

**Special Issue: Methodological Issues in  
the Study of Information Structure**

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# Introduction

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Much linguistic data can be better understood once we take into account the information structural properties of linguistic expressions. It is therefore not surprising that information structure has received considerable attention in recent linguistic research (cf. overviews in Breul & Göbbel 2010; Zimmermann & Féry 2010; Krifka & Musan 2012; amongst others). An important advance in the study of information structure lies in the refinement of the descriptive inventory; thus, different levels of information structural partitions have been distinguished: topic vs. comment, focus vs. background, given vs. new (cf. Krifka 2007 for a recent survey). It has been shown that these partitions tend to be relevant for different types of linguistic phenomena. For example, one domain where information status, i.e., the distinction between given and new information, has proven particularly useful is the domain of nominal constituents (pronouns, definite NPs, indefinite NPs, etc.). It has been shown that information status is a good predictor for the occurrence of the various formal types of noun phrases (cf. Prince 1981; Gundel et al. 1993; Ariel 2001, Ariel 2014; Roberts 2003).<sup>1</sup>

The study of information structure, like every other linguistic domain, involves the identification of form-function correlations, such as (*movement to the*) *preverbal position* and *focus*, or *left dislocation* and *topic* (cf. Skopeteas 2012). In order to find a suitable method to investigate the relation between forms and functions, we have to consider at least the following three variables:

- the IS-notions that are involved (e.g., *focus*, *topic*, *givenness*),
- the forms that are involved (e.g., *dislocation*, *clefting*, *prosodic prominence*),
- the type of hypothesis that we want to verify in our research.

The challenge is to identify and apply research methods that are suitable with respect to these three components. In the past decades, a great number of methods and tests have been devised to investigate information structure. Skopeteas (2012) provides a comprehensive overview of empirical research of information structure to date. Our brief outline of different methods is structured according to the type of data used (following Skopeteas 2012), focusing on their merits and problems.

The investigation of *naturalistic data* (mainly corpus data) usually starts from a linguistic form and interprets potential information structural functions that correlate with these forms. Given that determining and annotating information status is, comparatively, easier than identifying pragmatic relations such as *topic* and *focus*, it comes as no surprise that corpus studies have most frequently been used for the investigation of the information status of referents. Theoretical accounts of how the status of discourse referents is expressed in a language are mostly based on empirical

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<sup>1</sup> Other domains where information status is relevant are the linear ordering (cf. Arnold et al. 2000) and the prosodic realization of constituents (cf. Baumann 2006).

studies of naturalistic data (Chafe 1976, 1994; Prince 1981; Gundel et al. 1993; Ariel 2001, 2014).

However, corpus data have also been used for the investigation of linguistic forms related to topic or focus (e.g., syntactic by Herring & Paolillo 1995 for Sinhala and Tamil; prosodic by Hedberg & Sosa 2008 for English; Frascarelli & Hinterhölzl 2007 for German and Italian; Simard 2010 for Jaminjung; El Zarka 2013 for Egyptian Arabic), narrow focus or contrast (Brunetti 2009), and exhaustivity (Wedgwood et al. 2006). Other focus-related phenomena such as the behavior of focus-sensitive particles or theticity have also been investigated in corpus data (Matić 2003). Pešková (this volume) investigates the form of subject NPs in Portefño Spanish in relation to topic and focus.

Naturalistic data is particularly well suited for the falsification of a hypothesis (cf. Skopeteas 2012). If a structure  $S$  can be observed to occur frequently in a context  $C_i$  with a specific interpretation  $I_j$ , we may formulate the hypothesis that structure  $S$  is triggered by the context  $C_i$  and is always associated with the interpretation  $I_j$ . We may even believe that the interpretation  $I_j$  is actually the meaning  $M_k$  of a certain structure  $S$ . Naturalistic data may provide evidence against such hypotheses if it contains instances of the structure  $S$  in a context  $C_i$  that gives rise to an interpretation  $I_l$ , i.e., crucially, it cannot be interpreted as  $I_j$ , let alone denote a meaning  $M_k$ . In principle, a single counterexample to the suggested property is enough to falsify a hypothesis; furthermore, natural language corpora, especially if they are large, have the additional virtue of allowing frequency counts that help establish statistical tendencies of form-function relations. Statistical methods, such as multivariate and mixed-effect linear regression analyses, seem to be particularly promising in determining the effect of certain contextual and other functional factors on the occurrence of a specific linguistic form (cf. Owens et al. 2010).

Of course, corpus studies alone can never be sufficient to produce an exhaustive description of information structural phenomena in a specific language. Especially in understudied languages, i.e., in the overwhelming majority of the world's languages, corpora are simply not large enough to contain all types of structures relevant for the investigation of information structure (cf. Matic, this volume). Consisting of entirely uncontrolled data full of multiply conditioned variation, corpus data alone can also never produce sufficiently reliable analyses that allow us to gain deeper insights into cross-linguistic and possibly universal aspects of the interaction between information structural notions and linguistic forms. As Skopeteas (2012) observes, to prove that a certain linguistic phenomenon is dependent on context, it is not only necessary to know in which contexts the investigated linguistic phenomenon occurs, but also in which contexts it does not occur.

A corpus study may be apt for establishing the context-relatedness of a linguistic form. However, the reverse hypothesis that a certain speaker intention, i.e., a certain context, will regularly trigger the occurrence of a specific linguistic form cannot be proven on the basis of a corpus study (if it can be proven at all: cf. Matic, this volume, on the fallacy of "context-to-intention assumptions" and "intention-to-grammar assumptions"). Thus, analyses based on naturalistic data have to be backed by experimental evidence and speaker intuitions about the grammaticality of a linguistic expression and its appropriateness in a certain context.

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A clear advantage *experimental methods* have over observation in naturalistic discourse is the possibility of controlling for different linguistic and extra-linguistic factors. A common type of experiment in information structure research is the production experiment, in which linguistic utterances are elicited in a given context. This can be done either using a linguistic context such as questions eliciting an appropriate answer on the assumption of question-answer-congruence, forced-choice experiments and sentence-completion tasks, or, alternatively, using non-linguistic context provided by visual stimuli (cf. van der Wal, this volume; Uth, this volume). Many experimental studies today utilize such visual stimuli, whether pictures or films, to elicit linguistic data given a specific context. *The Questionnaire on Information Structure* (QUIS) (Skopeteas et al. 2006) is a comprehensive collection of experimental tasks based on visual stimuli. It was designed within the Collaborative Research Center (SFB 632) *Information Structure* and has since then been applied for the investigation of information structure in a large number of languages, both within and outside the project.

Within QUIS, different types of visual stimuli are used for different types of tasks, and different tasks have different virtues and drawbacks with respect to the investigation of information structure. For example, films and picture books can be used to elicit longer coherent narratives that have the advantage of exhibiting somewhat more natural speech. In fact, many corpora of spoken language in language documentation contain this type of data, which may thus be characterized as an intermediate type between naturalistic and experimental data (cf. Lee, this volume). Elicited narratives also share with the former the drawback of including multiply conditioned variation. However, the fact that the same story is usually elicited from several speakers at least provides a better basis for detecting form-context correspondences than completely heterogeneous spontaneous speech.

A well-known example of a video stimulus is Chafe's *pear story* (Chafe 1980), while another frequently used method to elicit narratives makes use of the picture books of the Frog stories series (e.g., Mayer 1969). Narratives have been widely used to study referential expressions (cf. Lee, this volume, for an overview). Map-tasks are successfully used to elicit dialogic data, providing a rich source for the study of givenness, focus and contrast, and especially corrections.

More effective control of different factors can be gained by a constrained experimental design using only single pictures combined with a question or a sequence of a small number of pictures that provide similar or almost identical data across speakers (cf. Gabriel 2007, 2010; Uth, this volume). As in question-answer pairs, the utterances are usually very short and are supposed to encode a specific information structural category such as information status, contrastive topic, or contrastive focus. They are also used to test the influence of other factors on information structure such as animacy, semantic role, or transitivity.

Like naturalistic data, experimental production data has also been very frequently used for the investigation of information status. Numerous linguistic and psycholinguistic studies have investigated the effect of givenness on deaccenting (cf. Cruttenden 2006 for a recent comparative study on deaccenting of given items in a number of languages). Experiments by Swerts et al. (2002) and Hellmuth (2005) provide evidence for the hypothesis that deaccentuation is especially common in West-Germanic

languages (Ladd 1996), while in Italian (Swerts et al. 2002) and Egyptian Arabic (Hellmuth 2005) given referents are usually accented.

There are, however, certain caveats with experimental designs. One is that you might not always get what you are looking for. For example, it is very difficult to elicit event-reporting (thetic) sentences using visual stimuli. There is, in fact, no guarantee that a speaker will not treat the “new” referent as a topic and hence will not interpret the depicted scene in the expected way (cf. Van der Wal, this volume). Similarly, Uth (this volume) discusses whether the experimental setup used in Gabriel (2007, 2010; and also in Heidinger 2014) elicits “pure” information focus and not epistemic-evidential marking.

A second problem is that in an experiment, the presence of the experimenter has an enormous influence on what is assumed to be in the common ground between speaker and hearer. Thus, the experimenter, being a possible addressee of a participant’s utterance, may be assumed to be aware of a newly introduced referent on a picture, and thus the referent may be treated as given (cf. Lee, this volume).

Another issue related to experimental design is the socio-cultural appropriateness of visual stimuli, if one and the same set is used across languages. Thus, it will often be necessary to adapt visual stimuli to the target culture.

Furthermore, it is not easy to control for all different factors in an experiment. In the above mentioned study, Hellmuth (2005) comes to the conclusion that speakers of Egyptian Arabic deaccent neither given elements within a phrase nor given phrases in a sentence. However, El Zarka (2013) shows that in Egyptian Arabic given information is clearly downgraded (pronounced in an “attenuated manner,” Chafe 1976) or even deaccented, if it is part of the presupposition of a sentence. She argues that the given referents in the game used by Hellmuth (2005) are always part of the focus and are presumably regularly accented for this reason. Thus, we are well-advised not to take the results of a particular experiment at face value without considering the possibility that other factors may have influenced the results of our experiment (in the present case the [+/-focus]).

A general drawback of experiments is that the language produced in experimental settings is mostly less “natural” than in recordings of spontaneous speech and can at best be called semi-spontaneous. More often than not, elicited utterances are not what can be heard in natural discourse. To test certain hypotheses, speakers have to obey certain instructions, as e.g., “Please answer using a whole sentence,” when the most natural reply to a question would be a one-word statement. Again, the presence of the experimenter as well as the whole setting may influence the spontaneity of the utterances and the naturalness of speech. This is especially problematic in the study of prosody. In the QUIS corpus elicited for Egyptian Arabic, for example, there is an overly high proportion of high rising contours for declarative sentences. Taken at face value without resorting to natural discourse it might be assumed that Egyptian Arabic usually has high rising declarative intonation as has been attested for a number of Urban Northern dialects in the British Isles (Jarman & Cruttenden 1976; Cruttenden 1981). As it seems, this over-proportionate use of this specific intonation contour, which may be interpreted as cautious and unconfident, can be ascribed to the fact that young Egyptians were interviewed by a white European female academic who was not only more advanced in



age, but probably also perceived as superior in social status. Thus, it would be misguided to conclude that new information or focus is encoded by a high rise in Egyptian Arabic.

Evidence from naturalistic discourse or production experiments has to be complemented by another type of evidence that is not provided by inductive reasoning. Such evidence is based on the intuition of native speakers concerning the grammaticality, acceptability, and appropriateness of a certain linguistic structure in a given context. *Speaker intuition* provides the only possibility of gaining negative evidence, which obviously cannot be encountered in naturalistic and experimental production data (Himmelmann 2006). Although a negative judgment about context felicity is apt for verifying a negative hypothesis, there is again a problem involved with this method. A speaker's intuition is not necessarily reliable, even in grammaticality judgments, and even more so in the case of context felicity, which is more difficult to assess. Thus, it is also a question of how "good" the intuitions of a certain speaker are and how many congruent judgments of different speakers we can get (cf. Adli 2004, 2011 on how to collect reliable judgments in an experimental setting). In linguistic research, there are basically two ways of collecting data on speaker intuitions: to work with individual speakers or language assistants, which is common practice in fieldwork, or to collect a large number of judgments on the researched phenomena. This can be done using questionnaires containing the structures that have to be evaluated or by perception experiments. Given that speaker intuitions are not necessarily reliable, fieldwork data of understudied languages, especially with a very small number of speakers, are particularly problematic (cf. Matić, this volume). If a large number of speakers is available in a language community, it is possible to collect speaker judgments on a large scale in an experimental format or with questionnaires.

The six contributions to this special issue of *Grazer Linguistische Studien* discuss relevant issues, open questions, and the advantages and drawbacks of the various methodological options in the study of information structure. The volume is the outcome of a workshop which took place in Graz, Austria, on the 24<sup>th</sup> and 25<sup>th</sup> of May 2013.<sup>2</sup>

Choonkyu Lee's article ("Using picture sequences to study referential accessibility") is concerned with the use of visual stimuli in the investigation of various accessibility factors influencing referential choices. After reviewing some of the well-studied factors that influence the accessibility of referents depending on the preceding text, conceptual knowledge, or perceptual availability, the author turns to the less extensively studied domain of situational dimensions of the discourse content (topic time, space, and overall theme). The paper presents a review of previous studies of content dimensions and their influence on a reader's perception of story continuity and referential choice. He also discusses some widely used narrative elicitation methods such as films and picture books and comments on their virtues and drawbacks. He specifically points out the influence of the experimental setting and the presence of an experimenter on the naturalness of production data.

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<sup>2</sup> The workshop was organized with the support of the *Vice Rectorate for Research and Junior Researchers' Promotion*, University of Graz and was part of the Habilitationsforum *Diskurse und Episteme*.

Dejan Matić (“Textual clues for information structure categories”) discusses the problem of identifying information structure categories in the corpora of lesser known languages. He is predominantly concerned with two methodological choices that can be applied in fieldwork on endangered languages, naturalistic corpus data and elicitation with individual speakers of the language. In line with Matić & Wedgwood (2013), he specifically argues against the assumption of universal grammatical categories of information structure whose correlates have to be found in every language. He argues that the two types of methods in information structure research, distributional and contextual methods, i.e., tests and interpretation of utterances in context, are not sufficient to establish information structure categories in any language. This general problem is aggravated in the study of lesser known languages with a small number of speakers. To support his argumentation, Matić discusses two case studies from his own fieldwork.

Andrea Pešková’s article (“Information structure and the use of pronominal subjects in Spanish”) deals with the use of overt pronominal subjects (PS) in Porteño Spanish (a variety of Spanish spoken in the Buenos Aires area). Based on spoken language data, she analyzes the impact that different discourse functions have on the overt realization of pronominal subjects in this variety of Spanish. She proposes an inventory of five different discourse functions of pronominal subjects in Porteño Spanish. In line with the general topic of this special issue, the author puts special emphasis on the methodological challenges in determining these discourse functions in spoken language data. Hence, the author not only presents an analysis of pronominal subjects (in spoken language data) in terms of discourse functions, but also depicts in detail the methodological challenges and choices that underlie the analysis.

The starting point of Maja Stegenwallner-Schütz and Flavia Adani’s article (“How can the study of developmental disorders inform linguistic theory about information structure?”) is the assumption that *specific language impairment* (SLI) and *autism spectrum disorder* (ASD) manifest themselves in different linguistic components: while SLI affects grammatical abilities, ASD affects pragmatic abilities. In the study of IS-related phenomena, the question often arises as to whether they are grammatical or pragmatic. According to the above assumption, the linguistic behavior of speakers with SLI or ASD might be instructive in this respect: phenomena which cause problems for speakers with SLI are part of grammar proper, while phenomena which cause problems for speakers with ASD are part of pragmatics. The goal of Stegenwallner-Schütz and Adani’s paper is to verify (based on a detailed survey of the relevant literature) how the two disorders manifest themselves with respect to context effects on sentence interpretation and referential choices, and to determine how instructive the two disorders are with respect to the grammar-pragmatics divide.

Melanie Uth (“Spanish preverbal subjects in contexts of narrow information focus: Non-contrastive focalization or epistemic-evidential marking?”) provides a detailed examination of one specific method for the elicitation of narrow information focus used in Gabriel (2007, 2010): a semi-spontaneous elicitation experiment in which participants have to answer *wh*-questions related to a visual stimulus. The author is concerned with the question of whether the experimental set up used by Gabriel (2007, 2010) guarantees a setting in which information focus and not epistemic-evidential marking is elicited. The

author first discusses those aspects of Gabriel's original experimental design that she assumes to be problematic with respect to the elicitation of "pure" information focus. In a second step she presents a modified version of Gabriel's experimental design and the results of her own experiments in which she applied this modified design.

Jenneke van der Wal ("Tests for focus") presents an overview of different tests that are used to identify the focus of a sentence, its scope, and its semantic/pragmatic interpretation. Van der Wal gives examples from a wide variety of languages for formal strategies of focus encoding. Besides the well-known strategy of posing questions to control for the focus in the congruent answer, the paper reviews a fair number of tests using co-text for focus identification, mostly additions to the sentence containing the focus that are assumed to refer back to the focus part, such as "(and) not Y," contradictions to an incorrect statement, or conjunctions with "and/but also..." These strategies are well-suited to identify the scope of a contrastive focus in the sense of Dik (1981). The paper is also concerned with quantifiers and particles, irrespective of whether they are dedicated focus markers or only typically associated with a focus, such as 'only' and 'even'. The final section is devoted to stimuli used for the elicitation of utterances expressing different types of focus.

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# Using picture sequences to study referential accessibility

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**Abstract.** Discourse researchers have studied various accessibility factors arising from linguistic context, and psycholinguists have recently begun to discuss the role of competition between potential referents in the visual scene even without explicit linguistic mention. Dimensions of discourse content such as story time and space, however, still have not been investigated thoroughly. In this paper, I discuss some methodological possibilities and considerations for investigating various accessibility factors including content dimensions, with a focus on wordless image stimuli. A narrator's mental representation of the structure of story content – such as story time and space – is one of the determinants of the narrator's use of different types of referring expressions in organizing narrative discourse effectively.

**Keywords.** Referential accessibility; Narrative discourse; Situational content; Image stimuli; Methodology

## 1. Introduction

When referring back to a character that has already been introduced earlier in narrative discourse, the speaker has several options in choosing the type of referring expression, including a repeated name (e.g., Billy), a definite description (the boy), and a pronoun (he). Researchers have noted that this referential choice by the speaker is sensitive to various factors of referential accessibility (e.g., Ariel 2001). Explicit references such as repeated proper names (as rigid designators) are associated with discourse entities that are low in accessibility in working memory, and impoverished forms such as pronouns (which only indicate grammatical gender and/or number) are associated with discourse entities that are high in accessibility, while definite descriptions, which have more explicit content (such as a role label) than pronouns but are at the same time anaphors usually requiring an explicit linguistic antecedent, lie in the middle of the accessibility hierarchy.

Many determinants of accessibility have to do with the nature of the preceding linguistic context. For example, referential distance (e.g., Givón 1992) is defined in terms of the number of intervening clauses between an antecedent and an anaphor; that is, the longer the intervening linguistic material, the lower the accessibility of the target discourse entity to be re-mentioned. Givón (1992) provided summary statistics based on existing text across languages to demonstrate the relationship.

Centering, defined in terms of the topicality of the preceding clause (e.g., Brennan 1995), is also associated with the likelihood of a pronominal anaphor. Brennan (1995) provided a review of comprehension studies showing a processing advantage for

pronouns referring back to the center, compared to other referential types, which incurred a processing cost. She also provided new production data to demonstrate the impact of the information structure in an immediately preceding clause on the referential choice for the anaphor in the next clause. (It is important to note that the target content in her production study was a videotaped basketball game, which is a continuous event throughout with no temporal gaps and only minor spatial shifts.)

Further, the presence of other discourse entities that were mentioned explicitly in preceding discourse creates referential competition (e.g., Arnold and Griffin 2007). In Arnold and Griffin's (2007) storytelling task in which participants described a pair of scenes, participants were less likely to use a pronoun to refer back to a character in the second scene after having mentioned another character in the first scene, even though there was a gender mismatch between the two characters and thus no potential referential ambiguity with a pronoun.

Each of these accessibility factors that depend on the preceding linguistic context has received empirical support and seems to play a partial role in a narrator's referential choice and a listener/reader's coreference resolution. There are, however, factors that go beyond linguistic text, such as perceptual availability giving rise to referential competition (Fukumura et al. 2010); conceptual knowledge allowing bridging inferences without an explicit antecedent (Haviland and Clark 1974); and mental representations allowing 'conceptual anaphors' with mismatching grammatical features (Gernsbacher 1991). Furthermore, there is another class of factors to consider in referential choice, namely, situational dimensions of the discourse content, such as topic time, space, and overall theme, whose influence on referential choice has been understudied.

In Section 2, I review previous studies demonstrating the impact of content dimensions on a reader's perception of story continuity as well as a narrator's referential choice. In Section 3, I discuss some widely used narrative elicitation methods with regard to their advantages and disadvantages for investigating referential choice and information structure. I make concluding remarks in Section 4.

## 2. Narrative content dimensions

In narrative discourse, there are two levels of structural dimensions. One has to do with the text, i.e., the discourse topic time, space, and individuals that are indicated explicitly in the discourse. The other has to do with the target story content, with its own story time, space, and protagonists, among others. For example, there may be a long temporal gap or spatial shift from one scene/point in a story to the next, which a narrator may or may not choose to indicate as such in discourse structure. A particular narrator's linguistic representation of story content is only a limited one, but given a reasonably faithful representation, the listener/reader can use the linguistic markers of discourse topic time, space, and individuals to build a situation model of the target content, namely, the story world (e.g., Grimes 1975, Vonk et al. 1992).

One of the earliest studies pointing to the importance of the structure of the situational content on a narrator's referential choice is Clancy's (1980) study of narrative discourse in English and Japanese. She used Chafe's (1980a) "pear film" to elicit narratives, and described the impact of episodic boundaries on narrative organization



(further discussed in Section 3). She found narrators' tendency to mark shifts in topic space, perspective, or episode by nominal reference, rather than pronominal anaphora, in referring back to characters. Chafe (1980b) also noted that the cognitive difficulty in resetting the orientation of a narrative may depend on multiple factors of situational content – e.g., space, time, and people – although he did not link it directly to referential choice.

Besides global narrative coherence in terms of overall thematic continuity, the sub-dimensions of time, space, causality, and intentionality make independent contributions to a reader's perception of story content continuity (Magliano et al. 1999). Magliano et al. (1999) reported online sentence fit judgments ('How well does the sentence fit into the context of the story?') and story reading speed data from story reading experiments which suggested that participants kept track of discontinuities along temporal, spatial, causal, and intentional dimensions separately in updating their situation model.

From the narrator's perspective, the structure of the story content dimensions – e.g., how much time passed from one scene to the next in the target content – should be taken into account in organizing her/his narrative in order for the communication to be effective. Anderson et al. (1983) conducted a passage continuation experiment and found that the duration of a temporal gap in the story timeline as indicated by a temporal adverbial (ten minutes later / seven hours later) influenced the likelihood of mention of minor characters. In other words, for characters that are not of primary importance in the story plot, the narrator is likely not even to mention them when asked to continue the story after a long time shift in story time that goes beyond the typical duration of the topic event, whereas the same characters are more likely to be mentioned after a shorter interval in story time. Also in Natural Language Generation, McCoy and Strube (1999) tested their intuition that topic time in discourse serves as a discourse structuring device for application to automatic reference generation. In their reference generation algorithm for deciding between a pronoun and a definite description, they included a binary 'time change' parameter (whether there is a time shift or not in the discourse topic time) in addition to other factors such as referential distance and referential competition. Using references to persons in three New York Times articles as the gold standard, they found that using just the time change parameter led to 72.5% accuracy in producing the correct forms of referring expressions (where chance-level accuracy is 50% because they tested for two types of referring expressions, pronouns vs. definite descriptions). Comparing (a) a model which includes all their parameters except time change to (b) another model which includes all parameters as a minimal pair, they also observed performance improvement from (a) 78.5% to (b) 84.7%. In sum, representing a change in discourse topic time as a model parameter can help generate a naturalistic referring expression in re-mentioning a discourse entity.

Vonk et al. (1992) conducted an original production study on referential choice in relation to narrative content continuity. In a passage continuation task in Dutch in which participants had to write a sentence with a particular feeder word for a discourse referent, pronominal feeders led to more thematically continuous sentences than thematically discontinuous ones (as judged by independent judges with the referring expressions omitted). 'Full NP' feeders (proper names and definite descriptions) led to the opposite pattern, with more thematically discontinuous sentences. To complement the sentence

continuation data, Vonk et al. (1992) also conducted a self-paced reading experiment with a secondary probe recognition task, and found that readers were slower in recognizing a full NP anaphor in a probe (which was over-specific for the single protagonist in each text) than a pronominal anaphor. The authors argued, based on these findings, that the type of an anaphoric referring expression is tightly linked to a narrator's subsequent narrative planning, and to a reader's perception of thematic continuity. In addition to these production and processing experiments in which the type of a referring expression was determined by the researcher and presented to the participant, Vonk et al. (1992) conducted an elicitation task using cartoon strips with no verbal descriptions, which is reviewed in the next section.<sup>1</sup>

### 3. Elicitation methodology

Various kinds of visual stimuli without verbal descriptions have been used in linguistic research to elicit narratives. Some of the pioneering studies used a silent film (e.g., the pear film, Chafe 1980a) or a wordless picture book (e.g., Mayer's [1969] Frog story; see Bamberg 1985; Berman and Slobin 1994). Researchers have continued to use these stimuli extensively across many different cultures (e.g., Erbaugh 2001; Strömquist and Verhoeven 2004; MacWhinney 2000) to study a wide range of topics, ranging from sociolinguistics to acquisition. Silent films and picture books with no verbal descriptions are excellent material for eliciting narratives to study discourse processes, including the dynamics of accessibility of discourse referents, because they have a coherent storyline and a global thematic structure, as well as varying degrees of continuity/discontinuity between scene transitions at a local level. Adult participants, in particular, readily treat the picture sequences as parts of a coherent whole, providing a narrative with transitional phrases (*The next morning...*) rather than a set of disconnected scene descriptions.

#### 3.1. Silent films

In early work in this direction, Clancy (1980) used the 'pear film' to study narrators' referential choice in 20 English and 20 Japanese narratives, in relation to the amount of intervening linguistic text and referential interference from other discourse referents between an antecedent and an anaphor. In addition to the impact of intervening material between an antecedent and an anaphor, Clancy (1980) noted 'unusual' shifts from inexplicit to explicit forms of reference within very short intervals that could not be explained by referential ambiguity (examples in Clancy [1980: 171-173]). She observed that these shifts to nominal references followed an 'episode boundary' where a slight thematic change occurs in the narrative, and argued that these shifts may be either a narrative device to signal narrative structure to the audience or a reflection of the narrator's own mental representation, in which an episode boundary has deactivated discourse referents from the previous episode (see also Bestgen 1998).

