.VERUM(q) — λIM: $\underline{[\text{IM}(\neg\text{Peter kommt})]^{\text{evid}} \,\&\, [\text{IM}(\text{Peter kommt})]^{\text{epist}}}$.

{IM(Peter kommt), ¬IM(Peter kommt)}

REJECTQ — Peter kommt

$\lambda q \lambda \text{IM: } \underline{[\text{IM}(\neg q)]^{\text{evid}} \,\&\, [\text{IM}(q)]^{\text{epist}}}. \{\text{IM}(q), \neg\text{IM}(q)\}$

b. Peter kommt doch wohl nicht? ('Surely Peter isn't coming?')

$\underline{[\text{FALSUM}\ (\neg\text{Peter kommt})]^{\text{evid}} \,\&\, [\text{FALSUM}(\text{Peter kommt})]^{\text{epist}}}.$

{FALSUM(Peter kommt)], ¬[FALSUM(Peter kommt)}

λq.[FALSUM(q)] — λIM: $\underline{[\text{IM}(\neg\text{Peter kommt})]^{\text{evid}} \,\&\, [\text{IM}(\text{Peter kommt})]^{\text{epist}}}$.

{IM(Peter kommt), ¬IM(Peter kommt)}

REJECTQ — Peter kommt

$\lambda q \lambda \text{IM: } \underline{[\text{IM}(\neg q)]^{\text{evid}} \,\&\, [\text{IM}(q)]^{\text{epist}}}. \{\text{IM}(q), \neg\text{IM}(q)\}$

We assume that the insisting nature of RQs that we mentioned in the introductory sections, and thus their rhetorical flavour, follow from the specific epistemic bias of the speaker: before the speaker asked the question s/he thought that s/he was committed to a certain proposition, or that s/he was definitely not committed to that proposition. This is different from NDQs and PDQs where it is only required that the speaker did not actively believe what the contextual evidence suggests.

Turning to the syntactic side of REJECTQ, our proposal for German from Section 4.3 can stay as it was except that the negation in NRQs is not interpreted in situ but as the FALSUM operator, which at LF (German) or at the surface (sometimes in Swedish) appears high in the structure, as we just saw. The assumption that FALSUM appears in the specifier position of REJECTQ is similar to Zimmermann's (2004) assumptions about the syntax-semantics interface of sentences with *wohl*. As for the modal particle complex *doch wohl*, we assume that this complex enters a feature chain with appropriate features on the REJECTQ head:

(42) $[_{\text{ForceP}}$ FALSUM $[\text{REJECTQ}_{[\text{uRQ}]}$ [Peter kommt [doch wohl]$_{[\text{uRQ}]}$ nicht $[_{\text{vP}}$ t_{Peter} $t_{\text{kommt}}]]]]$

For Swedish, we assume that REJECTQ can come with or without a syntactic feature that overtly attracts FALSUM or the modal particles *visst/nog* to its specifier position. As we argued above, the uniting semantic-pragmatic feature of these elements is that they are illocutionary epistemic operators. As for the presence of *väl* in NRQs, *men* ('but') plus *väl* in PRQs and *ju* in rejections, we must assume that they are cues in the sense of Grosz (2014a), i.e. that their presence is required in cases of potential ambiguity between different types of speech act. In Swedish negative declaratives, ambiguity arises if the negation is low: negative declaratives with low negation in principle can be assertions, NDQs, rejections, NRQs (and possibly other speech acts). We know that rejections and NRQs differ in their prosody (Seeliger & Repp 2017). Intonation can also disambiguate NDQs and assertions (Gårding 1979; House 2003). However, intonation does not seem to be enough for a disambiguation of rejective vs. non-rejective utterances, i.e. RQs vs. DQs, and rejections vs. negative assertions. Morpho-syntactic means are employed for this differentiation.

7. Conclusion

We have argued that RQs in German and Swedish are best modelled by an illocutionary operator, REJECTQ, which takes a proposition and an illocutionary modifier as its argument, and which comes with certain presuppositions concerning the evidence available in the situation as well as the speaker's previous assumptions. The presence of the illocutionary modifier FALSUM can be indicated by a high syntactic position of the negation (in Swedish), and by the combination of a negative

marker in its canonical position with modal particles or modal particle stacks that do not receive a compositional meaning. The presence of VERUM is only indicated by modal particles or modal particle stacks. This proposal brings questions with declarative syntax in line with theories about questions with interrogative syntax, in which more than one syntactic position and pragmatic function of negation have long been proposed (Romero & Han 2004; Repp 2009a, 2013; Krifka 2015).

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On two types of polar interrogatives in Hungarian and their interaction with inside and outside negation

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The paper provides a survey of the form types of Hungarian polar interrogatives containing the negative particle *nem* 'not' and of their interpretational features, and discusses the possibilities of formally modeling the observable distinctions. First a general review of the basic syntactic, semantic and pragmatic properties of polar interrogatives is provided, with special attention to the differences between two root interrogative form types in Hungarian. It is argued that the distinction between *outside* and *inside* negation readings proposed by Ladd (1981) for English can also be detected in Hungarian, with the help of particular morphosyntactic tests. The application of the tests reveals that whereas the intonationally marked negative polar interrogatives have both outside and inside negation readings, those marked by morphological means only possess the former one. The tests are also shown to detect interpretational distinctions having to do with the types of bias that the particular forms are compatible with. Without providing a fully-fledged formal modeling, the paper discusses possible strategies for capturing the above distinctions in terms of the proposals made in Romero & Han (2004), Repp (2013) and Krifka (2017).

Keywords: bias, inside negation, outside negation, polar interrogative, Hungarian

1. Introduction

The aim of this paper[1] is to investigate the semantic and pragmatic properties of negative polar interrogatives in Hungarian. We want to show that the distinction between the so-called *inside* and *outside* negation readings of negative polar

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interrogatives pointed out by Ladd (1981) for English also exists in Hungarian and that the particular readings are associated with specific morphosyntactic features. The formal and interpretational properties of negative interrogatives will be compared to the better understood features of the corresponding positive interrogatives. The careful investigation of the felicity conditions of the different formal variants of the two main types of root negative polar interrogatives in Hungarian can be used to test the adequacy of existing formal approaches to modeling the interpretation of polar interrogatives, and to point to the need for finer distinctions that have not been made before.

Section 2 of the paper looks at the formal properties of the two form types of root positive polar interrogatives and their negative variants in Hungarian, which are contrasted to their declarative counterparts. Section 3 reviews two types of interpretational distinctions specific to polar interrogatives, namely, the distinction between the so-called *inside* vs. *outside* negation readings and the bias properties of polar interrogatives in general. It summarizes the claims of three influential semantic/pragmatic theories, those by Romero & Han (2004), Repp (2006) and Krifka (2017) on how the two readings of negative polar interrogatives in English can be formally modeled. Section 4 proposes a set of tests based on morphosyntactic and interpretational features that make it possible to distinguish between inside and outside readings of negative polar interrogatives in Hungarian. These include compatibility with *is* 'also' and *sem* 'neither', the interpretation of a particular type of indefinite, the position and interpretation of the adverbs *még* 'still' and *már* 'already', and inversion/non-inversion of verbal prefix and verb. It is shown that whereas intonationally marked negative interrogatives can receive both an outside and an inside negation reading, the morphologically marked ones only give rise to the former one. We sketch various possible ways of incorporating the data into a formal model of the interpretation of the relevant constructions. Section 5 presents the conclusions of the paper.

2. The structure of canonical polar interrogatives in Hungarian

As mentioned in the introduction, there are two basic types of root positive polar interrogatives in Hungarian (cf. É. Kiss 2002: 99 and Kenesei et al. 1998: 2 for discussion). In the first one, illustrated by (1), the sentence type is marked by the *-e* interrogative particle (referred to as an interrogative *item* by Bacskai-Atkari 2015), which attaches to the finite verb (or, in case the latter is elided, to the constituent in the immediately preverbal position). Such sentences are pronounced with an end-falling contour, and will be referred to as *-e*-interrogatives in what follows. The second basic type, illustrated in (2), is string-identical to the corresponding declarative. The interrogative form type is marked by a rise-fall melody, with the

peak on the penultimate syllable of the sentence (provided the sentence consists of at least three syllables). The interrogatives of this second type will be referred to as rise-fall or ∧-interrogatives in what follows:[2,3]

(1) a. [$_{\text{PredP}}$ Elutazott-e János\?]
VM.traveled-E John
'Did John go on a trip?'
b. [$_{\text{TopP}}$ János [$_{\text{PredP}}$ elutazott-e\?]]
'Did John go on a trip?'

(2) a. [$_{\text{PredP}}$ Elutazott János∧?]
'Did John go on a trip?'
b. [$_{\text{TopP}}$ János [$_{\text{PredP}}$ elutazott∧?]]
'Did John go on a trip?'

In the rest of the paper, we will not mark the intonation of ∧- and *-e*-interrogatives specifically, but will assume that it corresponds to the pattern illustrated in (1)–(2). Regarding the syntactic structure of (1) and (2), we assume, following É. Kiss (2002, 2010), that the left periphery of the Hungarian sentence is hierarchical, and contains (possibly multiple) TopP projections, hosting referential noun phrases, (possibly multiple) DistP positions, hosting distributive (right upward monotonic) quantifiers, and a unique FocP position, hosting exhaustive/identificational focus, which are all optionally filled. Following É. Kiss (2010), FocP will be assumed to dominate a Non-Neutral Phrase (NNP),[4] which hosts the verb in case [Spec, FocP] is filled, as illustrated in (3). In so-called 'neutral' sentences, where FocP is not filled, the verb is situated in the head of PredP, whose specifier position is occupied by the verbal prefix, as in (4):

(3) [$_{\text{TopP}}$ Mari [$_{\text{DistP}}$ legalább két fiút [$_{\text{FocP}}$ a moziba [$_{\text{NNP}}$ hívott [$_{\text{PredP}}$ meg.]]]]]
Mary at.least two boy.ACC the movies.into invited VM
'It was to the movies that Mary invited at least two boys.'

(4) [$_{\text{TopP}}$ Mari [$_{\text{PredP}}$ meghívott legalább két fiút a moziba.]]
Mary VM.invited at.least two boy.ACC the movies.into
'Mary invited at least two boys to the movies.'

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2. For a detailed discussion on the prosody of ∧-interrogatives consider Kornai & Kálmán (1988: 183–93), Ladd (1996: 115–118) and Varga (1994: 468–549).

3. Following É. Kiss (2002), the abbreviation VM stands for the category of verbal modifiers, which includes verbal prefixes.

4. The NNP was first proposed by Olsvay (2000). Cf. also Horvath (2007) for arguments as to why the landing site of V-movement has to be lower than the Foc head and why it has to be a maximal projection.

Despite the grammaticality of (1a,b)–(2a,b) in all dialects of Hungarian, they are not considered equally felicitous in all contexts and all dialects. These differences will only be hinted at in this work; for a detailed discussion see Gyuris (2017). In this paper, the acceptability judgments for the variants of polar interrogatives containing the particle *-e* will reflect the opinions of speakers of dialects where these form types can be used to formulate informal information questions, and are not only used in official registers. Among the two form types, only the one containing *-e* is available in embedded interrogatives, which, however, are not going to be discussed here for lack of space.

According to the literature (cf. É. Kiss 2002, 2010), in negative declaratives, the negative particle *nem* is situated in the specifier of NegP, dominating the NNP, which hosts the non-prefixed verb. The verbal prefix, which is situated behind the verb as a default, is assumed to remain in [Spec, PredP], as shown in (5a,b) (which share the same interpretation):

(5) a. [$_{\text{NegP}}$ Nem [$_{\text{NNP}}$ utazott [$_{\text{PredP}}$ el János.]]]
not traveled VM John
'John did not go on a trip.'
b. [$_{\text{TopP}}$ János [$_{\text{NegP}}$ nem [$_{\text{NNP}}$ utazott [$_{\text{PredP}}$ el.]]]]
'John did not go on a trip.'

The canonical negative versions of (1a,b)–(2a,b), containing the negative particle *nem* 'not' are shown in (6a,b)–(7a,b), respectively. As expected, (7a,b) are string-identical to (5a,b):

(6) a. [$_{\text{NegP}}$ Nem [$_{\text{NNP}}$ utazott-e [$_{\text{PredP}}$ el János?]]]
not traveled-E VM John
'Didn't John go on a trip?'
b. [$_{\text{TopP}}$ János [$_{\text{NegP}}$ nem [$_{\text{NNP}}$ utazott-e [$_{\text{PredP}}$ el?]]]]
'Didn't John go on a trip?'

(7) a. [$_{\text{NegP}}$ Nem [$_{\text{NNP}}$ utazott [$_{\text{PredP}}$ el János?]]]
'Didn't John go on a trip?'
b. [$_{\text{TopP}}$ János [$_{\text{NegP}}$ nem [$_{\text{NNP}}$ utazott el?]]]
'Didn't John go on a trip?'

It was pointed out by several authors (cf. Ladd 1981; Büring & Gunlogson 2000; van Rooij & Šafářová 2003; Romero & Han 2004; and Sudo 2013, among others) that, independently of the language under consideration, positive and negative polar interrogatives generally cannot be replaced by each other in all contexts, and Gyuris (2017) argues that the same applies to positive and negative ∧- versus *-e*-interrogatives in Hungarian as well. Assuming that positive and negative polar interrogatives share their semantic value (consisting of the set of propositions

that correspond to their potential answers, cf. Hamblin 1973 and Groenendijk & Stokhof 1984), the differences in the uses of the form types must be due to certain pragmatic features. These features will be discussed in the next section.

3. Interpretational contrasts in positive and negative interrogatives

3.1 Inside and outside negation readings of negative polar interrogatives

Ladd (1981) was the first to call attention to the following contrast. Whereas among declarative sentences in English, only (canonical) positive ones are compatible with the additive particle *too*, and negative ones with the negative polarity item *either,* as in (8a,b), negative polar interrogatives can be compatible with both of the above items, as shown in (9a,b). (9c) illustrates the positive polar interrogative counterpart of the latter two:

(8) a. Jane's coming too.
b. Jane's not coming either. (Ladd 1981: 166, Examples (7a,b))

(9) a. Isn't Jane coming too?
b. Isn't Jane coming either? (Ladd 1981: 166, Examples (9a,b))
c. Is Jane coming either?

According to Ladd (1981: 166), (9a) is only acceptable in a context where it is known that somebody other than Jane is coming, and the aim of the speaker in asking the question is to confirm his/her assumption that Jane is coming. (9b), however, is only compatible with a context where it is known that there is somebody other than Jane who is not coming, the speaker previously believed that Jane would be coming, came to the conclusion based on the context that she is not coming, and wants to check the validity of this inference. In other words, (9a) is to be regarded as checking the truth of the positive proposition 'Jane is coming too', and (9b) as checking the truth of the negative proposition 'Jane is not coming either'. Ladd characterizes the readings above as containing *outside* versus *inside* negation (to be referred to as ON and IN in what follows), respectively: in the former case, the negation is viewed as being "outside" the proposition whose truth value is inquired about (thus the negative particle does not signal propositional negation), whereas in the latter case the negation is "inside" the proposition. (Note that Seeliger & Repp, this volume, use the terms *non-propositional* vs. *propositional negation* to refer to the two possible interpretations of negative particles in structures used to make question acts.)

Büring and Gunlogson (2000) list several further morphosyntactic tests that can be used to distinguish between the two readings of negative polar interrogatives

in English and German. Regarding English, they note the contrast between the determiners *no* and *some:* whereas the former is only compatible with IN readings, the presence of the latter marks the reading as ON:

(10) a. Is there no vegetarian restaurant around here?
b. Isn't there some vegetarian restaurant around here?
(Büring & Gunlogson 2000: 5, Example (11a,b))

Regarding German, the authors argue that merging the negative particle *nicht* 'not' with the indefinite determiner *ein* 'a' into the negative determiner *kein* in interrogatives indicates an IN reading, as in (11a), whereas the lack of merge, as in (11b), marks an ON reading.

(11) a. Gibt es kein vegetarisches Restaurant in dieser Ecke?
gives EXPL no vegetarian restaurant in this corner
'Is there no vegetarian restaurant around here?'
b. Gibt es nicht ein vegetarisches Restaurant in dieser Ecke?
gives EXPL not a vegetarian restaurant in this corner
'Isn't there any vegetarian restaurant here?'
(Büring & Gunlogson 2000: 4, Example (7a,b))

The list of further morphosyntactic tests offered in the literature includes the fact that the appearance of the English adverb *already* in a polar interrogative marks outside negation, as shown in Romero & Han's (2004) example given in (12):

(12) Dialog between two editors of a journal in 1900:
A: I'd like to send this paper out to a senior reviewer, but I'd prefer somebody who has experience with our regulations.
S: Hasn't Frege already reviewed for us? He'd be a good one.
(Romero & Han 2004: 619, Example (27))

According to Repp (2006), the relative positions of the negative particle *nicht* and the additive particle *auch* in German also indicate the above distinction: whenever the additive particle precedes the negative particle, which in declaratives appears in sentence-final position, we have an IN interpretation, but it can only follow the negative particle in case of an ON reading:

(13) a. Kommt Jane auch nicht?
comes Jane also not
'Isn't Jane coming either?'
b. Kommt Jane nicht auch?
comes Jane not also
'Isn't Jane coming too?' (Repp 2006: 409, fn. 10, Example (i))

Having looked at an interpretational distinction characterizing negative polar interrogatives, in the next section we consider how differences between the uses of positive polar interrogatives as well as the two readings of negative polar interrogatives can be parametrized.

3.2 Bias properties of polar interrogatives

It has been argued in the literature that particular polar interrogative form types introduce preferences, referred to as *biases* on the part of the speaker with respect to one of the possible answers to the question (cf. Ladd 1981; Büring & Gunlogson 2000; van Rooij & Šafářová 2003; Romero & Han 2004; and Sudo 2013, among others.) These biases can be based on contextual evidence or on previous assumptions of the speaker. (Cf. Seeliger & Repp this volume, for an analysis of a class of biased declarative questions in Swedish and German, based on the two-dimensional approach proposed by Sudo 2013, introduced below, as well as for further general discussion of the formal modeling of question bias.)

Büring and Gunlogson (2000) show that the acceptability of a positive or a negative interrogative in a particular context depends on the availability of *compelling* new evidence supporting one of the possible answers.[5] A positive polar interrogative *?p* like *Is Jane coming?* is only acceptable in a context if there is no compelling new evidence that supports the negative answer to the question (corresponding to $\neg p$), a negative polar interrogative on its IN reading is only acceptable if there is compelling new evidence that supports the negative answer to the question (corresponding to $\neg p$), and a negative polar interrogative on its ON reading is only acceptable if there is no compelling new evidence that supports the positive answer to the question (corresponding to p).

Sudo (2013) distinguishes the *evidential bias* types illustrated above from those that rely on the previous expectations of the speaker (on the basis of her/his knowledge, wishes or the norms), which the author refers to for reasons of brevity as *epistemic bias*. Since we will need a distinction between biases based on expectations of the speaker coming from different sources, we will follow Domaneschi, Romero & Braun (2017) in referring to the latter type of bias as the *original speaker bias*. Sudo shows that English positive polar interrogatives and negative polar interrogatives containing *high negation* (as in *Isn't Jane coming?*) differ as to this bias type: the latter are only compatible with the speaker's original bias for the positive answer, whereas the former are not sensitive to the existence of any bias of this kind.

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5. Büring and Gunlogson (2000: 7) consider evidence to be compelling "if, considered in isolation, it would allow the participants to assume p (i.e. the evidence could reasonably justify the inference that p)."

Sudo's generalizations about the bias features of English polar interrogatives are summarized in the following table:

(14) Evidential and original speaker bias in English polar interrogatives (based on Sudo 2013):

	evidential bias			*original speaker bias*		
	for p	*none*	*for ¬p*	*for p*	*none*	*for ¬p*
positive interrogative (9c)	✓	✓	✗	✓	✓	✓
negative interrogative with 'high' negation – ON (9a)	✗	✓	✓	✓	✗	✗
negative interrogative with 'high' negation – IN (9b)	✗	✗	✓	✓	✗	✗

Sudo does not discuss the possible interactions between the two types of biases. However, given that all high negation negative interrogatives investigated by him are only compatible with the speaker's previous expectations supporting the positive answer, and those with IN readings are only compatible with compelling evidence for the negative answer, the point of using a negative interrogative with the latter reading seems to mark a contrast between expectations and evidence.[6] ON readings are also acceptable whenever no evidence supports either of the answers, which explains why they can be used to suggest the positive answer.

The view that the IN-ON distinction is semantically relevant is not shared by all researchers. Trinh (2014: 244) argues, for example, that situations where evidence for either possible answer is absent, and which were claimed to be compatible with the ON reading only, can also be viewed as providing "minimal evidence" for the negative answer, and thus as a subset of the set of situations where the IN reading is licensed. Van Rooij and Šafářová (2003) also disagree with postulating the relevant interpretational distinction. These two papers do not address the morphosyntactic data collected by the authors discussed above. AnderBois (2011: 185) argues that the presence of NPIs like *either* in (9b) is a necessary condition for the IN reading of high negation polar questions, in the absence of them the questions get an ON reading. This view, however, seems to be contradicted by the experimental results of Domaneschi et al. (2017), who found that in cases where the original speaker bias went for the positive answer, and the evidence pointed towards the negative one, 67% of the speakers considered the high negation polar interrogative without any NPI to be the most appropriate structure to express a polar question.

6. For experimental studies investigating the interaction between the two types of biases see Roelofsen et al. (2013) and Domaneschi et al. (2017).

Whereas Ladd (1981), Büring and Gunlogson (2000) and Sudo (2013) do not investigate the case of negative interrogatives in English with *low negation*, Romero & Han (2004) call attention to the fact that they do not share the bias properties of either reading of high negation polar questions: low negation polar questions are compatible with the absence of original speaker bias. The contrast between high negation and low negation questions in terms of original speaker bias is illustrated in (15a–b):[7]

(15) [Context: S is interviewing A, a professional athlete, about A's training regimen. S has no prior beliefs about A's schedule or habits. S says:]
   a. Tell us about your training. Do you wake up early? Do you not eat sweets?
   b. Tell us about your training. Do you wake up early? #Don't you eat sweets?
   (Silk 2016: 3–4, Example (5))

Having looked in this and the previous section at the distinction between IN and ON readings and the bias features of polar interrogatives in English and German, we provide an overview of three theoretical approaches that aim to model the distinctions formally.

3.3 Theoretical accounts of bias in negative polar interrogatives

3.3.1 *Romero & Han (2004)*

Romero and Han (2004) propose an account of the IN/ON ambiguity of preposed negation polar questions like (16) in terms of operator scope ambiguity:

(16) Doesn't John drink?

The authors assume that the Logical Forms of preposed negation polar questions necessarily contain some "epistemic, conversational" operator, referred to as VERUM, whose interpretation has to do with the degree to which a proposition is considered to be certain. It is taken to assert that "the speaker is certain that *p* should be added to the Common Ground" (p. 627). (17) shows the formal definition of the denotation of VERUM:

7. An anonymous reviewer for the paper considers the claim that English IN polar questions in general can be uttered by epistemically unbiased speakers to be too strong, and thinks that the reason why in the case of (15) (or in the case of analogous examples given by Romero & Han 2004) this seems to be possible is that in the list of interview questions there is "a negated discourse antecedent that licenses the negation in the question (which requires licensing because negation makes the question more marked)."

(17) $[\![\text{VERUM}_i]\!]^{g_{x/i}} = [\![\text{really}_i]\!]^{g_{x/i}} =$
$= \lambda p_{<s,t>} \lambda w. \forall w' \in \text{Epi}_x(w)[\forall w'' \in \text{Conv}_x(w')[p \in \text{CG}_{w''}]] = \text{FOR-SURE-CG}_x$
(Romero & Han 2004: 627, Example (43))

This means that VERUM p is true at a world w iff an anaphorically determined discourse participant x (as a default, the sum of the speaker and the addressee) is certain that in all the worlds in which the conversational goals of x are met the proposition p is part of the common ground. Romero and Han (2004) abbreviate this meaning as FOR-SURE-CG$_x$ p. The authors propose that in addition to preposed negation polar questions, VERUM is present in the Logical Forms of declarative sentences containing the epistemic adverb *really* or stress on a polarity element, but not in those of ordinary po sitive polar interrogatives pronounced with neutral intonation. This means that the partition generated by a positive polar question like the one in (18a) is a "balanced" one, consisting of p and $\neg p$ (Groenendijk & Stokhof 1984), as opposed to the one generated by its variant in (19a) containing *really*, "where the choice is between absolute certainty about adding p to CG (the FOR-SURE-CG p cell) and any other degree of certainty (the ¬FOR-SURE-CG p cell)" (p. 628). (18a–d) and (19a–d) illustrate how these partitions are generated by showing the natural language sentences, their LFs, their semantic values, and the partitions themselves, respectively:

(18) a. *Does John drink?*
b. LF: [$_{\text{CP}}$ Q [John drinks]]
c. $[\![Q \text{ John drinks}]\!](w_0) = \lambda q\, [q = \lambda w.\ \text{drink}\ (j, w) \vee q = \lambda w.\ \neg\text{drink}\ (j, w)] =$
$=$ {"that John drinks", "that John doesn't drink"}
d.

p	¬p

(Romero & Han 2004: 267–8, Example (45)–(46))

(19) a. *Does John really drink?*
b. LF: [$_{\text{CP}}$ Q VERUM [$_{\text{IP}}$ John drinks]]
c. $[\![\text{CP}]\!](w_0) = \lambda q\, [q = \lambda w. \forall w' \in \text{Epi}_x(w)[\forall w'' \in \text{Conv}_x(w')[\lambda w'''.\text{drink}(j, w''') \in \text{CG}_{w''}]] \vee q = \lambda w.\ \neg\forall w' \in \text{Epi}_x(w)[\forall w'' \in \text{Conv}_x(w')[\lambda w'''.\ \text{drink}(j, w''') \in \text{CG}_{w''}]]] =$ {"it is for sure that we should add to CG that John drinks", "it is not for sure that we should add to CG that John drinks"}
d.

FOR-SURE-CG$_x$ p	¬FOR-SURE-CG$_x$ p

(Romero & Han 2004: 628, Example (47)–(48))

The authors propose that the ambiguity of English interrogatives with high negation can be accounted for on semantic grounds, in terms of a genuine scope ambiguity between the negation and VERUM at LF, and that the presence of VERUM necessarily generates the ambiguity here. The LFs of (20a) and (21a) are illustrated in (20b) and

(21b) below, their semantic values in (20c) and (21c), and the resulting partitions in (20d) and (21d). The cells of the partitions marked by the double frames are the ones that are "pronounced" (i.e., correspond to the propositional contents of the interrogatives in question).

(20) a. Isn't Jane coming either?
b. LF: [$_{CP}$ *Q* VERUM [not [$_{IP}$ Jane is coming] either]]
c. $[\![CP]\!](w_0) = \lambda q\ [q = \lambda w.\forall w'\ Epi_x(w)[\forall w'' \in Conv_x(w')[\lambda w'''.\neg come(j,w''') \in CG_{w''}]] \vee q = \lambda w.\ \neg\forall w' \in Epi_x\ (w)[\forall w'' \in Conv_x\ (w')[\lambda w'''.\ \neg come(j,\ w''') \in CG_{w''}]]] =$ {"it is for sure that we should add to CG that Jane is not coming", "it is not for sure that we should add to CG that Jane is not coming"}
d. FOR-SURE-CG$_x$ ¬p ¬FOR-SURE-CG$_x$ ¬p

(Romero & Han 2004: 635, Example (68)–(69))

(21) a. Isn't Jane coming too?
b. LF: [$_{CP}$ *Q* not [VERUM [$_{IP}$ Jane is coming] too]]]
c. $[\![CP]\!](w_0) = \lambda q\ [q = \lambda w.\ \neg\forall w' \in Epi_x(w)[\forall w'' \in Conv_x(w')[\lambda w'''.\neg come(j,w''') \in CG_{w''}]] \vee q = \lambda w.\ \neg\neg\forall w' \in Epi_x\ (w)[\forall w'' \in Conv_x\ (w')[\lambda w'''.\ \neg come(j,\ w''') \in CG_{w''}]]] =$
{"it is not for sure that we should add to CG that Jane is coming", "it is for sure that we should add to CG that Jane is coming"}
d. FOR-SURE-CG$_x$ p ¬FOR-SURE-CG$_x$ p

(Romero & Han 2004: 636–7, Example (73)–(74)[8])

It falls out automatically from the account why PPIs and *too* are acceptable on the ON but not on the IN readings of negative polar interrogatives: in the former the clausemate negation does not scope immediately over the PPIs, whereas in the latter it does. It is also accounted for successfully why ON questions are felt to be double-checking *p* and IN questions are felt to be double-checking *p:* in the former case the scope of the verum operator contains *p,* and in the latter case ¬*p*.