<sup>1</sup> Chafe (1980b), Ariel (2001), and Landragin (2007) are excellent reviews of additional factors in information structure and accessibility including phonology, perception, speech/dialog processes, and the amount of descriptive content in the referring expression, although they make little or no mention of the impact of content structure on referential choice.

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Clancy (1980) also made some important observations that have methodological implications, in her discussion of character introductions in the opening scene. She noted that a few Japanese narrators used zero anaphora from the very beginning in introducing the pear man in the film (or, “simply plunged into the narrative without actually introducing the pear man” [Clancy 1980: 145]) based on their assumption that the interviewer must already be familiar with the story. Moreover, Clancy (1980) described narrators’ shifts in perspective between the story world and the ‘real world,’ in which narrators made evaluative remarks about the content or quality of the movie as reflections to themselves or to the interviewer. What this suggests is that, for any investigation of a linguistic phenomenon that is sensitive to the common ground between interlocutors, the physical presence of an experienced researcher may have undesirable consequences and should be considered carefully, even if the task is a largely one-sided task with little verbal communication. Unless the goal of the study is specifically to address this mode of narration, with shifts in the target audience or perspective and in the presence of an experienced audience, unnecessary personal monitoring can be avoided in the task design. For dialog studies in which personal interaction is a prerequisite, it makes sense to have at least a confederate or another participant as a partner, and for monologic narrative tasks, it is reasonable to use a confederate as the audience or just remove the physical audience component altogether by letting the narrator imagine an audience. These alternatives address the need of making the narrative task pragmatically reasonable for the research objectives. If the task design in Clancy (1980) is adopted, however, it is important to keep in mind that discourse-given/new status is often established separately in different worlds or perspectives (Clancy 1980).

Another important insight in Clancy’s (1980) discussion as well as other accounts of accessibility (e.g., Ariel 1990; Gundel et al. 1993) is that discourse-given/new status is gradient and dynamically changing, with old information becoming newer over time under working memory constraints and with referential competition from other discourse referents. Clancy (1980) proposed that more than a single mention may be required to introduce a character and establish it as old information, especially in languages like Japanese where zero anaphora is a major option for inexplicit reference but may be too inexplicit early on for a newly introduced character.<sup>2</sup>

### 3.2. Picture books and strip cartoons

Vonk et al. (1992) studied the impact of thematic continuity in a story on referential choice, using wordless comic strips to create experimental conditions of thematic continuity vs. thematic shift without verbal intervention. There were two versions of six strip cartoons, each with three or four pictures. One version had thematic continuity, and the other had a thematic shift in the final picture (as confirmed in pre-test rating data). The authors asked 30 native speakers of Dutch to write a coherent story for the pictures, and found a tendency (approaching significance) toward pronouns in thematic continuity versions and more balanced proportions of nominal references and pronouns after a

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<sup>2</sup> See Clancy (1980) for discussion of important crosslinguistic findings in English and Japanese. For example, English pronouns, as the main option for ‘inexplicit reference,’ pattern more similarly to Japanese zero anaphora than English ellipses do.

thematic shift. When two independent judges read these written narratives and judged the thematic continuity/shift at the critical sentence, those with a pronoun in the critical sentence led to significantly higher responses of ‘thematic continuity’ (81%) compared to those with an explicit nominal reference (19%) (Table 6, Vonk et al. 1992: 314).<sup>3</sup>

As mentioned above, Mayer’s (1969) Frog story and other wordless picture books in the series are also excellent material for studying referential choice in narrative discourse (see Berman and Slobin 1994; Strömqvist and Verhoeven 2004). Although there is little discussion of referential choice in Berman and Slobin’s (1994) volume, there is more discussion in Strömqvist and Verhoeven’s (2004). In particular, Hickmann (2004) discussed the relationship between content structure and information structure as reflected in the use of discourse markers and accessibility markers from a developmental perspective. We have also used Mayer’s wordless picture books in our recent work on the impact of content dimensions on referential choice (e.g., Lee 2012). Some of the most useful characteristics of Mayer’s picture books for studying the impact of content dimensions include the wide range of variation in content dimensions (e.g., short vs. long temporal intervals, and smooth vs. abrupt spatial shifts between consecutive scenes in the story) and the presence of multiple characters in most of the scenes, including a boy, his family, and his somewhat anthropomorphic pets, which often elicit personal pronouns in narratives. While these picture books may look too childish for adult participants, it is important to note that it is the target audience which is expected to be young children, and not necessarily the narrators (see Marchman 1989 for a cross-sectional developmental comparison including an adult group). In fact, this is an additional reason why it is undesirable to have an experienced researcher with the narrator during in an elicitation session. Ideally, it would be more naturalistic to have a child audience during the session, or one can have the narrator produce her/his narrative with a target audience of young children in mind (Lee 2012).

### 3.3. Other materials

The decisions regarding elicitation methodology would, of course, depend on the research questions one wants to address. Although some researchers are only interested in dialog processes, discourse without real-time personal interaction constitutes a large part of our linguistic activities as well. For discourse, some are more interested in written text, others in oral narrative, and others in cross-modal comparison. For example, in a study of speech processes related to the discourse-given/new distinction, Bard et al. (2000) analyzed dialog during a collaborative navigation task with maps containing differing landmarks between the interlocutors (see also Wilkins 1993).

Further useful visual stimuli for elicitation can be found on the Story-builder website (Sardinha 2011) and the L&C Field Manuals and Stimulus Materials website (login required; e.g., Kita’s [1995] animation).

<sup>3</sup> Arnold and Griffin (2007), Fukumura et al. (2010), and Serratrice (2013) also used picture sequences of cartoon characters and toy figures to study the production of referring expressions in a similar passage continuation task, although the independent variables of interest in these studies were referential competition, grammatical number, or animacy, rather than continuity in content dimensions.

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## 4. Conclusion

In this paper, I have reviewed some elicitation studies with only nonverbal stimuli that address narrators' referential choice, and pointed out some important findings, caveats for data interpretation, and methodological considerations.

In investigating the impact of a single content dimension separately from other possible confounds (e.g., teasing story time apart from space, protagonist, etc.), it would be ideal to manipulate each dimension while holding all others constant for experimental control. This would necessitate customized illustrations rather than naturally existing picture books, but this is reasonable for the story time dimension, which can be controlled more precisely with explicit visual signals of time such as a clock. For the dimension of space, however, it is physically impossible to manipulate just space while holding all other dimensions constant, so there are limitations to this alternative.

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# Textual clues for information structure categories<sup>1</sup>

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**Abstract.** This paper tackles the problem of identifying information structure (IS) categories in the corpora of lesser known languages. The difficulties boil down to the impossibility of directly observing speaker intentions. To circumvent this problem, linguists tend to resort to distributional data and IS tests. It is shown that these kinds of data are problematic as category-defining devices for a number of deeper, more theoretical reasons. First, they presuppose a direct context-meaning connection, i.e. they work only under the unwarranted hypothesis that a certain type of context automatically triggers a certain type of speaker intention. The second issue has to do with the tacit universality assumption of distributional tests. If languages regularly display a certain structure in a certain diagnostic context, it is assumed that this structure must have a certain predefined meaning (focus, topic, contrast, etc.). It is shown that these assumptions are erroneous. Finally, the mechanic application of tests underrates the role pragmatics plays in the interpretation and production of utterances: meanings are often underspecified and can be derived from quite distinct source denotations. These theoretical points will be illustrated in this paper by a short analysis of two constructions from Even and Tundra Yukaghir (both spoken in north-eastern Siberia), the negative tag structure in Even and the focal Yukaghir clitic *mə(r)=*, which pass all IS tests but can nevertheless be shown to have denotations quite distinct from the European IS categories. The conclusion to be drawn from these and other practical and theoretical qualms is that distributional data and IS tests are not the method with which to establish a category of information structure. However, they can be helpful in conducting linguistic analysis, but in a different capacity: as a heuristic designed to help uncover potential categories in an otherwise little known language, not as criterial tests to define necessary and sufficient conditions for a category.

**Keywords.** Information structure; Focus tests; Universality of categories

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## 1. Introduction

This paper tackles the problem of identifying information structure (IS) categories in the corpora of lesser known languages. The difficulties are in part similar to those occurring with the corpora of national languages with large numbers of speakers, and boil down to the impossibility of directly observing speaker intentions. Lesser known languages, however, pose additional problems: the corpora are much smaller in size and therefore less apt to generate plausible hypotheses, the analysing linguist's general fluency in the language is usually lower, and native speakers of the language are often not immediately available as a source of explanatory intuitions. One of the purposes of the paper is to show how the limitations of the corpora of lesser known languages can be circumvented. The common method to do so is similar to the one applied in better known national languages. Field linguists tend to resort to three types of indicators of IS: distributional data, contextual cues, and information structure tests. I aim to demonstrate that this methodology is based on unwarranted assumptions about the relationship between context and meaning and is therefore invalid as a means of proving the status of IS categories in any given language (see also Matic 2009, Matic & Wedgwood 2013). This is exemplified with the analysis of two apparent IS phenomena in two indigenous languages of Siberia, the negative tag construction in Even and the particle *mə(r)=* in Tundra Yukaghir. The paper ends with some suggestions on how the methodological deficiencies of the current IS tests can be improved. I conclude with the observation that these deficiencies reveal not only flaws in the linguistic method, but also urge us to re-think the way we theorize about IS across languages.

## 2. Problems and solutions in determining IS categories

### 2.1. Methodology

The major issue in determining IS is its dependency on speaker intentions (e.g. Cohen et al. 1990, Asher & Lascarides 1994, Roberts 2012). To treat an element in an utterance as a topic or focus, to present it as contrastive, to presuppose a proposition or assert it: these are all acts that speakers perform in order to express a certain type of communicative intention (see especially Keijsper 1985 and Matic 2003 on IS as an intention-driven aspect of language). The corollary of this is that the IS of any particular utterance is, strictly speaking, inscrutable for the analysing linguist: speaker intentions are private and there is no way to directly read them off any given utterance. Of course, it is possible to make more or less plausible guesses on the underlying speaker intentions. As a matter of fact, this permanent hypothesizing on speaker intentions is the method that enables communication in the first place: according to the standard Gricean model (Grice 1975) as well as other competing models (e.g. Sperber & Wilson 1986), utterances merely provide clues for speaker intentions, while the real interpretive work consists of drawing inferences on the basis of these clues. This is also the way linguists draw conclusions on IS. On the basis of our intuitions, we hypothesize that a certain

structure is conventionally connected to a certain IS configuration because we assume that this structure is used under contextual conditions which correspond to speaker intentions that are best revealed by the given IS configuration. For instance, we conventionally take it that a cleft sentence such as *It was JOHN that drank the milk* has a narrow focus on 'John' because it is felicitously used when the speaker intends to establish the identity of the person that drank the milk.

There are two interconnected preconditions for this method of learned guesses derived from intuitions on speaker intentions to work. First, the linguist must have the necessary intuitions herself, or at least an access to the intuitions of those who have them. Second, it must be possible to establish the regularity of the connection between a speaker intention, an IS configuration, and a linguistic structure. Neither of these two preconditions is met when the object of investigation is lesser known languages and the major source is field data.

First, it is almost universally the case that field linguists do not and cannot acquire sufficient knowledge of the language and culture they investigate to form extensive linguistic and cultural intuitions which would help them to form plausible hypotheses about speaker intentions. Fieldworkers always remain linguistic and social outsiders in the communities in which they work (Duranti 1997: 91ff., Crowley & Thieberger 2007: 56; see also Quine's theses on the indeterminacy of translation for a philosophical view on this, Quine 1969). Native speakers on whose intuitions one could rely are more often than not impossible to access, sometimes (especially in the era of massive disappearance of languages) simply non-existent. Even in those cases in which it is possible to entertain frequent consultations with the linguistic community, it is an extremely demanding task to try and elicit subtle judgments about intentionality. It is hard enough to elicit intuitions on IS from linguistics undergraduates; it is virtually impossible to do so with naive native speakers of lesser known languages.

Second, the corpora of these languages are usually neither big nor varied enough to allow for broad generalisations on the elusive phenomenon of IS. There is no relevant statistics available, but on the basis of my own fieldwork and that conducted by my colleagues, I take it that the maximal size of a corpus does not exceed 200,000 words and is actually usually much smaller. Odds are that less frequent IS configurations will be found very rarely in such a corpus, or not at all. Furthermore, a superficial look at the currently largest collections of corpora (DobeS and HRELP-ELAR) reveals that most, though not all, corpora consist entirely or dominantly of narrative monologic texts. This is quite unfortunate for the investigation of IS, since both speakers' intentions and IS categories are less readily observable in monologues than in conversations, where the interactive nature of the recorded communication makes it much easier to infer the underlying intentional structure. An IS-specific problem is that the major diagnostic context for IS categories, question-answer pairs, is often all but fully absent from non-dialogic texts.

Some of these obstacles can be circumvented. For instance, one can plan the composition of one's corpus more carefully and attempt to include as many conversational texts as possible. If this is not possible, one can test the generalisation derived from the few instances of relevant utterances against the whole corpus. For instance, if a certain structure regularly appears in all (rare) question-answer pairs, its

focus-denoting properties can be checked against all the instances of the given construction in the corpus. Other solutions are also conceivable. However, this does not solve the basic problem of diagnosing IS categories, the general imperviousness of speaker intentions, which is aggravated by our lack of intuitions on lesser known languages. In order to resolve this problem, linguists (dealing both with better and lesser known languages) resort to three methods of determining IS: (a) distributional data, (b) contextual cues, and (c) IS tests.

Distributional data pertain to the compatibility or incompatibility of certain formal features with other formal features. The logic of this method is roughly as follows: if feature A is not compatible with feature B, and feature B has certain IS properties, then it can be assumed that A also has some IS properties which are excluded by those of B. For instance, if a certain morpheme is not combinable with nominal focus markers, the standard conclusion is that it is a verb focus maker (see Section 3.2 for a detailed discussion of one such case).

In addition to distributional data, there is one widely used method, that of reconstructing speaker intentions on the basis of contextual cues, be it via formalised IS tests or through the interpretation of utterances in natural discourse. The latter type of contextual determination of IS functions is remarkably similar to IS tests (see below): an utterance is interpreted as reflecting an intention (e.g. to correct an assumption on the part of the hearer), and this intention is then mapped onto one of the existing IS categories. For instance, the utterance *No, it wasn't Tim – JOHN opened the door* is understood as an expression of a corrective speaker intention; this intention is then mapped onto the category 'narrow focus on subject', and it is assumed that nuclear stress on the subject in English corresponds to this IS category.

IS tests are thus merely a subtype of the method relying on contextual cues, since tests are as a rule based on idealised context types. Thus, the most prominent of all IS tests, the question-answer test with constituent questions (Kasimir 2005), can be represented as the minimal common denominator of all types of contexts in which the assertion consists in identifying an element of a proposition. The sequence *Who opened the door? – JOHN opened the door* subsumes all contexts in which the point of the assertion is to identify the variable in the open proposition 'X opened the door', which is assumed to correspond to the category of narrow focus on the variable. In natural discourse, the context for this can be, for instance, correction (*No, it wasn't Tim – JOHN opened the door*), or addition (*Everybody was opening doors and windows, so JOHN opened the door, too*), or other types of contexts. All these types are ideally represented by the question-answer pair. This means that methods (b) and (c) amount to the same, since they are both dependent on preceding and following text (plus extralinguistic situation and world knowledge) to determine the IS of an utterance.

Let us summarise: confronted with the impossibility of reading speaker intentions directly off utterances, linguists resort to two types of methods, distributional and contextual methods; the latter come in two forms, controlled IS tests and interpretation of utterances in context.

## 2.2. Underlying assumptions and fallacies

The methods of uncovering IS and its grammatical expression in lesser known languages described in the previous section are based on a number of assumptions about the relationship between grammar and meaning and between meaning and context. These beliefs are usually not explicitly justified or they are simply taken for granted and left unexpressed: IS research is mostly based on a set of tacit assumptions (Matić 2009, Matić & Wedgwood 2013). In what follows, I shall identify the two most important tacit assumptions in IS research and show why they are problematic and what consequences this has for the methods of identifying IS.

The first underlying tacit assumption can be labelled Context-to-Intention Assumption and deals with the relationship between context and meaning. It can be formulated as follows:

### *Context-to-Intention Assumption*

If an interpretation is regularly present in a certain type of context, then there must be a specific speaker intention regarding information packaging which is associated with that context.

Before proceeding with the analysis, two terminological points are in order here. First, ‘meaning’ is used in its narrow sense, as a conventionalised linguistic sense encoded by a linguistic expression, while ‘interpretation’ is any meaningful effect produced by linguistic means. Second, ‘context’ refers to linguistic and extralinguistic surroundings of an utterance and does not include, as in some philosophical traditions, the set of propositions shared by the interlocutors (e.g. Stalnaker 1999). Context-to-Intention Assumption implies that every regular meaningful contextual effect must stem from a specific speaker intention which corresponds to an encoded linguistic meaning. The logic of this can be demonstrated by the following example. It is assumed that every utterance that is used to correct a negative proposition put forward by an interlocutor (e.g. *You don’t know that. – I DO know it!*) must encode a discrete meaning which brings about this effect of polarity correction. In practice, this amounts to claiming that each sentence used to correct polarity must somehow encode the semantic primitive called ‘polarity focus’.

The second tacit assumption concerns the relationship between meaning and grammar (the terms are used in the same sense as above).

### *Intention-to-Grammar Assumption*

If a specific speaker intention is present, it corresponds to a discrete linguistic meaning and must be grammatically encoded.

This assumption equates interpretations and meanings, as does the Context-to-Intention assumption, but it goes a step further: it takes for granted that every interpretation has a grammatical (or lexical) expression of its own. To continue with the polarity correction example: if a structure is regularly used in the context of polarity correction, as is the case with the *do*-support construction in English, then this structure must encode the meaning defined by this context, i.e. polarity focus.

Taken together, these two assumptions result in the argumentative chain which presumes that contexts determine speaker intentions *qua* linguistic meanings and that

every regular interpretation is a linguistic meaning reflected in the grammar. The speech act of polarity correction is thus presupposed to require a semantic entity ‘polarity focus’, and this polarity focus is then connected to a grammatical structure, e.g. the *do*-support construction in English.

I am going to argue that this line of reasoning is fallacious, as it reifies interpretations into meanings and meanings into grammatical structures. Let us start with a simple definition of a linguistic category. Linguistic categories are conventional form-meaning pairs. If there is no corresponding form, there is no reason to postulate a discrete linguistic meaning (as mentioned above, ‘meaning’ is used narrowly in this paper, as a semantic entity that is linguistically encoded). It is a generally accepted fact that linguistic meanings are only a fraction of what comes across to the interlocutor: the interpretation is much richer than what is encoded by the language (Grice 1975, Sperber & Wilson 1986, Carston 2002, 2008). In other words, what is communicated is underspecified by utterances and is decoded with the help of inference. There are two types of inferences that arise out of this underspecification, ad hoc or *conversational implicatures* and systematic or *generalised conversational implicatures* (Grice 1975, Levinson 2000). The former arise out of context and are not bound to any specific type of expression (as in *It’s cold in here* meant to convey ‘Please close the window’). The latter present the default ways of interpreting certain types of expressions or constructions which do not count as encoded linguistic meanings proper, since they are cancellable. This is a clear sign of their inferred nature (Levinson 2000). A common example of generalised implicatures are numerical expressions – *two* is per default interpreted as ‘exactly two’, but under appropriate conditions the ‘exactly’ component can be cancelled, and *two* can mean ‘at least two’; the stronger interpretation is an implicature, the weaker one the encoded linguistic meaning.

What are the consequences of this massive underspecification for the determination of IS in utterances? Basically, both assumptions on which the common methods of identifying IS categories are based, Context-to-Intention and Intention-to-Grammar Assumptions, are fallacies. Context-to-Intention Assumption can only work under the hypothesis that a certain type of context automatically triggers a certain type of speaker intention. For instance, question-answer pairs are taken to necessarily indicate focus because answers must assert only what has been marked as knowledge gap in the question; or the opposition of two alternatives must lead to contrasting two foci, etc. This is, of course, an oversimplified behaviouristic assumption which glosses over all individual differences in possible communicative intentions (cf. Matic 2009). Note that the Context-to-Intention Assumption is all the more fallacious in corpus-based investigations, given the variability of real-world communicative intentions attested in natural discourse. Even worse, if all communicative content is underspecified, then there is no guarantee that the interpretation that occurs in a certain type of context is necessarily an encoded linguistic meaning and not a generalised conversational implicature. The polarity correction needn’t be achieved via a specialised semantic entity, a polarity focus or something else, but can also be routinely inferred from some other semantic content.

The same holds true for Intention-to-Grammar Assumption. If a communicative effect is there, it still does not mean that we are dealing with a linguistically encoded

meaning; the effect in question could easily turn out to be some kind of inference. Again, the upshot is that, if the polarity effect is usually present when *do*-support in English is used in positive sentences, this still does not guarantee that polarity focus is a part of the meaning of the *do*-support construction. It could be the case that there is some other, more fundamental meaning associated with *do*-support, and that polarity focus is just a reading arrived at via inference under certain contextual conditions.

All this taken together implies that our major diagnostic means for discovering IS categories in utterances, distributional and contextual clues, do not ensure that we are dealing with the categories we are looking for. If two forms are incompatible, this needn't be due to incompatibility of their encoded meanings. It might also be caused by a clash at the level of inferential interpretation. In the same vein, if certain structures regularly appear in certain types of contexts, it needn't be due to their encoded meanings: generalised conversational implicatures or other types of conventionalised inferences can be and often are a better explanation of the facts (Levinson 2000).

The corollary of this is that we cannot take our data at face value: even if a structure passes all diagnostic contextual tests and has a distribution we expect a certain IS category to have, we cannot be sure that it is an instance of one of the known categories of IS. At first sight, this seems to lead to a deeply pessimistic view of the investigation of IS in lesser known languages. If we cannot directly reconstruct speaker intentions from our data, and our usual means to uncover them indirectly are bound to fail due to underspecification of meanings, then we are left without a possibility to ever scientifically deal with IS in any language, especially so in those languages with which we can get acquainted only insufficiently. I shall propose a solution to this dilemma in the concluding section of this paper in some detail. Basically, I argue that our methodology of reconstructing IS via context and distribution is not flawed in itself, but has often been used in a wrong way, namely as a yes-or-no diagnostics, which is, as we have seen, a role it cannot play. What this methodology can do is to function as a heuristic, as a means of discovering structures and constructions which display interesting interpretive effects which may be related to IS phenomena in better known languages. Our task is to explore these phenomena in their own terms (in the Boasian sense), without the presupposition that the categories of IS in our field languages are identical to those that we know from our native languages.

Before turning to these optimistic prospects, I shall illustrate how contextual and distributional criteria can lead us astray in analysing IS-like phenomena with two examples from my own fieldwork. The first case study deals with the Even negative tag construction and the second with the Tundra Yukaghir particle *mə(r)*=. These two case studies will also serve as a convenient introduction to the concluding section, which will address the linguistic diversity attested among IS categories.

### 3. Case studies

#### 3.1. Negative tags in Even

The first case study which shows the potential for misinterpretation when the standard IS-defining methodology is applied deals with focus-sensitive negative tag questions in

Even. A detailed description of this construction can be found in Matic (in press); in this paper I will only focus on its focus-like properties. Even is a North Tungusic language, closely related to Evenki and Neghidal, spoken by small reindeer herding communities scattered over the huge area of north-eastern Siberia, between the Lena River in the west and the Pacific Ocean in the east, and between the Arctic Ocean and the Aldan River on the north-south axis. Even is a typical Eurasian language, with such standard features as vowel harmony, agglutinative suffixing morphology, predominant dependent marking, head-final structure, and a rich array of non-finite verbal forms (standard descriptions are Novikova 1960-1980 and Mal'čukov 1999, 2008). The argumentation is based on data from natural discourse collected during fieldwork with the Even communities of north-eastern Siberia and Kamchatka (2006-2012). Additional material is provided by elicited and experimental data, as well as grammaticality judgments.

Tag questions in Even minimally include the negative auxiliary verb which copies the agreement, tense and mood of the preceding finite verb (1), not unlike the well-known tag structure in English. This negative auxiliary can be optionally preceded by the clitic particle *=(k)kE*, as in (3). One difference between English and Even is that Even tags do not display polarity reversal, i.e. they are always negative irrespective of the polarity of the host clause.

- (1) *E tar kukatmu tar no:k-ča*  
 INTJ DIST glove.POSS.1SG DIST hang-PF.PTC  
*bi-he-nni e-he-nni.*  
 be-NFUT-2SG NEG-NFUT-2SG  
 'Oh, there, you hanged my glove there, didn't you?'

Another interesting difference is that Even tags can be clause-internal, as the following examples show ((2) is from natural discourse, (3) is elicited).

- (2) *Adžit=ta e-h-ni no:jan go:n-ni.*  
 truth=PTL NEG-NFUT-3SG 3SG say-3SG(NFUT)  
 'He told the TRUTH. / What he said was the truth (wasn't it).'
- (3) a. *Hin-du teti:-w=ke e-he-m umu-re-m.*  
 2SG-DAT coat-ACC=PTL NEG-NFUT-1SG bring-NFUT-1SG  
 'It was a coat that I brought you (wasn't it).'
- b. *Hin-du=kke e-he-m teti:-w umu-re-m.*  
 2SG-DAT=PTL NEG-NFUT-1SG coat-ACC bring-NFUT-1SG  
 'It was to you that I brought a coat (wasn't it).'

As the translations indicate, clause-internal tags seem to be related to IS: they appear to mark the element that precedes them as the main assertive point of the utterance, focus. Variable positioning of the tag illustrated in (3) results in different IS interpretations: the speaker intention in (3a) seems to be to identify the element that was brought to the interlocutor; in (3b), she intends to identify the receiver of the coat. These intuitions are confirmed by some standard IS tests. Thus, negative tags can be used in corrections,



where they must follow the element whose identity is about to be established, as in (4), where it is the polarity of the main verb that is being corrected, so that the tag must follow the verb.

- (4) *Min-du e-he-ndi go:n.*  
 1SG-DAT NEG-NFUT-2SG say.NEG.CVB  
*Hin-du go:n-e-m=ke e-he-m!*  
 2SG-DAT say-NFUT-1SG=PTL NEG-NFUT-1SG  
 ‘–You didn’t tell me that.’ ‘–I DID tell you!’

Tags can also occur in question-answer pairs. When this is the case, they must be used congruently, i.e. the tag in the answer must correspond to the question word in the question. This is shown in (5): after a constituent question about the direct object, the tag can only follow the direct object in the answer (5a); if it is placed elsewhere, the answer is infelicitous (5b)

- (5) *Ia-w taŋ-a-d-a-ndi?*  
 what-ACC read-0-PROG-NFUT-2SG  
 a. *Kinige-w e-he-m taŋ-a-d-da-m.*  
 book-ACC NEG-NFUT-1SG read-0-PROG-NFUT-1SG  
 ‘What are you reading?’ ‘I’m (obviously) reading a book.’  
 b. *#Kinigew taŋaddam ehem.*

These contextual data seem to indicate that negative tags are focus markers *stricto sensu*. In actual fact, the congruent usage in question-answer pairs might be taken to imply that their only semantic contribution is to indicate the position of focus, since questions and answers are usually taken to be instances of ‘pure’ focus, without any other semantic components such as contrast or counterpresuppositionality. However, there are instances of tags in natural discourse in which the interpretative contribution of the tag seems to be more specific than the general focus semantics. One such example is given in (6).

- (6) *Di: em-di-n?*  
 who come-PST-3SG  
*Hi: ha:-ndi e-he-ndi, ɨariw ulgimi-ndi?*  
 2SG know-2SG(NFUT) NEG-NFUT-2SG why ask-2SG(NFUT)  
 ‘– Who has arrived?’ ‘– You already know that, why are you asking?’

The tag attached to the main verb does not merely mark focus. It also implies that the interlocutor should be aware of the proposition that is being put forward and has a connotation of impatience on the part of the speaker. In view of this and similar examples (see Matić in press and example (8) below), I suggest that the encoded meaning of the negative tag construction in Even is evidential in nature. More precisely, I maintain that negative tags mark the (part of the) proposition they are attached to as uncontroversial and potentially known to both interlocutors. More formally, this can be expressed as follows:

- (7) [tag *p*], where *p* is a (part of a) proposition, presupposes that *p* is uncontroversial.

The closest parallel to this kind of meaning in better known languages are the German particles *ja* and *doch*, as in the German translation of (6) (*Du weißt es doch, warum fragst Du denn?*): according to the prevailing type of analysis, these two particles express the meaning similar to that proposed in (7) (cf. Grosz 2014). Indeed, the uncontroversiality presupposition and the irritated connotation of negative tags is clearly apparent in minimal pairs such as (8).

- (8) a. *Bi: hagdi bi-he-m.*  
1SG old be-NFUT-1SG
- b. *Q:n bi: ere-w umu-de-ku?*  
how 1SG PROX-ACC carry-PURP.CVB-1SG  
*Bi: hagdi bi-he-m e-he-m!*  
1SG old be-NFUT-1SG NEG-NFUT-1SG  
'How am I supposed to carry that? (Can't you see that) I'm old!'

The focus structure in (8a) and (8b) is identical, so that it is impossible to claim that the tag in the latter only marks focus. The difference is thus not of the IS type. Instead, the sentences differ in the evidential stance taken by the speaker. While (8a) expresses a simple proposition without evidential modification, (8b) implies the uncontroversiality and obviousness of the proposition. The meaning encoded by negative tags in Even is thus rather that of evidential modification and not directly related to IS in general and focus in particular.

In other words, I take it that the focus marking function of negative tags suggested by contextual clues, as illustrated in examples (1)–(5), is not the encoded meaning of this construction, but rather a set of inference-derived interpretive focus effects. I shall argue that the connection of the uncontroversiality marker and focus stems from the capability of tags to take variable scopes and from the general pragmatic principles.

The first component of the explanation is the variability of scope: tags mark the element to the left as uncontroversial. If the scope of the evidentiality operator is narrow, the tag is placed immediately after that element, as e.g. in (4) and (5). If the whole clause is to be marked as uncontroversial, the tag is attached to the last constituent, as a rule the finite verb, as in (6) and (8). This means that tags can project their scope. This kind of variable scopal behaviour is similar to that of focus operators.

The second component is pragmatic and has to do with the rules of rational communicative behaviour. Grice's second Maxim of Quantity, *Do not make your contribution more informative than is required* (Grice 1975) basically captures the interpretive rule that what we express in communication is only what is a living option at the current point in discourse. Uncontroversiality is thus marked only when it is an issue. We can formulate an ad hoc maxim for this: *Mark uncontroversiality only if it is a living option in the conversation, i.e. if things could have been (relevantly) otherwise*. Incidentally, this is also the rule of assertion: we assert only what is a living option in the

conversation, i.e. what could have been otherwise (Jary 2010, Matic & Wedgwood 2013), or, as a maxim: *Assert only what is a living option in the conversation, i.e. what could have been (relevantly) otherwise*. In communication, these two maxims lead to the coincidence of what is marked as uncontroversial and what is asserted, i.e. focused. If an element of the proposition is to be marked as non-controversial, it will also be asserted, as opposed to presupposed. The reason for this is that uncontroversiality is marked only if it is a living option, i.e. only if it needs to be asserted. In other words, negative tags and main assertion, focus, often coincide, but the former do not express/denote the latter. Note that this is made possible by the capability of tags to take variable scope, so that they can take variable scope in accordance with the scope of the main assertion.

The analysis of the Even negative tag construction illustrates how contextual cues, both from natural discourse and from IS tests, do not give us a direct access to the encoded meaning of linguistic expressions. They can indicate interpretive effects, but interpretation is not identical to meaning, as I have repeatedly pointed out. The contextual method is thus useful as a heuristic means to discover IS-like structures in an unknown language and get acquainted with their discourse usage, but its value in determining the semantic specification of a structure is limited.

### 3.2. Particle *mə(r)=* in Tundra Yukaghir

The second case study shows that distributional data can also lead us on the wrong track. It deals with the meaning and distribution of the proclitic particle *mə(r)=* in Tundra Yukaghir. The analysis presented in this section relies on Matic & Nikolaeva (2014); for the purposes of the present paper, the argumentation applied there is reduced to methodological issues, while some less important details are left out.

Tundra Yukaghir is a member of a small language family in north-eastern Siberia. This family additionally comprises Kolyma Yukaghir, at present nearly extinct, and may be distantly related to Uralic (Nikolaeva 2006, among others). Tundra Yukaghir is a typical SOV language, with a fairly rigid verb-final structure in main/independent clauses; the same rigid head-final pattern is evident in noun phrases, postpositional phrases and non-finite dependent clauses. It is spoken in the villages of Andryushkino and Kolymaskoe (the Lower Kolyma District of the Sakha Republic, Russia) by 63 speakers (survey by D. Matic and C. Odé in 2010–11). The data used in this paper come from natural discourse, the texts collected by Dejan Matic in 2008–2011 and the texts published in Kurilov (2005) and Maslova (2001), as well as elicitation.

Tundra Yukaghir is known in the typological literature for its intricate system of morphological focus marking (Krejnovič 1982, Maslova 2003). There are three basic clause types:

*S/O focus type*. If the subject of intransitive verbs or the direct object of transitive verbs is focused, a special focus suffix is attached to it and the verb carries the special S or O focus agreement.

- (9)            *Neme-ləŋ*    *ije:-məŋ?*        *Labunmə-ləŋ*    *ije:-məŋ*.  
               what-FOC    fear-OF.1/2SG    ptarmigan-FOC    fear-OF.1/2SG  
               ‘– What do you fear?’ ‘– I fear ptarmigans.’ (Kurilov 2005: 240)

*Zero type.* If any other type of non-verbal constituent is focused, there is no special focus marking and the verb carries the so-called neutral agreement. The focused element must be immediately preverbal.

- (10) *Qaduɟudəŋ kew-ej? Moskwa-ŋiŋ kew-eč.*  
 whither go-PF.INTERR(3SG) Moscow-DAT go-PF.NEUT.INTR.3SG  
 ‘– Where did he go?’ ‘– He went to Moscow.’

*mə(r)= type.* In other cases, the *mə(r)=*-type is used. There is no special focus marking, and the verb with neutral agreement is preceded by the particle *mə(r)=*.

- (11) *Tude tu:ri:-ɣanə mə̃r=aɣar-ej-m.*  
 he.POSS trousers-ACC EX=tear-PF-NEUT.TR.3SG  
 [He took out his traps. (While doing that,) ‘he tore his trousers.’  
 (Maslova 2001: 58)

The distributional facts seem to indicate that *mə(r)=* denotes verb focus: if the S/O focus type denotes focus on S or O, and the zero type focus on other non-verbal elements, then *mə(r)=* must be a dedicated marker of verb focus (this is the position of Maslova 2003). Indeed, there are some further distributional and contextual indications that this is the case. The particle *mə(r)=* is obligatory in answers to yes-no questions, which is readily explained by the fact that this is a typical context for verb focus (12). Also, it is obligatory in (most) verb-only sentences (13), because these sentences allow only for verb-focus readings, since no other focusable elements are present.

- (12) *Nime-lə mə̃r=we:-ŋa?*  
 house-ACC EX=do-NEUT.TR.3PL  
*Mə̃r=we:-ŋa.* vs. *\*We:-ŋa.*  
 EX=do-NEUT.TR.3PL do-NEUT.TR.3PL  
 ‘– Have they built a house?’ ‘– Yes, they have.’

- (13) *Mə̃r=kew-eč.* vs. *\*Kew-eč.*  
 EX=go-PF.NEUT.INTR.3SG go-PF.NEUT.INTR.3SG  
 ‘He left/ He did leave.’

Finally, *mə(r)=* is incompatible with focused oblique constituents and focus markers on S/O, as shown in (9’). If *mə(r)=* denotes verb focus, it is only logical that it cannot be combined with nominal focus markers.

- (9’) *\*Labunmə-ləŋ mə̃r=iŋe:-məŋ.*  
 ptarmigan-FOC EX=fear-OF.1/2SG

The distribution of *mə(r)=* thus strongly suggests that it is a verb focus marker. However, there are indications to the contrary. There are cases in which *mə(r)=* cannot be used in verb-only sentences, which contradicts its verb-focus nature. For instance, *mə(r)=* leads to ungrammaticality if attached to indicatives with a directive force, as in

(14). Also,  $m\grave{a}(r)=$  cannot be attached to imperatives (15) and most non-indicative moods (16), and it can never be applied if the sentence is negative (17). There is no principled reason why a verb focus marker would be excluded in these cases.

- (14)        *\*M\grave{a}r=u:-j\grave{a}li!*            correct:        *U:j\grave{a}li!*  
 EX=go-NEUT.INTR.1PL  
 ‘Let’s go!’
- (15)        *\*M\grave{a}t-u-l*        *m\grave{a}=we:t\grave{a}-k!*  
 I-0-ACC        EX=untie-IMP.2SG  
 intended meaning: ‘Untie me!’
- (16)        *\*Ile*            *m\grave{a}=pu\grave{n}i-j-uol-moraw-\acute{h}\grave{a}-j\grave{a}\eta.*  
 reindeer        EX=kill-0-ST.NLZR-NEC-PROP-NEUT.INTR.1SG  
 intended meaning: ‘I must SLAUGHTER a reindeer.’
- (17)        *\*M\grave{a}r=\acute{a}l=an\acute{h}\grave{a}-\eta u.*  
 EX=NEG=speak-3PL(NEG)  
 intended meaning: ‘They don’t SPEAK.’

These and similar data indicate that  $m\grave{a}(r)=$  is not a dedicated verb focus marker, despite appearances. A hint at its basic semantics comes from its use with question words, pronouns and verbs. When attached to an interrogative pronoun or a verb,  $m\grave{a}(r)=$  turns them into specific indefinites, as shown in (18) and (19).

- (18)        *Ta-\eta*            *ile\eta*            *m\grave{a}=p\acute{o}\check{c}ese\check{c}.*  
 DIST-ATTR        reindeer        EX=let.go.PF.NEUT.INTR.1PL  
*m\grave{a}=neme*        *we:-r\acute{a}l\acute{a}k.*  
 EX=what        do-SS.CVB.PF  
 ‘We let that reindeer go, after we did something (to it).’
- (19) a.        *Qo:d\grave{a}gur\acute{c}i:?*  
 what.happen(INTERR.3)  
 ‘What happened?’
- b.        *M\grave{a}=qo:d\grave{a}gur\acute{c}i:-j?*  
 EX=what.happen-NEUT.INTR.3SG  
 ‘Something happened (but I won’t tell you what).’

In order to account for the likes of (18) and (19b), I propose to treat  $m\grave{a}(r)=$  as an existential quantifier which is used on verbs and pronouns. When applied to verbs, it explicitly quantifies over events and thus serves as a realis mood marker: adding  $m\grave{a}(r)=$  to a predicate amounts to explicitly stating that the situation that the predicate describes exists in the real world. In this way,  $m\grave{a}(r)=$  establishes the reference of the segment of

the world for which the description given by the clause holds true and implies the commitment on the part of the speaker to the truthfulness of the proposition. This readily explains why  $m\acute{\alpha}(r)=$  is not compatible with negation, directives, and various moods, since they all imply non-existence of the event in the real world. It also accounts for the indefinite reading of question words with  $m\acute{\alpha}(r)=$ : with  $m\acute{\alpha}(r)=$ , the variable in the semantic representation of question words is bound by the existential quantifier, which turns them into specific indefinites.

Importantly, all the symptoms which seem to indicate that  $m\acute{\alpha}(r)=$  has a verb focus semantics can also be derived from this basic existential meaning. The particle  $m\acute{\alpha}(r)=$  is incompatible with nominal focus markers not because it denotes verb focus, but for the reasons of linguistic economy. When a nominal focus is used, the situation described by the predicate must always be presupposed. Thus, in uttering (10), the speaker must presuppose, i.e. treat as known and given to both herself and the interlocutor, that the person in question has gone somewhere; the assertion consists in the identification of the exact location of his/her departure. This means that there is no need to existentially bind the event, i.e. to explicitly mark its existence in the real world, since the event itself is already known, presupposed and (usually) contextually present for all interlocutors. The distribution of  $m\acute{\alpha}(r)=$  is thus not a direct product of its IS-meaning, but rather an effect of the entailments carried by the focus-induced presuppositions.

The same holds true for the other two apparent verb-focus properties, obligatoriness in verb-only sentences and in answers to yes-no questions. The particle is obligatory only in those verb-only sentences which encode assertions in the indicative, i.e. descriptions of the real world, as is apparent from the comparison of (13) and (14). In these cases,  $m\acute{\alpha}(r)=$  must be used since the situation is obviously not presupposed—otherwise, a nominal focus would have to be present. In the case of answers to polarity questions,  $m\acute{\alpha}(r)=$  is obligatory because in this context it is the existence of the situation that is at stake, i.e. the assertion consists in specifying the existence of the event. Since  $m\acute{\alpha}(r)=$  is semantically the carrier of this type of assertion (recall that it existentially quantifies over the event variable), it cannot be left out.

The particle  $m\acute{\alpha}(r)=$  in Tundra Yukaghir is thus another example of the insufficiency of our received methodology of identifying IS categories. It is an existential quantifier with somewhat idiosyncratic distributional properties. These distributional properties give rise to the impression that  $m\acute{\alpha}(r)=$  is a dedicated marker of verb focus. On a closer look, however, it turns out that  $m\acute{\alpha}(r)=$  has some additional distributional features which are not directly observable in a small corpus or via IS tests and simple elicitation. These features render the interpretation as focus marker improbable and suggest a different kind of analysis, in which focus readings of  $m\acute{\alpha}(r)=$  are just epiphenomenal pragmatic and distributional effects of its basic existential meaning.

Similar to pure contextual determination of IS categories, distributional data are useful as a means of detecting potentially interesting IS phenomena in a language and reveal a lot about the meaning and usage of the structures in question. However, they suffer from the same insufficiencies as contextual clues: it is impossible to determine via pure distributional analysis whether certain compatibilities are due to encoded meanings, inferred interpretations, or something else. We need to take into account more data and

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apply more complex analytic procedures to distinguish different possible roots of distributional idiosyncrasies.

## 4. Retrospects and prospects

As adumbrated in the introductory section and shown in the case studies, the main purpose of this paper is to demonstrate that the standard methodology in IS studies is not sufficient to establish categories of IS in any language. In particular, this holds true for lesser known languages, which carry with them additional practical and analytical difficulties, from smaller and less varied corpora and inaccessible speakers to the fact that the analysing linguist cannot have full access to the intuitions about the linguistic and communicative practices of the community she investigates.

This might seem to result in a pessimistic, agnostic view of the linguistic endeavour to describe IS. This needn't be the case. The methods used to identify IS categories are useful if used in their proper ontological capacity, namely not in order to identify and prove the existence of pre-conceived IS categories, but as a heuristic tool designed to help uncover potentially interesting descriptively relevant phenomena and points of comparison among languages. It is of utmost importance to keep the ontology and the metalanguage clear: what is found with these methods is not IS categories, but rather a set of structures which are used in IS-relevant domains, be it due to their inherent meaning or due to conventional inferences they are tied to. Distributional data and contextual cues are thus extremely helpful in delimiting the phenomenological field of structures that are in one way or another connected with information update and the speech acts based on it.

This view of the usefulness of IS-identifying methods is intertwined with a clearly non-universalist stance on the nature of IS categories put forward in detail by Matic (2009) and Matic & Wedgwood (2013). If the application of tests, contextual cues and distributional data does not lead to the unequivocal identification of categories but merely to the delimitation of the phenomenological field of IS, what is the use of these procedures? In order to understand this, we need to draw a distinction similar to that proposed by Haspelmath (2010), between (i) linguistic categories, *qua* elements of the structural analysis and (ii) comparative concepts, which are essentially practical points of comparison, defined relative to the particular needs of the analyst.

There is strong evidence against the assumption that IS categories are crosslinguistically relevant categories, i.e. that every language has a limited set of IS-relevant grammatical categories, such as focus, topic, contrast, etc. (Matic & Wedgwood 2013). According to our current state of knowledge, it is much more probable that languages carve up the semantic space relevant for information update in highly idiosyncratic and unpredictable ways. The task of the analyst is thus not to use tests, etc., in order to find the exact match of focus as known from a couple of European languages in a more 'exotic' language, but rather to establish in which way the given language deals with the information update. Some languages might turn out not to have a single grammatical category connected with this function; others may have certain IS categories which are completely different from the European type, while still others can display interesting interactions between semantic domains, such that categories from the

evidential or quantificational domains play a role in interpreting information-related speaker intentions, as is the case with the Even and Tundra Yukaghir constructions presented in this paper. In order to be able to determine this, we need IS categories and the methods to uncover them as comparative concepts, i.e. as a tool to find practical points of comparison. Even negative tags and Tundra Yukaghir particle *mə(r)=* wouldn't be discovered as informationally interesting phenomena if the standard IS tests hadn't been applied to them.

It is for this reason that the standard IS methods are important in the analysis of lesser known languages. They help us detect the broad domain of IS in a language and see whether grammatical categories of a certain kind are involved in interpreting IS or not. It is important to keep in mind that these methods just *facilitate* the analysis, but they do not *constitute* it. In order to understand how the domain of IS is expressed in a language, we need to apply a much more careful interpretive analysis of all relevant data. It is only in this way that we will be able to understand how information update interacts with grammar in languages with structures that strongly diverge from the European type. Given the centrality of information transmission in human communication, the comparative tools described in this paper stand a good chance of being a source of important insights into the nature of human language.

## Abbreviations

0 – epenthetic sound  
 1/2/3 – first/second/third person  
 ACC – accusative  
 ATTR- attributive  
 CVB – converb  
 DAT – dative  
 DIST – distal  
 EX – existential  
 FOC – focus  
 IMP – imperative  
 INTERR – interrogative  
 INTJ – interjection  
 INTR – intransitive  
 NEG – negative  
 NEUT – neutral  
 NFUT – non-future  
 NEC – necessitative  
 NLZR – nominalizer  
 OF – object focus  
 PF – perfective  
 PL – plural  
 POSS – possessive  
 PROG – progressive  
 PROP – proprietive



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PROX – proximal  
PST – past  
PTC – participle  
PTL – particle  
PURP – purposive  
SG – singular  
SS – same subject  
TR – transitive

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# Information structure and the use of pronominal subjects in Spanish<sup>1</sup>

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**Abstract.** The main objective of this study is to present and discuss methodological issues concerning the definition of different discourse functions of pronominal subjects (PS) in spoken Spanish. It will be shown that while prosody and syntax are very important in distinguishing focus from topics, the context plays a more important role in determining different types of topics. Moreover, the present paper shows that the information structure is a very important intervening factor with respect to the use of PS in Spanish (a consistent null-subject language). It explains the obligatorily overt PS on one hand (focus, contrastive topics), and partly the subject pronoun variation on the other (aboutness-shift topics, familiar topics). Additionally, a new subcategory of aboutness-shift or familiar topics—the *disambiguating* topic—is proposed for obligatorily overt PS that appear with ambiguous verbal forms in semantically unpredictable contexts.

**Keywords.** Information structure; Focus; Topic; Syntax; Prosody; Spanish; Spoken data

## 1. Introduction

This study investigates different discourse properties of pronominal subjects (PS) in spoken *Porteño* (Buenos Aires) Spanish. The use of PS in Spanish—a consistent pro-drop language (Biberauer et al. 2010)—is one of those linguistic phenomena which supports a postulation that it is necessary to distinguish between *grammar* and *usage* of grammar (see e.g. Newmeyer 2003; Adli 2011; and many others). Whereas grammarians assume that overtly realized PS are focal and contrastive or disambiguating expressions of their null counterparts (see e.g. Alarcos Llorach 1994; Luján 1999; RAE 2009-2011), spoken data show clearly that the use of overt PS can and does occur also in non-focal, non-contrastive or non-ambiguous contexts (see e.g. Lu 1997; Otheguy et al. 2007; Posio 2012). Observe (1)<sup>2</sup>:

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<sup>1</sup> A preliminary version of this paper was presented at *The Second Graz Workshop on Information Structure* (May 2013). I am very grateful to the audience for their useful comments and fruitful discussions. I would also like to thank Dina El Zarka and Steffen Heidinger as well as the anonymous reviewer for their detailed and helpful comments on an earlier version of this article. My thanks also go to Michael Kennedy-Scanlon for checking and correcting the English of this paper. It goes without saying that all errors remain my own.

<sup>2</sup> The example is taken from an oral corpus utilized in this study (see Section 3 for details.) Where necessary, the omission of PS in such examples is indicated by the use of the null set symbol  $\emptyset$  in the Spanish text and parentheses in the English translation.

- (1)  $\emptyset$  *Dormía en un cuarto con diecisiete camas. Sirios, israelitas, chilenos, argentinos, albaneses. Toda una mezcla de cultura y de gente... Ahí también  $\emptyset$  tenía otro amigo que me rescató y me llevó a su casa. Yo tuve suerte en el viaje ese.*

‘(I) was sleeping in a room with seventeen beds. Syrians, Israelis, Chileans, Argentinians, Albanians. All a mixture of cultures and people... There (I) had also another friend who rescued me and brought me to his home. I was lucky on that journey.’

Interestingly, the use of the overt PS *yo* (underlined) in (1) appears with a non-ambiguous verbal form *tuve* (‘I had’ / preterit), whereas the null subjects ( $\emptyset$ /*pro*) occur with verbal forms *dormía* (‘I was sleeping’ / imperfect) and *tenía* (‘I had’ / imperfect) that are syncretic between the first and third person singular in Spanish. Moreover, the context neither establishes contrastive relationships and nor indicates a focalization of (the overt) subject. To confirm this, it is necessary to provide an intonation analysis which may fill the gap in the research regarding the meaning of realized PS in languages such as Spanish. The methodology is of primary importance for this study: How can the PS be defined in spoken data? Does syntax (here: word order), phonology or both play a role in detecting the discourse function of pronominal subjects?

The paper is organized as follows: Section 2 describes several methodological problems that the categorization of PS in spoken Spanish entails. Section 3 presents five different functions of PS (focus, contrastive topic, aboutness-shift topic, familiar topic and disambiguating topic) and discusses some further problems concerning the relationship between the information structure and the use of PS in the data analyzed. Finally, the paper ends with some concluding remarks in Section 4.

## 2. Towards the categorization of PS in spoken data

According to many empirical investigations, the variation in PS (null vs. overt) in Spanish depends mainly on different linguistic factors such as grammatical person, verb semantics, type of clause, morphological and contextual ambiguity. The present study argues that the information structure is also an important factor controlling the use of PS in *Porteño*. Moreover, the information structure explains the use of obligatorily overt (i.e. not omissible) PS.

Following Dipper et al. (2007), Krifka (2007), López (2009) and many others, information structure deals with how sentences or parts of sentences (e.g. pronominal subjects) can be embedded in a coherent discourse. Compare the sentences in (2):

- (2) a.  $\emptyset$                     *compré*            *un helado.*  
       *pro*                    bought-1SG    an ice-cream
- b. *Compré*            *un helado*        *yo.*  
       bought-1SG    an ice-cream    I  
       ‘I bought an ice-cream.’

As we can observe, both sentences are grammatically correct in Spanish. However, if we place (2a) or (2b) in the wrong context, the result might be an “infelicitous discourse” (López 2009: 1). For example, the sentence (2a) cannot be the answer to a question like ‘*Who bought an ice-cream?*’ since the null subject cannot function as a focus. Nevertheless, determining the discourse function of pronominal subjects is not a very straightforward issue if we study spoken data and have to reconstruct their information structure. It is assumed that PS can be introduced as new information (aboutness-shift topic), it can represent old (i.e. known) information (familiar topic), it can express oppositional/contrastive relationships (contrastive topic) or it can be a focus (dealt with in Section 3). The basic methodological question is whether to rely on context, syntax or prosody when it comes to defining the function of a PS. By annotating actual corpus data, the present investigation will describe the discourse-pragmatic functions of PS in context after having characterized their prosodic and syntactic properties. However, whereas prosody and syntax are of value for detecting focus, they are less reliable for defining different topics.

In the following subsections, four methodological difficulties are discussed, namely, the problem of distinguishing between PS-focus and PS-topics (Section 2.1), the problem of categorizing different types of topics (Section 2.2), the problem of ‘contrastivity’ (Section 2.3) and the role of verbal syncretism in explaining the overt use of PS (Section 2.4).

## 2.1. Problem 1: Focus or topic?

If a pronominal subject in Spanish functions as a focus, whether neutral or contrastive, it must always be phonetically realized (RAE 2009-2011). Nevertheless, there are two general methodological problems that arise in empirical (corpus-based) research on the use of PS in Spanish: 1) an inadequate definition of focus (also called ‘emphasis’, ‘contrast’ etc.) and 2) the lack of prosodic analysis. Firstly, if focus in spoken data is not properly classified, obligatorily expressed pronominal subjects may not be separated from optionally expressed subjects (see e.g. Otheguy et al. 2007). An important characteristic of focal subjects in Spanish is that they are usually shifted to the rightmost position. However, focal subjects can also be preverbal (see Gabriel (2007, 2010), Uth (this issue)), and right-shifted subjects can be confused with a familiar ‘afterthought’ topic. Secondly, as will be shown, prosody is essential to distinguish between topics and focus (see Gabriel 2010; Feldhausen et al. 2011 for *Porteño* Spanish) and is particularly useful in contexts where the pragmatic argumentation may cause disputes or doubts. The present study is the first investigation that provides a tonal analysis of overtly realized PS in one Spanish variety. A conclusive definition of focus as well as a description of its syntactic and prosodic properties will be presented in detail in Section 3.1.