The "epistemic implicature" associated with preposed negation polar questions arises due to economy considerations: in the absence of bias on the part of the speaker it would not be economical to utter a question with a structure more complex than an ordinary positive interrogative. The more complex form with high negation generates an unbalanced partition. Romero & Han derive the fact that this epistemic implicature has to be positive on the basis of the "intent" of the question (which determines the partition chosen to be pronounced). The "intent"

8. (21c) corrects a typo in the original formula (73c) in Romero & Han's paper (p. 636).

of an IN-question is said to be to "ask the addressee to provide conclusive evidence (if he has it) for ¬*p*." (p. 646). This means that "¬*p* must be the addressee's implied proposition" and *p* the one of the speaker. The intent of an ON-question is claimed to be "ask[ing] the addressee to provide reasons – if any – to doubt *p*." Thus, "¬*p* must be the addressee's implied proposition, and *p* must be the original belief of the speaker" (p. 647).

3.3.2 *Repp (2013)*

Repp (2013) follows Romero & Han (2004) in assuming that IN readings of negative polar interrogatives are to be represented in terms of propositional negation scoping under the VERUM operator. She argues, however, that the contributions of ON readings should be modeled with the help of a different, "CG-managing operator" referred to as FALSUM, which is identical to the operator that also occurs in denials, and informally means that "there are zero degrees of strength for sincerely adding a proposition to the CG" (p. 234). This means that the semantic value of the German negative polar interrogative in (22a), which is assigned the LF in (22b), is as shown in (22c):

(22) a. Ist Paul nicht ins Schwimmbad gegangen?
is Paul not to.the pool gone
'Didn't Paul go to the pool?'
b. [Q [FALSUM [Paul went to the pool]]]
c. {There are zero degrees of strength for adding *Paul went to the pool* to CG; There are not zero degrees of strength for adding *Paul went to the pool* to CG} (Repp 2013: 240, Example (11))

The essential parts of the author's formal definition of the denotation of FALSUM in interrogatives is as follows:

(23) $[\![\text{FALSUM}]\!]^x = \lambda p_{<s,t>} \lambda w.\ \forall w' \in \text{Epi}_x(w)\ [\forall w'' \in \text{Conv}_x(w')\ [p \notin CG_{w''}]]$
Discourse condition for utterance u_n with $[\![\text{FALSUM}]\!]^x(p)$:
[…]
(ii) for x = addressee: u_{n-1} does not entail p (Repp 2013: 243, Example (16))

What (23) expresses is that applying the FALSUM operator to a proposition *p* means that in all the worlds *w'* that conform to interlocutor *x*'s knowledge in *w*, where *x* is identical to the addressee, and fulfill all the conversational goals of *x* in *w'*, the proposition *p* is not in the CG. Thus, adding FALSUM to a polar question with propositional content *p* "corresponds to enquiring about the degrees of strengths of the sincerity conditions for adding *p* to CG: the addressee is expected to determine whether or not there are zero degrees of strength for adding *p* to CG" (Repp 2013: 240).

3.3.3 *Krifka (2017)*

Krifka (2017) proposes a new interpretation for negative polar interrogatives in the framework of Cohen & Krifka (2011). The theory assumes that at LF the projections responsible for encoding the sentence radical (also referred to as *propositional content* in other frameworks, cf. Farkas & Bruce 2010), namely, TP and TPQ, illustrated below, are different from those hosting the illocutionary operators responsible for the speech act type that the sentences express, namely, ForceP (cf. Rizzi 1997). The set of illocutionary operators assumed include ASS (assertion), QU (question), and REQUEST. In Cohen & Krifka's theory, what speech acts do is modify the set of commitments for the interlocutors, thus, "linguistic forms that are conventionally related to a certain speech act can be seen as functions from input commitments to output commitments" (p. 365). The commitments that have "accumulated up to the current point in discourse" are said to constitute a *commitment state*. The effect of a particular type of speech act is assumed to specify "admissible continuations of commitment states" rooted in a particular commitment state (p. 367), which are referred to as *commitment spaces*.

The default reading of root interrogatives is represented with the help of the illocutionary operator QU that takes a "question sentence radical" (in TPQ) as an argument. With a question, the speaker specifies that the admissible continuations of the conversation are those in which the addressee makes an assertion that answers the question. An illustration is provided below, where (25b) shows the LF of the example in (25a), and (25c) the characterization of the commitment space of the latter:

(25) a. S_1 to S_2: Is there a vegetarian restaurant around here?

b. $[_{\text{ForceP}}\ [_{\text{ForceP}'}\ \textit{QU-is}_i\ [_{\text{TPQ}}\ [_{\text{TP}}\ \textit{there}\ e_i\ \textit{a vegetarian restaurant here}]]]]$
the TP introduces a propositional discourse referent
φ = 'there is a vegetarian restaurant around here'

c. $\langle \ldots, C\rangle + QU_{S1,\,S2}\,(\{\varphi, \neg\varphi\}) =$
$= \langle \ldots, C, \{\surd C\} \cup \{c \in C \mid \exists p \in \{\varphi, \neg\varphi\}[\surd C + S_2\text{: } p \subseteq c]\}\rangle$
(Krifka 2017: 382–3, Examples (44)–(45))

(25c) thus expresses that TP introduces a propositional discourse referent for the proposition 'there is a vegetarian restaurant around here', and the admissible continuations are those in which S_2, the addressee, commits herself to a proposition that entails the former proposition or its negation.

Krifka considers positive polar interrogatives like (25a) to be ambiguous between the above, neutral reading, and a biased reading, which is identical to the only reading of the rising declarative *There is a vegetarian restaurant here?* He represents the latter reading with the help of the operator REQUEST, which is applied to a speech act (an assertion). REQUEST is claimed to be expressed syntactically in (25a), by triggering head movement. (In the case of rising declaratives, it is expressed by

prosodic means.) The LF of this biased reading of (25a), repeated in (26a), is shown in (26b), and the commitment space associated with the latter in (26c):

(26) a. S_1 to S_2: Is there a vegetarian restaurant around here?
b. $[_{ForceP}$ *REQUEST-is*$_i$ $[_{ForceP}$ *ASS*-e_i $[_{TP}$ *there* e_i *a veg. restaurant here?*$]]]$
introduces φ = 'there is a vegetarian restaurant around here'
c. $\langle \ldots, C\rangle$ + $REQUEST_{S1,S2}$(ASS('there is a vegetarian restaurant around here')) = $\langle \ldots, C\rangle$ + $\{\sqrt{C}\} \cup C$ + [S_2: 'there is a vegetarian restaurant here']
(Krifka 2017: 389, Example (53))

Whereas the standard reading of positive polar interrogatives presents both options as equally preferred, a "REQUEST question" presents the assertion of the positive proposition by S_2 to be preferred. This does not mean that the case is excluded when a negative answer follows such a question: in these circumstances, another operation, referred to as REJECT, is required to apply first. (Krifka 2015 introduces the terms *bipolar* vs. *monopolar question* for the same distinction.)

Turning now to polar questions with high negation, Krifka accounts for the case of "questions based on negated propositions", referred to as IN readings of negative polar questions above, and illustrated in (27a), by assuming an interpretation based on REQUEST, as in (27b):

(27) a. S_1 to S_2: Is there no vegetarian restaurant around here?
(alternatively: Isn't there any vegetarian restaurant around here?)
b. $\langle \ldots, C\rangle$ + $REQUEST_{S1,S2}$(ASS(¬'there is a vegetarian restaurant around here')) =
= $\langle \ldots, C\rangle$ + $\{\sqrt{C}\} \cup C$ + [S_2: ¬'there is a vegetarian restaurant around here']
(Krifka 2017: 389, Example (54)–(55))

(27b) expresses that the preferred answer to the question, according to the speaker, is identical to the negative proposition.

Regarding the ON interpretation of negative interrogatives, the author proposes (i) that it contains the REQUEST operator, and (ii) that the negative particle itself does not denote propositional negation but a speech-act operator over the ASS operator dominated by REQUEST, referred to as *denegation*, represented with the sign '~', illustrated in (28):

(28) a. S_1 to S_2: Isn't there a vegetarian restaurant around here?
b. $[_{ForceP}$ *REQUEST* $[_{NegP}$ *-is*$_i$*-n't* $[_{ForceP}$ *ASS* $[_{TP}$ *there* e_i *a vegetarian restaurant here*$]]]$
c. $\langle \ldots, C\rangle$ + $REQUEST_{S1,\,S2}$(~ASS(φ)),
where φ = 'there is a vegetarian restaurant around here'
= $\langle \ldots, C\rangle$ + $\sim ASS_{S1,\,S2}(\varphi)$
= $\langle \ldots, C, C - \{c \mid \exists c'\,[\, c' + [S_2: \varphi] \subseteq c\}\rangle$
(Krifka 2017: 390–1, Example (59), (60), (61))

According to the author, questions like (27a) are available for the purpose of checking whether the option represented by phi should be considered: S_1 asks S_2 whether he would exclude the option of asserting phi. In contexts where phi is actually the answer preferred by the speaker, the addressee can derive this conclusion indirectly, given that it is made him easy to give a negative answer to the question.

Having discussed the pragmatic properties of negative interrogatives and ways of their formal modeling cross-linguistically, in the following section we will concentrate on the interpretation of their Hungarian counterparts.

4. Inside and outside negation readings of negative polar interrogatives in Hungarian

4.1 The two form types and their compatibility with *is* 'too' and *sem* 'neither'

4.1.1 *Data*

In the present section we wish to show that the role of the English particles *too* and *either* in distinguishing between outside and inside negation readings of polar interrogatives is matched in Hungarian by the additive particle *is* 'too' and the negative particle *sem* 'neither'. We will argue that the compatibility of a negative interrogative form with these particles can be used as a test for the availability of the ON/IN readings.

First let us consider the appearance of these particles in declaratives. As (29a,b) show, an *is*- 'also' phrase legitimately appears in positive declaratives, both in postverbal and in preverbal positions. Note that *is* 'also' and its associated element form one constituent together (cf. É. Kiss 2002: 81):

(29) a. [$_{\text{PredP}}$ Elutazott János is.]
VM.traveled John also
'John also went on a trip.'
b. [$_{\text{DistP}}$ János is [$_{\text{PredP}}$ elutazott.]]
'John also went on a trip.'

A declarative containing the particle *sem* 'neither', which is considered by É. Kiss (2009) a "negative polarity item, a minimizer", is only grammatical if the particle appears postverbally, following the preverbal negative particle, as in (30a), or fuses with the negative particle *nem* preverbally, illustrated in (30b):

(30) a. [$_{\text{NegP}}$ Nem [$_{\text{NNP}}$ utazott [$_{\text{PredP}}$ el János sem.]]]
not traveled VM John either
'John didn't go on a trip, either.'
b. [$_{\text{TopP}}$ János [$_{\text{NegP}}$ sem (*nem) utazott el.]]
'John didn't go on a trip, either.'

As (31a) shows, negative declaratives are not ungrammatical with *is* 'too'. But this structure has a limited use: it can only express the denial of a previous statement, e.g. the one expressed by (29a,b). The variant shown in (31b), where the *is*-phrase appears in preverbal position is, however, ungrammatical:

(31) a. [$_{\text{NegP}}$ Nem [$_{\text{NNP}}$ utazott el János is.]]
not traveled VM John too
'It's not the case that John went on a trip, too.'
b. *[$_{\text{DistP}}$ János is [$_{\text{NegP}}$ nem utazott el.]]

We turn now to negative ∧-interrogatives. (32a–b) are string-identical to the declaratives in (30a–b), respectively, and (32c–d) to (31a–b):

(32) a. Nem utazott el János sem?
'Didn't John go on a trip, either?'
b. János sem utazott el?
'Didn't John go on a trip, either?'
c. Nem utazott el János is?
'Didn't John go on a trip, too?'
d. *János is nem utazott el?

The interpretational difference between (32a–b) and (32c) above is identical to what has been claimed in the literature for negative polar interrogatives containing *either* versus *too* in English: (32a–b) are only acceptable in a context where the speaker previously thought that John would go on a trip, but now infers, on the basis of contextual evidence, that this did not happen, and wants to double check this inference. (32c), however, is only acceptable in a context where the speaker thought that John would go on a trip and would like to double-check the correctness of this assumption. The above data thus indicate that *is* and *sem* can be used as diagnostics for identifying ON and IN readings, and, as a consequence, that negative ∧-interrogatives in Hungarian can give rise to both of these readings. The fact that whereas the form types in (32a–b) are string-identical to canonical negative declaratives, the declarative counterpart of (32c) can only have a denial reading points to an important parallel between declaratives/interrogatives that express truth-conditional negation and those where the negative particle serves other purposes (denial and outside negation, respectively).[9]

Note that, since the variants of (32a–c) that lack the particles *is* 'too' and *sem* 'either' (*Nem utazott el János?* or *János nem utazott el?* 'Didn't John go on a trip?') are string-identical to the corresponding negative declaratives, it would be unmotivated

9. Repp (2006: 397–423) also emphasizes the structural parallelism between declaratives with a denial reading and interrogatives with an outside negation reading in German.

to argue that negative interrogatives in Hungarian have an ON reading as a default, and that the IN reading arises only in special circumstances, as AnderBois (2011), discussed above, predicts for English.

Let us now turn to negative *-e*-interrogatives. As (33a–d) show, they are only compatible with *is*:

(33) a. *Nem utazott-e el János sem?
not traveled-E vm John either
b. *János sem utazott-e el?
c. Nem utazott-e el János is?
not traveled-E vm John too
'Didn't John go on a trip, too?'
d. *János is nem utazott-e el?

Assuming that compatibility with *is* and *sem* properly identifies ON vs. IN readings, the data in (33) lead to the conclusion that negative *-e*-interrogatives can only give rise to the former.

4.1.2 *Implications*

The lack of IN readings for *-e*-interrogatives, noted in the previous section, can be accounted for if we follow Rédei (1986–1991) in assuming that *-e* originates from an Uralic negative particle **e* that turned into a negative verb, and Simoncsics (2003: 240–1) in claiming that the role of this morpheme was to turn a proposition *p* into an alternative question of the form *p or not p?*. Under the above assumptions, the apparent impossibility of adding *-e* to a sentence $\neg p$ with propositional negation can be explained as a case of blocking, since $p \vee \neg p$ is equivalent to $\neg p \vee \neg\neg p$. Szabolcsi (2015) (independently of the above authors) also argues that the interpretation of *-e*-interrogatives is equivalent to alternative questions of the form *p or not p?*.[10,11]

Gyuris (2017) looks at the uses of positive vs. negative $\wedge$- and *-e*-interrogatives. The paper proposes that the felicity conditions of positive $\wedge$-interrogatives are very

10. In spite of the semantic similarity between *-e*-interrogatives and alternative questions in Hungarian, the conditions on their felicitous use seem to be markedly different, as discussed in Gyuris (2017): whereas the former are used felicitously if there is no contextual evidence supporting the positive or the negative answer, alternative questions of the form *p or not p*? are the preferred option if both answers seem to be supported by evidence, or if a polar question of a different form but with the same answer set has already been asked but has not been answered in the discourse.

11. Note that the syntactic and semantic properties of *-e*-interrogatives discussed so far show a close similarity to the corresponding features of Chinese A-not-A questions, in which, according to Li &Thompson (1981: 532), the constituent A cannot contain a negative particle.

similar to those of the English polar interrogatives with inversion, and the conditions for the felicitous use of *-e*-interrogatives can be accounted for on the basis of their bias properties in the evidential domain: they introduce the contextual presupposition that there is no compelling contextual evidence for either the positive or the negative answer to the question. The paper also argues that all types of negative interrogatives in Hungarian share the property of marking that the speaker prefers the positive answer based on her previous assumptions. The following table summarizes the bias properties of polar interrogatives in Hungarian, by indicating what types of contextual evidence and what types of speaker expectations they are compatible with:

(34) Evidential and original speaker bias in Hungarian polar interrogatives (based on Gyuris 2017)

	evidential bias			*original speaker bias*		
	for p	*none*	*for ¬p*	*for p*	*none*	*for ¬p*
positive ∧- interrogative (2a,b)	%*	✓	✗	✓	✓	✓
negative ∧-interrogative – ON (32c)	✗	✓	✓	✓	✗	✗
negative ∧-interrogative – IN (32a,b)	✗	✗	✓	✓	✗	✗
positive *-e*-interrogative (1a,b)	✗	✓	✗	✓	✓	✓
negative *-e*-interrogative – ON (33c)	✗	✓	✗	✓	✗	✗

* Certain speakers do accept the form in the context indicated, others do not, cf. Gyuris (2017).

The assumption that negative polar interrogatives of all kinds are associated with the speaker's original bias for the positive answer is supported by the fact that the Hungarian versions of Example (15b) above, illustrated in (35), are all unacceptable:

(35) [Context: S is interviewing A, a professional athlete, about A's training regimen. S has no prior beliefs about A's schedule or habits. S says:]
a. #Nem eszel édességet?
not eat.2SG sweets.ACC
'Do you not eat sweets?'
b. #Nem eszel-e édességet?
not eat.2SG-e sweets.ACC
'Do you not eat sweets?'

The only way to understand (35a,b) is as an offer by S, or a way of expressing surprise at the addressee not eating sweets, which is clearly not the interpretation intended in the context.

Let us consider how the IN/ON ambiguity of Hungarian polar interrogatives could be accounted for in the theoretical frameworks reviewed in Section 3. The fact that ON readings are compatible with *is* 'also', which cannot be situated in the

immediate scope of propositional negation, as in (32c)–(33c), could, in principle, be accounted for in Romero & Han's (2004) theory by saying that the VERUM operator, which scopes below the propositional negation that *nem* 'not' expresses, prevents *is* 'too' in ON readings to be in the immediate scope of the latter. In the same framework, IN readings could be modeled by assuming that here propositional negation takes narrow scope with respect to VERUM.

The theory, however, faces some general problems, which raises the question of whether it should be adopted for Hungarian. The first one concerns the congruence of questions and answers. Similarly to the English case, pointed out first by Reese (2007), negative declaratives in Hungarian (e.g. those in (5a,b)), which are used as full answers to ∧- and *-e*-interrogatives (as in (6a, b) and (7a, b)), do not have a reading where the degree of certainty about the truth of a proposition seems to be expressed. These declaratives themselves are acceptable out of the blue, which is not predicted on standard assumptions about VERUM (cf. Gutzmann & Castroviejo Miró 2011; Richter 1993). Furthermore, the two form types of negative interrogatives are also acceptable out of the blue, e.g. as offers or suggestions, which does not seem to follow from the standard properties of VERUM. The second general problem concerns the fact that on Romero & Han's account ON readings are assumed to contain propositional negation (although embedded), which does not seem to accord with intuitions about the role of the negative particle in ON readings (namely, to suggest the positive answer) and with the formal parallels between these and special uses of negative declaratives.

Using Repp's (2013) theory, ON readings of negative interrogatives in Hungarian could be modeled with the help of the FALSUM operator, which, again, does not interact with *is* 'too'. The proposal runs, however, into some difficulties from a theoretical point of view. First, as pointed out by Krifka (2017: 365), if a negative interrogative "is answered affirmatively, by *ja*, without any modification, then […] this is not just understood as the weak commitment that ¬FALSUM(φ) would indicate. Rather, a simple affirmative answer indicates a commitment to the proposition φ, without modification." A related concern is raised by Northrup (2014: 179), according to whom the fact that ON readings of polar questions with propositional content *p* can also be asked in neutral contexts indicates that paraphrasing them as *Is it the case that there is zero evidence that p?* is inadequate.

Following Krifka's (2017) approach, one could assume that the negative particle *nem* 'not' is interpreted in the ON readings of negative polar interrogatives in Hungarian as the denegation operator ~, whereas it denotes ordinary propositional negation in the case of the IN readings. The fact that *is* 'too' is compatible with ON readings could then be attributed to the fact that the interpretation of the additive particle is not affected by the denegation operator in the same way as by propositional negation. The fact that an *is*-phrase cannot precede the negative particle, as

in (32d) and (33d), could either be explained as a syntactic restriction (analogous to that relevant to declaratives) or as a semantic restriction on the relative scopes of the *is*-phrase and the denegation operator. Concerning the latter case, if we assume that the denegation operator denoted by the negative particle *nem* has to be interpreted at LF in the ForceP projection of the sentence, one could attribute the ungrammaticality of (32d) and (33d) to the fact that the *is*-phrase serves as a barrier to the LF-movement of *nem* (cf. Beck 1996). In the next section, we consider some data having to do with the interpretation of indefinites in the ON/IN readings.

4.2 Negative polar interrogatives containing *vala*-indefinites

4.2.1 *Data*

Szabolcsi (2002) observes that *vala*-indefinites (similarly to *some*-indefinites in English) cannot be interpreted as being within the scope of negation in the same sentence. In other words, in (36B) *valaki* 'somebody' can only refer to a specific person:

(36) A: Milyen hibát követett el János?
what mistake.ACC made.3SG VM John
'What mistake did John make?'
B: Nem értesített valakit.
not notified.3SG someone.ACC
'There is a particular person he didn't notify.'
(Szabolcsi 2002: 220, Example (8), translation amended)

Gärtner & Gyuris (2012) note that in a negative interrogative a *vala*-indefinite can equally get a non-specific and a specific reading:

(37) János nem hívott fel tegnap valakit?
John not called VM yesterday somebody.ACC
i. 'Didn't John call a particular person yesterday?'
ii. 'Didn't John call some person yesterday?'
(Gärtner & Gyuris 2012: 401, Example (25), translations amended)

Let us consider now whether (37) can give rise to both ON and IN readings, by applying the *is* 'too' vs. *sem* 'neither' tests:

(38) a. János nem hívott fel tegnap is valakit?
John not called.3SG VM yesterday too somebody.ACC
'Didn't John call some/a particular person yesterday, too?'
b. János nem hívott fel tegnap sem valakit?
John not called.3SG VM yesterday either somebody.ACC
'Didn't John call *some/ a particular person yesterday, either?'

According to (38a–b), (37) is compatible with both an ON and an IN reading. The two readings, however, differ in one important respect: whereas the latter only allows the specific reading of the indefinite, similarly to the string-identical negative declaratives, the former is compatible with both a specific and a non-specific reading. This means that on the interpretation of the indefinite paraphrased in (37i), (37) is ambiguous between an ON and an IN reading, whereas on the interpretation of the indefinite paraphrased in (37ii), only the ON reading is possible.

4.2.2 *Implications*

The fact that non-specific readings are available for *vala*-indefinites in negative interrogatives on their ON reading is compatible with the assumption that on these readings, the negative particle does not stand for propositional negation but for the denegation operator of Krifka (2017), which does not interact with the interpretation of the indefinite. In the next section we look at compatibility with positional variants of the adverbs *még* 'still' and *már* 'already'.

4.3 Compatibility with positional variants of the adverbs *még* 'still' and *már* 'already'

4.3.1 *Data*

The interrogatives discussed in this section contain the adverbs *még* 'still' and *már* 'already', and the process verb *alszik* 'sleeps'. (39a–d) show how the position of the adverbs in postverbal positions and in positions preceding the preverbal negative particle influences the availability of ON readings (compatible with *is* 'too'):

(39) a. Nem alszik Mari is még / már?
not sleep.3SG Mary too still already
'Isn't Mary still/already sleeping, too?'
b. Nem alszik-e Mari is még / már?[12]
not sleep.3SG-E Mary too still already
'Isn't Mary still/already sleeping, too?'
c. *Még/Már nem alszik Mari is?
d. *Még/Már nem alszik-e Mari is?

(40a–d) illustrate the availability of IN readings (compatible with *sem* 'either'):

(40) a. Nem alszik Mari sem még / már?
not sleep.3SG Mary either still already
'Isn't Mary still/already sleeping, either?'

12. All examples discussed in this section containing *még/már* in sentence-final position are equally acceptable if the adverbs are situated in an immediately postverbal position.

b. *Nem alszik-e Mari sem még / már?
not sleep.3SG-E Mary either still already
c. Még/Már nem alszik Mari sem∧?
d. *Még/Már nem alszik-e Mari sem?

(39a–b) and (40a–b) show that when situated postverbally, the presence of the adverbs does not influence the interpretation of either type of interrogative: ∧-interrogatives can have both ON and IN readings, but *-e*-interrogatives can only have the former, as expected. (39c–d) illustrate that ON readings are not available with sentence-initial adverbs, and (40d) that they are incompatible with *-e*-interrogatives altogether (which is expected if the latter only have ON readings). The contrast between (39c–d) and (40c) indicates that sentences where the adverb precedes the negative particle require an IN reading. Thus, we have a new test for distinguishing between IN and ON readings of negative interrogatives in Hungarian: if the negative particle can be preceded by either of the adverbs *még* or *már* without a significant change in interpretation, we have an IN reading, otherwise an ON reading. (Note that with verbs denoting a change of state, usually only one of the adverbs will be appropriate.)

4.3.2 *Implications*

The ungrammaticality of (39c–d) could be accounted for by saying that the negative particle *nem* 'not' on its ON reading is situated above the standard positions of the adverbs *már* and *még,* in the topic field of the sentence.[13] The problem with the above assumption, naturally, is that there are negative interrogatives with an ON reading where the negative particle is situated in the same, immediately preverbal position as in interrogatives with an IN reading, as in (7a,b), repeated below in (41):

(41) a. [$_{NegP}$ Nem [$_{NNP}$ utazott [$_{PredP}$ el János?]]]
'Didn't John go on a trip?'
b. [$_{TopP}$ János [$_{NegP}$ nem [$_{NNP}$ utazott el?]]]
'Didn't John go on a trip?'

These data support the approach outlined in 4.1.2, on which ON readings are assumed to involve the movement of the negative particle *nem* to ForceP at LF, where it is interpreted as the denegation operator. The fact that negative polar

13. Surányi (2008) lists the adverbs *még* and *már* among the so-called "middle adverbials" in Hungarian, whose highest position is situated between the topic and distributive quantifier positions of the sentence, cf. (3) above. Thus, if the negative particle on its ON reading occupies a position among the (possibly multiple) Spec, TopP positions, as "high adverbials" do, we can account for the lack of ON readings in the case of (39c,d).

interrogatives with *már/még* in initial position are ungrammatical would indicate that these adverbs act as interveners for the relevant movement. In the next section we consider a word order variation, which, again, differentiates between ON and IN readings.

4.4 Inversion and lack of inversion between verbal prefix and verb

4.4.1 *Data*

So far, we concentrated on negative polar interrogatives in Hungarian where the verbal prefix is situated behind the verb. As discussed above, this is the canonical form of negative polar interrogatives, which, other things being equal, can give rise to both ON and IN readings, just as canonical forms of negative polar interrogatives with high negation in English do (cf. Ladd 1981; Büring & Gunlogson 2000; Romero & Han 2004, among others). Consider now the following examples, which show a wider range of negative interrogative structures (having the same interpretation) in a context that calls for an ON reading:

(42) [Context: the meeting organized by *A* is about to start. *B* is one of the participants.]
A: Mary is going on a trip, and therefore she is not coming. I expect everyone else to be present, although I haven't seen John yet.
B: i. Nem utazik el ő is?
not travel.3SG VM he too
'Isn't he going on a trip, too?'
ii. Nem utazik-e el ő is?
iii. Nem elutazik ő is?
iv. ?Nem elutazik-e ő is?

The aim of *B's* utterance is to ask for the truth value of the proposition 'John also went on a trip', which she believed to be true preceding the conversation, and thus to call the attention of interlocutor *A* to the possibility of this proposition being true. It is expected on the basis of the preceding discussion that this intention on the part of *B* can be expressed with the help of (42Bi–ii). However, (42Biii) and the marginal (42Biv) are also available for this purpose, both without prefix-verb inversion.

Let us consider what happens when interrogatives with analogous structures as those in (42) are uttered in a context that requires an IN reading, marked by the presence of *sem* 'neither':

(43) [Context: *A*, the head of department is talking to *B*, one of his colleagues.]
A: Nobody will represent us at the conference in Debrecen, since Peter is not able to go now.
B: i. Nem utazik el János sem?
not travel.3SG VM John either
'Isn't John going either?'
ii. *Nem utazik-e el János sem?
iii. *Nem elutazik János sem?
iv. *Nem elutazik-e János sem?

In the dialog above, the aim of speaker *B* is to find out whether the proposition 'John is not going on a trip, either' is true. As expected on the basis of the preceding discussion, (43Bi) is acceptable in this context and (43Bii) is ill-formed. As (43Biii–iv) show, *sem* is incompatible with a negative ∧- or *-e*-interrogative that displays no prefix-verb inversion, which indicates that the lack of inversion in negative interrogatives can only indicate an ON reading.

4.4.2 *Implications*

The fact that, as shown above, negative polar interrogatives with no prefix-verb inversion are grammatical on the ON reading but not on the IN reading could indicate that the presence vs. absence of inversion between verb and prefix is a further, stable criterion along which the two readings can be differentiated from each other. The situation, however, is a bit more complicated, as a comparison between the following examples shows:

(44) a. Nem elutaztál?
not VM.traveled.2SG
'Didn't you go on a trip?'
b. Nem utaztál el?
'Didn't you go on a trip?'

Whereas (44b) is appropriate in a context where the speaker previously believed, wished or wanted that the addressee went on a trip, (44a) is only appropriate in the first of the above contexts. The contrast between the acceptability of (45A,A′) below illustrates the same fact:

(45) [Context: B tells A about an event when he made an embarrassing mistake.]
A: Nem szégyellted el magad?
not shamed.2SG VM yourself
'Weren't you ashamed?'
A′: #Nem elszégyellted magad?
'Weren't you ashamed?'

The utterance of (45A) can be made in a case where speaker *A* thinks that *B* should have been ashamed of himself, that is, in a case where the speaker's original deontic bias favors the positive answer. (45A′), however, is only appropriate in a situation where the speaker wants to suggest to *B* that what happened was that he (that is, *B*) was ashamed of himself. Such an utterance is strange, because it suggests information to the hearer in a situation where the latter is the source of the information (about himself). Thus, (45A′) would only be acceptable in the relevant situation if *B* was suffering from amnesia.

The previous example thus indicates that the negative particle *nem* appearing in a ∧-interrogative without inversion is only compatible with a situation where the speaker's original bias towards the positive answer to the question is an epistemic one. This seems to be an important finding since, to my knowledge, no construction has been discussed from any language that made a distinction between different types of original biases by the speaker.

The following example shows that negative interrogatives with two occurrences of the negative particle *nem* can also be grammatical in Hungarian:

(46) A: I thought that John left for a conference, but his car is in the car park.
B: Nem nem utazott el?
not not traveled VM
'Didn't he not go on a trip?'

The speaker of (46B) wishes to check the truth of the proposition 'He didn't go on a trip', which she believed to be true before, and which would serve as an explanation for the state of affairs described in the sentence in (46A). The first *nem* stands for outside negation, which introduces the original epistemic bias of the speaker for the proposition expressed by the rest of the sentence ('He didn't go on a trip'), and the second one for propositional negation, in NegP. (47)–(49) below show some further examples of negative interrogatives for which, again, no string-identical declaratives exist in Hungarian.

I want to propose that the data discussed in this section should be accounted for by assuming a biclausal analysis: the particle *nem* preceding a non-inverted prefix-verb complex or another negative particle originates in a matrix sentence of the form *Nem az van, hogy … ?* 'Is it not the case that …?' (where *nem,* however, must have an IN interpretation), whereas the rest of the interrogative sentence (including the prefixed verb or the second negative particle) originates from a *declarative* sentence embedded under the matrix interrogative. (47) shows this paraphrase for (44a):

(47) Nem az van, hogy elutaztál?
not that be.3SG that VM.traveled.2SG
'Is it not the case that you went on a trip?'

The contrast between the biases negative interrogatives with vs. without inversion in Hungarian can give rise to points to the need for distinguishing between epistemic and other types of original speaker biases, which have been treated analogously so far in the literature (Sudo 2013; Reese 2007, etc.).

One problem with the biclausal analysis proposed above is that it cannot be extended to the case of the marginally acceptable (42B–iv), since, due to the presence of *-e,* it cannot be analyzed as containing a subordinate *declarative* embedded under a matrix interrogative. Structures analogous to (42B–iv), could, however, also be considered as blends of a (dominant) ∧-interrogative without inversion, as in (42B–iii), and *-e*-interrogatives. The role of adding *-e* to the former structure is then seen as emphasizing the exclusion of the possibility that the negative answer is supported by contextual evidence, which would be compatible with the ON-reading of the ∧-interrogative.

In this section, we have reviewed five possible (morphosyntactic and interpretational) features of negative polar interrogatives in Hungarian, each of which is compatible either only with the ON or only with the IN interpretation. The first two concerned compatibility with the additive particle *is* and the negative polarity item *sem,* the third the availability of a non-specific reading of *vala*-indefinites, the fourth the availability of a sentence-initial position for the adverbs *már* and *még*, and the fifth the lack of inversion between the verb and the verbal prefix. We emphasized that the acceptability judgments are predicted if the negative particle *nem* on its ON reading is not meant to denote propositional negation, but the speech act operator denegation proposed by Krifka (2017), but we also pointed out some difficulties that the adoption of the latter framework for the Hungarian examples faces. With respect to the last phenomenon, the absence of prefix-verb inversion, we emphasized that it formally marks a particular subtype of the original speaker bias, which has not been connected to any particular construction in any languages.

5. Conclusion

This paper was concerned with empirical and theoretical aspects of particular semantic/pragmatic properties of negative polar interrogatives in Hungarian. First, we reviewed the assumptions on which the distinction between IN and ON readings of negative polar interrogatives is based cross-linguistically, and the types of biases in terms of which the felicity conditions of the various form types of the latter can be stated. Next, we looked at three important formal theories that aim to account for these semantic/pragmatic distinctions on the basis of English and German data. Finally, we called attention to five different morphosyntactic and

semantic features that give rise to obligatory ON or IN readings of polar interrogatives in Hungarian. One of them was argued to have the property (not noted for any language before) of being sensitive to the presence of one particular subtype of original speaker biases. In the course of analyzing the formal and interpretational distinctions above, we looked at possible ways of modeling them in terms of the three theoretical approaches discussed above, and pointed out some challenges the latter would run into if they were chosen to be adopted for Hungarian.

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Two kinds of VERUM distinguished by aspect choice in Russian

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The paper proposes a direct tie between the existential use of imperfective aspect in Russian and the expression of VERUM. It is argued that the kind of VERUM expressed in these cases differs from the kind of VERUM that utterances based on perfective verb forms convey. In the former cases the speaker invites the addressee to infer the truth of a generic proposition, whereas in the latter cases she invites the addressee to infer the truth of an episodic proposition. It is also shown that in the imperfective cases VERUM may be indicated by verum focus, whereas for perfective aspect to express VERUM verum focus is mandatory.

Keywords: imperfective, perfective, Russian, pragmatics, verum

1. Introduction

According to Zybatow (1999), Junghanns & Zybatow (1997, 2009), Zybatow & Mehlhorn (2000), three kinds of focus are to be distinguished in Russian. *Neutral Focus* is realized as falling tone on the last syllable that can be regularly stressed in the sentence. Its function is "emphasizing the information that is important in the given context" (Junghanns & Zybatow 1997: 305). Unlike neutral focus, *Contrastive Focus* may target every constituent. It is prosodically clearly distinguished from neutral focus by a rise-fall-pattern starting off higher in pitch.[1] Contrastive focus serves to indicate the need to correct explicitly or implicitly stated information. *Verum focus*, finally, is characterized by accent on the finite verb. It shares its basic contour with contrastive focus, but is distinguished from the latter by a smaller fall in pitch (Junghanns 2002: 40, but see Mehlhorn 2002: 160). Following Höhle (1988), the authors state that the function of verum focus is to emphasize the being

1. See Mehlhorn (2004) for details.

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true of a contextually given thought. As an example, Zybatow (1999: 76) presents (1), adapted from Mehlig (1991) (capitals indicate verum focus accent):

(1) A: *Igor' sokraTIL svoju stat'ju?*
I. shorten.PST.PFV REFL article
'Has Igor shortended his article?'
B: *Net, ešče ne sokraTIL.*
no still not shorten.PST:PFV
'No, he has not shortened it yet.'

Accordingly, given that the question/answer-pair in (1) is felicitous, A emphasizes that she wants to know whether the proposition that Igor shortened his article is true or false, and B replies by emphasizing falsity of the proposition.

What does it precisely mean to say that the speaker "emphasizes" the truth (or falsity) of a proposition? This question is notoriously difficult to answer, and I will not be able to provide an ultimate solution in this paper. I take the following intuition as my working assumption: The speaker uses verum focus in (1) in order to signal that the truth value of the proposition *p* (that Igor shortened his article) is of crucial relevance for her. "Of crucial relevance" means that something would pragmatically follow from the truth of *p* that would not follow if *p* was false (or vice versa), and that this something will have an impact on the future behavior of the speaker (in the case of verum interrogatives) or the hearer (in the case of verum declaratives). Expressed with some exaggeration: By signaling verum focus, the speaker expresses that her or the hearer's fate depends on the truth or falsity of *p*. An example may be instructive here.

Think of the following context for (1): The speaker and the hearer are two editors of a linguistic volume, and Igor is one of the contributors. The paper that Igor initially contributed was longer than the publication guidelines allow, and so the editors have asked Igor to resubmit a shortened version of his article within a specific period of time. If he fulfills this obligation, they will accept his submission, and if he does not, they will have to exclude him from the volume. Now time has come to draw a decision on Igor's paper, and so one editor is asking her colleague (1A). She thereby "emphasizes" the issue of the truth of *p* (by signaling verum focus) in the sense that she indicates that the truth value of *p* matters for the future course of events, i.e. for whether they will accept or reject the paper.

Let me point out that this intuitive description of the impact of verum focus does not conflict with Gutzmann & Castroviejo Miró's (2011) theoretical proposal, according to which the expression of VERUM amounts to signaling that the speaker wants to resolve a question which is presupposed as being currently under debate. According to that proposal, by uttering a declarative with VERUM, the speaker pursues two goals at once. She asserts that *p*, and at the same time she

signals that she wants to downdate *?p*.[2] Gutzmann and Castroviejo Miró (2011: 20) point out that the explicit signal to downdate *?p* implies that the speaker has no doubts about the truth of *p*, i.e. that she "must be sure that *p* should be added to CG".[3] I add the triviality that the explicit signal to downdate *?p* also implies an underlying motivation for signaling that. As noted above, my proposal in this regard is that some future decision depends on the truth value of *p*. By signaling that she wants to downdate *?p*, the speaker expresses that she wants to find out what to do (in the case of interrogatives), or that she wants to let the hearer know what to do (in the case of declaratives).

Utterances containing VERUM, in other words, bring about not only the assertion of *p*, but also the assertion of a second, concealed proposition *q*, whose truth follows from the truth of *p*. In (1), A is asking whether it is true or false that *p* (that Igor shortended his article), at the same time signaling that she wants to know whether or not *q* (that Igor will be excluded from the volume) is true. This is possible because the speaker knows that the hearer knows that, if *p* was false, Igor would be excluded from the volume (=*q*). In the given case, B answers by asserting ¬*p*, thereby signaling that *q* is true.

Above we saw that signaling verum focus on the finite verb is a linguistic means in Russian for "emphasizing the truth of a proposition", i.e. for expressing VERUM. In the present paper, I want to show that VERUM may be expressed in Russian also by morphological means, i.e. by choosing imperfective instead of otherwise expected perfective aspect. The phenomenon arises under very specific circumstances: It has to be clear from context that reference to a single completed event is intended by the speaker, and that the existence of the event referred to is unknown to the hearer. In such a situation the verb may in principle take on both perfective and imperfective morphology in Russian.

If the speaker chooses perfective aspect, she will assert *p* in order to draw attention to the specific conditions of the target state of the event.[4] This may be accompanied by the expression of VERUM by means of focus, as in (1). If the speaker

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2. The term term "downdate" is a technical term. It describes "the move that […] erases a question *?q* from the QUD" (Gutzmann & Castroviejo Miró 2011: 160). "QUD", in turn, is "[a] partially ordered set that specifies the currently discussable issues" (ibid.).

3. "CG" is for Common Ground. The wording here refers to the theory of Romero & Han (2004), an important competitor of Gutzmann & Castroviejo Miró (2011). According to Romero & Han's proposal, VERUM is an operator that takes a proposition *p* as input and maps it onto a new proposition, VERUM(*p*), which is true if "it is for sure we should add to CG that *p*" (Romero & Han 2004: 628).

4. "Target state" is meant here in the sense of Klein (1994, 1995), not in the more narrow sense of Kratzer (2000) and Parsons (1990).

chooses imperfective aspect instead, she will signal that it is not the conditions of the event's target state that matter. What matters instead is VERUM, in particular the truth of a generic proposition *q* inferable from the truth of the asserted overt proposition *p*.

The story told in this paper may be summarized as follows:

- Expressing VERUM is covertly signaling the truth of *q* by overtly signaling the truth of *p*.
- Perfectives necessarily express reference to a completed event, and they may be accompanied by VERUM.
- Imperfectives may express reference to a completed event and, if they do, they necessarily express VERUM.[5]
- In case of perfectives with VERUM *q* is episodic.
- In case of imperfectives with VERUM *q* is generic.

It should be noted that I am not the first to identify a link between imperfectives referring to completed events and VERUM (see, for instance, Mehlig 2016: 240). What the present paper aims at contributing is an explanation as to *why* there is such a link. The paper is structured as follows: In Section 2 I remind of the basic principles determining aspect choice in Russian. Section 3 elaborates on the cases of particular relevance to the concerns of the present paper: on the possibility of using imperfective verbs to refer to completed events. Section 4 introduces current approaches to the semantics and pragmatics of Russian (im)perfective aspect, and Section 5 points to a crucial question that these approaches raise without answering it satisfactorily: What is communicatively relevant when imperfective aspect is chosen under reference to a completed event? In Section 6 I offer an answer to fill this gap. My answer will be that in these cases the relevant information is supplied by the consequent condition of a rule which is retrieved from the interlocutors' background knowledge. In Section 7 I point out that my answer implies that "completed imperfectives" involve the expression of VERUM, because what is relevant to the speaker is a concealed proposition *q* following from the truth of *p*. Section 8 addresses some issues that I cannot yet finalize, and Section 9 concludes the paper.

5. This claim does not hold for presuppositional imperfectives, see below, Section 3.

2. On aspect choice in Russian

Each verb form in a Russian text is morphologically identifiable[6] as belonging to one out of two aspectual categories, the perfective or the imperfective.

Perfectivity of the verb implies, as the name of this category suggests, completedness of the event. By using a perfective form, the speaker will draw attention to the full realization of an event at a specific time in the past (if the verb is in past tense, which I presuppose throughout to reduce complexity), as well as to the specific consequences that this event has brought about. As an illustration consider (2), which contains two perfective verb forms:

(2) *Ja posmotrela ėtot fil'm i legla spat'.*
I watch.PST.PFV this movie and lay.PST.PFV sleep
'I watched that movie and went to sleep.'

(2) shows two sentences, introducing two events. Each verb form is perfective so that both events are understood to realize completely. The two sentences are coordinated by conjunction *i* ('and'), which amounts to a taxis relation of immediate succession ("chain of events") at discourse-level: the target state of the first event provides the occasion for the second event to take place.

Comrie (1976: 113) characterizes perfectives in Russian as serving "specific reference to the completedness of the event". This wording echoes classic analyses in Russian aspectology. Maslov (1974: 108–109), for instance, assumes there to be three constraints imposed on the use of a perfective form: a perfective will always be interpreted as (i) referring to a completed event, (ii) referring to a single event and (iii) referring to a specific event. The established umbrella term for perfective uses satisfying these three conditions is "concrete factual use" (e.g. Maslov 1959; Rassudova 1968/1982; Švedova et al. 1980).

In contrast to the perfective, the imperfective is described as being devoid of any semantic features (cf. Maslov 1974: 110). Given that assumption, the use of an imperfective form in Russian is predicted to be possible whenever at least one of the three conditions semantically associated with the perfective form is not met.[7] Either the event referred to is not a singleton (so that it is not an event referred to, but rather events referred to):

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6. There are exceptions to that, i.e. biaspectual verb forms, which I trace over here. See Zaliznjak & Šmelev (1997) and Breu (2009) for condensed expositions of the system of Russian aspect morphology.

7. It is therefore, in a sense, justified to describe the use of the imperfective as a non-use of the perfective (Forsyth 1970). Note in this regard Paslawska & von Stechow's (2003: 336) conclusion that "there is no such thing as the meaning of the imperfective; this 'aspect' is really a non-aspect".

(3) *Ja smotrela ėtot fil'm neskol'ko raz.*
I watch.PST.IPFV this movie several times
'I watched that movie several times.'

Or the event referred to is not completed, or at least not claimed to be completed. This use of imperfective aspect is imperfective sensu stricto, giving rise to the effect of an internal "viewpoint" (Smith 1997: 231) on the event.

(4) *Kogda ty pozvonil, ja smotrela ėtot glupyj fil'm.*
when you phone.PST.PFV I watch.PST.IPFV that silly movie
'When you phoned, I was watching that silly movie.'

In (4) we see a compound sentence. The verb form of the temporal subordinative clause is perfective, which according to what was said above will guide attention to the time of the target state, i.e. to when speaker and hearer are on the phone. This time will be treated as reference time for the interpretation of the main clause. The main clause itself is imperfective, leading to the interpretation that the movie watching is not yet completed (the movie is still running) at reference time. If the speaker wanted to express that the movie was over at reference time, she would have to use perfective aspect in combination with the phase particle *uže* ('already'):

(5) *Kogda ty pozvonil, ja uže posmotrela ėtot glupyj fil'm.*
when you phone.PST.PFV I already watch.PST.PFV that silly movie
'When you phoned, I had already watched that silly movie.'

The third possibility is that the event referred to is not specifically located in time, which amounts to the feeling of a "gap" (Leinonen 1982) between the event and the circumstances of the utterance. To describe this intuition, Maslov (1948: 160) speaks of the abstraction away from the temporal development of the action ("otvlečennost' ot samogo protekanija dejstvija"). (6) shows an instance of this third case (example from Glovinskaja 1982). Note that the event referred to in (6) is completed.

(6) *Ja smotrELa ėtot glupyj fil'm.*
I watch.PST.IPFV this silly movie
'I did watch that silly movie.'

The imperfective use represented by (6) is traditionally known as "general-factual" in Russian aspectology. The question of how to reconcile event completedness with imperfective morphology, and of how to capture the intuitive dissociation of the single completed event from the time axis poses a "perennial problem" (Klein 1995) for time-relational treatments of Russian aspect. Attention should be paid to that the finite verb *smotrela* bears sentence stress in (6). This is typical of general-factuals, albeit it is no neccessary condition. I will come back to that issue below.

3. Varieties of "completed imperfectives"

As we saw in (6), event completedness is not the exclusive territory of perfective aspect in Russian. Also the imperfective may appear under reference to a single completed event. In the present section I will elaborate on this option of Russian grammar. There are basically two variants.[8]

Grønn (2004) calls the first class of general-factuals "presuppositional imperfectives" (our Example (6) belongs to the second class). Presuppositional imperfectives are characterized by two features. First, the input context already entails the information about the existence of the event referred to. This information may be either explicitly mentioned or implicitly contained (i.e. accommodatable) in the context. Second, focus lies not on the event and its specific consequences, but rather on these or those circumstances of its realization, which is why intonational focus will never fall on the verb.[9]

(7) *Včera ja posmotrela odin glupyj fil'm. Ja smotrela ego*
Yesterday I watch.PST.PFV a silly movie I watch.PST.IPFV it
po rekommendacii IVAna.
after advise I.
'Yesterday I watched a silly movie. I watched it on recommendation of Ivan.'

The second sentence in (7) is an instance of a presuppositional imperfective. It corefers to the (completed) event introduced by the preceding perfective sentence, thereby focusing on the motivation for the movie-watching. In this paper, cases of presuppositional imperfectives are of secondary importance as they have nothing to do with VERUM (as far as I can tell).[10]

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8. This is, of course, a simplification. Besides presuppositional uses, there are at least two more "completed imperfectives" whose inclusion in the category of existential imperfectives is not self-evident: bidirectional imperfectives and counterfactual imperfectives. Both realize under very specific conditions and are ignored here (see Grønn 2004, 2008). Some authors, moreover, argue for the existence of a special class of "singular-factual imperfectives" (Šeljakin 2008; Mehlig 2013).

9. Rassudova (1968/1982: 55) describes these cases of "circumstantial focus" as cases where the speaker is interested in where, when, why or by whom the action realized ("kogda govorjaščego interesuet, gde, kogda, začem, kto soveršal dejstvie").

10. However, Alvestad 2013 treats imperfective uses involving verum focus as cases of presuppositional imperfectives, where the presupposed meaning component is an event type rather than an event token. This proposal is interesting because together with the proposal of the present paper it amounts to the claim that existential imperfectives should per se be subsumed under the category of presuppositional imperfectives.

Our Example (6) represents the second class of "completed imperfectives", those for which Grønn proposes the label "existential imperfectives". Let me give another example for illustration (taken from Švedova et al. 1980).

(8) *Po doroge on ogljadyval prochožich i dumal: "Ėtot ne*
on street he inspected pedestrians and thought this not
čital 'Kapitala'. I ėtot… I tot, s borodoj, ne
read.PST.IPFV K. and this and that with beard not
čital. A ja vot čital.
read.PST.IPFV but I consider read.PST.IPFV
'Looking at the people in the street he thought: This one did not read Capital. And that one…And that one, with the beard, did not read it. But I have read it.'

The crucial sentence is the final one. The speaker reassures himself that he has read 'Capital'. The self-directed utterance is accompanied by an exclamative marker *vot*. In cases like these the specific time of the realization of the event does not matter for the message conveyed. It is just irrelevant when the speaker in (8) read 'Capital'; what he is proud of is that he read the book, and that this sets him apart from the people around him. As noted above, the irrelevance of the specific event time has been described in the literature as the dissociation of the event from the time axis. To capture this property of existential imperfectives, Grønn (2004), following other authors (e.g. Gasparov 1990), proposes that they are characterized by "a big and floating reference time" within which the event time is located just somewhere.

Comrie (1976) tries to spell out the essence of general-factuals (of the existential sort) in the following way: "Here the speaker is simply interested in expressing the bare fact that such and such an event did take place, without any further implications" (Comrie 1976: 113). Dickey (2000) reproduces this characterization of existential imperfectives when writing: "The general-factual use of the impv […] merely asserts the occurrence of the situation in question in general, without reference to any contextualizing background information" (Dickey 2000: 95).

In what follows I will argue that statements like these, frequent as they are in the literature, are wrong or, at least, misleading. I argue that existential imperfectives do involve "reference to contextualizing background information" and that taking this background information into account is, in fact, crucial to understanding this kind of imperfective use. Moreover, and this will be my central point in the context of the present volume, the kind of background knowledge referred to is such that existential imperfectives will always and necessarily express VERUM.

4. The semantics and pragmatics of perfective and imperfective aspect

In Section 2 I have briefly recapitulated the classic analysis of the meaning and use of Russian aspects. In the present section I will relate it to current streams of research.

Grønn (2004) provides a formal way of pinning down the intuition that the use of a perfective verb form amounts to "specific reference to the completedness of the event", and that the imperfective is "semantically unmarked" in comparison to the perfective. According to Grønn, aspect is located in a functional projection immediately above VP.[11]

(9) $[_{CP} \dots [_{AspP} \dots [_{VP} \dots]]]$

The VP denotes a property of events, as is standardly assumed within event semantics (Maienborn 2011). The meaning of the VP serves as input to one out of two aspectual operators, IPF or PF. These operators are semantically conceived of as functions mapping a property of events (corresponding to the meaning input supplied by VP) to a property of times. The output property of times will in the further course of semantic composition constrain the interpretation of the assertion time.[12]

The classic (un)markedness analysis is implemented by assuming that, while PF has a very specific semantic content, the content of IPF is as abstract as can be. All that IPF semantically requires is that the assertion time should somehow overlap the (time of the) event.[13]

(10) $\text{IPF} \Rightarrow \lambda P \lambda t \exists e.\ P(e) \wedge e \circ t$

The content of PF is, as noted above, quite specific. Consider (11), which is a modified version of Grønn's PF-operator:[14]

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11. Tatevosov (2011, 2015) has coined the term "aspect-high theories" for analyses that adopt that assumption. Advocates are, besides Grønn, among others, Schoorlemmer (1995), Junghanns (1995), and Paslawska & von Stechow (2003).

12. Following Klein (1995) and Grønn (2004), I will use the term "assertion time" for reference time from now on, understood as "the time for which an assertion is made" (Klein 1995: 687); note that Klein (1994) uses the term "topic time".

13. Unlike Grønn, I use a static semantic format in what follows.

14. In Grønn's original version, $f_{end}(t) \subseteq f_{target}(e)$ is no obligatory condition for perfective verb forms, coming into play only with target state verbs. PF is, accordingly, applicable not only to VPs supplying a target state, but also to VPs lacking a target state. With the latter, $f_{end}(t) \subseteq f_{target}(e)$ is replaced by $e \subseteq t$. Unlike Grønn (2004), I adopt a Kleinian notion of target state which is arguably involved in *all* cases of perfective use in Russian (cf. Klein 1995). See Mueller-Reichau (2016) for more discussion of that point.

(11) $PF \Rightarrow \lambda P \lambda t \exists e.\ P(e) \wedge e \circ t \wedge f_{end}(t) \subseteq f_{target}(e)$

As can be read from (11), PF is applicable only to VPs that describe a change of state, i.e. that bring about of a target state. In Vendlerian terms, the VP has to be an accomplishment or achievement (Vendler 1967).[15] Note that the condition $e \circ t$ is included in (11) only to ease comparison with (10).[16] According to that proposal, when a perfective is put to use, reference will be made to an event which brings about a target state to hold at the end of the assertion time.[17]

The crucial condition of PF is, of course, $f_{end}(t) \subseteq f_{target}(e)$. This condition, target state validity, may be viewed as comprising the three pieces of meaning that classic aspectology assigns to perfectives (see Section 2). It implies completedness of the event because it requires the realization of the event's target state. It implies singularity of the event because it requires a single target state (otherwise it would be unclear where the single assertion time should end). And it implies specificity of the event because it requires the target state to be linked to a specific assertion time, which amounts to referentially anchoring the event (cf. Mittwoch 2008: 343–344).[18]

Recall from above that the competitors PF and IPF, as they are stated in (11) and (10), are of the same semantic type.[19] The difference lies merely in that PF includes with $f_{end}(t) \subseteq f_{target}(e)$ one more interpretive condition than IPF. We may thus notice that aspectual pairs in Russian, i.e. two Russian verb forms that differ from each other merely in their aspectual value, constitute a (binary) Horn scale, with the perfective verb form representing the more specific value (Sonnenhauser 2006). The use of the imperfective, the less contentful member of the Horn scale, thus triggers the pragmatic inference that the speaker wishes to not communicate the pieces of

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15. This assumption makes perfect sense in view of the well-known fact that Russian makes heavy use of verbal prefixation in order to furnish verbal lexemes with a target state, which may be viewed as preparing them for participating in the aspectual system (cf. Plungjan 2011: 411–412).

16. Since the target state belongs to the event (Moens & Steedman 1988), $f_{end}(t) \subseteq f_{target}(e)$ is a special case of $e \circ t$.

17. Note an important difference to claims saying that "the Perfective form must normally denote a single, telic event and implicate that its result state holds at evaluation time" (Mittwoch 2008: 345). Given (11), the validity of the target/result state at assertion/evaluation time is entailed by a Russian perfective form rather than implicated.

18. In her semantics of the perfective, Padučeva (1996: 54) captures target state validity in a similar vein by assigning two "semantic components" to perfective aspect which require the coming-into-being of the target state as well as its being-in-effect at evaluation time to be assertive information.

19. They are both functions from event properties to functions from times to truth values << s; t >;< i; t >> (cf. Grønn 2004: 49).

information that are exclusively associated with the perfective. Accordingly, the use of the imperfective will be motivated if the speaker's target of reference does not match at least one of the perfective conditions (singularity, completedness, or specificity). The first two possibilities have been illustrated in Section 2, the third one is what I turn to now.

5. What is relevant instead of the target state?

To account for the fact that imperfectives may be used to denote events abstracting away from the time axis, Grønn proposes that imperfective morphology may in cases of reference to completed events trigger the implicature that the particular conditions of the event's target state are irrelevant to the speaker's message:[20]

> Aspectual competition gives rise to a pragmatic implicature saying the factual Ipf is used by the speaker either in order to convey the message that the target state has been cancelled, or in case the validity of the target state is irrelevant in the discourse situation. (Grønn 2004: 274)

This can, of course, not be the final word, as it hardly improves our understanding of what "abstraction away from the time axis" means. It leaves us in the dark about what is relevant to the message. The unanswered question is (12):

(12) In cases of existential imperfectives, what is relevant instead of the target state (which would be relevant if the perfective was used)?

This is the point where, I propose, VERUM comes into play.

Consider the following example (from Padučeva 1996). It is hard to reconcile with the theory developed in Grønn (2004).[21]

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20. To fully understand the quote: A neat feature of Grønn's account is that it explains why imperfective verb forms are used in Russian to convey that a reversible result has been cancelled. Reference to a reversed result is, after all, at odds with the perfective condition $f_{end}(t) \subseteq f_{target}(e)$. "Factual ipf", moreover, is an umbrella term that covers existential imperfectives (where the target state is irrelevant) besides other cases of imperfective use under reference to completed events.