## 2.2. Problem 2: Different types of topics

Frascarelli (2007) found a clear correlation between different types of discourse functions and their prosodic realization in (spoken) Italian, with familiar topics being prosodically realized by low tones, contrastive topics and focus by high tones and

aboutness-shift topics by rising tones (see also Frascarelli and Hinterhölzl 2007 for Italian and German; Féry 2006 for German). However, it is not very clear what criteria Frascarelli used to select the data and draw these conclusions. It should be also pointed out that Frascarelli (2007) investigated only 173 sentences extracted from a very small oral corpus (totaling 100 minutes of conversation).

As for the present study, the spontaneous corpus data examined here do not show any clear-cut prosodic differences among different types of topics since all topics prefer a rising tone. In terms of syntax, topics are predominantly preverbal, the exception being familiar topics, which can also be right-dislocated. Therefore, context and consistent usage of definitions seem to be more important when it comes to categorizing topics than prosody and/or syntax (see Sections 3.2-3.4).

### 2.3. Problem 3: Contrastivity

There is considerable debate among empirical researchers about whether the PS is obligatorily or optionally expressed in a contrastive context, with some authors stating that PS are optional in contrastive contexts (Enríquez 1984; Bentivoglio 1987; Amaral and Schwenter 2005; Otheguy et al. 2007) and others that claim the opposite (Rosengren 1974; Silva-Corvalán 1982, 1994, 2001; Cameron 1997; Bayley and Pease-Álvarez 1997; Lu 1997; Balasch 2008). These contradictory conclusions may reflect differences in the definition or interpretation of a contrastive context. I will argue that the PS cannot be omitted if it is a contrastive topic (see RAE 2009-2011: 40.3u, 33.5c-f), which should not be confused with a contrastive focus. Although both of these categories lead to the obligatory expression of PS, the difference between them is a function of syntax and/or prosody. The question of ‘contrastivity’ is dealt with in depth in 3.2.

### 2.4. Problem 4: Verbal syncretism

Besides focus and contrastive topics, verbal syncretism is another traditional though not unproblematic explanation for the use of overt PS. There are verbal forms in Spanish which exhibit syncretism between the first and third person singular in certain tenses and moods, namely, in the imperfect of the indicative, in the subjunctive and in the conditional (e.g. *cantaría*, ‘I(s)he would sing’). It should be emphasized that Spanish has no verbal tense or mood which requires an overt realization of PS unlike, for instance, Modern Hebrew (see e.g. Melnik 2007). However, it will be shown that some PS must be overtly realized in certain ambiguous contexts for a correct interpretation of information in the discourse. For this case, a new subcategory of aboutness-shift or familiar topic is proposed, the *disambiguating* topic (see 3.5). The need for such a category derives from the vigorous debate surrounding the differing (and often contradictory) results yielded by previous empirical investigations about whether the ambiguous verbal morphology leads or does not lead to a significantly higher use of PS in Spanish. Whereas some studies support such correlations (see Hochberg 1986; Bayley and Pease-Álvarez 1997; etc.), ambiguity as an intervening factor in the expression of PS is not corroborated in many other studies (see e.g. Barrenechea and Alonso 1977;

Balasz 2008). There are four main problems in spoken Spanish concerning the relationship between the use of PS and (non)-ambiguous verbal morphology:

- 1) The PS is sometimes expressed even when the verbal form is non-ambiguous.
- 2) The PS is sometimes expressed with an ambiguous verbal form, but with no other candidate for a reference.
- 3) The PS is sometimes omitted with an ambiguous verbal form, but with another candidate for a reference in the context.
- 4) The PS is sometimes expressed with an ambiguous verbal form and with another candidate for a reference in the context.

Section 3.5 will be specially devoted to the two latter problems. The question is why the PS can be omitted in some ambiguous contexts but must be overtly realized in others. The goal of the next section is to present the different discourse functions of PS and discuss their syntactic and prosodic properties on the basis of spoken data.

### 3. Discourse properties of PS

Following Frascarelli and Hinterhölzl (2007), Frascarelli (2007), Krifka (2007), RAE (2009-2011) and others, the present investigation assumes that the PS can have one of the following functions (understood as IS features): focus (see section 3.1), contrastive topic (see 3.2), aboutness-shift topic (see 3.3) or familiar topic (see 3.4). However, as noted above, we feel that it is necessary to add a new special subcategory of aboutness-shift and/or familiar topics called disambiguating topic.

The material used in this study is taken from a larger audio corpus (see Pešková 2014) which comprises over 10 hours of free interviews, recorded in 2008 and 2009 in Buenos Aires. Though the corpus contains 10,748 finite sentences with either null or overt PS, for the purpose of the present study, a subset of only 1,632 declarative (personal) sentences have been analyzed. Unless otherwise indicated, all examples are taken from this subset of the oral corpus.

#### 3.1. PS as a Focus

Though many definitions have been proposed for focus, I follow Krifka, who defines focus as an element which “indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions” (2007: 18). Similarly, López describes focus as a “part of the answer sentence that provides a resolution for the variable” (2009: 34). The marking of focus differs from language to language. In Spanish, focused subjects are mostly syntactically marked, i.e. shifted to the rightmost position of a sentence (Zubizarreta 1998; Zagona 2002) (see 3):

- (3) a. *La plata me la dieron ellos*  
 the money me-CL it-CL gave-3PL they  
 ‘THEY gave me the money.’
- b. *Esto no lo digo yo, lo dice Transparency.*  
 this not it-CL say-1SG I it-CL says-3SG Transparency  
 ‘I don’t say this, Transparency says it.’

It has been assumed by some authors (see e.g. Zubizarreta 1998, 1999) that in Spanish a new-information (or neutral) focal subject is placed in the rightmost position in a sentence, whereas a contrastive focal subject prefers a preverbal position. However, this is not confirmed in other studies investigating different Spanish varieties (see Gabriel 2007, 2010; Muntendam 2009; Hoot 2012; Leal-Méndez and Shea 2012; Heidinger 2013). The data examined in the present study likewise indicate that contrastive focus is very often postverbal (see (3b)).

It should be mentioned that the canonical word order in Spanish is SVO in declaratives with transitive verbs (e.g. *María compró el diario*; ‘Mary bought the newspaper’). Spanish also allows postverbal subjects in declarative sentences with unaccusative verbs (e.g. *Llegaron dos chicas*; ‘There arrived two girls’), as well as in interrogatives (*¿Qué leyó María?*; ‘What did Mary read?’), exclamatives (*¡Qué alto está Juan!*; ‘How tall John is!’) and imperatives (*¡Hazlo tú!*; ‘You do it!’) (Zagona 2002: 27-29). Some scholars point out that Spanish also allows VSO order in declaratives (e.g. *Compró María el diario*), but this is less natural than SVO and may vary from speaker to speaker (Zagona 2002: 27; cf. Zubizarreta 1998; Costa 2001). The empirical study by Gabriel (2010) shows that the VSO-order is not common in *Porteño* Spanish, since speakers of this variety clearly prefer SVO declarative sentences. Regarding the VOS-order, there are two possible ways to analyze such postverbal or clause-final subjects: either as focus or as right-dislocated topics (see more below). The right-dislocations of subject are possible, however, not very common in Spanish in comparison with other Romance languages like Catalan (see e.g. Vanrell and Fernández Soriano 2012; Villalba 2011). The difference between these two discourse categories is that the focus requires the overt form of the PS, whereas the right-dislocated topic is merely a matter of variation (i.e. it can be either expressed or omitted). If the interpretation of the discourse function of the subject is doubtful or insufficiently clear from the context, it becomes necessary to carry out a prosodic analysis. Intonation plays a key role in determining focus in languages like Spanish because focus is prosodically prominent, i.e. it bears a nuclear accent (see Zubizarreta 1998; Zagona 2002; etc.).

Besides the syntactic marking of focus seen in (3), other strategies may be used to express focus in Spanish, namely cleft constructions (4), focusing adverbs associated with the subject such as *también* (‘also’) (5) and prosody (see (6) and Fig. 1):

(4) Yo fui quien te llamó.  
I was-1SG who you-CL called-3SG  
‘It was ME who called you.’

(5) Vos también lo conocés.  
You(SG) also him-CL know-2SG  
‘YOU also know him.’<sup>3</sup>

<sup>3</sup> Focusing adverbs focus on a particular part of the sentence (subject, verb phrase, etc). In the context seen in (5), the adverb *también* is associated with the subject, as the speaker says to another speaker ‘Of course, (I) know J.R. You also know him. (We) went to school with him.’ (Sp. *Claro,*



- (6) *Donde vos tenés que hablar como hablan los demás.*  
 where you(SG) have-2SG to talk as talk-3PL the others  
 ‘Where YOU have to talk in the way the others do.’

In the last example, the speaker points out that ‘it is YOU who has to talk in the way the others do’ and places emphasis on the subject pronoun *vos*. This prosodic marking is necessary since the focused subject is not shifted to the rightmost position of the sentence but instead remains in preverbal position. The characteristic pitch accent of the focus in *Porteño* Spanish is a low-high-low tone, labeled L+H\*+L in the Spanish ToBI system (see Gabriel et al. 2010; Feldhausen et al. 2011).<sup>4</sup> This tone has a rising and falling pattern within the metrically strong syllable and does not occur with topics in the variety of Spanish under study here. Furthermore, the focus domain is typically separated by a low boundary tone (L-) from the rest of the utterance and triggers a deaccentuation of all the postfocal material (see Fig. 1).

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*lo conozco a J.R. \*(Vos) también lo conocés. Fuimos al colegio con él.*) For this reason, the omission of PS *vos* (‘you’) is not permitted.

<sup>4</sup> The Sp\_ToBI is a Spanish *Tones and Break Indices* transcription system (see Aguilar et al. 2009; Estebas-Vilaplana & Prieto 2009; Prieto & Roseano 2010; for *Porteño* Spanish see Colantoni & Gurlekian 2004; Gabriel et al. 2010), based on the Autosegmental-Metrical (AM) model of intonation (see Pierrehumbert 1980; Ladd 2008; cf. Hualde 2003 for Spanish). It assumes two basic tonal units: (1) pitch accents, which are associated with metrically strong syllables ( $\sigma^*$ ) of the prosodic word, and (2) boundary tones, which mark the end of either intonational phrases (indicated with the symbol ‘%’) or intermediate phrases (indicated with the symbol ‘-’) (for Prosodic Hierarchy see Selkirk 1984; Nespó & Vogel 2007). The abbreviations L and H stand for low tone (L) and high tone (H) respectively, and the addition of an asterisk (\*) shows that tone’s association with the metrically strong syllable  $\sigma^*$ . The acoustic analysis used in the present study was carried out using Praat software (Boersma & Weenink 2010).

Fig. 1: Waveform, spectrogram and F0 contour of utterance *Donde vos tenés que hablar como hablan los otros* ('Where YOU have to talk in the way the others do'), with focused subject pronoun *vos* ('you') realized as L+H\*+L.

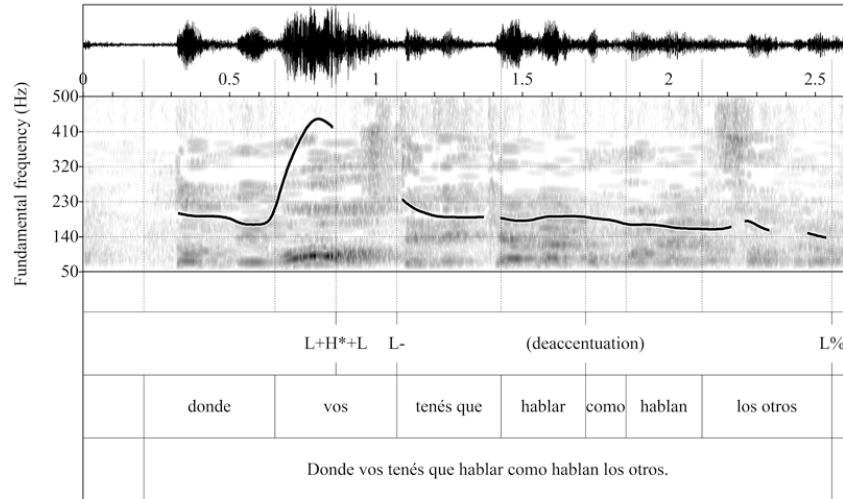
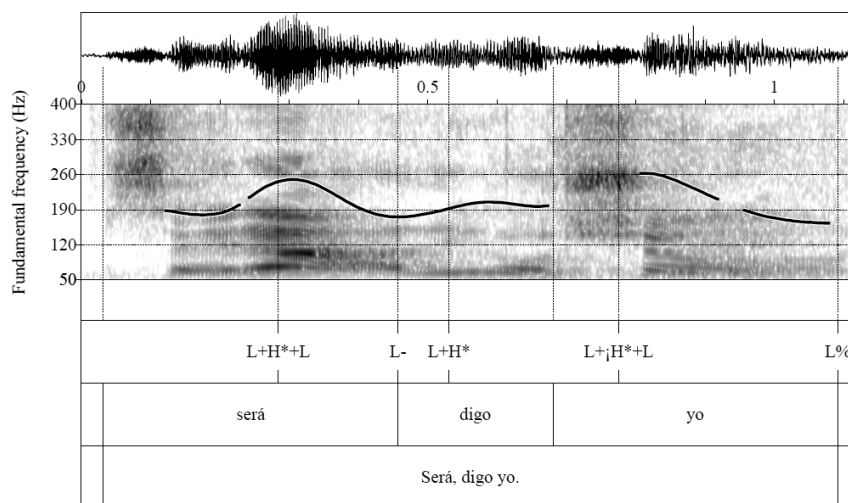


Fig. 1 shows that the monosyllabic subject pronoun *vos* ('you') in focus is realized with a rising-falling pitch contour (L+H\*+L), and it is followed by a low boundary tone (L-) and a low plateau of the postfocal material (between L- and L%). Notice also the high pitch range (170-450Hz) on the prosodic word *vos*, which adds emphasis to the prominence of the focus domain. The tritonal realization is also typical of focused subjects which are moved to the right edge of the sentence (see Fig. 2).

Fig. 2: Waveform, spectrogram and F0 contour of the utterance *Será, digo yo* ('It will be, I say'; lit. 'Will be, say I') with clause-final subject *yo* ('I') as a focus and realized as  $L+{}_iH^*+L$ .



In the utterance seen in Fig. 2, the subject pronoun *yo* ('I') forms part of one prosodic phrase (*digo yo*), separated from the preceding material (*será*) by a low intermediate boundary tone (L-), and it is realized as a  $L+{}_iH^*+L$  followed by a low phrase-final boundary tone (L%). The symbol '<sub>i</sub>' indicates so-called upstep of F0 peak: in Fig. 2, the pitch peak associated with the word *yo* is higher than the peak of the preceding prosodic word (here: *digo*).

In sum, if the focused subject is preverbal, it must be systematically realized as a  $L+H^*+L$  in the variety of Spanish under study (with the exception of constructions such as those in (4) and (5)). Even if the focused subject is marked syntactically, i.e. shifted to the right edge of a sentence, its typical tonal realization is still  $L+H^*+L$ . However, the focused (clause-final) subject can be also realized as a falling tone ( $H+L^*$ ) or even as a low tone ( $L^*$ ). In the latter case, the problem is that this tonal realization of clause-final subjects might coincide with the characteristic tonal realization of familiar right-dislocated (RD) topics defined as an 'afterthought' (Hyman 1975; see also Frascarelli 2007 for Italian RD-topics; Gutiérrez Bravo 2008 and Villalba 2011 for Spanish RD-topics). The subject as a topic in the right periphery is illustrated in Figure 3.

Fig. 3: Waveform, spectrogram and F0 contour of the utterance *Tomamos mates nosotros* ('We drink *mates*'; lit. 'Drink *mates* we') showing clause-final subject *nosotros* ('we') as a right-dislocated topic realized as L\*.

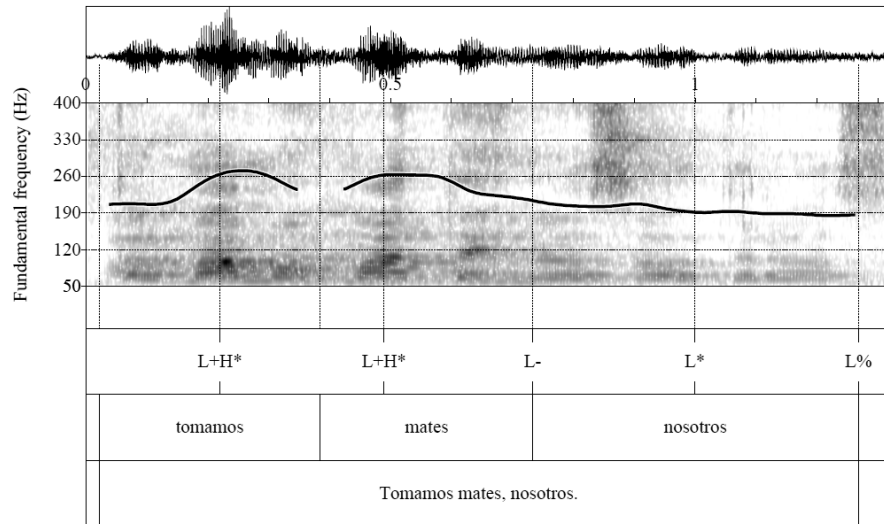


Fig. 3 illustrates the typical tonal contour of a sequence with a right-dislocated subject: the subject *nosotros* is phonetically realized as a low plateau (L\*), typically separated by a low boundary tone (L-) from the preceding prosodic unit. Such a boundary tone or prosodic phrasing is crucial to distinguish between subject-focus (L\*) and subject-topic (L\*) in the rightmost position. While the topic-domain is separated by a low tone (L-) from the preceding prosodic material (see Fig. 3), the focus-domain is separated by a high tone (H-) (see Pešková et al. 2011).

### 3.2. PS as a Contrastive Topic

As we noted in Section 2, among empirical researchers considerable debate revolves around whether the expression of a PS in a contrastive context is obligatory or optional. However, I will assume that PS must always be overtly realized when they function as contrastive topics (RAE 2009-2011; and see argumentation that follows below). The only occasion when the 'contrastive' subject-topic may be omitted is when it is replaced by another expression such as a locative adverbial that can affect reference (for more details see Amaral and Schwenter 2005). In (7) below, the pronoun *nosotros* ('we') can be omitted as it is replaced by a locative adverbial *acá* ('here') which functions as a sort of generic subject in Spanish:

- (7) *En España dicen tú, pero acá decimos vos.*  
 in Spain say-3PL tú (you) but here say-1PL vos (you)  
 'In Spain (they) say *tú*, but here (we) say *vos*.'

If no expression like *acá* in (7) were used, it would be necessary to express the pronoun *nosotros* overtly (*En España dicen tú, pero \*(nosotros) decimos vos*), because it functions as a contrastive topic. The contrastive topic can be defined as an “aboutness topic that contains a focus” (Krifka 2007: 44) and which creates “oppositional pairs with respect to other elements belonging to a restrictive discourse-given or contrastive set” (Chocano 2012: 143). Additionally, the PS as a contrastive topic must always be preverbal (or clause-initial), as we see in (8):

- (8) *Cindy toma café con leche pero yo prefiero café negro.*  
 Cindy drinks-3SG coffee with milk but I prefer-1SG black coffee  
 ‘Cindy drinks coffee with milk, but I drink black coffee.’  
 (Bailey and Pease-Álvarez 1997: 356)

In (8), the PS *yo* (‘I’) is a topic which represents a switch-reference in the discourse. Moreover, the information given about *yo* is in clear contrast with the information which is given about the previous referent (see RAE 2009-2011: 40.3u, 33.5c-f). In other words, *yo* contrasts with *Cindy* precisely because of the fact that *drinks coffee with milk* creates an opposition with *drink black coffee*. Thus, the pronoun *yo* is a contrastive topic.

Otheguy et al. (2007) among others assume that the PS can be omitted in contrastive sets. They illustrate this with the following example (9):

- (9) *Nosotros queríamos que asistiera pero ella no quiso ir.*  
 we wanted-1PL that assists-3SG but she not wanted-3SG go  
 ‘We wanted that (she) assisted, but she didn’t want to go.’  
 (Otheguy et al. 2007: 776)

Of course, this situation clearly involves some kind of contrast. However, the subject pronoun *ella* (‘she’) cannot be a true contrastive topic in this instance because it has a null subject as an antecedent in the same complex sentence (*que Ø asistiera*); hence, its expression is optional on the condition that it is not prosodically marked.

The difference between ‘neutral’ topic (optional overt PS) and contrastive topic (obligatorily overt PS) is illustrated in (10). Notice that the contrast can also be covert:

- (10) Context: *¿A qué hora llegaste?* ‘What time did (you) arrive?’  
 a. ‘Neutral’ Topic *(Yo) no recuerdo.* ‘I can’t remember.’  
 b. Contrastive Topic *\*(Yo) no te hago estas preguntas.* ‘I don’t ask you such questions.’  
 (RAE 2009-2011: 40.3x)

The first answer (10a) permits the omission of the subject as thematic information, whereas in the second one (10b) it would not be appropriate to do so, as the speaker “‘*implícitamente desea contrastar su respuesta con esa misma pregunta*”<sup>5</sup> (RAE 2009-2011: 40.3x). It is as if the speaker is saying, ‘You are asking me such questions, but I

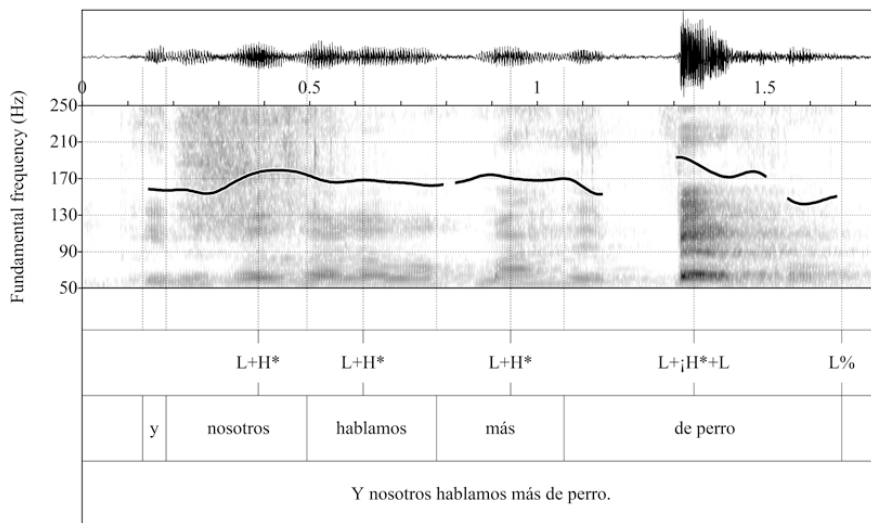
<sup>5</sup> “[The speaker] implicitly wishes to contrast his answer with the question itself.”

don't ask you such questions.' This oppositional relationship between two references is essential for contrastive topics, as illustrated in (11):

- (11) a. *Ellos dicen persho y nosotros hablamos más de perro.*  
 they say-3PL dog and we speak-1PL more about dog  
 'They say *persho* (dog), and we talk more about *perro* (dog).'
- b. *No todo el mundo toma tanto mate. Yo tomo mucho.*  
 not all the world drinks-3SG so much *mate* I drink-1SG much  
 'Not everybody drinks *mate*. I drink (it) a lot'.
- c. *¿Van a Neuquén el viernes? Ah, mirá vos. Yo estuve en Neuquén este año.*  
 go-3PL to Neuquén the Friday Ah, look you. I was-1SG in Neuquén this year  
 'Are (you) going to Neuquén on Friday? Well, look at that. I have been to Neuquén this year.'

In terms of prosody, the predominant pitch accent of the contrastive topic is a rising tone (L+H\*) (see Fig. 4), which is also found very often with other types of topics.

Fig. 4: Waveform, spectrogram and F0 contour of utterance *Nosotros hablamos más de 'perro'* ('We speak more about *perro* (dog)') where the subject is a contrastive topic, realized as L+H\*.



### 3.3. PS as an Aboutness-shift Topic

The aboutness-shift topic is a type of topic which introduces or reintroduces a new reference that does not contrast with any preceding element in the context (see e.g. Frascarelli and Hinterhölzl 2007). This topic refers basically to what other authors have called *sentence topic* (Reinhart 1981), *chain initial topic* (Givón 1983a, 1983b), *obligatory topic* (Vicente and Foullieux 1992), *new topic* (Krifka 2007) or *tema* (Di Tullio 2007). The PS as an aboutness(-shift) topic prefers a null form in *Porteño* Spanish, but it can also be overtly realized quite often. An example of the introduction of a new reference in discourse is given in (12)<sup>6</sup>:

- (12) *Vinieron de las dos [inmigraciones], muchos, mitad y mitad, casi. Pero aquí está más arraigado para mí la cultura italiana, mucho más. Hay mucho español también, mucho. Pero nuestra manera de ser... Mirá, si vos tenés la oportunidad de volver a Italia...*  
 ‘A lot of them came from both [the immigrations], half and half, almost. But here, Italian culture is much more deeply rooted, I think. There is also a lot of Spanish influence. However, our way of being... Look, if you have the opportunity to go back to Italy...’

In (12), the speaker is first reflecting about the Italian influence in Argentina and then changes the topic and addresses the listener directly. The overt subject pronoun (*vos*) is used to indicate a switch-reference. It should be noted that Bianchi and Frascarelli (2010) assume that the aboutness-shift topic is a root-phenomena and restricted only to root clauses. However, if we adopt this syntactic condition, the problem is that we move away from the basic definition of the aboutness(-shift) topic. Thus, the present paper assumes that the pronoun *vos* (12) is introduced newly in the discourse and thus is an aboutness-shift but not a familiar topic.

A situation that is similar to (12) can be observed in (13), where the overt pronominal subject *yo* represents a topic-shift:

- (13) *Sí, [la influencia] es italiana [...]. Es una tonada que se fue transmitiendo en generación en generación. Después cuando se vienen acá, siguen con la tonada [...]. Es como que se mantiene, ¿no? El hecho de estar hablando en esa forma... Yo tengo una amiga que es argentina porteña y que se fue a vivir a San Juan.*  
 ‘Yes, [the influence] is Italian [...]. (It) is an accent that was passed down from generation to generation. Later, when (they) come here, (they) hold onto the accent [...]. (It) is somehow maintained, right? The fact of talking that way... I have a friend who is *Porteño* Argentinean and who went to live in San Juan.’

<sup>6</sup> Since examples (12-16) offer a larger context, we have dispensed with the grammatical gloss.