21. A reviewer wondered whether the trouble with this example may be due to the fact that (13) is a polar question. It is true that yes/no-questions often (but not always, see Mehlig 1991) serve an existential-verificational function. However, the problem that (13) raises for Grønn is not that it is verificational, but that it is formed by an imperfective verb. Note, moreover, that the phenomenon is not tied to interrogatives (I am indepted to Ilja Seržant for discussion on that point):

(i) *Blin, ona perestavljala moi knigi!*
damned she rearrange.PST.IPFV my books
'Damned, she has rearranged my books!'

(13) Ty *perestavLJAL* *moi* *knigi?*
you rearrange.PST.IPFV my books
'Have you rearranged my books?'

(13) may be uttered by someone who is standing in front of her own book shelf, realizing that her books are not shelved in the way that she expects them to be. The addressee of the utterance is around. How to explain that the verb form is imperfective in this case?

On Grønn's account the use of the imperfective under reference to a completed event may be motivated by one of two possible reasons. The first possibility is that (13) is an instance of presuppositional imperfective, the second that it is an instance of existential imperfective (cf. Section 3). If the former was the case, the event denoted by the imperfective verb should be anaphorically linkable to an event already entailed in the input context. It is not obvious that this condition could be met in (13). Even more, if the imperfective in (13) was presuppositional, we would not expect intonational focus to fall on the verbal constituent, but this is where it falls. Therefore the first possibility is out.

If the imperfective in (13) was existential (Grønn's second option) the particular conditions of the target state should not matter to what the speaker wants to convey. However, in (13), the particular consequence of the event (the misarrangement of the books) is highly relevant to the speaker's message.

Grønn's way out of this dilemma seems ad hoc. He proposes that the speaker of (13) presupposes the existence of an event token (which has to be accommodated by the hearer) while focusing on the kind of the presupposed event (cf. Grønn 2004: 201). Given that idea, what (13) expresses may be paraphrased as follows: "Something has caused my books to be misarranged. Is it that you rearranged them? Or did something else happen to that effect?" At this point one may wonder: What else apart from rearranging books can cause books to be lined up in an unexpected order? Nothing comes to my mind. The idea that (13) would focus on the kind of the event token that caused the rearrangement fails because there are no plausible alternatives available to the event kind which is explicitly named by the speaker. I therefore conclude that the key to understanding (13) must be sought elsewhere.[22]

In what follows, I will propose a way of making sense of (13) that does not face the problems just described. Moreover, my proposal will provide an answer to question (12). And my answer to (12) will relate to VERUM.

Note that by uttering (13) the speaker expresses a suspicion, which is that the hearer has accessed the speaker's books without taking care of putting each book back to where it stood before. If the suspicion turned out to be justified, the speaker

22. My argument here presupposes that, in the words of Krifka & Musan (2012: 7), "[f]ocus indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions".

would be entitled to complain, and even sanction the hearer (e.g. by not allowing her to touch the books anymore).

In other words, if the true answer to (13) would be "yes", the addressee of the question would have violated a socially accepted norm which says that, if someone takes a book out of someone else's book shelf, she should after usage put it back to the place where it was before.

The rule just noted describes a special case of a more general social norm saying that a visitor should respect the house rules of her host. Or, more compactly:

(14) Respect your host's home!

To rearrange someone's books (without permission) is to ignore this social imperative. Ignoring this rule of respect, in turn, implies a demotion of the ignorer's social prestige.

The dynamics of the inferences triggered by the utterance (13) may be summarized as follows:

(15) i. Background rule: If someone rearranges someone else's books, she will thereby commit a privacy transgression and, as a consequence, deserve the book owner's disrespect.
ii. Event: The hearer rearranged the speaker's books.
iii. Conclusion: The hearer deserves disrespect.

According to that analysis, (13) expresses a "double-question", so to speak. The first question relates to the denoted event (ii); it can be read directly from the words: "Is it true that you have rearranged my books?" In addition to that, there is a second, implicit question, triggered by the validity of the conclusion (iii): "Am I entitled to conclude that you are someone who deserves disrespect?"

I argue that the presence of an implicit message is mandatory for the felicity of existential imperfectives because it is precisely this information which is, instead of the target state, relevant for what the speaker intends to convey.

6. What is relevant instead of the target state?

What is described in (15) is a syllogism. The socially accepted background rule (i) and the actual event that is claimed to have been performed (ii) together fulfill the premises that license the conclusion (iii). In a generalized form, the syllogism may be stated as follows:

(16) i. $p \rightarrow q$
ii. It is true that p.
iii. It is true that q.

Mueller-Reichau (2016) states the hypothesis that the inference pattern in (16) underlies *every* utterance of an existential imperfective.[23]

(17) **Existential imperfectives, first claim**: The (non-presuppositional) use of imperfective aspect under reference to a single completed event in Russian requires the existence of a rule in background knowledge that agrees with the denoted event, whereby a rule will "agree" with an event if the kind of the denoted event matches the kind of the event in the antecedent of the conditional of the rule.

It should be noted that the consequence proposition of a background rule (i.e. the "*q*" in (16)) is never episodic.[24] The proposition *q*, which is implicitly asserted by an existential imperfective declarative and implicitly requested by an existential imperfective interrogative, will always generically characterize the agent of the respective event.[25] It will correspond to an individual-level predication in the sense of Carlson (1980). As such it is paraphrasable as "X is one who VERBs", where X is the agent of the event referred to by the explicit assertion and VERB is a non-episodic predicate. In (13), for instance, *q* may be stated as "Are you one who deserves disrespect?"

In (17) I have claimed that Russian existential imperfective sentences are always grounded in background knowledge such that there has to be a "supporting generic" whose antecedent event kind matches the kind of event named by the sentence.[26] Now, given the successful utterance of an existential imperfective, there may be two principled reasons as to why the supporting rule is present in the interlocutors' shared background knowledge. The first possibility is that the rule is an accepted norm in the social community to which both speaker and hearer belong. Our Example (13) represents a case in point, the socially accepted norm being the one described in (15i).

As for Example (8), the syllogism arguably involves the rule (18i) (which I suppose is socially accepted among Marxists):

(18) i. Background rule: If someone reads 'Capital', she will then know what is really going on in a capitalist society.
ii. Event: The speaker read 'Capital'.
iii. Conclusion: The speaker knows what is really going on in a capitalist society.

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23. The proposal is inspired by Šatunovskij (2009), who attributes the inference pattern to a subgroup of existential imperfectives.

24. This follows from the generic nature of rules (Carlson 1995).

25. I leave it open whether or not non-actions (with non-agentive subjects) may figure in this use as well.

26. More precisely: by the VP of the sentence (cf. Mueller-Reichau & Gehrke 2015).

The second possibility is that there is no socially accepted norm in the first sense, but that the utterance exploits a trivial rule of common sense reasoning. This case is illustrated by the regularly quoted (19), which is the paradigmatic example of existential imperfectives of the "experiential" sort (Padučeva 1996: 39; cf. Grønn 2001):

(19) *Sergej vešal ėtu kartu. On znaet kak ėto delaetsja.*
S. hang.PST.IPFV this map he knows how this does.
'Sergej (once) put up this map. He knows how to do it'

Crucial to understanding (19) is the utterance situation: Someone (the hearer) has problems putting up a certain map. Another person (the speaker) does not have the cues to help, but she knows of someone (Sergej) who might help. The speaker believes that Sergej can help because she knows that Sergej has already done what the hearer intends to do. What drives the speaker's conclusion is the trivial rule of common sense reasoning noted in (20i):

(20) i. Background rule: If someone does something, she will then know how to do it.
ii. Event: Sergej put up this map.
iii. Conclusion: Sergej knows how to put up this map.

Example (19) provides support for the approach advocated here as the existential imperfective is immediately followed by a second sentence that explicates precisely the proposition that, according to my approach, is implicity asserted by the existential imperfective, i.e. that Sergej is one who knows how to put up this map.

Another trivial rule is exploited in (6). In that example the inference pattern is arguably as follows:

(21) i. Background rule: If someone watches a movie, she will then know the movie.
ii. Event: The speaker watched that silly movie.
iii. Conclusion: The speaker knows that silly movie.

Let me point out, once again, that rules, be it social rules or trivial rules of common sense, are generic creatures. Their consequent part describes an individual-level predication. Thus, whenever a rule applies, it will express a generic characterization of the individual that it applies to (the verb *know* is an inherent individual-level predicate, e.g. Chierchia 1995.).

7. Existential imperfectives express VERUM

Above we saw that the existential imperfective is successfully used in (13), and that this empirical fact poses a problem for current theories about "completed imperfectives". I have proposed to explain the felicity of (13) by showing that the example satisfies the condition that I take to hold for existential imperfectives in general, i.e. that there be a supporting rule in background knowledge (cf. 17). In the specific case of (13) I determined the supporting rule as saying that, if someone rearranges someone else's books, she will thereby violate (14) and, as a consequence, deserve the book owner's disrespect. To further substantiate my claim I now provide (22):

(22) *Ty perestavLJAL svoi knigi?*
you rearrange.PST.IPFV REFL books
'Have you rearranged your books?'

I have changed just a single piece in comparison to (13), i.e. the possessive pronoun. This minor change has a crucial effect because the VP of (22) no longer agrees with (the antecedent of) any socially accepted rule in background knowledge that could support the existential imperfective. There is no social norm that would imply something to follow from rearranging your own books. However, to make sense of the utterance, in line with (17), the hearer may resort to a trivial rule of common sense. This rule and the respective inference pattern may be stated as follows:

(23) i. Background rule: If someone (re)arranges a set of items, she will then know where to find each item.
ii. Event: The hearer rearranged his own books.
iii. Conclusion: The hearer knows where to find each book.

Indeed, (22) is naturally uttered in the following situation: Someone is looking for a particular book in someone else's bookshelf. She was sure to find the book easily (presumable because she had already used the book formerly), but she cannot find it. Looking for an explanation for her failure she raises the hypothesis that the book owner has rearranged the books. If true, that would suggest an explanation for her failure. Since the hearer would then know the precise places of the books, it would be reasonable to ask the hearer for help, which is why (24) is a natural continuation of (22):

(24) *Ty perestavlJAL svoi knigi? Gde stojat 'Čudesa Indii'?*
you rearrange.PST.IPFV REFL books where stand WoI
'Have you rearranged your books? Where is 'Wonders of India' standing now?

Above I have argued that, by uttering an existential imperfective question, the speaker expresses a hypothesis. The hypothesis suggests a consequent proposition to be true, which is relevant for the speaker to handle the current discourse situation. The consequent proposition *q* is generic. Importantly, the relevant consequence can be counted as true only in case that the hypothesized proposition *p* is true. Therefore, we may describe the pragmatic sense of an existential imperfective interrogative as an attempt of the speaker to gain verifying information about the consequent proposition.[27] (25) shows a further example to consolidate this point:

(25) A: *Ty menja obmanyvala?*
you me betray.PST.IPFV
'Have you betrayed me?'
B: *Da, no ja obmanyvala tebja vsego odin raz.*
yes but I betray.PST.IPFV you only one time
'Yes, but I betrayed you only once.'

A's motivation for asking is that she has to decide whether she should leave B or not. If the event about which she inquires should turn out to have taken place, this drastic move would be strongly suggested due to the following inference pattern which is based on a rule widely accepted in predominantly monogamic societies:

(26) i. Background rule: If someone betrays his or her partner, he or she is no good partner.
ii. Event: B betrayed A.
iii. Conclusion: B is no good partner for A.

The truth of (ii) is a precondition for licensing the truth of (iii), and the truth value of (iii) is what speaker A in (25) eventually wants to determine. Therefore, by raising the question, A expresses that she wants to resolve ?*p* from QUD (to use Gutzmann & Castroviejo Miró's words) because something important would follow from the truth of *p* that would not follow if *p* was false. In other words, by uttering (25A) the speaker expresses VERUM. Generalized:

(27) **Existential imperfectives, second claim**: The (non-presuppositional) use of imperfective aspect under reference to a single completed event in Russian involves the expression of VERUM.

As a final illustration consider (28) from from Rassudova (1968/1982); see also Swan (1977):

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27. It is well-known that existential imperfectives serve a verificational function (e.g. Mehlig 2016). Here I go a step further and suggest a reason as to *why* existential imperfectives are verificational.

(28) A: *Ėtot čelovek Vam znakom?*
this person you familiar
'Do you know this man?'
B: *Da, ja odnaždy ego vstrečal.*
yes I once him meet.PST.IPFV
'Yes, I once met him.'

Here, the use of the imperfective is felicitous because the sentence serves to justify B's affirmation of A's question. B thereby exploits the trivial rule that if it is true that some person met another person, it will be also true that this person knows the other person.

8. (More or less) open issues

In this section I address three issues that I cannot yet resolve.

The first relates to the predictive force of my theory. Above I have presented several examples to illustrate the role of background knowledge in the interpretation of existential imperfectives. At this point one may wonder (as a reviewer did): Isn't it the case that you can always accommodate a suitable background rule? If so, what does the analysis actually predict? Could one put an imperfective sentence into a context which does not supply any suitable syllogism, and then the existential reading becomes unacceptable? I admit that it is very difficult to control for possible accommodations within my pragmatic account. But consider the following examples (judgements only indicate whether the existential imperfective interpretation realizes):

(29) a. ?*Vy kogda-nibud' dyšali (vozduchom)?*
you once breath.PST.IPFV air
'Have you ever breathed (air)?'
b. *Vy kogda-nibud' dyšali takim vozduchom?*
you once breath.PST.IPFV such air
'Have you ever breathed such air?'

(30) a. ?*Ja pil vodu.*
I drink.PST.IPFV water
'I drank water.'
b. *Ja pil vodu iz istočnika Ačairskogo monastyrja.*
I drink.PST.IPFV water out spring A. monastery
'I drank water from the spring of Achair monastery'

(31) a. ?*Moj sosed sidel v vanne.*
my neighbor sat.PST.IPFV in bathtub
'My neighbor sat in a bathtube.'

b. *Moj sosed sidel v tjurme.*
my neighbor sat.PST.IPFV in jailhouse
'My neighbor sat in jail.'

The observation is that, out of the blue, the (a)-examples in (29) to (31) do not easily lend themselves to an existential interpretation, which is in clear contrast to the respective (b)-examples. Within the proposal of the present paper, this may be explained as follows: What is relevant when uttering an existential imperfective is the truth of a generic consequence following from a general rule. According to what I said above, there are two possible sources for such a rule. It may either follow from trivial common sense reasoning, or from well-established social norms. Given this, the trouble with the (a)-examples is arguably that none of the two options can be run without further ado. There are no socially accepted rules that the hearer could appeal to. If there were, such rules would have to have the form "in general, if you (breathed air / drank water / sat in a bathtube), you will be characterizable as one who…". How about trivial rules? There are indeed trivial rules available saying that if you have (breathed air / drunk water / sat in a bathtube), you will know how it is like to (breath air / drink water / sit in a bathtube). However, these kinds of actions are too ordinary and widespread for their consequences to be noteworthy. So this option fails, too.

The situation is different in the (b)-examples. The action requested in (29b) is special because now a special kind of air is meant by the speaker (i.e. the kind of air around in the speech situation). The speaker rhetorically communicates that she considers breathing this kind of air to be a rare thing to do, and this is why (29b), unlike (29a), allows for an experiential construal. The action denoted in (30b) is related to a socially accepted rule as part of the knowledge frame evoked by the expression *Ačairskogo monastyrja*. The rule says that drinking from the sacred spring of Achair monastery will enhance health, wisdom and strength. And the action of (31b) is likewise related to a social rule saying that a person who was in jail will count as "socially suspicious", suggesting that the speaker does not consider the neighbor trustworthy.[28]

The second issue relates to intonational focus. Consider the following two examples. The first one is a headline found under the page entitled "News and rumors about the candidates" of the Russian TV-reality show "Dom-2" <http://dom2.ru/>. The second one, which entails more or less hidden rassism, is found on the website <http://police-club.ru/>.

28. One may well argue that (30b) and (31b) both allow for experiential reads too. This would complicate the exposition of the argument a bit, but it would not alter it.

(32) *Il'ja Jabbarov sidel v tjurME.*
I. J. sat.PST.IPFV in jailhouse
'Ilya Jabbarov was in jail.'

(33) *Ja odnaždy ubival kavKAZca (ovčarku, čtoby ne*
I once kill.PST.PFV caucasian sheepdog to not
podumali čego). Chozjain poprosil.
think.PST.PFV something owner ask.PST.PFV
'I once killed a caucasian (a sheepdog, to avoid misunderstandings).
The owner asked me to.'

The observation is that, unlike with most of the examples that we came across with above, the existential imperfectives (32) and (33) are both naturally pronounced without stressing the verb, i.e. without verum focus. Instead we find neutral focus on the sentence-final word (indicated by capitals). A precise analysis of the factors that determine the prosodic realization of Russian existential imperfectives is a desideratum beyond the scope of this paper. At present, my story on the observed variation is as follows: Since existential imperfectives in Russian intrinsically express VERUM, they are often accompanied by verum focus: This kind of focus is (as the name suggests) in harmony with the content of existential imperfectives. It may therefore be appealed to in order to unequivocally indicate the existential reading of the by itself semantically vague imperfective form. That existential imperfectives intrinsically express VERUM also explains why they are not always accompanied by verum focus: If the context provides enough cues to identify the existential reading, as the contexts in (32) and (33) arguably do, verum focus may be dispensed with. The situation with perfectives is different. For perfectives to express VERUM, verum focus is mandatory. Since perfectives do not intrinsically express VERUM, verum focus has to be used to add this piece of information to the content of perfective.

The third issue concerns the question of whether the tie between VERUM and existential imperfectives that I propose in this paper for Russian extends to other Slavic languages as well. A reviewer has questioned this possibility for Czech because the scope of existential imperfectives is known to partly deviate from Russian (e.g. Dickey 2000; Wiemer 2008), whereas verum focus works the same way in both languages. My reply is that the narrower use of existential imperfectives in Czech can be traced back to a semantically less restrictive perfective meaning in comparison to Russian (Stunová 1991; Mueller-Reichau 2018). If correct, this would mean that although the option of expressing VERUM by means of the "semantically unmarked"[29] imperfective aspect plus contextual information is limited in Czech, it is available and basically works the same way as in Russian.

29. Recall Section 4.

9. Conclusions

In the present paper, I have argued that expressing VERUM is an option that speakers make use of to indicate that "some relevant consequence" follows for her from the truth (or falsity) of *p* that does not follow from the opposite truth value of *p*, and that she wants to know whether, or claims that, the consequence has materialized. The communicative strategy operates on the fact that the materialization of a consequence of *p* presupposes the truth of *p*. Since VERUM thus calls for the resolution of ?*p*, the proposal is in line with saying that VERUM serves an instruction to resolve the question currently under discussion, i.e. to downdate from QUD ?*p*.

My approach entails the claim that any input context suitable for the expression of VERUM should entail the truth of a conditional $p \rightarrow q$. I have argued that two kinds of VERUM-licensing contexts should be distinguished. In the first case the proposition *q* of the conditional is episodic (stage-level), in the second case it is generic (individual-level). I conceived of generic conditionals as (social or trivial) rules. The theoretical distinction between episodic and generic VERUM-effects is empirically motivated by the observation that it determines aspect choice in Russian. VERUM-expressing utterances implying the truth of an episodic *q* call for perfective aspect, whereas VERUM-expressing utterances implying the truth of a generic *q* call for imperfective aspect.

The latter result provides an answer to a long-standing open question in Russian aspectology. The question is: What is relevant instead of the target state (that would be relevant with perfective aspect) in cases of completed imperfectives of the existential sort ("general-factuals")? The answer is: What is relevant in these cases is the truth of the generic consequent proposition of a presupposed rule.

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Polarity focus and non-canonical syntax in Italian, French and Spanish

Clitic left dislocation and *sì che* / *sí que*-constructions

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Unlike in Germanic languages, in the Romance family the prosodic realization of polarity focus is strongly restricted. Instead, we observe a wealth of formal means that involve other language domains, such as the lexicon and non-canonical syntax. In this article, we provide a fine-grained analysis of the contribution of marked syntax to the expression of polarity focus in French, Italian and Spanish, by examining two constructions: clitic dislocation and *sì che* / *sí que*. Our main goals are to understand the distribution of these structures and their cross-linguistic differences on the basis of data gathered from the *Direct Europarl* corpus. Based on a *Question Under Discussion* model, we identify the main contexts of use to which clitic dislocation and *sì che* / *sí que* appear to be a good fit thanks to their functional properties; in particular, we recognize the framing function of clitic left dislocation as one of the most relevant features justifying the affinity between these structures and the expression of polarity focus. Finally, we explain the profound asymmetry observed in the distribution of clitic dislocation and *sì che* / *sí que* in our dataset on the basis of inherent grammatical grounds (related to the absence *vs*. presence of a system of clitic subject pronouns in the three languages), as well as the typology of information structure within the Romance family, as put forward by Leonetti (cf. Leonetti 2010, 2014) in his recent works.

Keywords: non-canonical syntax, corpus linguistics, clitic dislocation, Romance languages, Question Under Discussion

0. Introduction

The aim of this paper is to explore the relation between non-canonical syntax (particularly, clitic left dislocation and *sì che* / *sí que*-constructions) and polarity focus in Italian, French and Spanish. After presenting our definition of polarity focus

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(Section 1) and a brief overview of the realization of this information-structural category in the Romance languages (Section 2), we will investigate some corpus examples of the above-mentioned constructions by means of a question-based model of discourse (Section 3).

1. A definition of polarity focus

The term *polarity focus* (henceforth, PF) covers a range of linguistic phenomena of prosodic, lexical and syntactic nature which convey an emphasis on the positive polarity of a proposition. In other words, PF is used to express that a proposition is true, often (but not necessarily) despite expectations to the contrary (Matić & Nikolaeva 2016). In the following example, we observe a typical context of use, in which PF is conveyed by a stressed *do* (usually known in the literature as emphatic *do*, cf., among others, Lai 2012 and Wilder 2013):

(1) A: John did not read 'War and Peace'.
B: John DID[1] read it.

However, PF is not only used in contexts of conflicting polarity as in (1), but also in cases such as (2), in which no contrast is observed (see Lai 2012: 123):

(2) A: So, John has read 'War and Peace' in the end.
B: Yes. He HAS read it.

PF has already been acknowledged as a linguistically relevant category by Halliday (1967) and Dik et al. (1981). However, it has received special attention in the work of Höhle (1988 and 1992) under the term *Verum Fokus*. Höhle's studies concern German, where one can observe a range of phenomena involving the accentuation of finite verbs and auxiliaries (and even complementizers such as *dass* 'that' and *ob* 'if, whether'), as in Examples (3) and (4):[2]

1. From now on, the focalized element in a sentence is signaled within the examples by small caps.

2. From a (generative) syntactic point of view, the common feature underlying these phenomena is the fact that in German all these different elements (i.e., finite verbs, auxiliaries, and complementizers) are hosted in the same position (C^0), the head of a functional projection (Gutzmann & Castroviejo Miró 2011: 146). For a different formal syntactic analysis, cf. Lohnstein (2016, this volume).

(3) A: Ich habe Hanna gefragt, was Karl gerade macht, und sie hat die alberne Behauptung aufgestellt, dass er ein Drehbuch schreibt.
B: Karl SCHREIBT ein Drehbuch. (Höhle 1992: 112)
'A: I asked Hanna what Karl was doing. She made the silly comment that he is writing a screenplay.
B: Karl DOES write a screenplay'

(4) (Nein) Karl HAT nicht gelogen.
'(No) Karl DIDN'T lie'

In (3), the focalized element, viz. the finite verb *schreibt,* does not contrast with a set of alternatives made up of other verbal lexemes (such as 'write', 'read', 'revise', etc.). On the contrary, the alternative set consists of propositions differing only in their polarity (i.e., *Karl is / is not writing a screenplay*), cf. Leonetti & Escandell-Vidal (2009: 177) and Lai (2012: 124). Focalization could thus be said to operate on the grammatical elements of the finite verb, which are mainly related to its illocutionary force.[3]

If one conceives the focalized component of a proposition as the relevant piece of information which provides an answer to the current "question under discussion" (QUD),[4] PF occurrences can be naturally analyzed as answers to polar QUDs (e.g., in (3), *Is Karl writing a screenplay?*).

Thus, focus on sentence polarity falls under a general and unitary notion of focus, in which "(…) focus in general indicates the presence of alternatives for interpretation" (Krifka & Musan 2012: 19). While the background consists of the entire proposition conveyed by the clause (Lai 2012: 138), the alternative set is made up by the binary polar opposition "± assertable". This view is compatible with the observation that the propositional content of a sentence containing PF should be discourse given or inferable (cf. Leonetti & Escandell-Vidal 2009: 171; Gutzmann & Castroviejo Mirò 2011; Lai 2012: 123).

From a cross-linguistic perspective, the interest in studying PF lies in its multifarious formal realizations across languages (see the typological observations in Gutzmann 2012 and Lohnstein 2016). Some languages preferably rely on prosody

3. According to Klein (2006; cf. also Turco 2014: 4), emphasis on positive polarity results from the focalization on the affirmative-assertive relation between the topic and comment of the sentence. This could be seen as related to Lohnstein's (2016) category of "mood". It should also be mentioned that for some scholars PF (and *verum focus* in particular) is not conceived as an information-structural phenomenon: Romero & Han (2004), for instance, have provided an analysis of *verum focus* as an epistemic operator and Gutzmann & Castroviejo Mirò (2011) analyzed it as a use-conditional operator, dissociating *verum* from focus.

4. Cf. Klein & Von Stutterheim (1987); Roberts (2012 [1996]); Riester & Baumann (2013: 221); Riester (2015).

(e.g., specific intonation contours as in the case of German, cf. Grice et al. 2012 and Turco et al. 2013, or an increased duration of the stressed syllable in focus, as in Spanish, cf. Escandell-Vidal et al. 2014), while others employ lexical means (such as certain kinds of particles and adverbs) and syntax (i.e., marked constructions, such as *sí que* / *sì che* in Spanish and Italian). In the following paragraph, we will have a closer look at the different strategies found in Italian, French and Spanish.

2. Strategies for realizing polarity focus in Italian, French and Spanish

Unlike Germanic languages, Romance languages (French in particular) have a limited access to prosody in realizing PF (but see Turco et al. 2013 and Turco 2014).[5] On the contrary, they show a preference for various other lexical and syntactic means. At the current stage of research, however, it is not entirely clear to what extent such different formal strategies for expressing PF vary in relation to each other in terms of contexts of use, specific functions, etc. In this chapter, we will review several lexical (Section 2.1) and syntactic (Section 2.2) realizations discussed in the literature.

2.1 Lexical means for marking polarity focus in Italian, French and Spanish

PF can be signalled by a number of lexical items, e.g., adverbs that express the idea of 'truth' (as It. *veramente*, *davvero*, Fr. *vraiment, véritablement, (pour) de vrai*, and Sp. *de veras*, etc., 'really') or a high degree of epistemic certainty from the speaker's perspective (It. *certamente*, *certo*, *sicuro*, Fr. *certainement*, *sûrement*, Sp. *por supuesto, desde luego, por seguro* etc., 'of course, for sure'). Moreover, one finds adverbs encoding meanings related to the concepts of 'fact' or 'effect', as It. *di fatto*, *effettivamente*, *in effetti*, Fr. *de fait*, *en fait*, Sp. *de hecho*, etc., 'in fact'.

Besides adverbs, the realization of PF can rely on affirmative particles such as It. *sì*, Sp. (and Catalan) *sí* (lit. 'yes'), Fr. and Sp. *bien* (lit. 'well'), and Sp. *ya* (lit. 'already'; cf. Batllori & Hernanz 2013), that result from a grammaticalization process involving Latin expressions of manner (*sic* and *bene*) and time (*iam*), respectively.

The most iconic or transparent strategy to convey PF is by formally realizing the backgrounded proposition as an embedded clause within a main clause containing a predicate expressing truth, certainty or assertion.

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5. Turco et al. (2013) and Turco (2014) present the results of production experiments involving the preferred realizations of *verum focus* in French and Italian compared to Germanic languages (Dutch and German). Although prosodic marking is not the most preferred strategy for Romance speakers, it is nonetheless clearly (and quite consistently) attested. See also Andorno & Crocco (this volume).

Very often we find verbs denoting speech acts (often used in the first person singular) as Fr. *je t'assure,* It. *ti assicuro / dico*, Sp. *te digo*, 'Lit. I assure / say' (as in (5)) or epistemic verbs (as in (6)):

(5) a. *Je t'assure* qu'il est en train d'écrire un scénario.
b. *Ti assicuro / ti dico* che sta scrivendo una sceneggiatura.
'I assure you that he is writing a screenplay'

(6) *Ya lo creo* que fue a la reunión. (Escandell-Vidal & Leonetti 2009, exp. 12)
'For sure she DID go to the meeting'
(Lit. 'I believe she went to the meeting')

A tendency to use these expressions as juxtaposed independent sentences can also be observed:

(7) a. Il écrit un scénario, *je t'assure.*
b. Sta scrivendo una sceneggiatura, *ti dico.*
c. Escribe un guión, *te digo.*
'Lit. He is writing a screenplay, I assure you'

A more elliptic way of conveying PF is when the embedding predicate is made up by an adjective only, as It. *certo che*, *chiaro che*, *ovvio che*, Fr. *bien sûr que,* Sp. *claro que*:[6]

(8) *Bien sûr qu*'il est en train d'écrire un scénario.
'Of course, he is writing a screenplay'

(9) A: No me escuchas.
B: ¡*Claro que* te escucho!

(10) A: Non mi ascolti.
B: *Certo che* ti ascolto!
'A: You don't listen to me.
B: Of course, I do listen to you'

Even if the backgrounded proposition still has the formal status of an embedded clause introduced by a complementizer, these constructions are less transparent as embedding structures than those depending on a finite verb.[7] A special case is represented by It. *sì che* and Sp. *sí que* (cf. Sections 2.3, 3.2). It is difficult to interpret

6. As observed by Poletto & Zanuttini (2013: 133–135), these forms are not pragmatically equivalent to their adverbial counterparts since they are emphatically marked.

7. A quite grammaticalized construction is discussed in Escandell-Vidal & Leonetti (2009: exp. 12): *Vaya si fue a la reunión* ('Of course, he went to the meeting'), where *vaya*, formally a 3rd person imperative, resembles more closely an interjection than a matrix verb. One reason is that *vaya* lacks an argument slot for a complement clause; however, this fact is compensated for by the use of *si* ('if', instead of *que*), which assigns the status of an adjunct to the embedded clause.

this construction as a simple compositional embedding of a clause within a matrix predicate. This structure is rather reminiscent of other bi-clausal strategies which are often found in the domain of information structure, such as cleft and pseudo-cleft sentences. This brings us to some other strategies of PF marking which could be more strictly considered as "syntactic".

2.2 Syntactic strategies for marking polarity focus in Italian, French and Spanish

Several constructions, which are normally associated with other functional domains and contexts, appear to be also related to polarity only after close examination.

This is the case of *non-focal fronting*, a construction which is typical of Spanish, but is also (more rarely) attested in Italian and Catalan, and which is described as *verum focus fronting* by Leonetti & Escandell-Vidal (2009), Escandell-Vidal & Leonetti (2009) and Leonetti (2016):

(11) *Algo* debe saber.
'Something he must know'

(12) *Qualcosa* avrà fatto, nelle vacanze. (Example from Cinque 1990)
'Something he must have done during his holidays'

According to Leonetti and Escandell-Vidal (2009: 158–164), the fronted constituents in (11)–(12) cannot be interpreted either as a dislocated topic or as a fronted focus, as is shown by several prosodic and syntactic cues. Rather, the construction lacks any information-structural partition, thus triggering a PF reading as a "last resort interpretation" (Leonetti & Escandell-Vidal 2009: 178). Of course, this reading requires proper context conditions, where the propositional content is contextually given (thus preventing an *all focus* or *thetic* interpretation) and a polar alternative is triggered by a preceding polar question or an epistemic or deontic predicate (presenting *p* as a possibility, a belief, an intention or a duty):

(13) Dije que terminaría el libro, y *el libro he terminado.*
(Example from Escandell-Vidal & Leonetti 2009: 171)
'I said that I was going to finish the book and the book I finished'

Note that in a number of occurrences (like those in (11) and (12)), the fronted element consists of an indefinite pronoun or a pronoun denoting small quantities (reminiscent of the so called *negative polarity items*). For these cases, we could also interpret the fronted element as a dislocated element specifying a frame or a delimiter (frame topic), setting a minimal condition for the proposition to be true (cf. Section 3.2).

Another construction that appears to play a role in realizing PF is related to the family of clefts: in (14), the relative clause predicate, represented by the semantically empty verb *faire* 'to do', is stressed. The pitch accent on an empty verb, as in the case of the auxiliaries seen in Section 1, can lead to the focalization of its grammatical component (in particular, polarity):[8]

(14) A: Marie devrait passer son permis de conduire.
B: Mais *c'est-ce qu'elle fait*!
'A: Marie should get her driving license.
B: But that's what she does!'

Finally, there are certain occurrences of left and right *clitic dislocation* that appear to be relevant for the realization of PF in Romance languages, as is shown by the following examples (drawn from a corpus of spoken Italian):[9]

(15) Non è questione che il tempo non te l'ho dato; io *te l'ho dato il tempo.*
(LIP corpus, Frascarelli 2003: 557)
'[Lit.] It is not that the time I didn't give it to you; I gave it to you, the time'

(16) A: no, niente, eh, trovare una soluzione.
B: ah va be', *la soluzione gliela troviamo.* (LIP Corpus, Brunetti 2009: 763)
A: 'Nothing, well, we must find a solution
B: Ah well, the solution, we're going to find it'

Once more, the emphasis on the verbs (*ho dato* 'I gave' and *troviamo* 'we are going to find') occurring in contexts in which they are already discourse given does not concern their lexical content but rather their grammatical one.[10] We will return to clitic dislocation in the following sections.

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8. As the English translation shows, these structures seem to be very close to the English *Reverse pseudo-cleft* or *That's wh-clefts* (see Johansson 2001; Garassino 2014). In Jacob (2015), this construction type is mentioned as a special instance of a more generalized pattern of "anaphoric clefts", which is "paradoxical" or non-prototypical since the cleft construction is used for anaphorical linkage rather than for focalizing the cleft constituent.

9. As suggested by Cecilia Andorno (p.c.), polar questions themselves can make PF explicit via clitic dislocation in Italian (as shown in Crocco 2013). Thus, the use of CD as in "Carlo la sta scrivendo, una sceneggiatura?" '[Lit.] Is Carl writing it, a screenplay?' (where the QUD only concerns polarity) can avoid the potential ambiguity in "Carlo sta scrivendo una sceneggiatura?" 'Is Carl writing a screenplay?' (where the QUD may concern either polarity or the direct object's referent, i.e., Carl is writing a novel, not a screenplay).

10. On the link between repetition of lexical material and PF, see Baranzini & Lombardi Vallauri (2015). They suggest that the repetition of a verb is often used for highlighting a single feature, while its other features are not activated anymore. In this case, the feature involved is [+polarity].

Throughout Sections 2.1 and 2.2, the different strategies for expressing PF were mentioned in a descending order of structural transparency. Whereas the structures exemplified in (5)–(10) result from the compositional combination of a matrix element containing lexemes expressing truth, certainty, etc. (albeit with a descending clausal status for the matrix element) and an embedded clause conveying the propositional content, the remaining constructions are less compositional since they lack a lexical item denoting polarity. This is the case of both grammaticalized constructions (such as It. and Sp. *sì che* / *sí que*) and other structures, such as fronting, special kinds of cleft sentences and clitic dislocation, which convey PF by virtue of specific pragmatic and contextual properties, departing from their most typical functions.

The wealth of possibilities to express PF raises the question of possible differences between these constructions in terms of information-structural and functional properties. As we will see, there is a close connection between the constructions involving *sì* / *sí* and clitic left dislocation. In the following Sections, we will return to these constructions looking more closely at their contexts of use, similarities and differences. In Section 3, we will analyze selected corpus examples in order to provide more fine-grained observations.

2.3 *Sì che* / *sí que* in Italian and Spanish[11]

These structures are described in the literature as special types of cleft or cleft-like sentences (Bernini 1995: 184), whose main clause contains the affirmative polarity particle *sì* / *sí* (Bernini 1995: 184–185; Poletto & Zanuttini 2013; Turco 2014: 46 for Italian; Batllori & Hernanz 2013 for Spanish) and whose function is to emphasize positive polarity in respect to the propositional content of the subordinate clause:[12]

(17) A: È poi arrivato Gianni?
B: *Sì che* è arrivato. (Example from Poletto & Zanuttini 2013: 124)
'A: Has Gianni arrived?
B: Of course, he has arrived! / Absolutely!'

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11. *Si* exists in French as an affirmative particle expressing positive polarity in a contrastive way; it can even be accompanied by an explicit proposition (cf. Kerbrat-Orecchioni 2001: 102):

(i) A: Il ne fait pas beau.
B: *Si* (il fait beau).

However, French *si*, unlike the corresponding forms in Spanish and Italian, is limited to dialogical contexts, where it is used to answer a preceding opposite turn.

12. According to Escandell-Vidal et al. (2014: 156), *sì che* / *sí que*-clefts contain a positive polarity particle "that make[s] the split between focus and background overt".

(18) A: No ha cantado la soprano.
B: *Sí que* ha cantado la soprano.
(Example adapted from Batllori & Hernanz 2013: 3)
'A: The soprano did not sing.
B: She DID sing'

This construction has often been described in relation to discourse contexts such as (17) and (18), in which the *sì che* / *sí que*-sentences provide a positive answer to a *yes* / *no* question or contradict the (negative) polarity of a previous assertion. However, as shown by Batllori & Hernanz (2013: 4), this construction can also occur in non-contradictory contexts (cf. (19)). Moreover, both *sì che* and *sí que* can be accompanied by a left-dislocated topical element (such as *esto* 'this' in (19)) preceding the polar particle (cf. also Bernini 1995: 184 for Italian):

(19) Carrefour le ofrece este fin de semana precios de vértigo… ¡*Esto sí que* es un aniversario! (Example from Batllori & Hernanz 2013: 4–5)
'This weekend Carrefour is offering incredibly low prices! Now, that's a real anniversary!'

It might appear surprising to interpret (19) as an example of PF: this will become clearer in the light of what will be said in Section 3.2, where we will analyze strategies of using PF within non-polar contexts and where we will also discuss the role of left dislocation with respect to the *si*-construction.

2.4 Clitic dislocation and polarity focus

Despite their apparent equivalence, clitic dislocation (henceforth, CD) in Italian, French and Spanish present numerous idiosyncratic features which are amenable to differences in their grammars. From a pragmatic point of view, left dislocation and right dislocation (henceforth LD and RD, respectively) are both usually described as topic-marking devices (cf., among many others, Lambrecht 2001; Benincà et al. 1988; Berruto 1985 and 1986 for Italian, etc.; Sedano 2013 for Spanish; De Cat 2007 for French, etc.). LD is used for expressing a topic shifting (Lambrecht 2001: 1076), i.e., for directing attention to a new topic in the discourse, and/or a contrastive topic (Brunetti 2009), i.e., for opposing the current topic with a relevant alternative (or alternatives) in the discourse, or, in the words of Krifka & Musan (2012: 32), for setting a delimiter or a frame within which the uttered proposition holds:

(20) *A Dante* (gli) regalerò un libro; *a Ugo e Leo*, invece, regalerò dei cd.
(Example and English translation from Brunetti 2009: 765)
'As for Dante, I'll give him a book; but as for Ugo and Leo, I'll give them CDs'

As seen in (15) and (16), CD seems to have a special relation to PF.[13] In the following made-up examples, it seems likewise clear that CD makes possible a PF reading of the utterance:

(21) A: Non hai preso le pastiglie.
B: Ma le ho prese, le pastiglie!
'A: [Lit.] You didn't take the pills.
B: But I DID take them, the pills'

(22) A: Non hai preso le pastiglie.
B: Le pastiglie, le ho prese (ma il resto delle medicine no)!
'A: [Lit.] You didn't take the pills.
B: The pills, I DID take them (but not the whole medical prescription)'

In both examples, the focalized piece of information in the sentence answers the polar implicit question whether B did take his pills or not, raised by the interlocutor A in the preceding utterance. Asking for the relation between PF and dislocation, a very straightforward answer could be that dislocation, if it applies to an element that is normally placed after the finite verb (an object or a prepositional phrase), allows for the verb to appear in the rightmost position and thus to be the highlighted element of the core sentence. As we have seen in Section 1, the emphasis on the verb can result in PF.

However, there are examples in which the dislocated element is the subject, while the verb is still followed by an object or adjunct (e.g., *lui, il a une vision*, cf. (23) below). Moreover, it seems clear from the contrast between (21) and (22) that dislocation has more functions than just making available the rightmost position to the verb: while in (21), *pastiglie* seems to be a continuous (or familiar) topic, (22) suggests a reading where *pastiglie* has a contrastive interpretation ('I took the pills, but not the whole medical prescription').

Finally, there seems to be a direct interaction between LD and the *sí*-construction, as we can see from Example (19) above and likewise from (23) below, in which

13. The link between PF and dislocation has also been observed by Simone (1997), Brunetti (2009: 775) and Andorno & Crocco (this volume). In view of an observation made by an anonymous reviewer, we would like to stress that we do not claim that dislocation is a structural means for expressing PF, but rather that it makes possible a PF reading in certain contexts (focalization of the predicate in contexts presenting a given or inferable antecedent proposition) and that there are even other reasons for an affinity between LD (as a contrastive topic marker) and PF contexts, as shown in Section 3.1. This view is similar to the one presented by Matić & Nikolaeva (this volume), according to whom PF (or salient polarity as they prefer to name this specific type of emphasis) is not directly encoded by certain linguistic forms in a given language but can be pragmatically conveyed by different structures under appropriate (contextual) conditions.

Spanish and Italian combine both constructions, while French only uses LD. In fact, the *si*-construction is one of a few syntactic environments where Spanish and Italian allow for subject LD, whose status is otherwise uncertain, due to the lack of clitic subject pronouns in these two languages.[14] In a PF context, using a *sì che*/*sí que*-cleft with a left dislocated subject is thus a more straightforward and effective strategy to single out a subject sentence topic.

In the following chapter, we will try to determine some context conditions that may motivate the use of *si*-constructions and LD in PF contexts.

3. Polar Left dislocation and *sì che*/*sí que*-clefts in the corpus

The following discussion is mainly based on data drawn from the parallel corpus *Direct Europarl* (Cartoni & Meyer 2012), containing the transcriptions of official speeches held by members of the European Parliament. The advantage of *Direct Europarl* is that it can be used both as a parallel corpus (if we are interested in analyzing translation equivalents in different languages) and a comparable corpus (if we are interested in comparing the original data produced in different languages, as we are going to do in this paper).[15] *Direct Europarl* is a subcorpus of the larger parallel corpus *Europarl* (Koehn 2005). In a sense, it is also an enhanced version, since it makes it possible to disentangle original and translated texts, which is not always the case in *Europarl* (cf. also Brianti 2014: 283). In the following, we limit ourselves to data from the original speeches, and only occasionally consider the translations. A first observation in this regard is that the translations sometimes imitate the PF marking strategy used by the original, sometimes they replace it by an adverb, a *si*-construction or a dislocation structure, and that quite often they simply omit to mark PF explicitly.

Since *Direct Europarl* is not syntactically annotated, the dislocation occurrences were found by searching for non-nominative clitic pronouns, deciding intuitively whether PF was involved or not (in fact, in most of the examples we found lexical PF markers as the ones discussed in Section 2.1, cf. the use of *davvero* 'really' in (25)–(26) below). Of course, it was impossible to carry out an exhaustive search for

14. See De Cesare (2014: 39–43) for a comprehensive discussion.

15. As a parallel corpus, *Direct Europarl* allows for the following directions: Italian > French and French > Italian; Spanish > French and French > Spanish. The Italian corpus amounts to ca. 2.3m words, the French one to ca. 2.5m words and the Spanish one to ca. 2.8m words. The corpus search was carried out by means of the *AntConc* software (Anthony 2014).

the French masculine subject pronoun *il,* due to the high frequency of this form outside dislocation contexts.[16]

Even taking into account the above mentioned "translation bias", the following parallel example seems to show the different crosslinguistic preferences for the different constructions conveying PF:[17]

(23) a. Monsieur le Président, (…) il faut rendre honneur à la présidence française, il faut rendre honneur au président Chirac, qui a été au charbon, qui a combattu et qui a vaincu sur *sa vision de l'Europe*, parce que, **lui, il a une vision.** (*Europarl*, Dupuy, 2000)

b. Señor Presidente, (…) hay que rendir honores a la Presidencia francesa, hay que rendir honores al Presidente Chirac, que se ha dejado la piel, que ha luchido y que ha vencido con *su visión de Europa*, porque **él sí tiene una visión.**[18]

c. Signor Presidente, (…) occorre rendere omaggio alla Presidenza francese, occorre rendere omaggio al Presidente Chirac che, costretto a un'opera improba, ha combattuto e ha vinto con *la sua visione dell'Europa*, perché **lui sì che ha una visione.**
'Mr President (…) we should honor the French Presidency, we should honor President Chirac. He was at the coalface, he fought and conquered for *his vision* of Europe – because **he did have a vision**'

Even if it is not possible to say whether the *sí* only-construction in Spanish and the *sì che*-construction in Italian were chosen by the translators only to render the subject LD found in the French original, this example makes it clear that the three constructions at least partly overlap in their contextual usage.

Limiting our exhaustive search to direct object clitic forms, the most striking result – given the argumentative character of the corpus – is the extreme scarcity of

16. The spot-check we performed on a sample of the corpus did not provide us with any occurrence of subject LD with a PF reading. The only attested example is (23), which was found on the basis of its translation by means of *sì che* in Italian.

17. In this example, the Spanish, the Italian and the English versions are official translations based on the talk originally given in French. In the examples, we have highlighted PF structures in bold, while italics is used to signal the propositional antecedent of the PF occurrence. Other specific information units are underlined.

18. Interestingly, we find in this example the particle *sí* and not *sí que.* Although there are functional differences between these two strategies (as discussed in Batllori & Hernanz 2013), a *sí que*-cleft would be perfectly acceptable in this example as well.

LD in PF contexts. These are the numbers for PF-dislocation and for the *sì che / sí que*-constructions:[19]

Table 1. Distribution of Polar CDs and *Sì che / sí que*-constructions in *Direct Europarl*

	Italian (2.3 m)	**French (2.5 m)**	**Spanish (2.8 m)**
Polar LDs	6	4	0
Sì che / sí que	0	NA	61

As can be seen from this listing, we were not able to find any dislocation constructions with a PF reading for Spanish at all, and only a few in Italian and in French. The only construction reaching a considerable frequency is the *sí que*-construction in Spanish. Strikingly, this construction does not appear in our original Italian data although it is reported in the literature (e.g., Turco 2014; Bernini 1995, etc.). Moreover, it is perfectly accessible to the introspection of Italian speakers and appears repeatedly in the Italian translation of speeches held in other languages (e.g., (23)). We could maybe speculate that Italian *sì che*-structures are perceived by native speakers as more typical of the spoken language or generally of more informal registers (this would also explain why Italian politicians chose other structures in their official speeches held at the European Parliament).[20]

Given the scarcity of occurrences, we have refrained from conducting a quantitative analysis. Instead, in the next paragraphs we will provide a merely qualitative interpretation of the data. Given the *lacunae* in Table 1 and the equivalences in (23) we cannot even pretend to provide systematic explanations for any of the three constructions in the three different languages: we will restrain ourselves instead to the analysis of the examples at hand with respect to their contextual settings. We will start out by analyzing the context conditions for LD structures in Italian and

19. **Table 2.** Normalized frequencies (per 100.000 words) of Polar CDs and *Sì che / sí que*-constructions in *Direct Europarl*

	Italian (2.3 m)	**French (2.5 m)**	**Spanish (2.8 m)**
Polar LDs	0.2	0.1	0
Sì che / sí que	0	NA	2

20. Of course, this fact calls for (a) an analysis of the correspondences between Sp. *sí que* and It. *sì che*; (b) a contrastive analysis of *sí que/sì che vs. sí/sì* only in the two languages. We need to put aside these analyses here, mainly due to reasons of space, but also due to the problem of singling out an exhaustive list of *sì/sí* only with a PF reading, given the great number of other occurrences of the string *sì/sí* in the corpus (as a polar particle or as a reflexive pronoun).

French and then we will consider different types of *sì que*-examples that we have found in the Spanish data.

3.1 Left dislocation and polarity focus in French and Italian

As was pointed out in Section 1, the QUD underlying a PF utterance is whether a certain proposition, uttered in the previous context (or inferable from it), has to be considered true or not. Of course, the most clear-cut use of PF is given when the proposition is explicitly uttered in the preceding context:

(24) Dovremmo, credo, dare maggiore informazione sugli *strumenti a disposizione*, valutare le cose positive che sono state fatte – anche se noi non siamo contente fino in fondo, perché ancora resta molto da fare – ma non dobbiamo abbatterci per il fatto che *non abbiamo strumenti a disposizione*: **gli strumenti li abbiamo.**
(SPEAKER ID=278 LANGUAGE="IT" NAME="Ghilardotti (PSE)")
'We must, I think, provide greater information on *the tools available*, emphasize the positive things that have been done – even if we are not completely happy because there is still a lot to do – but we must not become dejected that *we do not have any tools at our disposal:* **the tools are there**'[21]

In (24) the PF utterance is a direct answer to the question that is repeatedly raised in this passage: whether there are tools available for a certain political activity. The pragmatic function of dislocation seems clear: the dislocated item *gli strumenti* conveys topic continuity, connecting with the two sentences in the previous context where the proposition that serves as background for the PF construction is mentioned. At the same time, the dislocation permits to emphasize the rightmost element, *abbiamo.* Since the lexical content of *abbiamo* is also repeatedly mentioned before (*non abbiamo strumenti a disposizione*), it is plausible to say that it is not the lexical content but the affirmative feature of the verb that is focalized here.

It is not clear, in this example, whether we should consider the occurrence of PF contrastive or informative; in other words: whether the PF utterance is only meant to contribute to the question raised by *sugli strumenti a disposizione* (i.e., are there available tools or not?), or rather to reject the possible objection *che non abbiamo strumenti a disposizione*, 'that we do not have any tools at our disposal'. When we lack either an explicit polar question or an explicit negation in the preceding context, and we are forced to assume an implicit polar QUD, it is not always clear whether the inferential process leads to reconstruct a negative proposition (as in (25) below), or rather an open question (as in (16)).

21. As in the case of (23), here and in the following sections we have relied on the official English translations for the examples from *Direct Europarl* and *Europarl*.

In (25), we would rather assume a contrastive reading: the negative polarity could be derived from *problemi* (…) *sulla tolleranza zero*, 'issues (…) zero tolerance', and from *è un lavoro che nessuno vuole affrontare*, 'a job that no one wants to take on'. Both statements trigger the inference that the measures for zero tolerance have not been taken:

(25) Onorevole Maes, lei ha sollevato *problemi* di importanza fondamentale, il primo dei quali *sulla tolleranza zero*. (…) E' di solito *un lavoro che nessuno vuole affrontare*, (…) però le premesse per la tolleranza zero **le abbiamo davvero messe**. (SPEAKER ID=31 LANGUAGE = "IT" NAME = "Prodi")
'Mrs Maes, you have raised some fundamentally important *issues*, the first of which *is zero tolerance*. (…) This tends to be *a job that no one wants to take on* (…); nonetheless, **we really have laid the foundations for zero tolerance**.'

In (26), the antecedent proposition is not negative, but modalized, stating a deontic necessity, while the PF utterance is an appeal for finally addressing that necessity:

(26) È chiaro allora che *diventa indispensabile mettere assieme i tre processi.* Purtroppo la nostra terminologia è orrenda, **ma i problemi della macroeconomia, del lavoro e dei problemi strutturali li mettiamo assieme davvero**, adesso, e allora abbiamo la capacità e la possibilità di ottenere i risultati che volevamo (…).
(SPEAKER ID=31 LANGUAGE="IT" NAME="Prodi")
'It is clear that *it becomes essential to put together the three processes*. Unfortunately, our terminology is nightmarish, but **let us genuinely group macroeconomic issues and labour and structural problems together**, right now, and we will then be able to achieve the results we desire'

Even if *diventa indispensabile*, 'it becomes essential', presupposes ¬*p,* we would not say that this is an intended implicature but rather that realizing *p* is at issue. In fact, deontic necessity is a prototypical context for PF, when speakers affirm that they really comply with their obligations; see also (27):

(27) Per riuscirci è indispensabile tener fede a un principio che è alla base del nostro stare nell'Unione europea. (…) È quello secondo il quale nello sviluppo della costruzione europea *occorre sempre fare uno sforzo per comprendere le ragioni degli altri*, farsene in qualche modo carico. **Noi questo sforzo lo abbiamo sempre fatto e continueremo a farlo** (…).
(SPEAKER ID=190 LANGUAGE="IT" NAME="Romano Prodi")
'To be successful in this, we have to hold faith with a principle that lies at the basis of our existence as the European Union (…). It is the principle whereby, in furthering European integration, *it is essential always to make an effort to understand the arguments of the other side* and in some way to take them on board. **We always made this effort**'

Again, the proposition to which the PF applies is mentioned explicitly in the preceding context; again, it is not negatively asserted in the context, but embedded into an expression of deontic necessity (*occorre*).

In this example, it is interesting to observe that there are *two* dislocated elements: besides the direct object phrase *questo sforzo,* whose function once more is to ensure topic continuity and to point to the antecedent of the proposition to which the PF applies, we have a dislocated subject *noi*[22] whose function could be interpreted as a frame or a delimiter: the background proposition "make an effort to understand the other side" is claimed to be true only (or at least) for the domain of agents defined by "we".

However, this state of affairs alters the notion of PF as we have first defined it: even if the PF construction is a reaction to a previously uttered proposition, it does so not just by adding a polarity value or inverting a previously given polarity value, but it modifies the reference of the proposition: while in (24) and (25) the PF utterances simply provide a positive answer to the polar QUDs raised in the previous context (respectively, whether the tools for political actions are available or whether measures for zero tolerance have been taken), in (26) and (27) the extension of *p* in the utterance conveying PF has changed with respect to the antecedent proposition. While the antecedent proposition occurs in a subject-less (thus generic), modalized (*è indispensabile, occorre*), non-referential form, the PF utterance is a positively asserted proposition with an identifying subject reference. In (27) the contrastive topic *noi* not only restricts the domain of truth or applicability of the proposition, but also conveys referential identity to the denoted situation which differs from the (lacking) situational referentiality of the antecedent proposition.[23]

This constellation leads to a very typical use of PF, which is much more clearly attested in our Spanish *sí que*-occurrences than in the few LD examples that we were able to retrieve in *Direct Europarl*, and to which we return in the following section. For the moment, we can summarize the following facts about LD in PF marking:

- LD (of the subject as well as of the direct object) appears to be a strategy for PF marking in French and Italian, although it is very rare;
- it applies to contrastive PF as well as to informative PF;

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22. Identifying a dislocated subject for Italian is only possible because of the other inserted element, namely, the dislocated object.

23. Applying the idea of an "eventuality" (Bach 1981) as an entity e_i (see Davidson 1966; cf. also Kamp & Rohrer 1983, whose aim was to explain argument structure and time relations) to our case, we could say that *e* described in the antecedent proposition is not bound at all, while *e′* of the PF utterance, placed within the scope of the dislocated reference term *noi*, is bound at the highest text level.

– the backgrounded proposition in a LD construction with a PF reading can either be explicitly mentioned in the previous context or be derived as an inference;
– the eventuality at issue in the PF utterance can either be referentially identical or it can be a referential actualization of the situation evoked in the previous context.

3.2 Polarity focus and the *sí que*-construction in Spanish

As we have mentioned above, we have found 61 occurrences of the *sí que*-construction in Spanish, while it was not attested in the original (non-translated) Italian data. The aim of this section is to find out to which extent the *sí que*-construction shares the range of uses of the LD exemplified in Section 3.1 for Italian and French. Furthermore, our goal is also to understand if more specific features for *sí que* can be found.

As we have already noted in Section 2.4, the uncertain status of subject dislocation in Italian and Spanish could motivate the existence of the *si*-constructions as a PF marker in these languages. In fact, the *si*-constructions are one out of a few syntactic structures that make possible subject LD even without an existing clitic subject pronoun.

The following data give a hint on this interpretation: in 36 out of 61 occurrences of *si que* we find some argument or adjunct placed at the left of *sí que.* In most of the cases, the dislocated element is a subject:

Table 3. *Sí que* and LD in the original Spanish texts from *Direct Europarl*

Topic + *sí que* (36/61)	**Subject**	**Object**	**Adverbial**
	26 (72%)	2 (6%)	8 (22%)

However, the remaining examples with dislocated elements other than the subject cast doubt on the fact that this would be the only reason for the *sí*-constructions to appear in PF contexts. More generally, the overall scarcity of the data (and of LD in particular) prevents us from supposing that the *sí que*-construction is a perfect Spanish equivalent to LD in French (as is suggested by the contrastive Example (23)).