Example (14) illustrates the reintroduction of a topic. The speaker starts to relate (in the first person singular) what he is doing and then describes his surroundings. At the end he reintroduces the reference *yo* ('I') in an overt form in the discourse:

- (14) *Acá estoy tirado en la hamaca paraguaya, en una posición muy cómoda, relajado luego de haber tomado sol toda la tarde y haber re-remado en kayak con Andrea. En un lugar maravilloso como es el lago Nahuel Huapi en San Carlos de Bariloche, en el sur, en la Patagonia argentina, un lugar que impresiona tanto a extranjeros como a los propios habitantes desde la Argentina como yo. Yo soy argentino y me encanta este lugar.*  
 'Here (I) am, lying in a Paraguayan hammock, in a very comfortable position and relaxed after having rowed in a kayak all afternoon with Andrea, at a marvelous place called lake Nahuel Huapi in San Carlos de Bariloche, in the South, in Argentinean Patagonia, a place which impresses not only foreigners but also the inhabitants of Argentina itself, like me. I am Argentinian and love this place (lit. *and this place pleases me*).'

In the previous three examples, the expression of the PS is used to signal switch-reference in a discourse. In (15) below, there is also a switch-reference in the context; however, the pronoun is omitted. The speaker describes her own feelings and experiences when travelling. The topic-chain of the first person singular is interrupted by reintroducing the pronoun *nosotros* ('we') in a null-form ( $\emptyset$ ):

- (15) [Mi marido y yo] fuimos a Brasil [...]. Cuando yo voy a Europa, no descanso. No es un viaje "relax" de decir, bueno, me voy a distender a Europa. Estoy como de acá para allá todo el día, me levanto a las siete, vuelvo a las doce. Acá [en Brasil] me levantaba a las once, volvía al departamento, dormía siestas... En la noche  $\emptyset$  íbamos a comer...  
 '[My husband and I] went to Brazil [...]. When I go to Europe, (I) never stop to take a break. (It) is not a journey for relaxing, like, "Well, (I) am going to Europe to relax." (I) am like the whole day going from one place to another, (I) get up at seven AM and (I) get back at twelve PM. Here [in Brazil] (I) used to get up at eleven, (I) used to go back to the room, (I) used to take naps... At night (we) used to go out for dinner...'

At this juncture it is worth mentioning that most studies on information structure examine mainly nominal or pronominal subjects of the third person (see e.g. Gabriel 2007, 2010; Frascarelli 2007). This paper offers an analysis for PS of all grammatical persons. The grammatical person is an important intervening factor in the use of PS, since many corpus-based and experimental studies show that the overt pronoun rate varies across the pronouns of different grammatical persons even in very similar contexts (for more details on this issue, which is far beyond the scope of this study, see Otheguy



et al. 2007; Goodall 2010; Posio 2012; Pešková 2013, 2014).<sup>7</sup> One of the methodological problems in the analysis of the informative function of PS is how to define the null or overt PS of local (i.e. first and second) persons in question-answer sequences like (16):

- (16) a. Speaker 1:  $\emptyset$  *Fuiste* *al cine?*  
                   went-2SG       to the cinema  
                   ‘Did (you) go to the cinema?’  
       a’. Speaker 2: *No, \emptyset fui* *al teatro.*  
                       no       went-1SG   to the theater  
                       ‘No, (I) went to the theater.’

From the grammatical point of view, we could assume that the null subject in (16a’) represents a shift in the context (2SG vs. 1SG) and therefore constitutes an aboutness-shift topic. However, the referent is still Speaker 2 in both cases, thus a familiar (given/known) topic (defined in 3.4). This analysis is supported by the following example, where the null subject is a third person singular (coreferent with *María*) interpreted as a familiar topic:

- (17) a. Speaker 1: *Fue* *María* *al cine?*  
                       went-3SG   Mary       to the cinema  
                       ‘Did Mary go to the cinema?’  
       a’. Speaker 2: *No, \emptyset fue* *al teatro.*  
                       no       went-3SG   to the theater  
                       ‘No, (she) went to the theater.’

A further methodological problem is how to deal with reiterative (subject-)shifts in contexts with two referents. In (18) we see two newly introduced topics (*mi abuela, yo*) and several null subjects. I propose to analyze all the null subjects as familiar (parallel) topics (cf. Silva-Corvalán 1982). This means that the notion ‘switch-reference’ can also occur between two familiar topics as is seen, for instance, in the last sentence of (18):

- (18) *Mi abuela<sub>i</sub> alquila la primer quincena de enero (...) una casa que \emptyset<sub>i</sub> tiene. Y si \emptyset<sub>i</sub> alquila la segunda, yo<sub>j</sub> tengo que hacer el cambio de llaves. Pero la segunda todavía \emptyset<sub>i</sub> no la alquiló. Así que \emptyset<sub>j</sub> lo estoy pensando porque \emptyset<sub>i</sub> me dijo...*  
       ‘My grandmother rents out a house (she) owns the first two weeks of January (...). And if (she) rents it out the second two weeks, I have to do the handover of the keys [from one tenant to the other]. But (she) has not rented it out yet. So (I) am thinking about it because (she) told me...’

As for syntax and prosody, the aboutness-shift topic is found in preverbal position in declaratives and is predominantly realized as a rising tone L+H\* (see Fig. 4 or 6).

<sup>7</sup> For instance, in *Porteño* Spanish the pronoun is more often realized for the first person singular (*yo*) than for the first person plural (*nosotros*) or third person singular (*ella*) (see Pešková 2013, 2014 for more details).

### 3.4. PS as a Familiar Topic

The familiar topic refers to given or previously mentioned information in a discourse, establishing a background for the sentence which is then responsible for the continuity of the topic (Givón 1983a: 9). It may also act as an ‘afterthought’, in which case it is dislocated to the right-periphery (Frascarelli 2007: 699). An example of a familiar topic is given in (19):

- (19) *Giorgina es una amiga. Es insoportable de lo habla. Habla mucho. No para.*  
 Giorgina is-3SG a friend is-3SG unbearable of that talks-3SG talks-3SG a lot not stops-3SG  
 ‘Giorgina is a friend. (She) is unbearable for talking too much. (She) talks a lot. (She) can’t stop.’

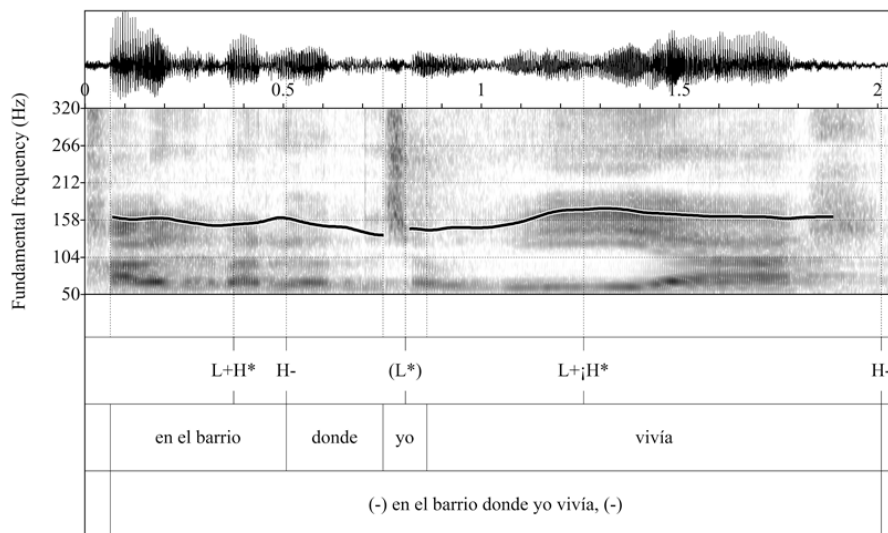
In contrast to what would be the case in English, in (19) all of the subject pronouns are omitted: the null subjects establish a chain of familiar topics which have the same antecedent mentioned at the beginning of the thematic paragraph (*Giorgina*). Familiar topics are assumed to have a null form in languages like Spanish (see Rizzi 1997; Ariel 2001; Carminati 2002; Cardinaletti 2004). The PS as a familiar topic is less often overtly realized than the PS as an aboutness-shift topic. However, when we study the data from the oral corpus, we still find many cases of overtly realized familiar PS, such as the examples in (20):

- (20) a. *La conozco un montón. Yo con Ale fui al colegio.*  
 her know-1SG a lot I with Ale went-1SG to the school  
 ‘(I) know her very well. I went to school with Ale.’
- b. *Yo hacía deportes, trabajaba en el barrio donde yo vivía.*  
 I did-1SG sports worked-1SG in the neighborhood where I lived-1SG  
 ‘I used to do some sports, (I) used to work in the same neighborhood where I lived...’
- c. *En Amsterdam también tuve muchos problemas cuando llegué para dormir porque yo no reservaba nada.*  
 in Amsterdam also had-1SG many problems when arrived-1SG to sleep because I not reserved-1SG anything  
 ‘In Amsterdam (I) also had a lot of trouble finding a place to sleep when (I) arrived, because I didn’t make any reservations.’
- d. *Mi abuela murió el jueves pasado. Estaba muy vieja. tenía alzhéimer... Ella vivía en mi pueblo.*  
 my grandma died-3SG the Thursday last was-3SG very old had-3SG Alzheimer she lived-3SG in my village  
 ‘My grandma died last Thursday. (She) was very old, (she) had Alzheimer’s... She used to live in my village.’

One plausible explanation for the overt PS could be that they appear at a new episode boundary, a context where the referent is less accessible (Van der Wal 2010: 199-200). Consider example (20d): the first episode refers to a description of the reasons for the grandmother's death, whereas the second episode (starting with the PS *ella*) tells us about the place where the grandma used to live. This tendency is also found in other pro-drop languages (see Van der Wal 2010 for the Bantu language Makhuwa; Paredes Silva 1993 for Brazilian Portuguese). However, not all the overt familiar PS found in spoken data indicate an episode boundary: for instance, in Spanish overt PS occur frequently in relative clauses (regarding (20b), see Dufter 2011; for more details see Pešková 2014).

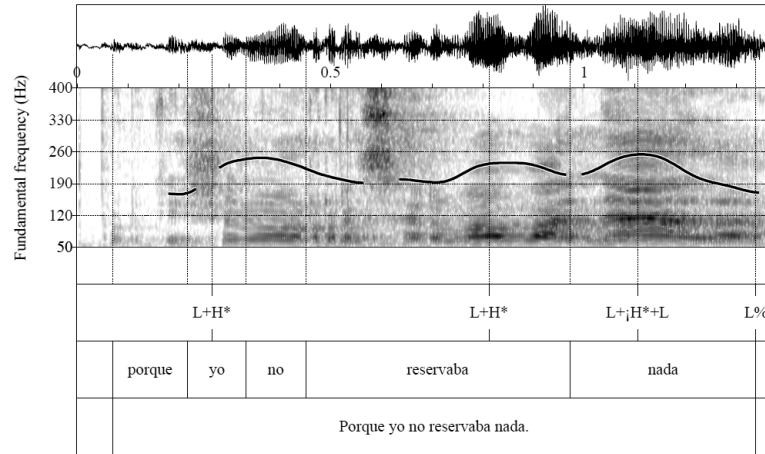
In terms of prosody, the right-dislocated (familiar) subject-topic is systematically realized with a low tone (see Fig. 3 above). However, it is also possible to find the low F0 contour with a familiar PS in the preverbal position, as illustrated in Fig. 5. This tonal realization contradicts the grammarians who state that overt subject pronouns are always emphatic or contrastive (Luján 1999: 1311-1312) and that they must always be “strongly stressed” in Spanish (Zagona 2002: 25). Moreover, the PS as a familiar topic in preverbal position is predominantly realized with a rising pitch contour (L+H\*) (see Fig. 6, example (20c)), a contour which is attested for other types of topics.

Fig. 5: Waveform, spectrogram and F0 contour of part of utterance *en el barrio donde yo vivía* ('in the neighborhood where I lived') where the subject is a familiar topic realized with a low F0 contour.<sup>8</sup>



<sup>8</sup> Though the prosodic word (the PS *yo*) is stressed, it lacks a pitch accent (indicated as (L\*)).

Fig. 6: Waveform, spectrogram and F0 contour of part of utterance *porque yo no reservaba nada* ('because I didn't make any reservations') where the subject is a familiar topic realized as L+H\*.



### 3.5. PS as a Disambiguating Topic

Disambiguating Topic is a new proposal for another type of obligatorily realized PS in Spanish. The PS as a disambiguating topic is a particular sort of aboutness-shift or familiar topic which must be overtly realized under certain conditions in order to compensate for referential and/or morphological ambiguities. The justification for introducing this new category lies not only in its discourse function but also in its formal aspect: the PS as a disambiguation topic always immediately precedes the verb, unlike aboutness-shift or familiar topics (3.3.; 3.4.), which permit intervening syntactic elements between verb and subject (e.g. (20a) *Yo con Ale fui al colegio*). A disambiguating PS is illustrated in (21):

- (21) *Mi marido quiso mudarse... Yo no tenía problemas*  
 My husband wanted-3SG to move I not had-1/3SG problems  
 'My husband wanted to move... I had no objections.'

In spoken language, the information given by a speaker must be accessible or interpretable to a listener. Since the verb *tenía* in (21) has a morphologically ambiguous form (1SG vs. 3SG), the subject pronoun *yo* must be overtly realized for the correct interpretation of the reference. If the subject had a null form in this context, it could lead to a second possible interpretation of the utterance (i.e. *no tenía problemas* would be associated with *mi marido*). It might be suggested that the pronoun *yo* in (21) is overtly realized because it indicates a switch-reference. However, this argument can be refuted by means of a simple test: if we replace the *imperfecto* verb tense (*tenía*) with the *pretérito* (*tuve*), which is unambiguous in its first person singular form, the null subject is still permitted without any difficulty: *Mi marido quiso mudarse. Ø No tuve problemas.*

The PS as a disambiguating topic can also be used to disambiguate referential ambiguities when the grammatical person includes more than one referent (see 22):

- (22) *Pedro y Judit han comprado un castillo en Ródano. Él ya*  
 Peter and Judy have-3PL bought a castle in Rhône he already  
*tiene unos castillos en Escocia.*  
 owns-3SG (F/M) several castles in Scotland  
 ‘Peter and Judy have bought a castle in the Rhône. He already owns several castles in Scotland.’  
 (Adli 2011: 218)

In his typology of different types of familiar topics, Adli proposes to analyze the pronoun *él* (22) as a subset of continuity topic (2011: 218). I agree with Adli that the subject is a familiar topic, but I propose that it should be regarded as a disambiguating topic (a subcategory for obligatory overt subjects) in this context. Given that Spanish verbs do not show gender agreement, the pronoun *él* must be overtly realized in (22) in order to specify the person who owns several castles in Scotland (*él* ‘he’ vs. *ella* ‘she’). Again, we can apply a simple test to support this analysis: if we use *yo* (‘I’) instead of *Judy* and a verb in a morphologically non-ambiguous form (such as the present tense), the subject can be easily omitted, as shown in (23):

- (23) *Pedro y yo hemos comprado un castillo en Ródano. Ya*  
 Peter and I have-1PL bought a castle in Rhône already  
*tengo unos castillos en Escocia.*  
 own-1SG several castles in Scotland  
 ‘Peter and I have bought a castle in the Rhône. (I) already own several castles in Scotland.’

As mentioned in the section 2.4., there are contexts where the PS is omitted in ambiguous contexts. In (24), the speaker is recounting an anecdote about a colleague. Notice that the complex sentence has two null subjects with two different referents (*I* vs. *he*), even though the verbal forms are both ambiguous (1SG vs. 3SG):

- (24)  $\emptyset$  *Pensaba que  $\emptyset$  tenía una hermana menor*  
 thought-1/3SG that had-1/3SG one sister younger  
 ‘(I) thought that (he) had a younger sister.’

Example (25) below offers another ambiguous context, in this case involving two potential antecedents that are third person singular masculine (*mi profesor* vs. *un profesor español muy importante*). Despite the fact that, after introducing the nominal subjects at the beginning of the narration, the speaker thereafter uses only null subjects, the information remains interpretable to the listener without any difficulty:

- (25) *Mi profesor me dijo que tuvo la posibilidad*  
 my professor me told-3SG that had-3SG the possibility  
*de conocer un profesor español muy importante. Y*

---

of meet	a professor Spanish	very important	And
<i>no lo</i>	<i>conoció.</i>	<i>Era</i>	<i>su ídolo</i>
not him	met-3SG	was-3SG	his idol
<i>pero</i>	<i>no lo quiso ir</i>		<i>a ver</i>
but	not him wanted-3SG	go	to see
<i>no le</i>	<i>gusta</i>	<i>viajar.</i>	
not him	likes-3SG	to travel	

‘My professor told me that (he) had the opportunity to meet a very important Spanish professor. And (he) didn’t meet him. (He) had been his idol all his life, but (he) didn’t want to go to see him because (he) doesn’t like traveling.’

In comparison to (21) and (22), examples (24) and (25) allow a pro-drop. Interestingly, not only the null subjects in Spanish but also several instances of the personal pronoun *he* in the English translation for (25) are ambiguous. However, the information is interpretable from the context. Thus, the crucial point here is the semantic predictability (expectation) provided by the contextual information as a whole. As Givón states, “predictability (...) is not a purely *grammatical* phenomenon, but takes into account grammatical, pragmatic or semantic input” (1983b: 59). Taking example (24) above, it is clear that the speaker is wondering whether or not his colleague —not he himself— has a younger sister or not. If an ambiguous context lacks semantic predictability, then we need to complete the information by using, for instance, an overt PS (as in (21) and (22)). It is this type of PS that we have interpreted here as ‘disambiguating topics’. We offer a definition for this type of topic in (26):

- (26) Disambiguating Topic:  
 PS as an aboutness-shift or familiar topic which is overtly realized in order to disambiguate referential and/or morphological ambiguities in contexts that lack semantic predictability.

This means that the overtly realized PS of verbs that show a morphologically ambiguous form in the context with semantic predictability are not considered disambiguating topics but rather aboutness(-shift) or familiar topics (see 3.3, 3.4). Interestingly enough, the ‘verbal ambiguity’ factor shows up as less important in the overt use of PS when disambiguating topics are excluded from the envelope of variation (see Pešková 2014). Concerning the phonological characteristics of disambiguating topics, their typical tonal realization is a rising tone or a low tone, similar to aboutness-shift and familiar topics.

## 4. Conclusion

The present paper investigated the relationship between the omission and expression of pronominal subjects with different pragmatic-discursive functions in *Porteño* Spanish. In addition to the methodological problems pointed out, the two goals of the study were, first, to define obligatory vs. optional overt PS and, second, to describe the informative functions of PS and their implications for the syntax-phonology interface. Regarding the first goal, PS are obligatorily realized as focus and contrastive topics (RAE 2009-2011). Additionally, a new subcategory of topic, the disambiguating topic, has been proposed

for obligatorily realized PS in semantically unpredictable contexts with morphologically ambiguous verbal forms. In contrast to these three categories, PS are omissible when interpreted as aboutness-shift topics or familiar topics. Interestingly, PS are more frequently realized as aboutness-shift topics than as familiar topics (Pešková 2014). These findings resemble a similar pattern previously found in Italian (Frascarelli 2007) and Peninsular Spanish (Adli 2011). However, the distinction between familiar vs. aboutness-shift topic does not fully explain the variable use of PS as there are also other factors such as grammatical person (see Otheguy et al. 2007; Posio 2012; Pešková 2013; etc.) or episode boundary (Paredes Silva 1993; Van der Wal 2010) which may significantly influence the expression or omission of the PS in a pro-drop language like Spanish (see also Pešková 2014).

As for the second goal, the present investigation on Spanish can only partly support Frascarelli and Hinterhölzl's assumption that discourse properties "have structural correlates both in phonology and in syntax" (2007: 89). Syntactically, focused subjects are mostly shifted to the rightmost position in a sentence, whereas topics are typically in clause-initial position with the exception of familiar topics, which can also appear in the right sentential periphery. Concerning prosody, intonation plays an important role in distinguishing focus from topic. Whereas right-shifted as well as preverbal focal PS have a rising-falling tone with its peak located within the accented syllable (L+H\*+L), the prevailing tonal realization of all types of topics is a rising tone (L+H\*). The only observed distinction (among topics) is that the subject as a contrastive topic cannot be realized with a low tone, in comparison with other topics. The question arises as to why in *Porteño* Spanish different types of topics do not show any clear differences in prosody. To state that it is a prosodic feature of the variety under discussion might be an overly simplistic answer. Hence, it might be profitable to devote future research to other prosodic phenomena such as intensity, duration and pitch range in order to more adequately describe the phonological categories of different discourse functions. Moreover, future investigations should also attempt to support results based on spontaneous spoken data by means of production or perception experiments and other experimental methods.

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# How can the study of developmental disorders inform linguistic theory about information structure?<sup>1</sup>

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**Abstract.** Specific Language Impairment and Autism Spectrum Disorders have been claimed to be complementary clinical profiles of impaired grammatical versus impaired pragmatic abilities. This paper explores these two disorders with respect to context effects on sentence interpretation and referential choices. A study of these areas can provide information about the contribution of perspective taking to sentence interpretation and to speakers’ referential choices, as well as shed light on the underlying nature of the two disorders.

**Keywords.** Specific Language Impairment; Autism Spectrum Disorder; Information structure; Context effects; Referential choices; Perspective taking

## 1. Introduction

A central focus of recent theorizing is on determining how information structure is encoded in grammar and whether or to what extent information structure is part of a separate pragmatic component. This article discusses two developmental disorders which can inform this debate: Specific Language Impairment (SLI) and Autism Spectrum Disorder (ASD). As shown in detail in the next sections, SLI is defined as a disorder that primarily affects the acquisition of grammar, presumably in the presence of full pragmatic competence, whereas ASD is associated with impaired pragmatic competence and normal language development. The following schema (see Figure 1) illustrates how the study of developmental disorders can inform linguistic theory and, in particular, theories of information structure. To this end, we have selected two linguistic phenomena about which we will review the current literature: the effect of information structure on hearers’ sentence interpretation and on speakers’ referential choices. We have selected these phenomena because both tackle the knowledge and use of specific forms, in this case word order and referential form, and their discourse functions. Both, word order (e.g., the ordering of given and new information) and referential choices (e.g., to realize the reference to an entity with either a description, a name or a pronoun)

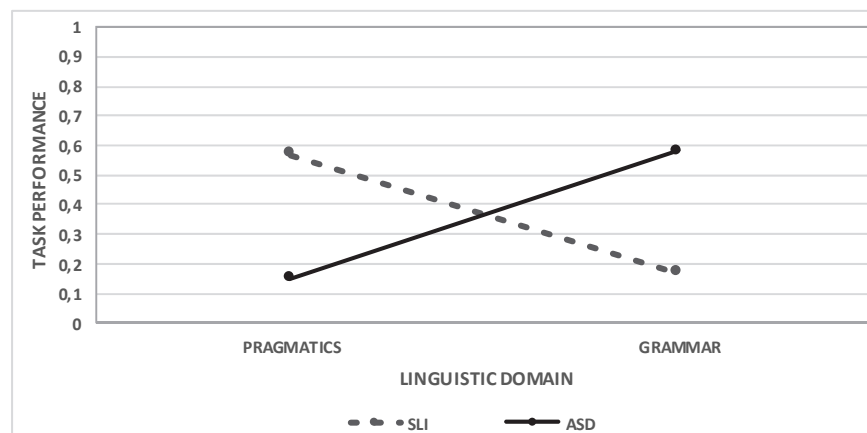
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signal speaker assumptions about hearer knowledge and attentional state (cf. Chafe 1976; Vallduvi and Engdahl 1996). The information structure of a sentence (e.g., the topic-comment structure or given-new information ordering) has to be appreciated by the hearer for efficient communication. Referential choices are sensitive to the cognitive status of an entity and reflect speaker assumptions about hearer knowledge (e.g., Ariel 1990, 2001; Gundel et al. 1993). Both, identifying the information structure of a sentence and appropriate referential choices, do not only involve the knowledge about the relationship between form and discourse function (e.g., referring expression and cognitive status, word order and topic-comment structure, given-new information ordering), but also the appropriate assessment of contexts in which the mapping becomes relevant in order to identify discourse functions of specific forms (Gundel et al. 2007; Vallduvi and Engdahl 1996).

Fig.1: Schema of predicted performance on information structure related phenomena



Defined as a disorder that selectively affects the grammatical component (i.e., the core computational system), the syndrome of SLI allows us to tease apart the contributions of the grammatical versus pragmatic components of language use (Schaeffer 2012). According to this view, children with SLI are considered to be fully pragmatically competent. As a consequence, poorer performance by children with SLI on a given pragmatic task has to be regarded as a reflection of their language impairment. This view then predicts a comparable performance on any given pragmatic task to that of younger, typically-developing children with similar grammatical abilities.

The literature, however, reports frequent co-morbidity of pragmatic disability in a subgroup of children with language impairment. These children are typically referred to as being affected by Pragmatic Language Impairment (PLI; see Bishop 2000). To date, it remains a matter of debate whether these children more closely resemble the clinical profile of children with SLI or that of children within the autism spectrum (Bishop 2000). The clinical profiles of SLI, PLI, and ASD are difficult to differentiate for those children that neither fully meet the ASD criteria, nor the typical SLI criteria and classification remains rather unreliable (e.g., Bishop and Norbury 2002; Botting and

Conti-Ramsden 1999). Therefore, it appears that some continuity is present in developmental disorders characterized by language impairment and/or pragmatic disability. It remains to be clarified whether SLI and ASD (or, rather, the high-functioning end of the autism spectrum) could in principle constitute the extreme ends of this continuum or whether they constitute independent syndromes that selectively involve language impairment or pragmatic disability.

In the next section, we will introduce the developmental disorders, SLI in Section 2.1 and ASD in Section 2.2, and their characteristics in further detail. We selected context effects on sentence interpretation (Section 3) and referential choices (Section 4), for which we will present evidence from SLI and ASD research and discuss in what respect they shed light on the independence of linguistic and pragmatic abilities or, rather, their interaction, and to what extent the disorders are complementary.

## 2. Developmental Disorders

### 2.1. Specific Language Impairment

SLI constitutes a developmental disorder that primarily affects the process of language acquisition in either or both receptive and productive modalities in the absence of any other obvious neurological or cognitive disorder (according to the ICD-10 Version 2015; World Health Organization 2015). Children with SLI have a normal intelligence quotient (IQ) and normal hearing abilities, excluding intellectual deficits, hearing disability, or other sensory impairments as primary causes for the language impairment. No neurological impairment can be held responsible for the poor language outcomes. In addition, the diagnosis of SLI also excludes abnormal socio-emotional development, and thus, the clinical profile of SLI excludes a diagnosis of the autism spectrum. Children with SLI do not follow the timely acquisition path observed in typical language development, but proceed much more slowly. Moreover, the language learning process in children with SLI can vary with respect to the acquisition rate, the final levels of mastery of a specific ability, the frequency of errors and/or the shape of the process itself (Leonard 1998). Thus, poor language outcomes are observed in the phonological, lexical-semantic, and/or morphosyntactic domains and these domains can be affected synchronously or asynchronously (see Bishop 1997; Leonard 1998).