On the other hand, the parallelism between LD and the *sí que*-constructions is obvious from other examples as well. Just like in (25) and (26), the PF utterance in (28) is used contrastively with reference to the (repeated) explicit negative antecedent:

(28) Pienso que el Sr. Ramón de Miguel puede manifestar que consultará al Consejo y que más tarde dará *una respuesta* más detallada, *que ahora no está en disposición de dar*. Pero pienso que manifestar simplemente que *no puede dar una respuesta* no forma parte de las reglas del juego. Considero que puede someter a la Presidencia, al Consejo, las preguntas que se le han formulado, y que puede declarar que, con respecto a algunas de ellas, *ahora no está en disposición de dar una respuesta*. Pero considero que, por regla general, *corresponde al Consejo responder a todas las preguntas*. (*Europarl*, Dupuis (NI))
Sí señor Presidente, sí que puedo responder.
(SPEAKER ID=248 NAME="De Miguel")
'I think that Mr De Miguel can say that he is going to refer to the Council on the matter and will give a more detailed answer later, as he is not in a position to do so at present. However, I do not think that he is playing by the rules by simply saying that he cannot give an answer. I think that he can put the questions that we have asked him to the Presidency and to the Council and say that he is not in a position to answer some of them at present. But I do think that, as a general rule, the Council should answer all questions'
'**Yes, Mr. President, I can answer**'

Instead of being explicitly stated, the antecedent negative *p* can be implicit:

(29) (…) *sigue habiendo detenciones arbitrarias y violaciones de los derechos humanos*.
(…) *se sigue poniendo en dificultades a los defensores de los derechos humanos*
(…) *permanece todavía en la cárcel una Premio Sajarov, como la Sra. Leyla Zana*.
(SPEAKER ID=172 LANGUAGE="ES" NAME="Carnero González")
(…) Turquía, en el lugar estratégico que ocupa, es el único Estado completamente laico (…) En eso, **sí que Turquía es un Estado absolutamente europeo.**
(SPEAKER ID=173 LANGUAGE="ES" NAME="Gutiérrez-Cortines")
'(…) Arbitrary detentions and violations of human rights continue to take place
(…) many [complaints] are continually causing problems for the defenders of human rights
(…) a Sakharov Prize winner, Mrs Leyla Zana, remains in gaol
(…) Turkey, in the strategic position it occupies, is the only truly secular state
(…) On this level, then, yes, Turkey is a totally European State'

In (29) several statements of the preceding speech amount to denying (implicitly) that Turkey is part of Europe, due to the violation of human rights, while the PF utterance asserts the contrary, bringing forward Turkey's laicism.

Thus, we could say that, once more, the left dislocated element states a condition for *p* to be true. This seems to be an especially straightforward explanation for those cases where the dislocated element is an adverbial/prepositional adjunct

with a circumstantial meaning. Things are more complicated when the adjunct is an argument of the verbal predicate:

(30) Sí quisiera decirle a mi buen amigo, el diputado Jacques Poos, que creo que aquí *alguien se ha podido quedar con las manos cruzadas*. Sus Señorías saben muy bien que *quien les habla nunca ha estado con las manos cruzadas*, ni cuando era ministro representando a su país –cuando era colega suyo y tuvimos muchos momentos para hablar –; por lo tanto, seamos también respetuosos con las palabras que utilizamos. Si su Señoría piensa que *yo he estado con las manos cruzadas* en este conflicto, creo que se equivoca y, si me lo permite, podría hasta echar la vista atrás para ver momentos en el que **el Consejo Europeo sí que ha estado con las manos cruzadas.**

(SPEAKER ID=152 LANGUAGE="ES" NAME="Solana")

'I would like to say to my good friend, Jacques Poos, that I believe *some people here may have been sitting back* and doing nothing. The honourable Members are well aware that *this speaker has never sat back* and done nothing, neither when he was a Minister representing his country – when I was a colleague of yours and we had many opportunities to speak; we must therefore be respectful in the words we use. If you believe that *I have been sitting back* in relation to this conflict, I think you are wrong and, if you will allow me, I could look back and recall moments when **the European Council has been sitting back**'

In (30), the predicate "having been sitting back" is repeated several times, with different subjects. The first occurrence, *alguien se ha podido quedar con las manos cruzadas*, 'some people may have been sitting back', despite its indefinite subject and its modal embedding is not non-referential as in (26) and (27) above; rather, with its epistemic hedge and the vague subject reference, it raises indirectly the question "*who* has been sitting back?", neglecting his/her duties. In the two following occurrences of the proposition, the speaker wants to deny the reproach regarding his own person (*quien les habla, yo*). As for the PF utterance, it conveys a *third* instantiation of the proposition with a third subject (*el Consejo Europeo*), stating that the predicate holds for this subject.

On the basis of (30) we can now come back to the question raised in Section 3.1: when we claim that in PF utterances the proposition is the background, or, in other words, that PF presupposes a QUD in which the truth or assertability of a proposition is at issue, this still allows for different contextual constellations: the polar QUD "whether *p* is true" can be related to the context either on the basis of a specific situation or eventuality ("that De Miguel can answer the question is true or not", "that Turkey is a European state is true or not") or on the basis of a generalized situation type, where the answer (i.e., the assertability of *p*) depends on

the conditions of each single eventuality belonging to this type ("*x* has been sitting back" results in a false proposition for *x* = Speaker, but to a true proposition for *x* = the European Council). The relation of a PF utterance to the contextually given situation is not necessarily one of *identity* of the event (that we can call "situational identity"), where a positive polar answer would contradict a negative instantiation of the proposition given in the context, but could be one of *analogy* ("situational analogy"), where the PF utterance, at least semantically, does not exclude the truth of the contextually given negative proposition: that the European Council *has* been sitting back does not *a priori* contradict the negative case for other referents. Interestingly, this relation of analogy also allows for a clear contrastive focus: thus, in (30) the *sí que*-construction establishes a sharp contrast; it does so, though, not by opposing the statement just to a previous utterance of the opposite state of facts (an opposite attitude of the European Council), but by contrasting it with another situation which is structured in an opposite way (namely, the opposite attitude of the speaker).[24]

Thus, the textual succession of the same proposition ("x has been sitting back") with different subject referents (*alguien*, *quien habla*, *yo*, *el Consejo Europeo*) evokes an overall textual structure that is not polar, i.e., where the element at issue is not the truth of a given proposition, but the reference of some other element, be it an argument or an adjunct. In a macro-perspective, the question raised in the passage reproduced in (30) could be paraphrased as "Who has been sitting back?", a question which is split up into a series of polar subquestions applied to each of the possible alternatives underlying the overall question.[25] In light of the question-subquestions strategy put forward by Büring (2003)[26] in his analysis of *contrastive topics*, we can break down (30) in the following question-answers pairs:

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24. These two constellations are reminiscent of the pragmatic function of focus of highlighting "parallels in interpretation" discussed in Krifka & Musan (2012: 11) as well as the different textual configurations pointed out by Dimroth et al. (2010, especially 3333). Although the model proposed in Dimroth et al. (2010) starts from different theoretical premises, we could claim that our first case (identical situation) roughly corresponds to the configuration III (*same entity, opposite polarity*), while the second case (analogous situation) fits the configurations I and II (*different entity, polarity at issue*).

25. According to Krifka & Musan (2012: 30), "(…) we often find contrastive topics to indicate a strategy of incremental answering in the common ground management (…)".

26. Following Roberts (2012 [1996]). For more recent treatments of QUD hierarchies, see Lai (2012), Wilder (2013), Riester (2015), Onea (2016), Velleman & Beaver (2016). In (31) and (34), Q represents superordinate questions, while SQ stands for subquestions and A for assertions. The signs ">" and ">>" indicate hierarchical relations which can be represented by means of a discourse tree (cf. Riester 2015 for more details). Finally, "+/−" signals polar questions.

(31) *Alguien se ha podido quedar con las manos cruzadas*
Q: Who has been sitting back?
> **SQ1 +/−:** Have I been sitting back?
>> [**A1a** *Sus Señorías saben muy bien que quien les habla nunca ha estado con las manos cruzadas*]
>> [**A1b** *Si su Señoría piensa que yo he estado con las manos cruzadas en este conflicto, creo que se equivoca*]
> **SQ2 +/−:** Has the European Council been sitting back?
>> [**A2** *el Consejo Europeo sí que ha estado con las manos cruzadas*]

While A1a and A1b rely on lexical strategies, namely, embedding *p* within an epistemic matrix verb and emphasizing adverbs (*saben muy bien que nunca* p, *si piensa que* p *se equivoca*), A2 uses *sí que*. Splitting up a non-polar QUD into a series of polar subquestions seems to be a common text strategy and one of the most common usages of PF.[27]

We can now briefly come back to (27): in fact, the PF utterance could be interpreted not only as a way of specifying the unspecified antecedent *occorre fare uno sforzo,* 'it is essential to make an effort'. We could even recognize an allusion to a (non-identical) situation where somebody else did *not* make an effort. This would be a classical rhetorical strategy whose function is to trigger a presupposition that is not in the *common ground,* thus forcing an accommodation whereby this fact becomes part of the common ground without mentioning it explicitly. Very often, this presupposition is about somebody not complying with his / her duties. Of course, this type of allusion can raise another QUD, not less rhetorical, namely, *who* is the agent for whom the proposition does not apply, which is normally left to the hearer's / reader's inference. This interpretation holds for (27) as well as for (23), in which it is inferable that there are other persons who, unlike Chirac, do not have a vision of Europe.

In a general way, we could conclude that the connection between LD and PF lies in the framing function of LD, where the dislocated element states a condition for *p* to be true, independently whether *p* refers to the identical situation as its antecedent, and whether the dislocated element is a circumstantial adjunct or an argument of the sentence.

However, let's have a look at those occurrences of *sí que* that do not have a dislocated frame:

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27. Cf. also certain applications of *verum focus* in German of the type *Wer HAT denn die Kokusnuss geklaut*? 'Who was the one who stole the coconut?'.

(32) *No podemos evitar el* acqua alta – eso es un fenómeno de la naturaleza – **pero *sí que* se pueden hacer** unos diques móviles y también se puede hacer un metro subterráneo. (SPEAKER ID=69 LANGUAGE="ES" NAME="Estevan Bolea")
'*We cannot prevent "high water"* – it is a natural phenomenon – but **we do have the ability to introduce** mobile dikes and build an underground subway'

(33) Con ello no quiero decirles que *el acuerdo alcanzado **sea óptimo** en **todos** sus aspectos*, **pero *sí que*** es **satisfactorio** en **alguno** de ellos.
(SPEAKER ID=57 LANGUAGE="ES" NAME="Hernández Mollar")
'In saying this, *I am not implying that the agreement reached is ideal* in every way, **but that it is satisfactory in some respects**'

In both examples, what varies between the antecedent and the PF utterance, instead of just a framing condition or an argument, is the predicate itself. So, what is the relation between the antecedent proposition and the one conveying PF? And where does the presupposition of negative polarity in both examples stem from? In both cases, we can say that the PF utterance *q* and the antecedent *p* are in some way congruent, i.e., both are instances of a more abstract, hyperonymous *r* ("we can protect Venice from flood" in (32), "the treaty is positive / has to be approved" in (33)) at issue in the superordinate QUD. However, *p* represents a stronger alternative than *q* in respect to *r* (see for instance the scalar relation between the propositions *sea optimo*, '(it) is ideal', and *es satisfactorio*, 'it is satisfactory', in (33)). So, when *p* is denied, this raises, pragmatically, the question whether there is a weaker instance of *r* which is true and could satisfy the truth conditions for *r*. Once more, we deal with a strategy of breaking down a more general QUD into subquestions. The difference from (31) is that the superordinate question is itself polar:

(34) **Q +/−:** Is the treaty good enough to be approved?
> S**Q1 +/−:** Is it optimal?
>> [**A1:** *no quiero decirles que sea óptimo en todos sus aspectos*]
> S**Q2 +/−:** Is it good at a lower degree?
>> [**A2:** *es satisfactorio en alguno de ellos*]

This is another quite typical use of *si* only and of *sí que* / *sì che*-constructions in Spanish and Italian.

Bearing in mind the criteria recognized as relevant for LD in PF marking, we should note that *si*-contructions in Spanish and in Italian are by no means limited to contrastive contexts, i.e., they do not necessarily react to a previous (explicit or inferable) denying of *p*: while (30) and (33) could be disputed, the following Spanish example seems clear, in which PF seems to have turned into a kind of emphatic reinforcement:[28]

28. A similar interpretation also holds for Example (19).

(35) *Esto es escandaloso*, esto merecería un titular: sólo seis Estados miembros nos dicen qué hacen con la recuperación de los fondos que han usado mal. **Eso sí que es de escándalo**.
(SPEAKER ID=011 LANGUAGE="ES" NAME="José Javier Pomés Ruiz")
'*That is scandalous*, it deserves a headline: only six Member States are telling us what they are doing about recovering funds which they have misused. **That really is a scandal**'

4. Conclusions and further remarks

In order to explain the cross-linguistic distribution of strategies for focalizing the polarity of a proposition, we have to take into account the formal structural properties of the different languages, such as the availability of prosodic accent, the flexibility of word order and the existence of clitic subject pronouns. This might at least partially account for the profound differences between Germanic and Romance languages, but also for the preferences of French, Italian and Spanish for the different strategies at hand.

As for the functional criteria that help us in analyzing the use of LD and *sí que,* the following aspects turned out to be important (even if none of them would be a licensing or a blocking criterion in itself):

A. Is the polar QUD explicit in the preceding context (i.e., discourse given), or is it derived by inferential processes? (This distinction is not always clear-cut, e.g., in modal contexts).
B. Is the relation to the antecedent proposition based on situational identity or on situational analogy? As a means for setting different circumstantial frames, LD has a special affinity for analogy; however, the use of LD is by no means limited to that.
C. Is the PF contrastive or informative? I.e., does it presuppose the negation of the proposition (either in a case of situational analogy or situational identity) or just the presence of the open question whether *p* is true or not? Or does it even emphatically confirm a previously given *p*?
D. Is the polar QUD a strategic subquestion of a superordinate QUD? Is the superordinate QUD a polar or a non-polar question?

Of course, these aspects are interrelated. In particular, the subquestion strategy (D) implies situational analogy (B), but not vice versa; it fits better an implicit QUD (A) than an explicit one.

The most striking result is the extreme asymmetry in the distribution of LD and *sí que* / *sì che* between French, Italian and Spanish: although polar CDs are overall very rare constructions in our dataset (cf. Table 1), they do not appear at all

in the Spanish corpus. On the other hand, *sì che* / *sí que*-occurrences are attested only in Spanish, but not in Italian (although they would be perfectly possible). This complementary distribution singles out Spanish in comparison with Italian and French. Although the small number of examples retrieved in our corpus makes it difficult to put forward reliable generalizations, a tendency for Spanish to rely on more "transparent" syntactic strategies (cf. Section 2.2) seems to emerge.

It would be tempting to relate this asymmetry to the typology put forward by Dimroth et al. (2010) and Benazzo & Dimroth (2015). According to this typology, Germanic languages are in general more assertion-oriented than Romance languages since they employ overt means for expressing and contrasting sentence assertion, such as affirmative particles (*doch* in German and *wel* in Dutch) and specific prosodic patterns (*Verum Fokus* in German). On the contrary, in the same contexts Romance languages opt for explicitly marking other information (e.g., change in the topic situation). Although Spanish, as well as Italian and French, relies on non-canonical syntactic strategies that signal contrast at the topical level, it also shows a stronger preference for constructions which explicitly mark positive polarity by means of an assertive particle. In this regard, Spanish appears to be, so to speak, more Germanic than Romance.

Needless to say, this claim should be tested through a more extensive corpus search, involving other PF strategies as well. However, it is important to stress that the "special" position of Spanish compared to Italian and French from an information-structural perspective has also been observed independently by Leonetti (see Leonetti 2010 and 2014). According to his proposal, a major divide between Central Romance languages (Italian, French and Catalan) and Spanish (but also Portuguese and Romanian) is suggested by the mapping between syntax and information structure. Central Romance languages are said to formally express a clear partitioning between information units as Focus / Background and Topic / Comment (one can think, for instance, of the almost obligatory marking of topicality in Spoken French by means of LD, cf. Leonetti 2010; De Cat 2007), while Spanish and Portuguese exhibit a looser link between syntax and information structure (as an example, consider *verum focus fronting*, in which the fronted element does not receive either a topical or a focal interpretation).

In case of PF, the preference of Spanish for *sì que*-clefts (i.e., structures which make the split between PF and background explicit) appears to be a counterexample to this generalization. However, it remains to be verified how (and if) the alleged 'assertion-oriented' status of Spanish relates to the typology put forward by Leonetti and how serious the PF counterexample should be taken.[29] A further research step

29. According to an anonymous reviewer, a connection between the data found in French, Italian and Spanish and the typology put forward by Leonetti could be seen in the fact that central Romance languages make a pervasive use of dislocations to evacuate topics from focal domains,

could consist, for instance, in examining more closely the relation between *verum focus fronting* (Section 2.2.) and *sí que*-cleft and their contexts of appearance.

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while Spanish does not show a compelling need for placing non-focal phrases out of the core sentential domain (as confirmed by the overall low frequency of dislocation in this language, cf. Leonetti 2010).

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In search for polarity contrast marking in Italian

A contribution from echo replies

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This paper examines polarity contrast marking in Italian, analyzing replies to questions and assertions in Map Task dialogues and read speech. We examine the frequency of echo replies, their syntactic and prosodic properties, and the frequency of *verum focus*. The results show that echo replies are recurrent, and even preferred, when a correction is involved. *Narrow* and *verum focus* are attested, although the latter is not common, and can also be due to morpho-syntactic manipulations such as clitic right dislocation. The results confirm the instability of polarity contrast marking in Italian and suggest that the use of marking devices is sensitive to pragmatic factors, especially in connection with the different functions of polarity contrast in discourse.

Keywords: polarity contrast, echo reply, verum focus, dislocation, Italian

1. Introduction[1]

Despite extensive use of both prosody and constituent position to encode information structure – as is the case for focus and topic marking of nominal constituents (Avesani & Vayra 2005; Bocci & Avesani 2006; Bonvino 2005; Crocco 2013; Scarano 2003) – Italian does not seem to be well-suited for focusing prosodically on polarity as an isolated functional element, as is the case for "verum focus" constructions in languages such as German (Gutzmann 2012; Turco et al. 2014), in which the speaker can mark a polarity contrast by pitch accenting the finite verbal form.[2]

1. We wish to thank Christine Dimroth, Davide Garassino, Daniel Jacob and the anonymous reviewers for their suggestions and their stimulating comments.

2. Following Höhle (1992), Krifka (2007) refers to such a focus as *verum focus*. However, it is worth noticing that the notion is controversial (see Gutzmann 2012; Repp 2013; Hartmann this volume).

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Moreover, Italian lacks a particle such as German *schon* and an auxiliary such as English *do* that can be used for encoding polarity contrasts; and although constructions with a similar function are available, such as the *sì che / no che* construction in sentences such as *sì che ho fame* 'I am indeed hungry' (Poletto & Zanuttini 2013), they are only exploited to a minimal extent by Italian speakers, when compared with speakers of Germanic languages (for a corpus-based study see Garassino & Jacob this volume). This difference has been observed in comparative studies based on different tasks and discourse types, such as relating contrasting events in narratives (Dimroth et al. 2010; Benazzo et al. 2012), or comparing contrasting scenes in dialogue tasks (Turco 2014). Differences also arise in second language acquisition. On the one hand, Italian learners of German take time to place particles in the post-finite verb position and are not able to stress them prosodically until they reach advanced competence levels (Andorno & Turco 2015); on the other hand, the interplay between negation, post-verbal particles and finite verb forms, that are core factors in the acquisition of finiteness in German L2, only play a marginal role in Italian L2 (Bernini 2003, 2005; Andorno 2000).

In the current paper, we extend the search for polarity contrast marking in Italian to contexts where a contrast in polarity is the main information to be conveyed. This paper focuses on verbal echo-replies, i.e. clausal replies in which (part) of the predicate of the prompt is repeated, such as:

(1) A: *I do not have to turn left then*?
B: ***Yes you do have to turn left / No, you do not have to turn left***

In the current work, we tackle the following questions:

(RQ1) How frequently do speakers of Italian use echo replies when confirming or correcting the polarity of a negatively biased question?
(RQ2) What are the syntactic and prosodic properties of Italian echo replies in these contexts?
(RQ3) How often speakers produce *verum focus* when no other option is available for marking a contrast in polarity?

Notice that echo replies are particularly suited to investigate polarity contrast when the presence of a verbal predicate provides the environment to observe *verum focus*.

The analysis presented in this study relies on two kinds of data: (1) elicited speech from Map Task dialogues; we examined contexts in which speaker B replies to a negatively biased sentence produced by the confederate speaker A, and (2) read speech elicited with a reading task; in this task the speakers are presented with a prompt consisting in a negatively or positively biased question, and are required to produce sentences with a fixed morpho-syntactic structure. The two sets of data provide pragmatically similar contexts, in that in both cases the speaker's task is to

contrast the assumption proposed by the interlocutor's utterances, either by maintaining or by switching the polarity of the relevant proposition. Crucially, however, the two datasets differ with respect to the freedom in linguistic encoding offered to the speaker. This difference between the two datasets allowed us, on the one hand, to investigate speaker preferences in the linguistic encoding of information structure in particular pragmatic contexts (Corpus 1) and, on the other, to look more closely at prosodic encoding when this is the only viable strategy left for marking polarity contrast (Corpus 2).

Our findings show that Italian speakers do not have grammaticalized patterns to mark a contrast in polarity, although they can resort to marked syntactic structures or ordinary focus marking devices to meet such a goal when it is relevant for the ongoing conversation.

This paper is structured as follows: in Section 2 we outline the background of the current research; in Section 2.1 we present the relevant terminology regarding focus, contrast and polarity; in 2.2 we sum up available research on the expression of polarity contrast in a comparative perspective. In Section 2.3 we examine the prosodic (2.3.1) and lexico-syntactic (2.3.2) markers of polarity contrast in Italian. Section 3 presents corpora, methods and research questions of the current study (3.1) and the results obtained by analyzing the corpora from a syntactic and prosodic point of view (3.2). Finally, in Section 4, we discuss our findings and draw some conclusions from this research.

2. Background

2.1 Polarity, focus, and contrast: Terminological distinctions

In the current paper, we focus on dialogic contexts in which speakers are engaged in mutually establishing the truth of a proposition. Example (2), from the Map Task section of our corpus, provides an useful example of this situation. Map Tasks are dialogical games in which the two interlocutors play different roles, namely the role of *Instruction Giver* (henceforth: GIV) and *Instruction Follower* (FOL) (Carletta et al. 1996). In the Map Task dialogues examined for this work, FOL is a confederate speaker who produces negative biased statements or questions as frequently as possible. These biased utterances create contexts in which the switch or maintenance of the polarity of the proposition at play is the only relevant information. We examine the GIV's replies to the biased utterances produced by FOL, as in GIV2[3] below.

3. As will be the case in the analysis section of the paper (Section 3), the following conventions apply to the example: the part of the reply which constitutes the target of the analysis is underlined; the relevant part of the question/assertion the reply replies, is in italics.

(2) GIV1: devi prendere una diagonale eh: a destra -, verso l'estremità eh: del foglio -,
FOL1: okay -, *quindi # non devo superare # l'albergo*.
GIV2: ##sì. devi superare l'albergo -, a questo punto. devi lasciare l'albergo sulla destra -, arrivare # sopra l'albergo.

GIV1: you have to take a diagonal path, eh: on the right -, towards the edge eh of the sheet -,
FOL1: okay -, *then # I don't need to pass # the hotel*.
GIV2: ##yes. You must pass the hotel -, at this point. You must leave the hotel to your right -, get # above the hotel.

Further details concerning the pragmatic properties of the contexts analyzed will be given in Section 3.1. For the time being, in order to clarify our terminological choices, suffice it to say that these contexts share the following properties:

(a) *Contrastive focus*. In the relevant contexts, practices of Common Ground (CG) management can encourage speakers to use a contrastive focus in the sentence packaging. The notions of contrast and focus intertwine and sometimes overlap (Repp 2010). We adopt Krifka's (2007) functional definition of focus as a device for CG management that "indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions" and we distinguish between informational and contrastive focus. A *contrastive focus* "presupposes that the CG content contains a proposition with which the current utterance can be contrasted, or that such a proposition can be accommodated" (Krifka 2007). As a consequence, with a contrastive focus the alternatives at play form a closed set defined by the information that is already available in the CG.

In Krifka's terms, a *contrastive* focus does not need to be *corrective*, but can also *confirm* a proposition. Based on the type of presupposition involved and on the conversational contribution to the CG made by the relevant proposition, different pragmatic uses of contrastive focus can be disentangled. A contrastive focus has a correcting function when the integration of the current proposition in the CG entails the cancellation of an alternative proposition already available in the CG, as is the case in the contribution of speaker B, rebutting A's contribution in (3i). When the proposition put forward by the interlocutor is the same as the one previously uttered by the speaker, contrastive focus has a *confirming* function, as in the contribution of speaker B in (3ii) (the relevant alternatives to be contrasted are marked with brackets; the contrastive focus is marked in bold).

(3) A: [John] wants coffee
B: i. No, [**Mary**] wants coffee
ii. Yes, [**John**] wants coffee

With an additive particle, however, a contrastive focus adds a new proposition to the CG together with its already available alternatives.

(4) A: [John] wants coffee
B: [**Mary**] wants coffee, too

A similar function can also be found when contrastive focus highlights "parallel" expressions or propositions (cf. Krifka & Musan 2012: 12), as in the following case, where two sets of alternatives are contrasted by speaker A and speaker B for the proposition "X stole Y" and they are both added to the CG.

(5) A: [Mary] stole the [cookies]
B: And [**Peter**] stole the [**cake**]!

As shown in Examples (4) and (5) for additive and parallel contrasts, the current proposition is added to the CG together with its alternative. However, in additive contrast current and alternative proposition concern the same predicate, whereas in parallel contrast they concern similar though not identical predicates. The contribution of the current assertion to the CG needs to be carefully encoded by speakers, in order to avoid any possible ambiguity regarding whether the sentence is to be considered as additive or parallel.

Table 1. Different pragmatic functions for a contrastive focus

Contrastive focus: relevant alternatives to the current proposition are available in the CG	Corrective contrast: the current proposition cancels an alternative proposition already asserted as part of the CG
	Confirming contrast: the current proposition is confirmed to be part of the CG
	Additive contrast: the current proposition is to be added to the CG, as well as the previously asserted alternative proposition concerning the same predicate about a different topic / frame
	Parallel contrast: the current proposition is to be added to the CG, as well as the previously asserted alternative proposition concerning a similar predicate about a different topic / frame
	…

A difference between a wider notion of contrastive focus and a more specific notion of corrective focus is also made in studies concerning the prosodic marking of information structure, as it is shown in Examples (6) and (7) (adapted from Bianchi & Bocci 2012: 2–3). A sentence (here: *Si era messa un Armani*, "She wore an Armani dress") involves a *contrast* whenever it focuses on an element ("an Armani dress") contrasted with an alternative which is introduced in the following part of the utterance ("a cheap dress from H&M").

(6) A: Maria era molto elegante l'altra sera a teatro.
'Maria was really elegant the other evening at the theatre.'
B: Certo. Si era messa [**un ArMAni**], non [uno straccetto di H&M]
'I bet. She wore an Armani (dress) not a cheap dress from H&M.'

Note that the alternative proposition ("She wore a cheap dress from H&M") is *negated* in (6), but is not *corrected*, as it has never been asserted to be part of the CG, and therefore does not need to be *removed* from it.

Instead, the same sentence "She wore an Armani dress" involves a *correction* when it causes the cancellation of a previously asserted proposition, as in (7).

(7) A: L'altra sera a teatro, Maria si era messa [uno straccetto di H&M].
'Yesterday evening at the theatre, Maria wore a cheap dress from H&M.'
B: No, si era messa [**un ArMAni**].
'No, she wore an Armani (dress).'

(b) *Polarity contrast.* In contexts like (2), the speaker (GIV) *confirms* or *corrects* a proposition explicitly proposed as part of the CG by the previous utterance of the interlocutor (FOL), cf. the turns FOL1 and GIV2 in Example (2). In doing so, the speaker's reply can explicitly focus on polarity (positive vs. negative polarity), or, from the point of view of the contrastive relation, maintenance vs. switch of polarity with respect to the proposition proposed by the interlocutor. Following Krifka's definition of 'contrast', we define 'polarity contrast' as a contrast occurring in the domain of polarity and subsume linguistic expressions of polarity-switch and polarity-maintenance under "polarity contrast markers". We therefore define a linguistic expression as a "polarity contrast marker" if the sentence containing it entails a contrast in polarity with some other proposition included in the CG, either *switching* or *maintaining* the polarity value of the alternative proposition (see Table 2).[4]

Table 2. Possible values for polarity contrast markers

Polarity contrast marker: a linguistic expression marking a contrast in polarity with respect to an alternative proposition (otherwise) carrying the same content and occurring in the preceding context.	Polarity-switch marker: linguistic expression marking that polarity has been changed with respect to the alternative proposition
	Polarity-maintenance marker: linguistic expression marking that polarity has been maintained with respect to the alternative proposition

4. It should be noted that Turco et al. (2015) adopt the label of 'polarity-contrast markers' only for linguistic expressions that "marks a switch on the polarity component" against the same propositional content.