Children with SLI typically perform below the average according to their peers on more than one measurement per language domain. Specifically, they show particular difficulties involving sentences with semantically reversible non-canonical word order (van der Lely and Harris 1990), such as object-relative clauses (e.g., Adani et al. 2014; Friedmann and Novogrodsky 2004), object which-questions (e.g., Friedmann and Novogrodsky 2011), passive sentences (Friedmann and Novogrodsky 2007; van der Lely 1996), and object clitics (e.g., Jacobowicz et al. 1998), as well as with inflectional morphology (e.g., Rice and Wexler 1996; Rothweiler et al. 2012).

The SLI exclusion criteria, in principle, rule out any substantial pragmatic impairment that would fall inside the autistic behavior spectrum. For instance, children with SLI are sensitive to violations of Gricean maxims (Surian et al. 1996), while children with ASD are not. However, difficulties making appropriate inferences in story

comprehension and organizing discourse during storytelling have also been frequently reported for children with language impairment (e.g., Adams and Bishop 1989; Norbury and Bishop 2002, 2003; see Bishop 2000). Pragmatic abilities are typically considered to constitute a strength in children with SLI (Schaeffer 2012; van der Lely 1997) and difficulties in text comprehension and story generation could, in principle, be attributed to their grammatical impairment.

In a corpus study of spontaneous speech, Schaeffer (2012) reported sensitivity to the discourse basis of the use of subject drop and definite articles in English as well as object scrambling in Dutch. She claims that children with SLI follow the *concept of non-shared assumptions* in their production, and by doing so take into account hearer knowledge for their productions. The group of children with SLI did produce grammatical errors, which resembled those of younger, typically-developing children. This result calls for a distinction between pragmatic and grammatical abilities in SLI.

In contrast, Bishop and Adams (1992) showed that children with SLI performed more poorly in story comprehension even when accounting for their receptive grammatical abilities. Previous research has tried to disentangle the contribution of semantic versus pragmatic aspects to phenomena in SLI, such as the interpretation of the logical versus the pragmatic meaning of quantifiers (Katsos et al. 2011) and the exhaustive interpretation of multiple wh-questions (Schulz and Roeper 2011). Thus, the study of pragmatic abilities in children with SLI should inform us on how pragmatic abilities such as assessing and updating shared knowledge interact with language abilities.

Children with SLI are predicted to perform well on discourse organization as reflected in age-appropriate assessments of what shared knowledge presents and their marking thereof in spoken discourse. If they do exhibit difficulties with pragmatic processes, these difficulties are hypothesized to reflect their underlying language impairment, which can be linked to their poor pragmatic performance. In these cases, children with SLI are hypothesized to behave more like (younger) typically-developing children of the same language age.

## 2.2. Autism Spectrum Disorders

Autism covers an entire spectrum (referred to as the autism spectrum) of variable clinical profiles that typically share impairments in social interaction and communication as well as repetitive, unusual behaviors and interests (DSM-V, American Psychiatric Association 2013). The autism spectrum covers the entire range of IQs, from mental disability to normal or above-average intellectual abilities. Children with normal to above-average IQs are typically considered to perform at the high-functioning end of the spectrum and are often known as having Asperger's syndrome or high-functioning autism.

In contrast with SLI, the communicative impairment in ASD is defined as affecting the (social) use of language and its understanding for communicative actions and thus, is linked to the pragmatic aspects of language development. Still, a considerable proportion of individuals with ASD also exhibit impairments to the structural aspects of language (see Bishop 2010 on co-morbidity of the two disorders). The communicative difficulties in ASD can affect verbal as well as non-verbal communication (Bishop 2010). Children



with ASD often exhibit unusual communicative behaviors with respect to mind-reading abilities, such as inferring communicative intentions, for example, topic continuation, non-literal speech, and aspects of prosody that convey information about the speech act.

A substantial proportion of individuals with ASD do not appear to exhibit language problems (Kjelgaard and Tager-Flusberg 2001; Joseph et al. 2005; see Tager-Flusberg et al. 2005 for an overview) and language abilities are not considered a diagnostic criterion for ASD (according to the DSM-V, American Psychiatric Association 2013). However, language abilities appear to vary greatly within the autism spectrum. In children with ASD and concomitant language impairment, complex syntactic operations pose a challenge, leading them to perform more poorly than peers in pronoun resolution (Perovic et al. 2013), passives (Perovic and Wexler 2014), the interpretation and production of clitics (Terzi et al. 2014), and morphological aspects such as tense marking (Roberts et al. 2004).

Complementary to the study of SLI, individuals with high-functioning ASD have been reported to have difficulties with social communication, empathy and mind-reading abilities, commonly summarized under the theory of mind abilities and largely in the absence of language impairment (cf. Tager-Flusberg 1996). At the linguistic level, these individuals are predicted to demonstrate difficulties with discourse organization as a reflection of their difficulty assessing shared knowledge. Similarly, difficulties with the assessment of the information structure of a sentence are expected to occur only if this ability depends on the impaired range of capacities. On the other hand, if these abilities are expected to be grammar-based, this should result in normal performance by these individuals.

### **3. Contextual influence on sentence interpretation**

The availability of new techniques for moment-to-moment monitoring during the process of sentence comprehension allows psycholinguists to track the influence of contextual constraints on parsing decisions. Adult processing research has shown that adults make use of a range of different (syntactic, lexical, semantic and pragmatic, as well as world-knowledge) information types that guide parsing predictions and/or are available during the sentence interpretation process (e.g., Altmann and Steedman 1988; Crain and Steedman 1985; Tanenhaus et al. 1995). For example, pragmatics may induce expectations that lead to predictions about upcoming input (Kaan 2001), or pragmatics may facilitate processing by reducing the memory load for accessing or storing referents during the computational process (Haviland and Clark 1974). In general, pragmatics should make the pragmatically more appropriate analysis of a sentence more favorable than its alternative (Crain and Steedman 1985).

Context effects that influence the parser's predictions about the upcoming constituent structure have been considered in the presence of ambiguity and should lead to a preference for the analysis that is more plausible in terms of verb semantics, previous discourse, or world knowledge as well as one that requires fewer additional presuppositions or entailments (Crain and Steedman 1985).

Frequently discussed in adult processing are the effects of given-before-new ordering of constituents (e.g., Clifton and Frazier 2004; Haviland and Clark 1974;

Hörnig et al. 2005). Given-before-new has been often viewed as meeting the listener's needs in terms of facilitating the integration of new information (Haviland and Clark 1974; Clark and Haviland 1977), and thus, are regarded as addressee-oriented. Additionally, a rather speaker-oriented account suggests that given-before-new provides the speaker with more planning time for uttering new information (e.g., Arnold et al. 2000; Bock and Irwin 1980). Accordingly, given-before-new could also influence expectations. As soon as there is an option in information ordering via word order, and the speaker chooses the more marked alternative, the hearer can consider this behavior to be purposeful (Clifton and Frazier 2004). The hearer would then be required to take the speaker's options into account.

The influence of context on children's comprehension or their appreciation of information structural markers has not received much attention yet (for a comprehensive overview, see Höhle et al., in press). Children as young as five years of age (Snedeker and Trueswell 2004) make use of verb semantics to predict upcoming constituent structure. Children already show sensitivity to prosodic information that signals focus/newness during infancy (Schmitz et al. 2006). By the age of four to five years, their looking behavior reflects expectations based on linking deaccentuation to previously introduced referents (Arnold 2008a).

The presence of context may facilitate children's comprehension of non-canonical word order. This has been shown in the case of object-initial transitive sentences in German, when the visual context depicted the events (Zhang and Knoeferle 2012) and when contrastive prosody provided an additional cue (Grünloh et al. 2011). Moreover, four-year-olds already performed well on topicalized spatial sentences, when the visual context supported the linking of sentence and scene to infer where X is in relation to Y. However, in contrast to adults, they did not gain an additional benefit from given-before-new to enhance the performance on topicalized spatial sentences compared to their canonical counter parts (Stegenwallner-Schütz and Adani 2013).

Children also repeated double object constructions more faithfully when the direct object following the indirect object received a focal accent compared to when the indirect object was accented and, hence, when the focus occurred late in the sentence (Höhle et al. 2014). Four-to-seven-year-old English speaking children showed facilitated comprehension of passive and object cleft structures when these were presented with a verbal context that lead to a given-before-new ordering of the test sentences compared to when these sentences were presented without context (Gourley and Catlin 1978; see also Huttenlocher et al. 1968 for visual context on passives).

To date, we know very little about the use of context during the sentence or text comprehension process by children with SLI. It was recently shown that children with SLI make use of verb semantics to predict upcoming referents (Andreu et al. 2013). Also, in an eyetracking-while-listening study, the information status of a topicalized spatial sentence (e.g., the hearer-given doll in 'Under the doll should be the monkey') did not affect children with SLI as it did their peers (Stegenwallner-Schütz and Adani 2014a). In contrast to peers, children with SLI apparently did not appreciate the information status signaled by the moved prepositional phrase (,under the doll'), namely that it presents given information.

Similarly, few studies have been carried out on the effect of context on sentence comprehension in ASD. Individuals with ASD have been shown to make less use of the sentence context when faced with syntactic ambiguity than adult control participants (Noveck et al. 2007). According to the *Weak Central Coherence* hypothesis (cf. Happé and Frith 2006), children with ASD would be expected to be poorer predictors in parsing. Children with ASD have been shown to make little use of context when presented with lexically ambiguous words (e.g., Norbury 2005). We would hypothesize that children with ASD should comprehend grammatically-encoded markers of information structure as their age-matched controls as long as they do not exhibit concomitant language impairment. A claim along these lines has been put forward by Szendroi (2010) who showed in a single case study appropriate intonational marking of corrective focus by one adolescent with ASD in Hungarian.

Little evidence is available to distinguish influences of sentence context on sentence interpretation in SLI and ASD. Children with ASD indeed show difficulties in taking the sentence context into account, as predicted by their pragmatic difficulties, while children with SLI do not. However, arguments in favor of the absence of a pragmatic disability in SLI rather build upon a lack of evidence for specifically pragmatic accounts of different processing performance (cf. Katsos et al. 2011; Schulz and Roeper 2011) when a more grammar-based account can explain the data as well.

## 4. Referential choices

The use of appropriate forms of reference has been claimed to depend on the speaker's ability to represent not only the accessibility of referents from his or her own perspective but also from the hearer's perspective (Ariel 1990, 2001; Givón 1983; Gundel et al. 1993). This should make the intended interpretation of the reference as easy as possible for the addressee (cf. the Gricean maxims of quantity and manner, Grice 1975). Hence, it follows that any speaker who has difficulties representing the activation status of referents from the hearer's perspective should also show difficulties using appropriate forms of reference in a discourse-sensitive way.

Speakers, both adults and typically developing children, generally use more explicit forms of reference (e.g., names or descriptions) to introduce new referents that are not yet subject to shared attention between the interlocutors (Ariel 2001; Gundel et al. 2007; Gundel et al. 1993; Kail and Hickmann 1992). However, children do not always behave adult-like: They overgeneralize pronouns (e.g., Bamberg 1987; Karmiloff-Smith 1985). Speakers use more reduced referential forms (e.g., pronouns and null elements) the more accessible these entities become in the discourse (see Arnold 2008b; Gatt et al. 2014 for overviews). The accessibility of referents increases with recency and frequency of previous mention (Ariel 2001; Givón 1983; but cf. Rohde and Kehler 2014), leading to the use of pronouns for maintaining reference and again more explicit forms for the reintroduction of referents. The use of more explicit forms also increases when simply more than one referent is active in the discourse (Arnold and Griffin 2007). This has been claimed to represent a strategy to avoid ambiguous reference in the case where pronominal reference would be ambiguous (e.g., when both referents share the same gender features).

In addition to the merely addressee-oriented factors described above, also speaker-internal factors can contribute to referential choices (Arnold 2008b). An increase in the use of more explicit forms of reference has also been shown in situations that lack referential ambiguity. Adults and children also tend to use more full lexical NPs if another referent has been mentioned in prior discourse, even if reference to that other referent would have been unambiguous (e.g., due to differential gender marking on the pronoun, Arnold and Griffin 2007). Adults show a similar increase in the use of explicit forms due to the mere visual presence of another referent (Fukumura et al. 2010); a similar behavior has also been shown to hold for typically developing preschoolers (Serratrice 2013). These effects have been explained by increasing competition among activated referents, which the speaker experiences in his or her own discourse model. The competition lowers the accessibility of the competing referents hence leading to the use of more explicit forms of referring expressions (Arnold and Griffin 2007, Gatt et al. 2014).

Further factors that influence referential choices are the animacy status of the referent (Givón 1983) and the subject role of the referent in the previous or current sentence (e.g., Arnold 2001; Brennan 1995; Kaiser and Trueswell 2008; Theakston 2011)<sup>2</sup>. The subject position has been claimed to be very accessible, as it is considered the default topic position of a sentence (Chafe 1976). For these factors, it is not necessarily clear to what extent they rely on considering the hearer's perspective or whether a speaker arrives at making the appropriate referential choice based on the activation status of referents in his or her discourse model alone.

The determining factors for referential choices in children with SLI and ASD have not been studied as systematically as those in typical development or adults' referential choices. Rather, the focus lies in differentiating the abilities among the populations. Bishop and colleagues (e.g., Adams and Bishop 1989; Bishop and Adams 1991; Norbury and Bishop 2002, 2003; Norbury et al. 2013) systematically attempted to tease apart referencing abilities in children with SLI, PLI, and autism. Although the results are somewhat mixed, they often show more overlap in performance than differences among groups. For example, children with SLI, children with high-functioning autism, and children with PLI all avoid the use of pronouns for the introduction of referents during storytelling. They did not differ from age-matched peers in this respect, nor among each other in terms of group comparisons. Similarly, all groups prefer pronouns for maintaining reference and full NPs for reintroducing referents (Norbury and Bishop 2003; van der Lely 1997; see also Tager-Flusberg 1995). There is conflicting evidence regarding the amount of ambiguous pronominal references produced by children with SLI. Whereas van der Lely (1997) did not find any differences in comparison to language-matched controls, Norbury and Bishop (2003) reported that both children with SLI and high-functioning autism produced a higher number of ambiguous pronouns than age-matched controls. It remains open to further investigation whether the difference can be explained with respect to the different control groups included (age-matched peers by

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<sup>2</sup> We want to point out that various factors have been shown to contribute to the mapping between discourse status and form of referring expressions to different degrees (see Brown-Schmidt et al. 2005; Kaiser and Trueswell 2008).

Norbury and Bishop or language-matched and, therefore, younger controls by van der Lely). Remarkably, children with SLI were reported to show a stronger preference of full NPs for the reintroduction of referents which reduces ambiguous reference (van der Lely 1997). Children with ASD appear more likely to be less consistent in their references (e.g., with names) than children with SLI (Norbury and Bishop 2003; Norbury et al. 2013).

Interestingly, analysis of referential choices in narratives appears to tap into a developmental change that children with SLI undergo, yielding different referential choices in the younger age ranges (up to age 9) compared to the older ages (age 10-11; de Weck and Jullien 2013). Children with SLI also take into account the information status of the interlocutor to a lesser extent than do age-matched controls, as reflected in their use of more definite than indefinite expressions (de Weck and Jullien 2013). In addition, children with SLI performed more poorly on a classical referential communication task (Bishop and Adams 1991) due to under-informative references that lead to ambiguity. In contrast to the more addressee-oriented tasks, children with SLI apparently experience similar competition effects to those experienced by typically developing children when the task controls for the accessibility of the referents in the visual material and prior context (Stegenwallner-Schütz and Adani 2014b).

Children with SLI apparently appreciate the Gricean maxims, as reflected in their ability to identify utterances that violate them (Surian et al. 1996). According to the assumption of a grammar-based impairment in SLI, difficulties with appropriate referencing are unexpected. The question remains whether their inappropriate references can be accounted for by an inability to monitor the hearer's perspective. Indeed, an alternative explanation is available that leaves aside the notion of perspective taking: Children with SLI have been reported to exhibit weaker working memory capacities than peers (Archibald and Gathercole 2006, Leonard et al. 2007; cf. Montgomery 2003 for an overview). This might also lead to difficulties in monitoring the discourse and subsequently accessing the appropriate referential form.

Pursuing the question whether children with SLI might have difficulties monitoring the listener's needs, we would expect them to also show difficulties performing other tasks that involve mentalizing, in particular, theory of mind abilities. Although children with SLI have been reported to show poorer or delayed false belief understanding on some theory of mind tasks (Farrant et al. 2006; Miller 2001, 2004), to date, findings remain inconsistent as to whether children with SLI perform differently from peers on theory of mind sensitive tasks (e.g., Miller 2001, 2004); still they apparently demonstrate a better performance than children with ASD (Colle et al. 2007; Leslie and Frith 1988; Perner et al. 1989).

In contrast to children with SLI, children with ASD are frequently described as showing difficulties mentalizing the cognitive state of others, as mirrored in their poor performance on theory of mind tasks (e.g., Baron-Cohen et al. 1985; Leslie and Frith 1988, among others). It follows that referential choices by individuals with ASD present a test case for the dependence of referential choices on a speaker's ability to mentalize hearer knowledge in the current discourse.

In narratives, individuals with ASD, like typically developing controls, produce names for the introduction and reintroduction of referents (Colle et al. 2008; Norbury

and Bishop 2003, Tager-Flusberg 1995). In contrast to age-matched peers, they use fewer pronouns for maintaining reference (Colle et al. 2008 with adults; Norbury and Bishop 2003 with children and adolescents). This points to over-explicit referential choices by children with ASD. However, there also appears to be a developmental trend. Somewhat younger children with ASD have been found to provide more explicit references in contexts where typically developing children would use pronouns (Arnold et al. 2009). Arnold et al. (2009) also showed that referential choices by teenagers with ASD are influenced by recency and the grammatical role of the referent, just as in typical development. However, overall, the evidence of appropriate referential choices in ASD remains mixed. Individuals with ASD have been frequently reported to produce more ambiguous pronouns than their controls which was interpreted as reflecting the disability to assess shared knowledge (Colle et al. 2008; Norbury & Bishop 2003, Novogrodsky 2013). Both, over-explicit and under-informative descriptions have also been reported in a referential communication task (Nadig et al. 2009) for children with high-functioning autism. There also appears to be individual preferences for different referencing strategies (Tager-Flusberg 1995) among the autistic as well as among the control group.

As expected under the assumption of a pragmatic deficit in autism, individuals with ASD show some difficulty in selecting the appropriate referring expression. However, in comparison to the characteristic difficulties with theory of mind tasks, the difference in referential choices between individuals with ASD and controls appears rather small (Arnold et al. 2009). Similar dissociations have been found for young, typically-developing children at the age of three years who show discourse-sensitive referential choices; however, they still fail on typical theory of mind tasks (Gundel et al. 2007). This would not be expected if appropriate referential choices solely depended on a speaker's ability to mentalize the addressee's discourse model.

Arnold et al. (2009) explained the use of over-explicit referring expressions by the limited working memory abilities in ASD. They speculated that the use of more full-lexical NPs in contexts that make pronoun use appropriate may result from the difficulty of monitoring the current discourse status of an entity and may be linked to limited memory resources for monitoring the discourse. However, verbal working memory has not appeared to be a domain of limited cognitive resources in ASD to any great extent. Rather, verbal working memory skills have been shown to be age-appropriate (Ozonoff and Strayer 2001; Williams et al. 2005), while limitations were instead found in the visual memory domain (Williams et al. 2005).

Although the syndromes of SLI and ASD show the predicted difference between somewhat normal referencing abilities in SLI and inappropriate referencing in ASD, the evidence is less clear-cut. Also, children with ASD apparently acquire the correct form and function mapping according to the evidence from storytelling. Inappropriate referential choices in this population, for example in the case of reference maintenance and ambiguous pronoun use, might instead be a consequence of keeping track of the discourse status of referents. Thus, the assessment of referential forms in children with SLI and children with ASD appears to present a fruitful ground for teasing apart the contribution of addressee-oriented and speaker-internal processes. This calls for more studies that use more controlled experimental settings, also for storytelling or story recall. The contribution of working memory constraints to their performance remains a

matter of further investigation. Studying referential choices in ASD has been shown to allow a disentanglement of the contribution of theory of mind abilities to referential choices and proven to be a test for theories of speaker-internal processes that are thought to be independent of perspective taking.

Open questions to be addressed in the future include the extent to which perspective taking can account for differing referential choices by children with ASD and SLI (both across syndromes and in comparison to typically developing peers) and their correlation with theory of mind abilities, the role of working memory in maintaining activation of referents in the speaker's own discourse model, and the extent to which language abilities influence referential choices.

## 5. Conclusion

The developmental disorders of SLI and ASD can be thought of as representing complementary profiles with respect to grammatical and pragmatic abilities. Therefore, their study can inform us about the extent to which context effects in sentence interpretation or referential choices draw on the grammatical versus pragmatic aspects of language.

However, we also show that the differences in the clinical profiles of these two populations are not clear-cut. Thus, while children with SLI have been shown to exhibit some difficulty with the pragmatic aspects of language (e.g., Katsos et al. 2011; Norbury and Bishop 2003; Schulz and Roeper 2011), it remains to be addressed to what extent these findings contribute to theories about the interface of semantic-syntactic aspects and pragmatic aspects of language. Children with ASD must be assessed as to what extent they also face language difficulties. Nevertheless, in particular, children with ASD who do not have any language impairment can inform theories about the extent to which mentalizing abilities play a role in appropriate language use and how these abilities correlate with other cognitive abilities, such as working memory abilities.

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# Spanish preverbal subjects in contexts of narrow information focus: Non-contrastive focalization or epistemic-evidential marking?<sup>1</sup>

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**Abstract.** In this article, we discuss the methodology of elicitation experiments designed by Gabriel (2007, 2010) in order to elicitate non-contrastive narrow focus on subjects in Spanish. Taking into account recent semantic-pragmatic work concerning the interplay between focus, evidentiality and emphasis, it is suggested that the frequent preverbal position of narrowly focused subjects in Gabriel's (2007, 2010) experiments might result from the fact that the informants' answers to the elicitation questions contain wrong (i.e. non-intended) pragmatic inferences. If this conjecture turned out to be true, the discussion concerning the position of non-contrastively focused subjects in Spanish would have to be started all over again, since the existing data would stem from experiments blurring the distinction between narrow information focus and other prominence marking strategies. The most obvious pragmatic inferences that come into question as possible intervening marking strategies are related to epistemic modality and evidentiality. The vagueness of the communicative contexts of Gabriel's (2007, 2010) materials does not permit sound conclusions concerning the precise nature of these inferences, though. Therefore, new experimental materials have been elaborated in order to get more precise communicative settings. However, albeit revealing interesting gradual differences, the comparison of the elaborated materials with Gabriel's (2007, 2010) does not exhibit any categorical distinction as concerns the subject placement in contexts of narrow information focus in Spanish: in the modified experimental setting we also find narrowly focused subjects in preverbal position, although to a much lesser extent than in Gabriel (2007, 2010).

**Keywords.** Spanish syntax; Subject position; Information focus; Evidentiality; Epistemic modality

## 1. Introduction

As concerns the realization of narrow information focus in Spanish, syntactic approaches such as Zubizarreta (1998), Costa (2001), Büring & Gutiérrez-Bravo (2001), Gutiérrez-Bravo (2008) generally assume that the nuclear stress is necessarily assigned to the last metrically strong syllable in an Intonation Phrase, so that non-contrastively focused

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subjects have to be placed in sentence-final position in order to be marked prosodically (cf. 1b. vs. 1a.). This phenomenon is generally conceived of as being due to a syntactic rule that is motivated by prosodic constraints and that is labeled ‘*p*-movement’ by Zubizarreta (1998, 1999), cf. the generalization below example (1).

- (1) *¿Quién te regaló la botella de vino?* –  
 ‘Who gave the bottle of wine to you?’
- a. \*F[María]<sub>F</sub> me regaló la botella de vino.  
 ‘F[María]<sub>F</sub> gave the bottle of wine to me.’
- b. Me regaló la botella de vino F[María]<sub>F</sub>.  
 ‘F[María]<sub>F</sub> gave the bottle of wine to me.’
- (Zubizarreta 1998: 125f)<sup>2</sup>

We may say that the reordering in (1b.) is due to prosodic reasons. More precisely, the constituents are reordered in order to put the focused constituent in the position which the neutral nuclear accent is assigned to in the clause [...]. We refer to this mechanism by means of the designation Regla P.

(Podemos decir que el reordenamiento esquematizado en (1b.) está motivado por razones prosódicas. Más precisamente, el reordenamiento de constituyentes tiene lugar para dejar el constituyente foco [...] en la posición donde cae el acento nuclear neutro dentro de la cláusula [...]. Nos referimos a tal mecanismo con el término de Regla P., Zubizarreta 1999: 423f)

While Zubizarreta’s (1998, 1999) work is entirely based on her own introspective grammaticality judgments, Gabriel (2007, 2010) pursues semi-spontaneous elicitation experiments that consist of two steps. First, short picture stories are shown to the informants in order to introduce the scenario and the referents the informants are going to be asked for. In a second step, the same pictures are shown to the informants once again, but this time accompanied by (written) *Wh*-questions asking for the subject or object referents introduced before. The informants are requested to imagine that the questions are asked by interlocutors that don’t know each other and that are unfamiliar with the questions that were asked before. One of the main results of these experiments is that “[c]onstructions with transitive verbs exhibit a strong tendency towards the pre-verbal placement of a [non-contrastively (MU)] focused subject when the object is realized as a full nominal DP constituent” (Gabriel 2010: 189), a result that is in diametrical opposition to the grammaticality judgments of Zubizarreta (1998, 1999) and other syntactic approaches.

In this paper, we argue that methodological considerations give reason to readdress the controversy concerning the syntactic realization of non-contrastively focused subjects in Spanish from a pragmatic perspective. More precisely, we consider the hypothesis that

<sup>2</sup> Following Zubizarreta (1999), we henceforth distinguish between the nuclear accent and the so-called ‘contrastive accent’ by underlining the constituents identified by the former and using capitals in order to signal the latter type of accent.



the preverbal subjects in contexts of narrow information focus elicited by Gabriel (2007, 2010) might be instances of ‘epistemic tunes’, a notion borrowed from Fließbach & Reich’s (2014) pilot study concerning the prosodic realization of obviousness and surprise in Mexican Spanish and Brazilian Portuguese on the basis of two native speakers. Albeit being preliminary, their study highlights both the pragmatic nature and the important prosodic effects of epistemic categories such as obviousness and surprise in the investigated languages.

The outline of the article is as follows. In section 2, we retrace the dispute concerning the syntactic realization of non-contrastively focused subject constituents in Spanish. In section 3, we present the experimental design of Gabriel (2007, 2010) in more detail, we draw attention to the problematic nature of the notion of ‘contrastive focus’ by Zubizarreta (1998, 1999) and others, and we discuss the methodology employed by Gabriel (2007, 2010) against the background of recent work on the interplay between focus, evidentiality marking and emphasis. Finally, we sketch an experimental setup which we designed in order to mitigate the effects of the pragmatic inferences of the above kind. In section 4, we discuss the results of an elicitation experiment we carried out in Quintana Roo, Mexico, on the basis of the revised experimental material. In section 5, we give a summary of the main conclusions.