2.2 Polarity contrast marking from a comparative perspective

Recently, a few comparative and experimental studies have asked how speakers of different languages organize information structure and use cohesive devices in discourse when a contrast in the polarity domain arises. The studies which we sum up below analyze polarity contrast on the basis of Dimroth's (2002) notion of *contrastiveness*, as a "paradigmatic relationship between an information unit of a given utterance with respect to the same information unit in a previous utterance". These studies examine different kinds of discourse tasks potentially involving a contrast in polarity.

In the *Finite Story* (Dimroth et al. 2010), a monological narrative task, speakers have to retell a video showing a sequence of events concerning different people performing / not performing similar actions during a fire episode, as in the following excerpt:

(8) scene 22. Arrival of fire engine with rescue net.
scene 24. Mr. Green does not jump into the rescue net
scene 25. Mr. Red does not jump into the rescue net
scene 26. Mr. Blue jumps into the rescue net

According to the terminology proposed in Table 1, Finite Story plots include sequences where the speaker can mark an additive contrast in which polarity is maintained (as in (8), scenes 24 to 25), or a parallel contrast in which a switch in polarity is involved (as in (8), scenes 25 to 26), in order to increase the cohesion between subsequent utterances in the retelling. Results show language-specific preferences in the use of cohesive devices (Dimroth et al. 2010; Benazzo & Andorno 2010; Benazzo et al. 2012). In parallel contrasts, speakers of Germanic languages (Dutch, German) often use polarity-switch markers, either particles (Dutch: *meneer Blauw springt wel uit het raam*) or *verum focus* (German: *deswegen IST er dann wohl auch gesprungen*), while speakers of Romance languages (Italian, French) use topic-switch markers (Italian: *il sig. Blu invece decise di buttarsi*, "Mr. Blue instead decided to jump"). In additive contrasts, speakers of Romance languages use predicate-maintenance markers (Italian: *lo stesso succede per il sig. Rossi*, "the same happened to Mr. Red") or additive particles with scope over nominal constituents (Italian: *anche lui rifiuta*, "he also refuses"), thus not focusing on the polarity. In contrast, speakers of Germanic languages often use additive particles following the finite verb (German: *jetzt hat er AUCH den Mut gefunden*). The particles in these structures can be considered as polarity-maintenance markers, signaling that an assertion with the same truth value about a different topic is added to the CG (cf. Dimroth et al. 2010: 3342). On the whole, when different cohesive strategies are available, speakers of Romance languages tend to avoid the use of polarity contrast markers, unlike speakers of Germanic languages.

In the *Polarity-switch Dialogues* (Turco 2014; Turco et al. 2012; Turco et al. 2014), participants compared their own picture to the description of a different picture produced by a confederate speaker, as in the following example:

(9) Confederate speaker [picture of a boy with a candy in his hands]:
"In my picture, the boy is not eating the candy"
Speaker [picture of a boy with a candy in his mouth]: "…"

The study found the following language-specific preferences. Speakers of Germanic languages use polarity-switch markers, either particles (Dutch: *wel*) or *verum focus* (German). Speakers of French and Italian instead often recur to switch markers with scope on a constituent working as frame setter (French: *Dans mon image par contre* "in my picture instead"). Féry and Krifka (2008) related these frame setter switch markers to topichood, as both frame setters and topics restrict the range of application of the ensuing predication. Moreover, in Romance languages, occurrences of an accent on verbs in non-final position – possibly interpreted as a *verum focus* – were only observed in about 35% of the utterances (cf. Section 2.3.1).

As a whole, the results of these studies suggest that speakers of Romance languages – Italian among them – adopt less specific strategies to mark polarity contrasts, such as switch markers operating on the topical portion of the sentence.

Both the Finite Story and the Polarity-switch Dialogues potentially offer additive and parallel contrastive contexts in Krifka's terms, but not confirming and correcting contrasts. In both tasks, the two pieces of information in contrast are not mutually exclusive: indeed, both are included in the CG. In the Finite Story there are different characters performing divergent actions, and in the Polarity-switch Dialogues pictures representing different situations are used. In conclusion, polarity contrast markers in these contexts do not confirm or correct previous information, but rather add new (contrastive) information. Moreover, both tasks allow for the choice of different information units in order to mark contrastive relations. Apart from the polarity, either the topic or the frame setting component can be marked as being in contrast with a previous unit of the same type. Therefore, in discarding polarity as a locus to mark the contrast, Romance speakers opt for different solutions in the information packaging or may even leave the contrast relation unmarked.

The contexts analyzed in the current research offer an advancement with respect to these possibilities. As will be explained in more detail in Section 3.1, the speakers are referring to the exact same piece of information and, therefore, the two alternative propositions are mutually exclusive. Either the information proposed by the interlocutor is confirmed by the speaker to be part of the CG, or it is corrected and has to be removed from the CG. We can expect such a context to encourage the use of polarity-switch markers even in Italian speakers, provided that this kind of markers is available in Italian (cf. Section 3.2).

2.3 Polarity contrast markers in Italian

2.3.1 *Prosodic encoding*

As seen above, together with the use of affirmative particles such as *doch* and *wel*, *verum focus* is a primary means of highlighting polarity operators in Germanic languages (Gutzmann 2012; Turco et al. 2014). In these languages, it is possible to emphasize the polarity of a sentence by pitch-accenting a finite verb, an auxiliary, or even a complementizer. In Italian, in contrast, the use of prosodic means to highlight polarity seems to be strongly limited. For instance, there is no evidence at present that Italian speakers mark polarity by prosody in spontaneous interactions (Dimroth et al. 2010), although they can be encouraged to produce *verum focus* if the interlocutor draws particular attention to the polarity of the utterance (Turco 2014). Turco's data on polarity marking in *Picture-difference Tasks* (cf. Section 2.2) provide evidence that, under specific experimental conditions, speakers of Italian produce utterances with the main prominence on a verb in more than half of the relevant contexts, and *verum focus* (i.e. main prominence on a finite verb) in about 35% of the cases (Turco 2014: 150–151). The study shows that finite verbs are preferred over non-finite forms as the place for the main prominence, although this is not the case when the finite form is an auxiliary. In complex verbal forms such as *ha mangiato* 'has eaten', speakers place the prominence preferably on the past participle, i.e. on the rightmost lexical element of the phrase, and *verum focus* is infrequent. Turco (2014) and Turco et al. (2015) interpret this preference, along the lines of Selkirk (1996), as resulting from phonological constraints disfavoring the accentuation of non-phrase-final functional monosyllables. Finally, similarly to what has been observed in cases of narrow or contrastive focus in several Italian varieties (Bocci 2013; D'Imperio 2002; Grice et al. 2005), *verum focus* in Roman Italian triggers a prosodic rearrangement of the post-focal prominences, which is described by the author as post-nuclear downstep.

In conclusion, there is evidence that Italian speakers can produce *verum focus* under certain conditions, a result which is complementary to the findings by Dimroth et al. (2010) about natural interactions. These studies indicate that *verum focus* is one of the possible options in this language to highlight polarity, although it is not a primary resource.

2.3.2 *Lexical and syntactic encoding*

As mentioned in the preceding section, Italian speakers focalize the verb in a Picture-difference Task in more than half of the relevant contexts. In the rest of the cases, however, prosodic structure is completely neutral. In these cases, Italian speakers can rely on lexical or syntactic means to encode polarity maintenance or

switch. As with prosody, the use of these means is not systematic, and empirical studies have pointed out that polarity contrast can be simply left unspecified.

Studies by Bernini (1995) and Poletto & Zanuttini (2013) have explored the structural and pragmatic properties of cleft constructions such as *sì che vieni* 'you do come' as a fronted polarity marker, such as (10):

(10) Se ho visto cosa c' è lì dentro? Sì
if have.PRS.1SG see.PST.PRT what there be.PRS.3SG there in Yes
che l' ho visto[5]
that it have.PRS.1SG see.PST.PRT
'[you ask] if I saw what there was inside? Yes, I did see it'

These structures, however, have not been attested in empirical studies such as the one by Brunetti (2009), and they do not occur in the Polarity-switch Dialogues analyzed by Turco (2014). Italian speakers can also highlight polarity through sentence initial adverbs such as *invece* 'instead' or intensifiers such as *proprio* or *davvero* 'really, certainly'.[6] However, empirical investigations again show that intensifiers rarely appear as polarity markers in spontaneous speech (Dimroth et al. 2010). Adverbs such as *invece* 'instead' (see Example 11) are more frequent, but they are not specialized as polarity markers; rather, they occur in sentence-initial position (as in 11).a or in a parenthetical phrase between the topic and the VP (11).b:

(11) a. I vigili del fuoco dicono al signor Verdi di buttarsi, ma lui non vuole. […]
Invece il signor Blu si butta
'The firemen say to mister Green to jump, but he doesn't want to do it. […]
Instead mister Blue jumps'

b. Il signor Verdi non voleva assolutamente buttarsi. […] Il signor Blu invece decise di buttarsi.
'Mister Green absolutely did not want to jump. […] Mister Blue, instead, decided to jump'

A further strategy to highlight polarity is the use of syntactic structures that are generally employed for topic marking, such as clitic right dislocation. In a typical declarative right dislocation, an object constituent is resumed by a coreferent clitic pronoun and is therefore marked as a given topic in the periphery of the sentence.[7]

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5. Example taken from the Italian newspaper *Corriere della sera.*<http://corrieredelmezzogiorno.corriere.it/bari/cronaca/15_luglio_25/fuoco-li-ha-mangiati-vivi-ceb22af6-3294-11e5-b678-cba043437fc9.shtml> (2 June 2017).

6. For an overview of the polarity markers in Italian see Garassino & Jacob this volume.

7. Right dislocation can also involve constituents other than objects. For an overview see e.g. to Benincà (1988) and Cecchetto (1999).

As a consequence of the pronominal doubling, the object phrase is separated from the preceding material by a prosodic boundary; moreover, the main prosodic prominence of the utterance occurs before the dislocated object (cf. Benincà 1988; Bernini 2009; Crocco 2013). In certain cases, this syntactic-prosodic construction seems to be used primarily as a means to focalize the verb while at the same time highlighting the polarity of the utterance, rather than as a means to topicalize a given constituent. In the following question-answer pair (12), for instance, speaker B replies to his interlocutor by highlighting the polarity of the utterance through a clitic right dislocation:[8]

(12) A: Ma hai visto il film?[9]
but have.PRS.2SG see.PST.PRT the movie
'but have you seen the movie?'
B: L' ho visto il film, ovvio
it have.PRS.1SG see.PST.PRT the movie obviously
'I did see [it] the movie, obviously'

Clitic right dislocation can also occur in yes-no questions, such as (13).[10] Interestingly, in these cases the right dislocated phrase, which is always resumed by a clitic, can be either discourse given or new. Furthermore, both the verb and the object can be pitch accented (Crocco 2013). Yes-no questions containing a right dislocation have been analyzed by Crocco (2013) as a means to express a confirmation request. In addition, polarity questions with a right dislocation seem to put special emphasis on the alternative answers available to the interlocutor. In this sense, they are one of the linguistic resources that Italian speakers can use to highlight polarity in yes-no questions. See for instance (13):

(13) GIV: tu ce l' hai un dado?
you there it have a dice?
'Do you have [it] a dice?'

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8. Despite the absence of a comma marking the disjuncture between verb and object, this example is clearly a case of clitic right dislocation because of the presence of a resumptive pronominal clitic. The example is taken from a discussion forum on the internet and is written in a rather colloquial style. The absence of a comma after the past participle, therefore, could be due to informality. Moreover, the presence of a resumptive clitic is *per se* sufficient to identify this sentence as a case of right dislocation: in fact, clause internal clitic doubling (cf. Anagnostopoulou 2006) is not permitted in standard Italian, at least in declarative clauses (cf. Crocco 2013).

9. Source: <http://www.pluschan.com/index.php?/topic/4140-brave-ribelle-di-brenda-chapman-e-mark-andrews/page-3> (2 June 2017)

10. This example is taken from the Map Task corpus analyzed by Crocco (2013).

Note that in (13) the right-dislocated NP *dado* 'dice' is discourse-new and non-specific, as indicated by the indefinite article *un* 'a'. In such a context, right-dislocation cannot be straightforwardly considered a means to mark the object constituent as a given topic.[11]

In any event, right dislocation is not the only option available to the speaker to put emphasis on polarity. Example (14).B illustrates that left dislocation can be used in a similar way to mark a polarity contrast:

(14) A: impar-a l' italiano altrimenti tac-i…
learn-IMP.PRS.2SG the Italian otherwise shut up-IMP.PRS.2SG
'Learn Italian or shut up'
B: Ue' ciccio, guard-a che l' italiano lo conosc-o[12]
hey dude, look-IMP.PRS.2SG that the Italian it know-PRS.1SG
'Hey dude, look, I do know [it] Italian'

Overall, research indicates that Italian, similarly to other Romance languages, can mark polarity contrast in several ways. Crucially, however, the means deployed to highlight polarity are not specialized and appear to variable extent in different contexts. In this paper we compare Map Task interactions and a sample of read speech in order to gather further evidence on the different linguistic means exploited by speakers to switch or maintain the polarity of an utterance in natural vs. morpho-syntactically constrained contexts.

3. The study

3.1 Corpora, methods and research questions

Our dataset comes from two subcorpora. Corpus 1 was collected for the study of particles *sì* / *no* in Italian (Andorno & Rosi 2015); it consists of elicited dialogues based on the Map Task (Anderson et al. 1991), an interactive game between two participants who are given two similar maps. As mentioned above (Section 2.1) one of the speakers, the *Instruction follower* FOL, has to draw a path on his map, following the instructions given by the other speaker (the *Instruction Giver* GIV). At the outset, only the GIV has the relevant path information on his map. GIV and FOL cannot look at each other's map. They each make use of information based on their own maps, on which, however, also the depicted objects are only partly similar

11. While clitic right dislocations are a means to mark a specific constituent as a given topic, there is evidence that this is not always the case for interrogatives (Crocco 2013).

12. Source: <http://it.hobby.viaggi.narkive.com/RzxwWPVX/tragedia-in-myamair> (2 June 2017)

(see Appendix). Therefore, expectations can arise about the information that can be put in the CG, but speakers often need to check whether their expectations are actually confirmed.

The Map Task dialogues were performed by 9 female university students, native speakers of northern varieties of Italian, acting as the GIV. The FOL role was performed by a female confederate speaker.[13] For the current purposes, we analyzed the GIV's replies to polar questions and assertions performed by the FOL.

The following examples illustrate the context in which the relevant replies are found. In Example (15), the proposition 'curves do not zigzag', proposed for check in turn FOL2, was already suggested as part of the CG in turn GIV1 (*sono due curve piuttosto larghe*, 'they are rather wide bends'). Through her assertion in turn 2, the FOL shows an expectation, based on contextual evidence, that a negative proposition is true and asks for a confirmation that it can be added to the CG:[14]

(15) FOL1: ma # sono ravvicinate -, queste curve? sono strette?
GIV1: m: n:o -, non sono strette. sono due curve piuttosto larghe.
←*NEG* *contextual evidence*
FOL2: okay. okay -, quindi <non> [//] <non devo farle> [/]
insomma non sono zigzag.
GIV2: no no no no.
FOL1: are they tight, these curves? are they narrow?
GIV1: no, they are not narrow. They are rather wide bends
←*NEG* *contextual evidence*
FOL2: okay. okay, then I do not have to take them [/] *they do not zigzag then*.
GIV2: no no no no.

In Example (16), the accuracy of the proposition 'colle delle rondini is on your map' as part of the CG is expected by the FOL, see turn FOL1 (*verso il colle delle rondini*, 'toward colle delle rondini'). In GIV2 this is challenged by the GIV's hesitation (*no n:*) and therefore checked in turn FOL2. Through the question in turn FOL2, the FOL asks whether the positive proposition she had supposed to be part of the CG needs to be canceled, as recent contextual evidence suggests.[15]

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13. Further details concerning the participants and the data are offered in Andorno & Rosi (2015).

14. According to the Map Task annotation scheme, these conversational moves can be considered 'confident checks' (Carletta et al. 1996; Grice & Savino 2004).

15. Negative questions in our data always have inner negation, in Ladd (1981) terms. These conversational moves are called *tentative checks*, in Grice & Savino (2004). For an in-depth description of different dialogic contexts in the data, see Andorno & Rosi (2015). The complex semantic and pragmatic value of negative polar questions has recently been described through several different approaches: Romero (2005), Reese (2007), Repp (2013), Krifka (2017).

(16) GIV1: devi fare metà giro intorno al colibrì -, e poi proseguire dritto.
FOL1: verso: <il colle> [/] il colle delle rondini. ←*POS epistemic bias*
GIV2: n:o. n: ←*NEG contextual evidence*
FOL2: *non hai il colle delle rondini*?
GIV3: eh: n:on ci sono colli delle rondini sulla mappa.

GIV1: you must turn half way around the 'colibrì' and then go straight on.
FOL1: toward 'colle delle rondini'. ←*POS epistemic bias*
GIV2: no n: ←*NEG contextual evidence*
FOL2: *don't you have 'colle delle rondini'*?
GIV3: eh: there are no 'colli delle rondini' on the map.

Note that in all contexts considered the FOL has no primary access to the information at play, as the check concerns information included in the GIV's map. That is to say, the FOL's check concerns *B-events*, "things which B [the recipient] knows but A [the speaker] does not" (Labov 1972: 254) or, more precisely, "some matter which the recipient has rights to know more than the speaker" (Heritage 2002: 1428). As a consequence, once the GIV has confirmed or corrected the proposition proposed in the FOL's turn, this is definitely accepted or discarded as part of the CG.

For the purposes of the current study, we considered only those among the FOL's prompts that are clearly biased, i.e. prompts which show her positive or negative expectation about the truth value of the proposition at play. These are the contexts in which the GIV's reply can possibly include a confirmation or a correction of the polarity value expected by the FOL. It turned out that the FOL's positive questions did not always show a clear bias:[16] the FOL often used positive questions to ask for further information about which she has no previous expectations. In this case the GIV's replies cannot be interpreted as a confirmation or a correction, as they can simply state a value for a proposition which neither speaker had considered to be part of the CG before. Instead, as shown in Examples (15) and (16) above, the negative form of the prompt provides a signal of the FOL's epistemic bias concerning the truth value to be assigned to the proposition at play (Ladd 1981; Büring & Gunlogson 2000; Krifka 2012). In order to avoid including replies lacking a clear polarity-maintenance/switch value in the corpus, we restricted the analysis of Corpus 1 to replies to negative prompts. In total, we collected 330 replies to negative questions and assertions.

Corpus 2 was collected during an experiment which was part of a larger study on the syntax-prosody interface in Italian (Badan & Crocco in press). The data were elicited using a reading task in which the speakers were required to silently

16. In fact, the lack of bias follows from the unmarked value of positive polarity when compared with negative (Reese 2007; Krifka 2017).

read a series of short situational prompts followed by a sentence to be read aloud. The prompts were designed to induce the desired reading of the target sentence, which is provided to the speaker in a given morpho-syntactic form. Examples of the prompts used to collect this dataset are provided below:

(17) A: *Ah, quindi i tuoi non hanno vissuto a Parigi*?
'Oh, so your parents didn't live in Paris?'
B: Sì sì. Hanno vissuto a Parigi.
'Yes, they did [live in Paris]'.

(18) A: *Le tue figlie hanno studiato a Milano?*
'Did your daughters study in Milan?'
B: *No. Non hanno studiato a Milano.*
'No, they didn't [study in Milan]'.

The much more constrained form of the prompt/reply pair and the context provided allowed us to include replies to both positive and negative questions. On the other hand, prompts in Corpus 2 are always (positive or negative) questions, and replies always express a switch in polarity. We decided to focus on polarity-switching replies since *verum focus* is observed in this type of utterance in studies we used for a comparison (especially Turco 2014; Turco et al. 2015; cf. Section 2.2 and 2.3.1). Corpus 2 consists of 40 utterances read by 4 speakers (1 male and 3 female) from the city of Este, in the province of Padua (Veneto), age ranging from 30 to 40 with university-level education. The speakers were recorded in a quiet room using a Røde HS1-P headset microphone plugged into a portable Marantz PMD 620 recorder. All target sentences presented an unmarked word order, without intensifiers or sentence-initial adverbs. The verb is always composed of a bisyllabic auxiliary form (*hanno* 'have') followed by a past participle and by a locative PP.

The data considered in Corpus 1 and Corpus 2 are summed up in Table 3:

Table 3. Pragmatic conditions of data considered for Corpus 1 and Corpus 2

	Form of the reply	**Prompts considered**	**Replies considered**
Corpus 1	Free	Negative assertions and questions	Positive polarity + switch Negative polarity + maintenance
Corpus 2	Constrained	Negative and positive questions	Positive polarity + switch Negative polarity + switch

Our first goal was to provide a background description of the format of polarity switching and polarity-maintaining replies, and their relative frequency in non-constrained conditions. We focused on the form and frequency of echo replies, i.e. replies adopting (part of) the predicate of the prompt, where a polarity

contrast is expected to arise. This analysis is based on Corpus 1 and is described in Sections 3.2.1 (RQ1) and 3.2.2 (RQ2). Our second goal was to deepen the analysis of echo replies from a prosodic perspective. To this end we selected from Corpus 1 echo replies including a verbal nucleus and considered all sentences of Corpus 2, which have the form of VP echo replies. The more constrained conditions of Corpus 2 allowed us to observe what speakers do with echo-replies, when morpho-syntactic and lexical choices cannot be manipulated and *verum focus* is the only viable option to mark a polarity contrast (the other option being to leave the contrast unmarked). This analysis is described in Sections 3.2.3 (RQ2) and 3.2.4 (RQ3).

With respect to the form of prosodic patterns, the analysis of the two corpora allowed us to compare,

- free (Corpus 1) and constrained (Corpus 2) echo replies carrying the same polarity (positive) and discourse function (polarity-switch);
- echo replies carrying the same function (polarity-switch) but a different polarity (positive in Corpus 1 and Corpus 2; negative in Corpus 2);
- echo replies carrying the same polarity (negative) but a different function (polarity-maintenance in Corpus 1; polarity-switch in Corpus 2).

The prosodic analysis aimed at identifying the position of the main prominence of the utterance, in order to determine the scope (broad or narrow) of the prosodic focus. The analysis was carried out using Praat (Boersma & Weeninck 2016) for visual inspection and listening. Following Ladd (2008) we consider every utterance in which the rightmost metrical head is pitch accented as an instance of broad focus, and every utterance in which the main prominence occurs on an element different from the rightmost head, as an instance of narrow focus. Furthermore, we assume that perceptual prominence reflects prosodic prominence. Finally, we consider as *verum focus* instances of narrow focus in which main sentential prominence is assigned to the finite verb. Note that, in this work, we will not provide a detailed analysis of the types and properties of the pitch accents occurring in the utterances. This limitation of the analysis is mainly due to (a) the diverse regional affiliations of the speakers, who speak Italian according to regional phonologies partly different from one another (cf. Gili Fivela et al. 2015); and (b) the syntactic diversity and variability of the samples. In fact, while syntax in Corpus 2 is strongly constrained, the speakers included in Corpus 1 can speak spontaneously. Therefore, the interaction between syntax and prosody (see a.o. Frascarelli 2000; Selkirk 2011) is not controlled and cannot be always reconstructed. Given the small size of the sample, the data on *verum focus* presented in this paper should be considered explorative.

3.2 Results

3.2.1 *Frequency of clausal and echo replies (Corpus 1)*

In all, we collected 330 replies to negative checks in the Map Task corpus: 227 of them are polarity-maintaining replies and 103 are polarity-switching replies. The replies can have various formats. For instance, a reply can start with an anaphoric polarity particle (*yes / no*, as Example a, b in Table 4) or other particles (Example c). The clausal part of the reply, when available, can add further information and precisions (Example b, d) or explicitly reformulate (part of) the information checked, in the form of an echo reply (Example a).

Table 4. Examples of formats of the replies found in Corpus 1

(Replying to the check:) *Sopra non hai gli abeti?* 'you don't have the firs above?'		
	Particle	**Clause**
a	No 'No	non ho gli abeti I don't have the firs'
b	Sì 'Yes	però gli abeti non sono proprio sopra sopra but the firs are not really above'
c	Esatto 'Exactly'	
d		Ho le automobili 'I have the cars'

Figure 1 shows the frequency of different types of reply found in Corpus 1. In general, replies including an information or an echo clause (as type a, b or d above) are more frequent than non-clausal replies (as type c), in which only a particle is present.

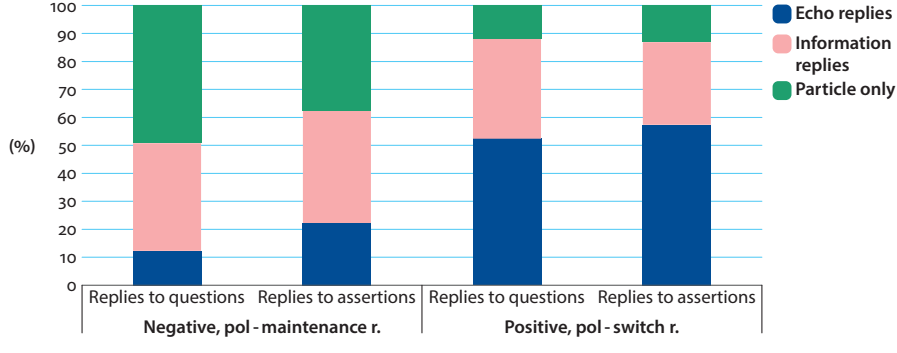


Figure 1. Corpus 1, percentage of clausal replies in polarity-maintenance and polarity-switch replies (total = 330 replies)

In polarity-maintenance replies, clauses occur in 51 to 62% of the cases, while in polarity-switch replies they represent about the 90% (88–87%) of the occurrences. Echo replies (type a above) are not so frequent within the polarity-maintenance replies (13 to 22%), but they are the most frequent type of polarity-switch reply (52 to 57%). In fact, the strong increase of clauses in polarity-switch replies is due to echo replies. In addition, echoes are slightly more frequent in replies to assertions than in replies to questions.

The results reported in Figure 1 show that the use of clausal replies, instead of particles alone, and of echo replies, instead of replies adding new information, is favored in cases of polarity-switch over polarity-maintenance and, slightly, in replies to assertions over replies to questions. On the one hand, when the speaker needs to signal that a switch in polarity has occurred, he uses echo replies more frequently than when the polarity is maintained. On the other hand, the stronger the commitment made by the interlocutor concerning the proposition at play (assertions vs. questions), the more frequent is the use of echo replies. Echo replies, in explicitly reformulating the propositional content at issue, are indeed an ideal locus to mark a polarity contrast. In the following sections, we will therefore describe the syntactic (Section 3.2.2) and prosodic (Section 3.2.3) format of the echo replies of Corpus 1, in order to find out whether polarity contrasts are marked through syntactic or prosodic means.

3.2.2 *Corpus 1: Syntactic format of echo replies*

The subset of echo replies includes 102 utterances with different syntactic formats.[17] The replies can be realized as a NP/PP alone (17/102) or followed by a polarity particle (9/102), or as full VP clauses (76/102). In what follow we comment on examples of the different syntactic formats found in Corpus 1.

a. NP/PP alone (17 cases).

(19) [pol. switch]
FOL: quindi *la linea # non è dritta*. GIV: beh sì. # <u>abbastanza dritta</u>.
FOL: so the line is not straight. GIV: well yes. Pretty straight. [i07]

(20) [pol. maint.]
FOL: ma *non devo fare un giro intero*. GIV: no -, <u>non un giro intero</u>.
FOL: but mh I do not have to go all the way round. GIV: no -, not all the way round. [i01]

17. From Example (19) onward the different experimental subjects (GIVs) are identified with a number (i01, i02…). The confederate Follower is always indicated as FOL.

In format (a), the clause is reduced to the relevant predicative part of the proposition at play. Note that, as polarity-maintenance replies in Corpus 1 always carry a negative polarity, the NP/PP is preceded by the negator *non*, while polarity-switch replies do not carry any polarity marker.

b. NP/PP followed by a polarity particle (9 cases).

(21) [pol. switch]
FOL: ma *neppure le barche hai*? GIV: sì le barche sì.
FOL: you do not even have boats? GIV: (lit.) yes -, boats yes [i07]

(22) [pol. maint.]
FOL: cioè *non hai niente lì # in: basso*. GIV: in basso a sinistra no.
FOL: you mean you have nothing at the bottom. GIV: at the bottom on the left no. [i04]

In format (b), polarity is overtly marked by the particles following the NP/PP. This construction can be considered a way to manage polarity contrasts, as it can only be used when the proposition to which the polarity contrast applies is already part of the CG.

c. Sentences including a VP (76/102). VP replies are by far the most frequent format (75%) of echo replies. However, when we consider the ratio of VP echoes out of the total amount of replies in the corpus, we observe a great difference in frequency between polarity-maintenance (32/76) and polarity-switch (44/76): VP echoes correspond to 14% (32/227) of polarity-maintenance replies, but they represent 43% of polarity-switch replies (44/103). That is to say, the need to mark a switch in polarity strongly favors the use of an echo reply with a verbal nucleus.