## 2. The empirical controversy concerning non-contrastively focused subjects in Spanish

The syntactic literature on focus marking in (standard) Spanish generally distinguishes between two different kinds of focus, i.e. information focus and contrastive focus. The former corresponds to the new information of a sentence, that is not yet part of the common ground of the speaker and the hearer, whereas the latter is generally understood as “a quantification-like operation which involves exhaustive identification on a set of entities” (Gutiérrez-Bravo 2008: 164). This generalization captures the fact that the various kinds of the so-called ‘contrastive focus’ (corrective, affirmative etc.) are all based on the exhaustive marking and/or interpretation of the corresponding constituents (cf. *ibid.*: 164f as well as É. Kiss 1998, Zubizarreta & Vergnaud 2005, Adli 2011, and the references cited therein).<sup>3</sup> According to most of the syntactic approaches, the two focus types are realized by fundamentally different grammatical means in Spanish. As Zubizarreta (1998, 1999), Costa (2001), Domínguez (2004), Gutiérrez-Bravo (2006) and others argue, in standard Spanish, the non-contrastively focused constituent is obligatorily placed in the sentence final position in order to coincide with the ‘neutral nuclear stress’ (“*acento nuclear neutro*”, Zubizarreta 1999: 4229, cf. 2b. and c.), which obligatorily falls on the final constituent (2a.).<sup>4</sup>

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<sup>3</sup> There is certain terminological confusion as concerns the denomination of the different focus types. For the sake of simplicity, we stick to the established dichotomy of ‘information focus’ and ‘contrastive focus’, respectively, following Zubizarreta & Vergnaud’s (2005) terminology.

<sup>4</sup> (2a., b.) and (3a.) are our own translations of the Spanish generalizations in Zubizarreta (1999: 4229f.), partly adapted on the basis of Adli (2011: 116, 119).

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- (2) a. Nuclear Stress Rule, NSR, Spanish version:  
In Spanish, nuclear stress falls on the rightmost accented word within the Intonation Phrase.
- b. Focus Prominence Rule, FPR:  
The focused constituent must contain the intonational nucleus of the Intonation Phrase, where the intonational nucleus is identified as the syllable that bears the main phrasal prominence.
- c. *¿Quién compró los discos?*  
'Who bought the discs?'  
*Los discos, los compró <sub>F</sub>[una muchacha]<sub>F</sub>.* (ibid.)  
'As for the discs, <sub>F</sub>[a girl]<sub>F</sub> bought them.'

By contrast, prosodic prominence to signal contrastive focus is, in general, not generated by means of the NSR, but is attributed to the so-called Contrastive/Emphatic Stress ("acento nuclear enfático", ibid.), which "may fall on any accentable morpheme" in the sentence.

- (3) a. Emphatic/Contrastive Stress Rule, E/CSR:  
The emphatic stress may fall on any accentable morpheme.
- b. *El gato de botas <sub>F</sub>[ROJAS]<sub>F</sub> se comió un ratón, y no el de botas AZULES.*  
'It was the cat with the <sub>F</sub>[RED]<sub>F</sub> shoes who ate a mouse, not the one with the BLUE shoes.' (Zubizarreta 1999: 4230)

Contrary to that, the results of Gabriel's (2007, 2010) semi-spontaneous elicitation experiments clearly argue for the possibility to displace the nuclear accent in order to signal narrow information focus in Spanish. The 18 Hispanic informants interrogated by Gabriel (2007, 2010) in his experiments are from different regions of Spain (14 participants) and Latin America (4 participants) and are graduate students or university staff. Table 1 presents the results with respect to the syntactic realization of the non-contrastively focused subject constituents pertaining to the stimuli (Id.) and (Iic.) of Table 2 below (section 3). The figures show that the informants almost exclusively make use of constructions with preverbal subjects, whereas there is not any evidence in favor of *p*-movement in the data. Constructions such as *Se lo da María* ('María gives it to him') are not to be classified as *p*-movement since both, the indirect argument and the direct argument are represented by means of dative (*se*) and accusative (*lo*) clitics which are generally considered to be a part of the verbal projection 'rising' to the functional layer together with the finite verb.<sup>5</sup>

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<sup>5</sup> For reasons of clarity, we restrict the discussion to subject constituents in this paper, although double-object constructions would in principle also be relevant for the present debate.

Table 1: Realization of subjects with respect to stimuli (Id., Ilc., Table 2) according to Gabriel (2007)

Synt. construction	Example	Share	%
Preverbal, nom. obj.	<sub>F</sub> [María] <sub>F</sub> le da el diario a su hermano.	26	72
Preverbal, pron. obj.	<sub>F</sub> [María] <sub>F</sub> se lo da.	1	3
Cleft	<sub>F</sub> [María] <sub>F</sub> es quien le da el diario a su hermano.	6	17
P-movement	Le da el diario a su hermano <sub>F</sub> [María] <sub>F</sub> .	0	0
Final	Se lo da <sub>F</sub> [María] <sub>F</sub> .	3	8
Total		36	100

From this, Gabriel (2007) concludes that Zubizarreta's (1998, 1999) far-reaching generalization concerning *p*-movement in Spanish has to be relativized in view of the empirical results, since, in sentences with a direct object DP, the participants of Gabriel's (2007) study do not feel any need to place the subject constituent in sentence final position in the context of narrow information focus. It is interesting to note that the data collected by Heidinger (2013, 2014) equally suggest that non-contrastively focused syntactic constituents may be realized in prefinal position in Spanish.

Gabriel (2007, 2010) models the behavior of the speakers in terms of an approach based on stochastic Optimality Theory. More concretely, he assumes that close to standard varieties of Spanish do indeed dispose of a constraint ('AlignFoc Right') principally favoring the placement of focused constituents in the rightmost position. However, due to the low frequency of the relevant constructions, the native speakers do not get much evidence in favor of the constraint, so that it is ranked below other ones such as 'Stay PF', favoring the displacement of the nuclear accent even in the context of narrow information focus. Gabriel (2007) conducted perception experiments in order to obtain further evidence in favor of this approach. In these experiments, the participants were asked to judge the grammaticality and/or pragmatic acceptability of different syntactic constructions (basically *p*-movement, SVO-sentences and clefts) as answers to the corresponding *Wh*-questions. The fact that the constructions involving *p*-movement are generally judged to be grammatical in *Wh*-contexts next to SVO-sentences is seen as clearly corroborating the adequacy of the proposed OT approach: Gabriel's (2007) main conclusion from the perception experiments is that *p*-movement seems to be part of the grammar of the respective speakers, but it is most of the time outranked by other constraints which are more prominent.

### 3. Epistemic modality in the context of *Wh*-questions

From the above, it is evident that the investigation concerning the position of non-contrastively focused subjects in Spanish highly depends on Zubizarreta's (1998, 1999) categorical distinction between narrow information focus, considered as new, i.e. non-presupposed information of an utterance, on the one hand, and 'contrastive focus', conceived of as "a quantification-like operation which involves exhaustive identification on a set of entities" (Gutiérrez-Bravo 2008: 164), on the other. However, it is to be noted

that the utility of the notion of ‘contrast’ in order to disentangle different types of focus is highly debated in the literature. Thus, whereas Zubizarreta’s (1998, 1999) distinction is based on Chomsky (1971), who argues in favor of a categorical difference between ‘ordinary’ syntactic focus and expressive, i.e. contrastive focus, many influential semantic accounts of focus start from the assumption that “[f]ocus generally indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions” (Krifka 2007: 18). Moreover, it is generally assumed that by focusing a constituent a speaker aims at relating it to the Common Ground (CG) by establishing a set of alternatives containing an element that is (semantically) given in the CG (cf. e.g. Büring 2006: 148).<sup>6</sup> Against the background of this general semantic principle, the fact that the ‘focusing mechanism’ may be used in order to achieve different communicative goals (pragmatic uses of focus, Krifka 2007: 21-25) accounts for the different subtypes of focus, which are often accompanied by additional emphasis or prominence marking, respectively. One subtype is e.g. ‘exhaustive focus’, which is employed in order to signal that “the focus denotation is the only one that leads to a true proposition, or rather more general: that the focus denotation is the logically strongest one that does so” (ibid.: 33).

A further pragmatic use of (narrow) focus conveying a special emphasis to the focused constituent is called ‘direct evidentiality’ by Faller (2002). The notion of (direct) evidentiality is generally oscillating between the indication of (i) the speaker’s source of information, which is direct in the case of ‘direct evidentiality’, and (ii) the (degree of) speaker’s commitment to the truth of the information, which is generally very high in this category. The fact that (direct) evidentiality is to be situated somewhere in between these two interpretative nuances is most probably due to the metonymic closeness of the source of the information a speaker’s argument or affirmation is based on, and his commitment to the truth of the latter. It is most probably also due to this meaning relation that evidential meanings are very often considered to be subtypes of epistemic modality in the literature (cf. Dendale & Tasmowski 2001 and the references therein).<sup>7</sup> English adverbs such as *obviously* or *evidently* are examples of this kind of evidentiality and/or epistemic modality markers. Another example is the Quechuan *-mi/-n*-suffixation, which according to Faller (2002: 140) is used in order to indicate that “the speaker has best possible grounds for making his or her statement”:<sup>8</sup>

<sup>6</sup> Roughly speaking, the Common Ground can be equated with the “information that is mutually known to be shared and continuously modified in communication”, (Krifka 2007: 15).

<sup>7</sup> This bipolar interpretation of the term is confirmed by the fact that the corresponding definitions in the literature equally oscillate between the above mentioned meaning components, depending on the pieces of evidence that are considered, cf. e.g. Chafe & Nichols (1986), Faller (2002) or Aikhenvald (2004). However, the examples in the literature suggest that the relevant structures may generally be interpreted in both ways, depending on the context of the corresponding utterances, and the exact relation between both shades of meaning is not of primary concern for the present analysis.

<sup>8</sup> Whereas in most Quechua dialects *-mi* alternates with *-m* if it follows an open syllable, the Cuzco dialect displays an alternation with *-n* in contexts of adjacent vowels (cf. e.g. Floyd 1999: 58 based on Cusihamán 1976). In example (4), adapted from Faller (2002), the topicalization of the subject constituent is indicated by the suffix *-qa* only.

- (4) *Pilar-qa t'antata-n mikhurqan.*  
 Pilar-TOP bread-EV ate  
 p=Pilar ate bread & speaker saw that p  
 (Faller 2002: 18, modified MU)

However, according to other authors such as e.g. Muysken (1995) or Sánchez (2010), Quechuan *-mi/-n* encodes narrow focus when attached to the focused element in the clause (cf. (5)).

- (5) Q: *Pi-n wasita ruwarqan?*  
 who-EV house built  
 'Who built the house?'  
 A: *Wasita-qa Pidru-n ruwarqan.*  
 house-TOP Pedro-EV built  
 'F[Pedro]F built the house.'  
 (Sánchez 2010: 31, modified MU)









In this context, Faller's (2002) and Matić & Wedgwood's (2013) analysis of Quechuan *-mi/-n* point to the fact that the (direct) evidentiality marking by means of this morphological item implies a certain emphasis on the fact that the marked constituent is so evidently the one that makes true the corresponding proposition. Contrary to that, non-emphasized "direct evidentiality [...] is [already (MU)] the default interpretation of all sentences which lack an evidential marker" (ibid.: 140).

Based on the notions of communicative goals and Common Ground management, the dualistic view on the focus category/ies is evidently easy to reconcile with the classification proposed by Krifka (2007) by assuming that 'narrow information focus' is an instance of neutral focalization, whereas the notion of 'contrastive focus' as used by the dualistic accounts covers a range of focalization strategies that serve different communicative goals implying additional emphasis. However, as will be shown below, this reconception of the focus dichotomy requires a reconsideration of the dispute concerning the preverbal non-contrastively focused subject constituents in the above mentioned elicitation experiments. In what follows, we will first present the corresponding elicitation materials of Gabriel (2007, 2010) in more detail. We will then discuss the reasons which lead us to suspect that the informants who opted for the prosodic marking of a preverbal subject constituent in the context of questions such as *¿Quién compró el periódico?* ('Who bought the newspaper?') reacted this way in order to realize communicative goals different from neutral information focus.

Gabriel's (2007) experiment consists of two steps. First, short picture stories are shown to the informants in order to introduce the relevant referents and the scene the informants are supposed to be asked for (cf. Table 2, Ia.-IIb.). Afterwards, the same pictures are shown to the informants once again, but this time accompanied by written *Wh*-questions asking for the subject or object referents introduced before (cf. e.g. Table 2, Ic.-IIId.). The informants are requested to imagine that the questions are asked by interlocutors that don't know each other and that are entirely unfamiliar with the questions that were asked before. The participants were asked to answer by means of

complete sentences, and in order to motivate this request, they were told that the data shall afterwards be used to train learners of Spanish as a second language.

Table 2: Experimental design of Gabriel (2007) with choice of four stimuli/*Wh*-questions

<p>(Ia.)</p>  <p><i>María compra el diario en el kiosco.</i> 'María buys the newspaper at the kiosk.'</p>	<p>(IIa.)</p>  <p><i>Blancanieves secuestra a Tarzán...</i> 'Snow White kidnaps Tarzan...'</p>
<p>(Ib.)</p>  <p><i>Después se lo da a su hermano.</i> 'Shortly after, she gives it to her brother.'</p>	<p>(IIb.)</p>  <p><i>Blancanieves secuestra a Tarzán...</i> 'Snow White kidnaps Tarzan...'</p>
<p>(Ic.)</p>  <p><i>¿Quién compra el diario en el kiosco?</i> 'Who buys the newspaper at the kiosk?'</p>	<p>(IIc.)</p>  <p><i>Blancanieves secuestra a Tarzán...</i> 'Snow White kidnaps Tarzan...'</p>
<p>(Id.)</p>  <p><i>¿Quién da el diario a su hermano?</i> 'Who gives the newspaper to her brother?'</p>	<p>(IIId.)</p>  <p><i>¿Quién entrega a Tarzán a los 7 enanitos?</i> 'Who hands over Tarzan to the Seven Dwarfs?'</p>

Obviously, the inquiry is designed in order to elicit non-contrastive narrow information focus by means of *Wh*-questions. However, having in mind the above discussion concerning epistemic modality and direct evidentiality, there are several reasons to suspect that the participants of the elicitation experiments encode one or the other, if not both, meaning components in addition to narrow focus when answering the corresponding *Wh*-questions.

There are two major 'pragmatic' problems with the above mentioned elicitation settings, which entail a series of minor difficulties for the participants to properly reenact the intended communicative setting. The first major problem relates to the sparingness and the vagueness of the visual stimuli. This problem is considerably reinforced by the clash between the undefined status of the unknown questioners and the familiarity of the referents suggested by the fact that they are introduced into the discourse by means of their first names. More concretely, the two visual stimuli showing two simple activities serve as a basis in order to motivate a series of questions from a whole range of unknown and unspecified questioners. Even if the questioners did not know the protagonists of the pictured scenes, the interviewed persons are not aware of any motivation for all these very similar questions. On the other hand, if the informants acted on the assumption that the undefined questioners did not know the corresponding protagonists, they could not refer to the latter by using their first names. That is to say, the scarce stimuli urge the participants of the elicitation study to pragmatically enrich the communicative settings. At the same time, the clash between the unfamiliarity of the unknown questioners and the usage of first names in order to introduce the corresponding protagonists most probably impedes the participants to properly reenact the intended 'game'. For this reason, the informants very probably end up with the most likely pragmatic enrichment, i.e. the encoding of the obviousness and/or the certainty of the assertions they make when answering the corresponding *Wh*-questions.

The second major problem of the corresponding elicitation setting concerns the direct relation between the (scarce) visual stimuli and the elicitation questions. The participants are interrogated about what they see on the pictures, and even if they manage to properly reenact the 'game', the answers are still more than obvious (both, in the evidential and in the epistemic sense of the term). This means that the communicative setting itself already favors the marking of both, evidentiality (i.e. the fact that the information stems from a visual input) and epistemic modality (i.e. the fact that they are more than sure as to the truth of the assertion since the circumstances are so obvious). Again, the usage of first names in order to introduce the corresponding referents into the discourse considerably reinforces the triggers for this kind of evidential or epistemic marking: If the questioners are familiar with the protagonists to such an extent that they know them by their first names, there should not be any reason for them to doubt about who is acting in the corresponding scenes. Due to these pragmatic effects, there are good reasons to doubt that the elicited data really exhibit the strategy of pure non-contrastive narrow focus marking in Spanish. To the contrary, it is likely that the data are characterized by a blending of narrow focus marking and emphasized obviousness (be it in the evidential sense of the term, related to the source of information, or in its epistemic modal sense, related to the speakers' attitudes towards the truth of the corresponding assertions). Evidently, this line of reasoning also extends to the data that stem from

Gabriel's (2007) perception experiments, since the corresponding materials are subject to the same criticism concerning the simplicity of the visual stimuli, the vagueness of the communicative settings, as well as the clash between the unknown questioners and the introduction of the referents by means of first names. Moreover, they are equally prone to trigger statements (or interpretations) of the obvious due to the direct relation between visual stimuli and protagonists (which are, as mentioned before, suggested to be familiar by the use of first names).

In this context, it is interesting to note that prosodic studies of obviousness reveal for several Spanish varieties that the tonal nuclear contours of statements of the obvious closely resemble the ones of utterances in the context of what is called contrastive focus by Zubizarreta (1998, 1999) and others. For example, leaving aside the issue of the boundary tones for the moment, there are several Spanish varieties which seem to encode obviousness by means of the so-called early peak contour L+H\* that is reported to be the main reflex of the so-called contrastive focus in close to standard varieties of Spanish. Such L+H\* tones are reported for Argentinean Spanish by Gabriel et al. (2010), for Venezuelan Andean Spanish by Astruc et al. (2010), for Ecuadorian Spanish by O'Rourke (2010) and for Chilean Spanish by Ortiz et al. (2010). Castilian Spanish equally has this option of obviousness marking, as evidenced by Estebas-Vilaplana & Prieto (2010). Hence, from the prosodic point of view, the marking of contrastiveness (in the above sense) and the encoding of obviousness tend to conflate in the same tonal events, both categories presumably being related by means of the prosodic strategies used for emphasis marking in general.

Because of these methodological doubts we consider the question of the syntactic realization of non-contrastively focused subject constituents in Spanish as ultimately unresolved up to this day. In order to empirically verify this methodological concern, we recently designed a threefold elicitation material based on the elicitation design of Gabriel (2007).<sup>9</sup> In one third of the queries, conducted on the basis of five informants, we tightly followed the design of Gabriel (2007). In the second third of the queries, conducted with five other informants, we equally followed the design of Gabriel (2007). However, we introduced the corresponding referents by means of indefinite noun phrases instead of proper names in order to facilitate the intended behavior by avoiding the clash between the unknown questioners and the familiarity of the protagonists suggested by the usage of first names. Crucially, in the last third of the queries, conducted with further five informants, we modified the pictorial stimuli in order to base our query on more elaborated and better-defined communicative settings.

In Table 3, the stimuli used for focus elicitation are exemplified by means of the ones used to elicitate non-contrastively focused subjects (Table 3, Ih.-Ii.). The participants were told beforehand that the pictures will be shown to them once again, but that they were accompanied, the second time, by speech balloons. The participants were told that they are supposed to complete the balloons by giving contextually appropriate answers. As in the context of Gabriel's (2007) experiments, the informants of the study







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<sup>9</sup> We are grateful to Christoph Gabriel for leaving to us the original slides of the enquiry of 2007, and to Henrike Rödiger for the design of the further stimuli.



were asked to answer by means of complete sentences and to behave as natural as possible.

Table 3: Experimental design of elicitation study, condition 3, story 1 & stimuli for subject focus

<p>(Ia.)</p>  <p><i>Ella es Aruma Hernández Casas.</i> 'This is Aruma Hernández Casas.'</p>	<p>(Ib.)</p>  <p><i>Aruma compra un periódico en una tienda, y una conocida con su hija la están mirando desde lejos.</i> 'Aruma buys a newspaper in a kiosk, and a friend with her daughter are looking at her from a distance.'</p>
<p>(Ic.)</p>  <p><i>Después, Aruma encuentra a su amigo Don Hernando y dan un paseo en un parque cercano.</i> 'Afterwards, Aruma encounters her friend Don Hernando. They go for a walk in a near public park.'</p>	<p>(Id.)</p>  <p><i>En el parque, encuentran a unos amigos y se paran un rato a platicar con ellos.</i> 'In the park, they encounter some friends and they stay a bit in order to have a conversation.'</p>
<p>(Ie.)</p>  <p><i>Luego, Aruma acompaña a Don Hernando a casa y le da el periódico. Sus vecinos los están mirando desde su jardín.</i> 'Aruma walks home with Don Hernando and she gives him the newspaper, Don Hernando's neighbors being in their backyard looking at them.'</p>	<p>(If.)</p>  <p><i>Don Hernando entra a su casa, prepara la cena y espera a su hermana, leyendo el periódico.</i> 'Don Hernando enters his home, prepares the dinner and waits for her sister, reading the newspaper.'</p>

<p>(Ig.)</p>  <p><i>Por fin, llega su hermana y empiezan a cenar.</i> ‘Finally his sister gets home and they have dinner.’</p>	
<p>(Ih.) <b>Stimulus for subject focus 1:</b></p>  <p><i>¿Quién compró el diario en la tienda?</i> ‘Who bought the newspaper at the kiosk?’</p>	<p>(Ii.) <b>Stimulus for subject focus 2:</b></p>  <p><i>¿Quién te dio el diario?</i> ‘Who gave the newspaper to you?’</p>

The elaboration of the communicative settings was mainly aimed at designing authentic interrogative contexts which circumvent the above mentioned triggers of evidentiality and obviousness. Taking into consideration the line of reasoning delineated in this section, we thus introduced the following four modifications of Gabriel’s (2007, 2010) elicitation design. First of all, we elaborated the elicitation designs in such a way that the questioners have a natural motivation for their interest in the requested information (cf. Ih., Ii., Table 3). Secondly, there is one clearly defined communicative (or interrogative) setting that does not need to be further enriched with pragmatic meaning components by the participants of the experiment (cf. *ibid.*). Thirdly, the questioners are as familiar in the discourse as the protagonists they ask for, so that there is no clash between unknown questioners and familiar protagonists. Finally, the participants are not asked to report on more than obvious facts on the basis of scarce visual stimuli, but they are confronted with more complex stories (cf. Ia.-g., Table 3) leading them to question-answer scenarios that exclude triggers of obviousness or evidentiality to the greatest possible extent (cf. again Ih.-i. in Table 3).

#### 4. Back to the question of preverbal non-contrastively focused subjects in Spanish

In the following, we discuss the results of an elicitation experiment we carried out in Quintana Roo, Mexico, on the basis of the material described above. The participants of the study are 19 to 28-years-old monolingual speakers of Yucatecan Spanish who have all been living in Yucatán from birth on. At the time of the experiments, they were about to complete their 12<sup>th</sup> grade at the local high school.

As concerns the results, it is to be noted, first of all, that the participants generally behaved in a much more natural way in the third condition than in the two conditions designed in analogy to Gabriel (2007). More precisely, the resulting utterances are remarkably more natural as concerns both their prosody (no astonishment, no boredom, no listing intonation) just as well as their syntax (huge diversity and shortness of constructions, cf. below). Therefore, we can be quite sure that, in the context of the third condition, the participants fully engaged in the ‘game’ and faithfully reenacted the intended communicative setting.

Table 7 lists the realization of the subjects in the utterances pertaining to the relevant part of the condition 3 material (i.e. the stimuli I<sub>h</sub> and I<sub>i</sub> of Table 3, as well as the ones of the second story we modified along the same lines). These figures are to be compared to the ones of the answers given to the corresponding stimuli of condition 1, i.e. *Aruma compra un diario... y después se lo da a su hermano*, (‘Aruma buys a newspaper and afterwards, she gives it to her brother.’) *Blancanieves secuestra a Tarzán... y se lo entrega a los siete enanitos*. (‘Snow White kidnaps Tarzán and hands him over to the Seven Dwarfs.’) → *¿Quién...?* (‘Who...?’) x 4, and condition 2, i.e. *Una mujer compra un diario en una tienda... y después se lo da a un amigo* (‘A woman buys a newspaper at a kiosk, and afterwards, she gives it to her brother’), *Una princesa atrapa a un bandido... y se lo entrega a un grupo de enanitos*. (A princess kidnaps an outlaw and hands him over to a group of dwarfs.) → *¿Quién...?* (‘Who...?’) x 4, which are listed in Tables 4 and 5, respectively.<sup>10</sup>

Table 4: Realization of subjects in stimuli with non-contrastive focus on the subject (Condition 1)

Synt. construction	Example	Share	%
Preverbal, nom. obj.	<sub>F</sub> [Aruma] <sub>F</sub> compra el diario en la tienda.	12	60
Preverbal, pron. obj.	<sub>F</sub> [Blancanieves] <sub>F</sub> lo secuestra.	1	5
Cleft	<sub>F</sub> [Aruma] <sub>F</sub> es quien le da el diario al hermano.	6	30
P-movement	El diario lo compra <sub>F</sub> [una mujer llamada Aruma] <sub>F</sub> - en una tienda de abarrotes.	1	5
Others final	--	0	0
Total		20	100

<sup>10</sup> The differentiation between the two tokens with ‘non-final’ postverbal subjects in Table 6 and the tokens of the ‘Others final’ and ‘p-movement’ groups is largely due to prosodic reasons. The subjects of the ‘Others final’ category are separated from the following material by means of an IP-boundary, evidenced by the lengthening of the final stressed syllable as well as the lack of resyllabification and/or a pause after the subject constituent. In Tables 4-6, the IP-boundaries are transcribed by hyphens. The ‘non-final’ postverbal subjects in Table 6 are characterized by the lack of such an IP-boundary.

Table 5: Realization of subjects in stimuli with non-contrastive focus on the subject (Condition 2)

Synt. construction	Example	Share	%
Preverbal, nom. obj.	<sub>F</sub> [La mujer] <sub>F</sub> le está dando el diario a un amigo.	18	90
Preverbal, pron. obj.	<sub>F</sub> [Una Princesa] <sub>F</sub> lo secuestra.	0	0
Cleft	Es <sub>F</sub> [una princesa] <sub>F</sub> que está atrapando a un bandido.	2	10
P-movement	Le da el diario a su amigo <sub>F</sub> [una mujer] <sub>F</sub> .	0	0
Others final	Se lo da <sub>F</sub> [una mujer] <sub>F</sub> .	0	0
Total		20	100

Table 6: Realization of subjects in stimuli with non-contrastive focus on the subject (Condition 3)

Synt. construction	Example	Share	%
Preverbal, nom. obj.	<sub>F</sub> [Aruma] <sub>F</sub> compró el diario y me lo entregó.	4	20
Preverbal, pron. obj.	<sub>F</sub> [Blancanieves] <sub>F</sub> nos lo trajo.	1	5
Cleft	Fue <sub>F</sub> [Blancanieves] <sub>F</sub> quien lo entregó aquí.	3	15
P-movement	Le da el diario a su hermano <sub>F</sub> [Aruma] <sub>F</sub> .	0	0
Others final	Lo compró <sub>F</sub> [Aruma] <sub>F</sub> . // <sub>F</sub> [Aruma] <sub>F</sub> - en la tienda. // Me lo dio <sub>F</sub> [Aruma] <sub>F</sub> . // <sub>F</sub> [Aruma] <sub>F</sub> - para que lea. // Al parecer es <sub>F</sub> [Blancanieves] <sub>F</sub> . // Fue <sub>F</sub> [Blancanieves] <sub>F</sub> ...	10	50
Others non-final	Me lo dio <sub>F</sub> [Aruma] <sub>F</sub> en la mañana. // Vino <sub>F</sub> [Blancanieves] <sub>F</sub> corriendo y se nos entregó.	2	10
Total		20	100

Table 7 shows the figures of the three conditions in comparison with the ones of Gabriel (2007).