VP replies can have different sentence structures. For instance, the VP can be partly reduced, with dependent constituents (e.g. object) expressed by a clitic pronoun (16 cases).

(23) FOL: ma # *non devo toccare la scritta*. GIV: sì. la tocco.
FOL: but I must not touch the writing. GIV: yes. I touch it [i04]

When the VP is fully expressed, it generally follows an unmarked (S)VO order (55 cases).

(24) FOL: *senza toccare le scritte della discoteca*. GIV: no: tocchi la scritta
FOL: without touching the writings of the disco. GIV: no: you touch the writing [i06]

In 5 cases, VP echo replies show a marked word order. The object is left-dislocated in (25) and right-dislocated in (26); in (27) the unmarked order for the presentative *c'è* NP (*there is* NP) is reversed; in (28) a polarity particle *sì* is inserted between the left dislocated object and the verb.

(25) FOL: ma *le barche non le supero*. GIV: &tz -, le barche le superi!
FOL: but the boats I do not pass them. GIV: (lit.) /tz/ -, the boats you pass them! [i08]

(26) FOL: *tu non ce l'hai l'ambulante*? GIV: &eh sì ce l'ho l'ambulante
FOL: don't you have the pedlar? GIV: (lit.) yes I have it the pedlar [i09]

(27) FOL: ma *non hai nemmeno # ancora più a destra. la pasticceria "il babà"*. GIV: sì. la pasticceria "il babà" c'è.
FOL: but you do not even have # on the right. the pastry "il babà". GIV: (lit.) yes. the pastry shop "il babà" I have it. [i09]

(28) FOL: ma *non hai nemmeno due barche*? GIV: le barche -, sì -, ce le ho.
FOL: you do not even have two boats? GIV: the boats -, yes -, I have them [i03]

As a final remark, we signal the lexical strategy observed in VP echo replies by two speakers, who occasionally emphasize the positive/negative value of the polarity with emphatic adverbs (*assolutamente* 'absolutely', *effettivamente*, 'indeed'; see (29)–(30)) or negative adverbs, determinants or pronouns reinforcing the negator *non* (*mai* 'never', *nessuno*'nobody', 'none', *niente* 'nothing'; see (31)–(33)).

(29) FOL: *non hai nessuna figura a:lla sinistra del colibrì*? GIV: no. non ho assolutamente nessuna figura.
FOL: don't you have any figure to the right of the hummingbird? GIV: no. I have absolutely no figure [i08]

(30) FOL: ma # *non devo fare <un> -, [/] <un giro> [///] una curva* +… GIV: sì. effettivamente devi fare una curva –
FOL: but I don't have to turn… GIV: yes. you have to turn indeed [i09]

(31) FOL: però *non lo tocco*. GIV: non lo tocchi mai.
FOL: but I do not touch it. GIV: you never touch it [i09]

(32) FOL: *non ci sono più curve*: +… GIV: non ci sono più curve né niente -, completamente dritto
FOL: there are no more bends: … GIV: there are no more bends or other things, completely straight [i08]

(33) FOL: *non hai <una stra> [///] una figura con una strada*. GIV: no. non ho nessuna strada.
FOL: you don't have a figure with a street. GIV: no. I don't have any street [i08]

In conclusion, we did not observe a unique and specific format to mark polarity contrasts in echo replies, but rather different possible formats of both reduced and full clauses. In addition, our data indicate that the need to mark a switch in polarity favors the use of an echo reply with a verbal nucleus.

In the following (Sections 3.2.3 and 3.2.4) we present the prosodic analysis of the echo replies with a verbal nucleus: these replies represent the possible contexts in which *verum focus* appear.

3.2.3 *Prosodic analysis of echo replies: Corpus 1*

As mentioned above, in Corpus 1 we found 76 echo replies: the number includes both polarity-maintenance and polarity-switch replies, as well as replies to both assertions and questions. In Table 5 we present the results for the prosodic analysis of these replies, concerning the position of the main prominence and the scope of the prosodic focus. Table 6 shows the results concerning narrow focus and *verum focus* in more detail. As mentioned in Section 3.1, we considered every utterance with main prominence on the rightmost metrical head as an instance of broad focus, every utterance in which the main prominence is on a non-final element as instances of narrow focus and, within this last group, all utterances with main prominence on the finite verb as instances of *verum focus*.

As a whole, *verum focus* emerges from these data as a possible strategy to highlight polarity, although not a particularly frequent one. Overall, 22 cases of *verum focus* were identified, corresponding to 73% of all cases of narrow focus (Table 6). However, *verum focus* represents only 29% of the echo replies (22/76), 10% of the clausal replies (22/224) and 7% of all replies (22/330). Within echo replies (76 cases, Table 5), narrow focus on the verb (24 cases: 22 on finite and 2 on non-finite forms, Table 6) is more frequent in polarity-switch than in polarity-maintenance replies

Table 5. Types of focus in the clausal echo replies of Corpus 1

Type of reply		**Type of focus**						**tot**	
		Broad		**Narrow**		**Other**			
Pol. maintenance reply	to assertions	9		9		6		24	
	to questions	5		2		1		8	
	tot	**14**	**44%**	**11**	**34%**	**7**	**22%**	**32**	**100%**
Pol. switch reply	to assertions	14		13		1		28	
	to questions	4		6		6		16	
	tot	**18**	**41%**	**19**	**43%**	**7**	**16%**	**44**	**100%**
Tot pol. maintenance reply		14	18%	11	14%	7	9%	32	42%
Tot. pol. switch reply		18	24%	19	25%	7	9%	44	58%
Tot echoreplies		**32**	**42%**	**30**	**39%**	**14**	**18%**	**76**	**100%**

Table 6. Types of narrow focus in the clausal echo replies of Corpus 1

Type of reply		Narrow focus						tot	
		On other constituents		On the verb					
				finite		non-finite			
Pol. maintenance reply	to assertions	2		7		–		9	
	to questions	–		2		–		2	
	tot	**2**	**18%**	**9**	**82%**	**–**	**–**	**11**	**100%**
Pol. switch reply	to assertions	2		9		2		13	
	to questions	2		4		–		6	
	tot	**4**	**21%**	**13**	**68%**	**2**	**10%**	**19**	**100%**
Tot narrow focus replies		**6**	**20%**	**22**	**73%**	**2**	**7%**	**30**	**100%**

(15 vs. 9 cases), and in the replies to assertions compared to replies to questions (18 vs. 6 cases). The small number of examples available in our corpus does not permit further observations.

A closer look to the data in Table 5 shows that 34% (11 cases) of polarity-maintenance replies and 43% (19 cases) of polarity-switch replies and are narrow focus utterances. As shown in Table 6, in most of these cases (24 cases, 80%), narrow focus is on the verb, either finite or non-finite; out of these 24 cases, 22 are occurrences of narrow focus on the finite verb, i.e. *verum focus*, while in the remaining 2 cases the main prominence is on a non-finite form.

As the following examples show, *verum focus* can be realized by highlighting different types of verbal elements (the item carrying the main prominence is boldfaced).

(34) Finite lexical forms
FOL: *ma non devo toccare la scritta*. GIV: sì qua la **tocca** un pochino.
FOL: but I don't have to touch the writing. GIV: (lit.) yes, here it touches it a bit [i01]

(35) Forms of *avere* 'have possession'[18]
FOL: *tu non ce l'hai l'ambulante?* GIV: eh sì ce l'**ho** l'ambulante
FOL: you don't have the pedlar? GIV: (lit.) oh yes I have it the pedlar [i09]

(36) The copula
FOL: *quindi non sono tanto importanti questi abeti.* GIV: sì, **sono** importanti
FOL: so these pines are not that important. GIV: yes, they are important [i09]

18. In this case *verum focus* emerges as an effect of a clitic right dislocation of the NP *(l'ambulante* 'the pedlar') resumed by a clitic object pronoun (cf. Example 12 and 13).

(37) Modal verbs
FOL: *però non devo superarle*. GIV: sì. **devi** superarle
FOL: but I don't have to go over them. GIV: yes, you have to go over them
[i09]

The pitch tracks of examples (36) and (37) are shown in Figures 2 and 3.

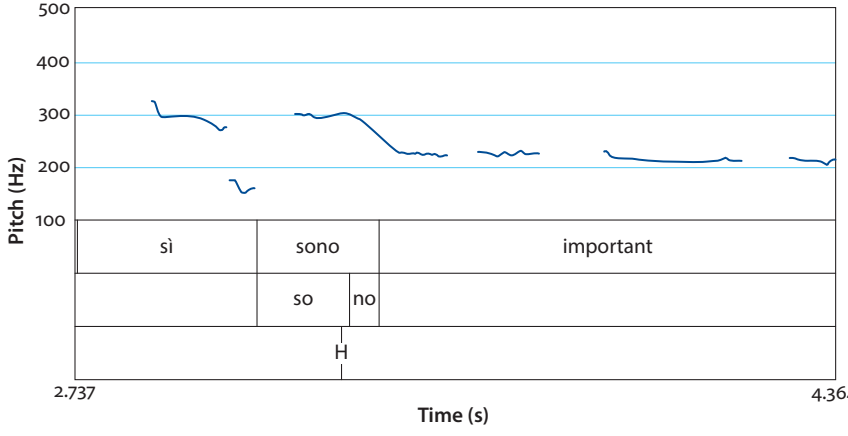


Figure 2. Utterance *sì sono importanti* produced by a female speaker (es. 36). Main prominence is on the copula

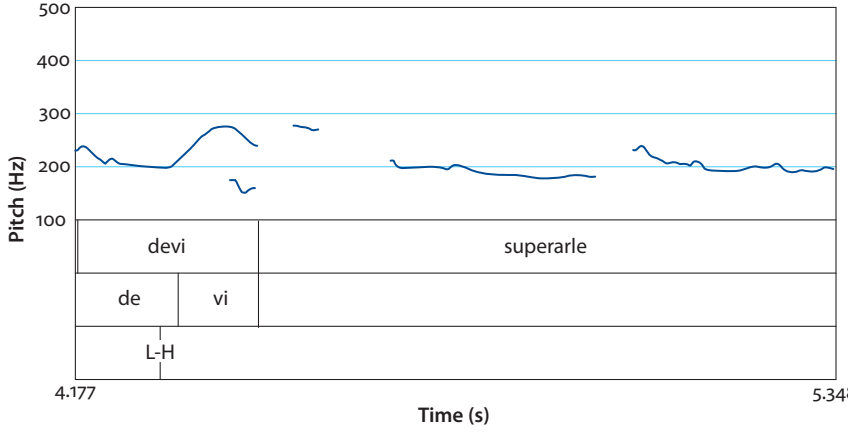


Figure 3. Utterance *devi superarle* produced by a female speaker (es. 37). Main prominence is on the modal verb

In the following section, we will examine Corpus 2, in which *verum focus* is the only strategy available to the speaker to mark polarity contrast. As we will see, even in this rather extreme case, *verum focus* is not always a self-evident choice.

3.2.4 *Corpus 2: Prosodic analysis of verbal echo replies*

All of the replies in Corpus 2 are clausal echoes, therefore they can be compared with the relevant subcorpus of Corpus 1 that was analyzed in 3.2.3. As mentioned in par. 3.1, all replies of Corpus 2 are polarity-switching replies to questions. They include positive replies to negative prompts and negative replies to positive prompts. As a whole, the Corpus includes 40 replies: 25 are positive, 15 are negative. The results of the prosodic analysis are available in Table 7.

Table 7. Broad and narrow focus in Corpus 2 (all echo replies with a verbal nucleus)

Type of focus		**Polarity-switch replies**				**Tot**	
		Positive		**Negative**			
Broad		11	28%	0	0	11	28%
Narrow	Past part.	9	21%	5	11%	14	32%
	Aux	5	11%	10	23%	15	34%
Tot		**25**	**63%**	**15**	**38%**	**40**	**100%**

The verb is focused in 29 out of the 40 utterances. In particular, all 15 negative replies have a narrow focus on the verb: in 10 cases the focus is on the auxiliary *hanno* 'have', i.e. *verum focus* while in 5 cases main prominence is located on the past participle. In contrast, in positive replies narrow focus on the verb occurs in 14 out of 25 cases, and the auxiliary is focused in only 5 out of the 14 cases. The contrast in polarity, therefore, is not marked at all in 11 cases of positive replies, that are realized as broad focus utterances. In this corpus no cases of narrow focus on elements different from the verb were found.

Figures 4–7 provide examples of utterances with *verum focus* (Figure 4 and 5), with narrow focus on the past participle (Figure 6), and with broad focus (Figure 7).

The data from Corpus 2 show a discrepancy between positive and negative replies in the realization of polarity contrast. Despite the fact that polarity is the only relevant information in the sentence, and that prosodic marking is the only option left to the speaker to mark the switch, speakers leave the contrast often unmarked in positive replies and produce narrow focus on the verb, and more specifically on the auxiliary, more in negative than in positive replies. An interesting example of the low acceptability of *verum focus* in positive replies was provided spontaneously by speaker AX (female), Example (38). This speaker first produced a positive reply with narrow focus on the auxiliary and then corrected herself by producing another rendition of the sentence this time with focus on the past participle, i.e. on the head of the VP:[19]

(38) "**Hanno** vissuto a Milano" (no, è sbagliato) "hanno **vissuto** a Milano"
"they **have** lived in Milan" (no, this is wrong) "they have **lived** in Milan"

19. Note that this speaker, just like the others, produced *verum focus* in negative replies.

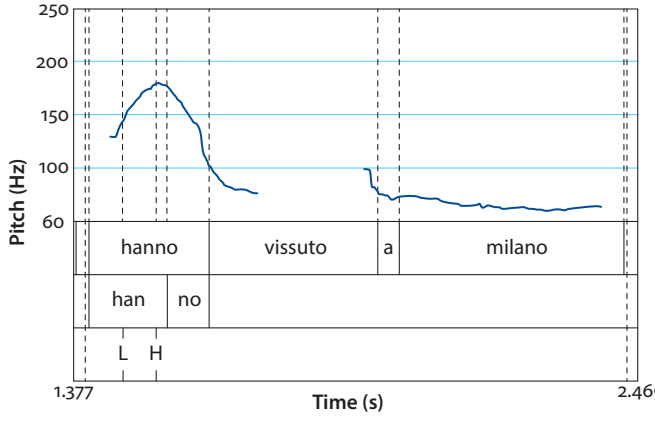


Figure 4. Positive reply *hanno vissuto a Milano* produced by a male speaker (in reply to prompt: "Quindi i tuoi non hanno vissuto a Milano?" 'So your parents didn't live in Milano'). Narrow prosodic focus on the auxiliary *hanno* 'have' (*verum focus*)

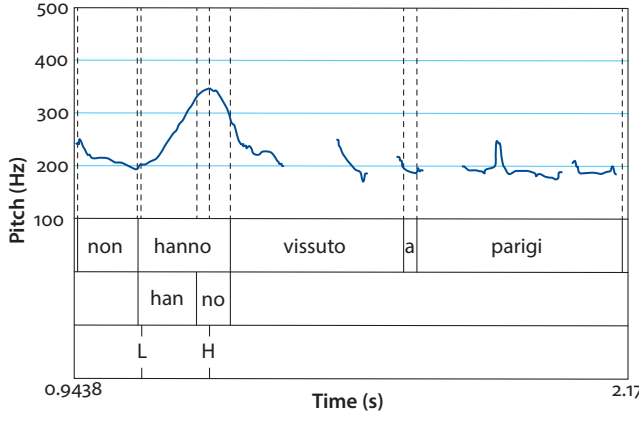


Figure 5. Negative reply *Non hanno vissuto a Milano* produced by a female speaker (in reply to prompt: "*Quindi i tuoi hanno vissuto a Milano?*", 'So your parents lived in Milano?'). Narrow prosodic focus on the auxiliary *hanno* 'have' (*verum focus*)

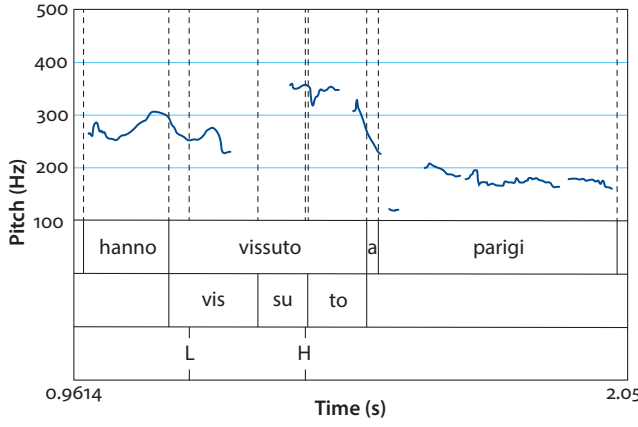


Figure 6. Positive reply *hanno vissuto a Milano* produced by a female speaker (in reply to prompt: "*Quindi i tuoi non hanno vissuto a Milano?*", 'So your parents didn't live in Milano?'). Narrow prosodic focus on the past participle *vissuto* 'lived'

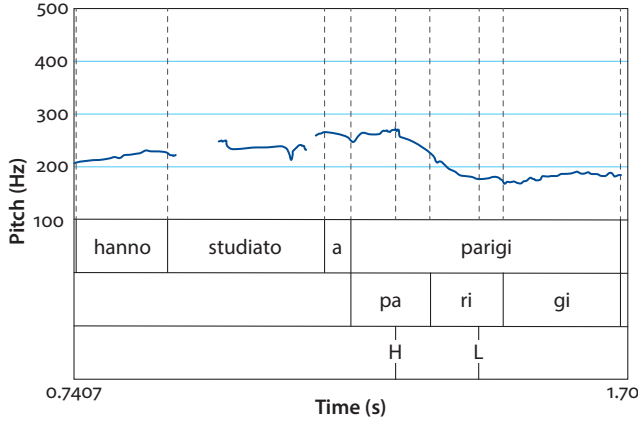


Figure 7. Positive reply *hanno studiato a Parigi* produced by a female speaker (in reply to prompt: "*Quindi le tue figlie non hanno studiato a Parigi?*", 'So your daughters did not study in Paris'). Broad focus

4. Discussion and final remarks

Our analysis confirms that the marking of polarity contrast, and in particular, prosodic encoding through *verum focus*, is possible although not a preferred option in Italian. When speakers are free to organize their speech, as in the Map Task data from Corpus 1, replies involving a polarity contrast show *verum focus* marking in

a minority of the cases. When only echo replies are considered, in which a *verum focus* is more likely to occur, the proportion increases to 1/3 of the cases. This is the same proportion observed in Polarity-switch Dialogues by Turco (2014). Remember that replies in Turco's dialogues were echo replies as well, but, in Krifka's terms, they realized a parallel contrast rather than a switch, and in that case the contrast was often marked on a different information unit (topics or frame setters). Parallel contrasts among sentences produced by the same speaker in a narrative – as shown in the Finite Story data (Dimroth et al. 2010) – proved to be an even less favorable context for the marking of polarity contrast in Italian, and this tendency was even stronger for additive contrast (cf. Section 2.2 for further details on both studies).

In the more constrained context of correcting replies of Corpus 2, instead, narrow focus on the non-finite verb and *verum focus* emerge rather frequently, in more than a half of the cases, showing that, although prosodic marking of polarity-contrast can be unsystematic in Italian, it is included among the possibilities at play.

The comparison of our data with results from previous research suggests that pragmatic, morpho-syntactic and prosodic factors need to be taken into account for a proper characterization of the marking of polarity contrast in Italian, and of *verum focus* in particular.

The Map Task data from Corpus 1 show that, when a speaker wants to cancel a proposition proposed to the CG by the interlocutor – a corrective contrast -, he makes use of an echo reply much more than in cases when he wants to confirm it (more than 40% of the polarity-switch replies are echoes, against 15% of the polarity-maintenance replies). Lexical markers emphasizing polarity (*assolutamente, proprio*) and marked word orders (left and right dislocation, leaving the verb at the right boundary of the prosodic phrase) are occasionally found, and *verum focus* is found in about 1/3 of the echo replies. In most cases, however, utterances do not exhibit any specific lexical or morpho-syntactic means for marking a contrast in polarity. The use of an echo seems *per se* the main signal of a corrective reply, while confirming replies have a wider range of realization formats.

When the results from the Map Task are further compared with results from the two other tasks used in similar studies (the Finite Story of Dimroth et al., 2010, and the Polarity-switch Dialogues of Turco, 2014), the following pragmatic factors seem to play a role. At the level of information structure and cohesion management, the availability of an alternative information unit to mark shift or maintenance (e.g. topic or frame setters) disfavors the marking of contrast on the polarity, as it is shown by additive and parallel sentences of *Finite Story* narratives and by parallel replies in Polarity-switch Dialogues. A shift (as in correcting and parallel contrast) rather than a maintenance (as in additive and confirming contrast) of polarity favors the marking of polarity contrasts. This is shown both by the comparison of correcting *vs.* confirming replies in the Map Tasks in Corpus 1, and by the parallel vs. additive

sentences in the *Finite Story* narratives. When considering the communicative acts involved and the speakers' interplay, polarity contrast marking and particularly *verum focus* seems to be highly disfavored in monologic narrative (additive and parallel sentences in the Finite Story narratives). On the contrary, *verum focus* appears in dialogues, when the speaker has to contrast his own proposition with a proposition that has been previously added to the CG by an interlocutor (replies in Polarity-switch Dialogues and in Map Tasks). The speaker's and the interlocutor's propositions do not need to be mutually exclusive, as is proved by the parallel contrasts used in the Polarity-switch Dialogues. Map Task data suggest that *verum focus* appears both in confirming and in correcting replies, although it is favored in corrections.

It is worth underlining two further pragmatic properties shared by replies in our Map Task data. The replies concern information that only the speaker has the right to confirm or correct (B-*events*, according to Labov 1972; Heritage 2002). Therefore, the prompts to which the speakers reply are rather meant to check (in either interrogative or declarative form) the interlocutors' previous assumptions. Corrective replies in our Map Tasks are thus counter-presuppositional (Gussenhoven 1983; Krifka 2017), as they cancel previous assumptions tentatively put forward by the interlocutor. Data from Poletto and Zanuttini (2013) suggest that even more explicit polarity-switch devices (*sì/no che*, polarity extraposition constructions) occur in Italian when correcting replies act as counter-assertive, rather than counter-presuppositional assertions (Gussenhoven 1983; Krifka 2017). In these cases, speakers engage in a fight concerning one and the same proposition, whereby both pretend to have direct and primary access to its truth (AB-*events*).

From a prosodic point of view, the data presented in this paper confirm the findings of Turco (2014), indicating that *verum focus* in Italian is an instance of a general strategy of narrowing the focus to some locally relevant information, rather than a specialized prosodic device. This result emerges from the analysis of Corpus 1 summed up above, which indicates that *verum focus* is only one of the possible strategies available to the speaker to highlight polarity in an unconstrained interaction, a fact further confirmed by the analysis of Corpus 2. In fact, the analysis of Corpus 2 shows that, even when prosodic marking is the only option left to the speaker to highlight polarity, *verum focus* does not appear systematically. In these circumstances, Italian speakers may realize a narrow focus on the verb by placing the main prominence on the non-finite rather than the finite form, or they may rely exclusively on the presence of an affirmative/negative particle at the beginning of the sentence, while leaving the contrast on the polarity unmarked. This result supports earlier findings about the instability of polarity marking in

Italian. Polarity is not necessarily marked in Italian and *verum focus*, even under the most favorable conditions, is optional. In addition to this, the analysis of Corpus 1 indicates that *verum focus* readings can also emerge as a result of morpho-syntactic manipulations, such as the use of clitic right dislocation. In this case, the prosodic highlighting of the verb can be seen as an effect of a syntactic operation.

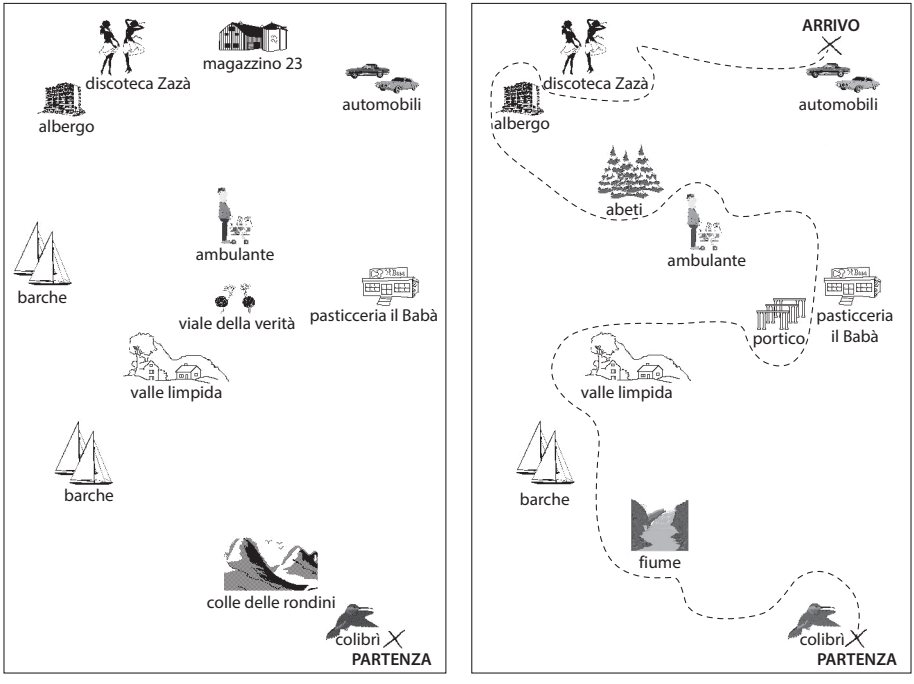
In any event, although prosodic marking of polarity is rather unsystematic in Italian, *verum focus* emerges relatively frequently in Corpus 2. As noticed by Turco (2014) along the lines of Selkirk (1996), monosyllabic and non-phrase final function words do not form prosodic constituents. In this framework, focusing an auxiliary, especially a monosyllabic one, is a strongly marked choice which violates a structural constraint (cf. above, Section 2.3.1). Nevertheless, there is empirical evidence that this option is not completely ruled out in Italian despite its markedness, as proved by the fact that *verum focus* has been reported by Turco (2014) as a possible, though infrequent option. A possible reason for which *verum focus* is comparatively frequent in Corpus 2 may be the type of auxiliary used in the target sentences. All auxiliaries in Corpus 2 are bisyllabic free forms (*hanno*, 'they have'), and therefore qualify as prosodic words (cf. Selkirk 1996; Elordieta 2014). The different prosodic status of monosyllabic and bisyllabic auxiliaries could have favored *verum focus* in the examined contests, since focusing on a bisyllabic function word could represent a less marked choice than focusing on a monosyllabic one.

Finally, a further result which emerges from the analysis of Corpus 2 concerns the discrepancy between positive and negative correcting replies. In this corpus, *verum focus* appears sporadically in positive replies (5/25), whereas it occurs more frequently in negative replies (10/15).[20] Therefore, the question arises as to why narrow focus on the auxiliary seems more acceptable in negative as opposed to positive replies. Let us first point out that these results could be due to the characteristics and the size of the examined sample. With the necessary caution, it can be tentatively hypothesized that *verum focus* in negative correcting replies is favored by the fact that the focused constituent is longer than in positive replies, since it includes a further function word adjacent to the bisyllabic auxiliary, i.e. the negation. Under this hypothesis, which needs to be tested under appropriate conditions in future research, *verum focus* in negative utterances would not be favored by the negation *per se*, but rather by the phonetic length of the focused constituent.

20. Note that *verum focus* in negative replies of Corpus 1 is less frequently marked: negative replies in this case are confirming replies, and disfavors the use of *verum focus*.

Appendix

Follower's and giver's map for the Map Tasks data in Corpus 1.



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The polarity of a sentence is crucial for its meaning. It is thus hardly surprising that languages have developed devices to highlight this meaning component and to contrast statements with negative and positive polarity in discourse. Research on this issue has started from languages like German and Dutch, where prosody and assertive particles are systematically associated with polarity contrast. Recently, the grammatical realization of polarity contrast has been at the center of investigations in a range of other languages as well. Core questions concern the formal repertoire and the exact meaning contribution of the relevant devices, the kind of contrast they evoke, and their relation to information structure and sentence mood. This volume brings together researchers from a theoretical, an empirical, and a typological orientation and enhances our understanding of polarity with the help of in-depth analyses and cross-linguistic comparisons dealing with the syntactic, semantic, pragmatic and/or prosodic aspects of the phenomenon.

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