Table 7: Realization of subjects in stimuli with non-contrastive focus on the subject (comparison of conditions)

Syntactic construction	Gabriel (2007)		Condition 1		Condition 2		Condition 3	
Preverbal, nom. obj.	26	72%	12	60%	18	90%	4	20%
Preverbal, pron. obj.	1	3%	1	5%	0	0%	1	5%
Cleft	6	17%	6	30%	2	10%	3	15%
P-movement	0	0%	1	5%	0	0%	0	0%
Others final	3	8%	0	0%	0	0%	10	50%
Others non-final	0	0%	0	0%	0	0%	2	10%
Total	36	100%	20	100%	20	100%	20	100%

Table 7 shows, first of all, that there is no important difference between the shares of conditions 1 and 2. Thus, contrary to our expectation, the type of referring expressions

used to introduce the referents (i.e. proper names versus indefinite descriptions) does not seem to play a role as concerns the positioning of the subjects. An explanation for this state of affairs might be that the visual stimuli are as scarce, and the requested information is as obvious in condition 2 as in condition 1. Also, the relation between the pictured scenes and the questions is as immediate as in the first condition. Thus, the relevant subjects might be marked in correspondence to the obviousness of the statements that are given as answers to the *Wh*-questions, irrespective of the degree of familiarity of the referents.

Contrary to that, there are important differences between the shares of condition 3 compared to the ones of conditions 1 and 2, and to the data of Gabriel (2007) (cf. again Table 7). One of the most evident differences is that there are much more subject constituents in final position in condition 3 of our elicitation material (50%) than in the conditions 1 and 2 (5%, apart from clefts) or in Gabriel's (2007) data (8%). Accordingly, the informants realize far fewer preverbal subjects in condition 3 (25%) than in conditions 1 and 2 or in Gabriel's data (65%, 90% and 75%, respectively). Together with the fact that the participants generally behaved in a much more natural way when being exposed to the stimuli of condition 3, this result suggests that the most natural way of realizing narrow focus in spoken Spanish is indeed to put the relevant constituent in a position in which the Nuclear Stress Rule may easily apply.

However, it is important to note that the data nevertheless does not furnish any conclusive evidence in favor of structures that might be traced back to what Zubizarreta (1998, 1999) calls 'prosodic movement', e.g. sentence final subjects in structures with full nominal object constituents. Moreover, there is unmistakable evidence in favor of the possibility to localize non-contrastively focused subject constituents in preverbal position in Spanish (cf. e.g. *¿Quién te dió el diario?* 'Who gave the newspaper to you?' – *F[Aruma]<sub>F</sub> compró el diario y me lo entregó.* 'Aruma bought the newspaper and gave it to me.' in Table 6). All in all, the results hence suggest that in natural communicative settings, speakers indeed tend to place non-contrastively focused subjects in the position required by the NSR, but preverbal subjects seem to be just as possible. This holds even in the elicitation contexts that were designed in order to exclude the explicit marking of direct evidentiality and/or obviousness. As such, the results may be taken as important additional evidence in favor of the possibility of preverbal subjects in contexts of narrow information focus in Spanish.

## 5. Conclusions

For the time being, we may draw the following conclusions from the methodological study described above. First of all, the communicative setting is highly important in the realm of elicitation experiments related to information structure. Secondly, the 'NSR-position' seems to be by far the most common position for non-contrastively focused subject constituents in Spanish in constructions without full nominal object constituents. This result is partly along the lines of Gabriel (2007, 2010) who notes that "focused subjects are preferably realized in clause-final position" in constructions "involving the pronominalization of the object" (ibid.: 2010: 195). Thirdly, the abundant preverbal subjects in the conditions 1 and 2 are very probably to be traced back to the fact that the

speakers felt the need to signal evidentiality and/or obviousness for the pragmatic reasons mentioned in section 3. Fourthly, our data suggest, again partly along the lines of Gabriel (2007), that it is nevertheless an entirely grammatical, albeit marginal option for native speakers of Spanish to localize non-contrastively focused subjects in prefinal position (cf. again the shares presented in Table 6).

It should be noted that our investigation is a preliminary approach to the methodological issues discussed in section 3. To mention but one immediate desideratum of the present investigation, the realization of the different (sub-)types of focus is a matter of syntax *and* prosody in Spanish, so that the relevant subject constituents evidently need to be analyzed prosodically, too. A first glance at the preverbal subjects in the third condition suggests that the displacement of the nuclear accent to a non-final position seems indeed to be possible, at least in the Yucatecan variety of Spanish. However, the data still has to be analyzed more carefully and more exhaustively before we can draw any conclusions.

Nevertheless, despite of the provisional nature of our investigation, the data resulting from our elicitation experiments furnish important additional hints in favor of (i) the possibility of preverbal subjects in contexts of narrow information focus in Spanish and (ii) the marginality of sentence final non-contrastively focused subjects in constructions with full nominal object constituents, i.e. structures which are generally traced back to *p*-movement by Zubizarreta (1998, 1999) and many other syntactic accounts on Spanish word order. Furthermore, as already hinted at by Gabriel (2007, 2010), our data equally suggest that the ‘NSR-position’ is nevertheless the preferred position for non-contrastively focused subjects in utterances without nominal direct object in Spanish. Finally, it has become evident that the specifics of the communicative setting have an important impact on elicitation experiments related to information structure.

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# Tests for focus<sup>1</sup>

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**Abstract.** In information structure studies, we ideally combine corpus data and semi-spontaneous data (which prevent tunnel vision) with elicitation (which provide more fine-grained and also negative evidence that is needed for testing specific hypotheses). But what counts as a good test in eliciting focus? This paper provides an overview of the tests that have been applied for (different types of) focus, indicating why they show the scope and/or type of focus they are used for, and discussing problematic aspects.

**Keywords.** Focus; Exhaustivity; Elicitation; Methodology

## 1. Introduction

As is well known, there are many (confusing and sometimes conflicting) definitions of focus and equally many ways to show the scope and interpretation of focus. This paper provides an overview of the tests used to ‘diagnose’ focus and the possible difficulties when applying these tests. In the introduction I aim to set the stage for a discussion of these tests by clarifying some terms and points of departure.

### 1.1. What this paper is about

With respect to the definitions used in the literature, a broad distinction into three groups can be made according to which aspect is taken as defining (cf. Hyman and Watters 1984):

1. The realisation (fronting, stress, particle etc.)
2. The scope: which constituent is focused (sentence, verb phrase, noun, adjunct etc.)
3. The semantic/pragmatic interpretation (exhaustive, contrastive, assertive etc.; Dik’s 1981, 1997 ‘communicative point of focus’)

The first set of definitions involves “diagnostics” like “the sentence-initial element is always the focus” or “focus is not resumed by a clitic”. These definitions are usually precisely what we are testing when the research question is ‘which focus, if any, is associated with this linguistic strategy?’. This results in circularity: we want to know whether a strategy like fronting encodes focus and at the same time we define focus as the fronted element. Therefore, these are not taken into account in this paper. The tests discussed in the current paper mainly show where the focus is, and what type of focus a

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certain strategy encodes. I will refer to all formal ways of encoding focus in a language as ‘strategies’, and am not concerned with the syntactic status of such strategies. For example, the bi-clausal or monoclausal status of what is called a ‘cleft’ is not discussed, but rather whether the element focused in a cleft is interpreted exhaustively.

The second group of definitions is usually determined by question-answer pairs (see section 2), and is the basis of, for example, Lambrecht’s (1994) distinction between Argument Focus, Predicate Focus and Sentence Focus. The examples used in the paper (and indeed in a large part of the literature) mostly illustrate focus on an argument or adjunct, rather than focus on the predicate, verb, or truth value; a subset of the tests can certainly also be used for those cases.

For the third group of definitions a broad range of descriptions and tests have been used, which, together with scope, are discussed in the rest of the paper. These include various distinctions made under various different names, such as É.Kiss (1998) identificational vs. new information, Vallduvi and Vilkuņa’s (1998) *kontrast* and *rheme*, etc. Though they may truly be different notions, they have often been conflated under the term ‘focus’ and are hence all relevant in diagnosing the properties of focus. Importantly I exclude from the domain of focus what has been called ‘presentational focus’ or ‘sentence focus’ (Lambrecht 1994), because I believe this to instantiate information structuring on a higher level than the sentence: it is a *thetic* (as opposed to *categorical*) sentence which as a whole presents one piece of information in the surrounding discourse. See the discussion under Test 1 and Sasse (2006) for further information on *theticity*.

One distinction to draw within the third category is that between pragmatic and semantic effects of focus. The various pragmatic types of focus are defined by the context in which they occur, that is, they relate to managing the common communicative goals (Krifka 2007b). These are the ‘corrective’, ‘replacive’, ‘selective’ etc. types of focus (cf. Dik 1997), which feature in section 4; see Zimmermann and Onea’s overview (2011) for these distinctions and exemplification. Semantic focus, on the other hand, is related to the content of the common ground (Krifka 2007b) and – unlike pragmatic focus – can have truth-conditional effects. A well-known semantic definition of focus is that it “indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions” (Krifka 2007b:6), as proposed in Rooth’s (1985, 1992, 1996) *Alternative Semantics*. Possible operations on that set of alternatives result in an exhaustive or exclusive reading, which have a truth-conditional effect.

Exhaustivity (excluding all alternatives) differs from exclusivity (excluding some alternatives). There are two versions of exhaustivity, weak and strong (as explained by Beck and Rullmann 1999, who refer to Bäuerle and Zimmermann 1991). Weak exhaustivity names all the referents for which the predicate is true, and strong exhaustivity names those referents and additionally gives the information that this is the complete set, that is, it implies or asserts that all alternatives are not true. For exclusivity one could also define two versions, weak and strong. Weak exclusivity means that there is at least *some* other referent to which the predicate does not apply (see also Molnár 2002), which leaves open the option that in fact *all* alternatives are excluded. Strong exclusivity is the same as strong exhaustivity: for *all* other referents the predicate does not hold – or, in Krifka’s (2007b:21) words, it “indicates that the focus denotation is the

only one that leads to a true proposition”. Strong exclusivity thus entails weak exclusivity: if all the alternatives are excluded, then logically some of the alternatives are excluded (under the assumption that there is at least one alternative).

As focus is dependent on the linguistic and extra-linguistic context, it is essential that contextualised data be used. The ideal would be to combine insights from corpus data and semi-spontaneous data with elicited data (i.e. grammaticality and felicity judgements as well as speaker’s comments). On the one hand, the corpus data prevent a tunnel view, while on the other hand, the elicitation data provide more fine-grained and also negative evidence that is needed for testing specific hypotheses. As an example of the former, take the case of Somali *baa*. Whereas this particle gained fame as a dedicated focus marker, a look at actual texts shows that it is used in many more contexts, as a shift topic marker, as a text-structuring device and inthetic sentences (Tosco 2002, cf. Saeed 1999)

While acknowledging that spontaneous data are indispensable, data mining (e.g., for the expression of focus) is a field on its own (see Dipper et al. 2007, esp. Götze et al. 2007) and I will concentrate here on tools that can be used in elicitation. This also means I take examples from spoken data rather than written, although the tests could be applied to written data too. Some tests can be used as a heuristic device to find a focus strategy, others assume that the researcher has a (suspected) focus strategy in mind that is to be tested for specific properties like exhaustivity.

An important development that should be mentioned at the start is the Questionnaire on Information Structure (QUIS), as a result of project D2 of the Sonderforschungsbereich 632 at the Humboldt-University in Berlin and the University of Potsdam (Skopeteas et al. 2006). To my knowledge, this is the first concrete method for the identification and description of information structure in natural language, and it consists of different stimuli and suggestions for the elicitation of topic, focus andthetic sentences. When used with care, this is a great help in collecting data on information structure. See further Skopeteas (2012).

As a word of caution, it should be mentioned that not all tests are equally applicable, depending on 1. the language (if a language has no negative indefinite ‘nobody’, this cannot be used in the indefinite test); 2. the informants (some tests require some abstract and/or creative thinking); and 3. test materials and availability of computer-run programmes (for quantitative studies). Nevertheless, this overview aims to provide some insight into the diagnostics that have been used to claim that a certain strategy does or does not encode focus/exclusivity/exhaustivity, and some of the pitfalls that come with the tests.

## 1.2. What this paper is not about

As mentioned, I am not concerned with the syntactic status of the strategies to be tested (e.g. whether there is altruistic movement of non-focal material, whether resumptives are clitics or not, etc.), even if these may prove to be useful clues to the interpretation of the strategy. What is also left to one side is the interesting discussion of whether focus is a unified phenomenon or category, for which I refer the reader to Matic’ and Wedgwood (2013) vs. Zimmermann and Onea (2011). A further issue is the possible influence of

non-linguistic or paralinguistic features (e.g., eyebrow raising, Krahmer and Swerts 2007a,b), which will not be covered either.

With respect to ‘types of focus’, I will not go into so-called second occurrence focus (Partee 1999, contributions in Kamp and Partee 2004, Selkirk 2008, Féry and Ishihara 2010, among others), multiple or pairwise focus (‘who kissed whom?’) and the possible category of ‘emphasis’ (cf. Downing and Pompino-Marschall 2013).

With these remarks and explanations in place, we can discuss the tests that have been employed to identify focus. The tests to be discussed have been subdivided into five types, which form the next five sections: Questions, Focus particles, Quantifiers, Co-text, and Stimuli.

## 2. Questions

### *Test 1: WH questions and answers*

As mentioned, the most widespread and accepted test for focus and a method of establishing the scope of focus is WH questions and their answers (Dik 1997, Rooth 1992, Krifka 2007a, Lambrecht 1994, Kasimir 2005, Roberts 1996, Beaver and Clark 2008, and many others). The basic idea is that a WH question always asks for new information. If focus is defined as the new information in a sentence,<sup>2</sup> then it follows that A) WH phrases are inherently focused (cf. Lambrecht 1994), and B) in the answer to a WH phrase, the phrase that replaces the WH element is in focus. In Dik’s (1997) terms, this is ‘completive’ focus, as it provides a value to the proposition left open in the corresponding WH question. In Lambrecht’s (1994:207) words, focus is “the element of information whereby the presupposition and the assertion differ from each other”, or in terms of alternatives, “a focus constituent X expresses new-information if [the (ordinary) meaning of X] introduces an element of Alternatives into the common ground, and if the alternatives to [the meaning of X] have not been explicitly introduced in the preceding discourse” (Zimmermann and Onea 2011:1663).

Q-A test (Kasimir 2005:12)

If a question asks for some X (X being a syntactic category), in a direct answer to this question, the constituent which corresponds to X is focused.

Question-answer pairs hence indicate the new information, and according to Rizzi (1997) this also means that it is incompatible with contrast (or: exclusion of alternatives). A contrastive answer is incompatible with an ordinary WH question, as in ‘What did you have for breakfast?’ #‘It was porridge that I had for breakfast’. However, Gryllia (2009:31, 40) shows that people can easily accommodate alternatives into a question, which make a contrastive answer compatible with a seemingly out-of-the-blue question, as in ‘Who did you meet?’ ‘I met GEORGE, not Mary’. This is interpreted as a hidden alternative question, which solicits the new information while additionally asking for the set for which the proposition is not true (see Test 2).

<sup>2</sup> This is debatable, as one may also say that new information is the default status of elements in a sentence (cf. Schwarzschild 1999, Selkirk 2008, Kratzer and Selkirk 2010), and define focus more narrowly as contrastive or exhaustive.

The Q-A test is most commonly used in indicating the scope of focus. To illustrate, consider the question-answer pairs in (1). Although the answer is segmentally and prosodically the same, with a pitch accent on APPLE, the contextualising WH question indicates what part is in the scope of focus: only the modifier *apple*, the whole noun phrase *apple juice* (“Argument Focus”), or the verb phrase *drank apple juice* (“VP focus”, “Predicate Focus”). See Selkirk (1984, 1995) for a discussion of such focus ambiguity and an analysis in terms of focus projection.

- (1) a. (what kind of juice did Little Tiger drink?)<sup>3</sup>  
He drank [APPLE]<sub>F</sub> juice.
- b. (what did Little Tiger drink?)  
He drank [APPLE juice]<sub>F</sub>.
- c. (what did Little Tiger do?)  
He [drank APPLE juice]<sub>F</sub>.

The Q-A test can also be part of testing with stimuli, e.g. in the QUIS where participants are presented with pictures and then asked a WH question.

Although Q-A pairs can be formed in any language for argument DPs (‘who?’, ‘what?’), not all constituents can be targeted by a wh question in all languages. For example, only a minority of languages has interrogative verbs, as in (2). These are absent in English, i.e. we cannot ask ‘the man whatted?’, and the test can therefore not be used to determine narrow verb focus in English.

- (2) Yankunytjatjara (Douglas 1959:39, via Hagège 2008)  
*wati yaal-tji-nu?*  
man what-INTR-PERF  
‘What did the man do?’

There are three further issues I want to raise with respect to the question-answer test. The first is the possibility to give a fragment answer (Merchant 2004). For example, the most natural answer to a question ‘who ate the cookies?’ would be ‘Cookie Monster’, rather than repeating the whole sentence ‘Cookie Monster ate the cookies’. Although the fragment answer still represents the focus, it often does not illuminate us on the use of a strategy to encode focus, as many strategies need a full clause. But even if the longer answer may not be the most natural, speakers do have intuitions on the appropriateness in the context, and therefore these Q-A pairs can help us in establishing what/where the focus of the sentence is.

The second is the possible influence of a question-answer congruence bias. Although the question-answer congruence in terms of information structure is crucial for any Q-A test to work, it is also well-known that people tend to repeat the exact *formulation* of the question in the answer. For example, if the question is asked in a cleft strategy (‘who was it that stole the cookies?’), the bias will result in a clefted answer (‘it was Cookie Monster who stole the cookies’), rather than an equally well acceptable non-

<sup>3</sup> Throughout the paper, capitals in examples are used to indicate sentence stress.

clefted sentence ('Cookie Monster stole the cookies'). Linguists should be aware of this tendency when applying Q-A tests.

The third remark concerns one specific question: 'what happened?'. As the question does not contain old information or presuppositions, and as the answer will canonically be a whole sentence, it is said that this Q-A pair forms a test for an 'all-focus' sentence, or 'presentational focus'. There are at least three ways in which the answer to 'what happened' can contain a topic and hence not be 'all focus'. The first is when there is a universal, unique, or always-available topic, such as 'the sun', 'the train' or 'the queen' (Chafe 1976). The second is when a situationally available topic is referred to, most obviously a speech participant. For example, in French a cleft can be used in athetic sentence, answering 'what happened' (3a), but this is only possible for non-speech act participants, as the inappropriateness of (3b) shows.

(3) French

*Qu'est-ce qui se passe?*  
'what happens?'

- a. *C'est Pascal qui a peint la tour Eiffel.*  
it is Pascal who has painted the tower Eiffel
- b. ?? *C'est moi qui ai peint la tour Eiffel.*  
it is me who has painted the tower Eiffel

A third problematic aspect of the 'what happened' question is our tendency to accommodate information (presupposition accommodation, Lewis 1979). For the purposes of creating a coherent discourse, participants are willing to accept as common ground the existence and relevance of referents that might be coded as topics even if they were not in the common ground before (see the overview in Stalnaker 2002 and von Stechow 2008). For example, at the beginning of a novel, the reader does not have any previous knowledge and the first sentence must therefore be 'all new'. Writers play with these expectations and sometimes seem to start a story 'in the middle', expecting us to accommodate the information that is presented as old. For example, the first line from a Dutch novel in (4) starts with a definite description 'the bike', triggering the existential presupposition of a bike and allowing it to be a topic.

(4) Dutch (novel 'Koude lente', Lieneke Dijkzeul, 2007)

Het fietsje lag in het gras bij de vijver, vlak bij de bank die ooit was geschilderd in de kleur groen die voorbehouden scheen te zijn aan parkbanken en Russische auto's ten tijde van het communistisch regime.  
'*The small bike was in the grass near the pond, close to the bench that was once painted in the shade of green that appeared to be reserved for benches in the park and Russian cars at the time of the communist regime.*'

In the same way, people can easily accommodate new entities in 'what happened' tests as well. When presented with a (QUIS) picture of a cat in a pool and asked 'what is going on?', we could describe the picture by saying 'there is a cat (who is) swimming', but it is equally easy to say 'the cat is swimming', even if the cat has not been previously

presented. These topic-creating factors make it difficult to know whether the answer to a ‘what happened’ question is truly all-new/all-focus.

### *Test 2: Alternative questions*

Apart from WH questions, another type of question is also used as a focus test. These are the so-called ‘alternative questions’ of the form ‘do you want coffee or tea?’. This can also be part of tests using stimuli, such as the QUIS picture of a woman cutting a melon being accompanied by a question ‘is a man or a woman cutting the melon?’. This special type of yes/no question requires a selection from among a set of given alternatives. The answer can be said to display ‘selective focus’ (Dik 1997). A focus constituent X is used selectively if “it introduces an element of [the alternative set] into the common ground, and is chosen from a restricted subset of [the alternative set] the members of which have been explicitly mentioned in the preceding context” (Zimmermann and Onea 2011:1663).

Again, fragment answers can be given, which may or may not illustrate the particular focus strategy. Yoruba illustrates how a fragment answer can contain the focus particle *ni* in the answer to an alternative question (5).

- (5) Yoruba (Bisang and Sonaiya 2000:189)
- a.    èwà    ló                    fẹ    jẹ        tàbí    irẹ̀sì?
- bean FOC:2SG        want eat    or     rice
- ‘Do you want to eat beans or rice?’
- b.    èwà    ni.
- bean FOC

The fact that the alternatives are present and one of the alternatives is selected, e.g., ‘I want beans’, excludes the other alternative, ‘not rice’. A question is whether this exclusion is necessarily present, having truth-conditional effects (semantics), or just an implicature (pragmatics). After all, choosing tea does not necessarily mean that one does not want coffee.

### *Test 3: ‘Mention some’ questions*

The opposite of an exhaustive focus is when the answer necessarily or typically has more than one referent for which the proposition can be true. This can be tested when explicitly asking for a non-exhaustive answer. An exhaustive focus strategy is infelicitous (in questions and answers) if an exhaustive answer to the question is impossible or highly implausible for pragmatic reasons, for example in the questions in (6). Note the difference with the cleft construction in French in this context, which is not exhaustive.<sup>4</sup>

- (6) a.       ?? Where is it that I can buy a newspaper in this city?

<sup>4</sup> Thanks to an anonymous reviewer for pointing this out.

- b. ?? Where are the places that I can buy a newspaper in this city?  
 c. ?? Which numbers are the ones that are odd?  
 (Cable 2008)

- (7) French  
*C'est où que je peux m'acheter un journal dans cette ville?*  
 'Where can I buy a newspaper in this city?'

### 3. Focus particles

The term 'focus particles' has been used to refer to two categories of particles. On the one hand, there are languages which have a dedicated particle marking the focus of the sentence, as illustrated for example for Gungbe (8).

- (8) Gungbe (Aboh 2004:8)  
*àkwékwè wè Kòfì xò*  
 banana FOC Kofi buy  
 'Kofi bought BANANA(S)'

These particles are a strategy of *expressing* focus and will therefore not be useful in our general overview of diagnosing test for what counts as a focus-encoding strategy.

On the other hand, there are focus particles or focus-sensitive operators that trigger a focused reading on the element they modify, or associate with the focus of the sentence. These are particles like 'even', 'also', and 'only'. They require a focus constituent in their environment and do not have an influence on the propositional content of the sentence, but may influence the truth-conditional values (König 1991, Rooth 1985, 1992, Krifka 2006, Beaver and Clark 2008, among many others). While in some languages all particles behave the same in terms of the linguistic expression (e.g. the interaction with stress), in others there are important differences between them, in terms of their effect on the sentence.

*Test 4: particle 'even'*

*Test 5: particle 'only'*

The scalar additive particle 'even' entails that more instantiations of the action/state described in the predicate have occurred and that the object modified by 'even' is the least likely in the set of alternatives to make the predicate true. For example, a sentence 'even Espen ate a vegetarian dish' is taken to mean that there is a relevant set of other people who eat vegetarian, and that in this set of alternatives, Espen is the least likely to eat vegetarian, thereby including all the members of the set.

In contrast, the exhaustive particle 'only' emphasises that the predicate is exclusively (and exhaustively) true for the referent of the focused element, excluding possible alternatives. This means that these particles cannot only be used to test focus in general, by compatibility of the particles with a certain focus strategy, but also to test exhaustivity. For a more detailed distinction between types of particles, and tests to see



their pragmatic or semantic nature, see the Questionnaire on Focus Semantics (Renans et al. 2011).<sup>5</sup>

When a focus strategy cannot be used for a DP modified by ‘even’, this may indicate that the strategy is restricted to exhaustive or exclusive focus. On the other hand, when the strategy can be felicitously used with ‘only’, this just shows that it is compatible with an exclusive or exhaustive reading but not that it must necessarily have this meaning. Brunetti (2004) shows for Italian that a focused DP in a preverbal position is compatible with both ‘even’ and ‘also’, which indicates that this strategy is not inherently exclusive (see Skopeteas and Verhoeven 2014 for the same argument in Yucatec Maya).

(9) Italian (Brunetti 2004:68)

- a. *Anche UN CAPPELLO gli ha comprato*  
 also a hat to.him.CL has bought Maria  
*Maria.*  
 Maria  
 ‘It is also a hat that Maria bought him’
- b. *Persino UN CAPPELLO gli ha comprato*  
 even a hat to.him.CL has bought  
*Maria.*  
 Maria  
 ‘It was even a hat that Maria bought him’

The same test in Makhuwa shows that the so-called conjoint verb form is compatible with ‘only’ (in fact, this verb form is required for ‘only’) but not with ‘even’, which forms an argument to say it encodes exclusive focus (Van der Wal 2011).

(10) Makhuwa (van der Wal 2009:236)

- a. CJ \**ki-n-thotol-alé hatá Láúra/Laurá*  
 1SG-1-visit-PERF.CJ even 1.Laura  
 int. ‘I visited even Laura’
- b. DJ *ko-ń-thótólá hatá Láúra*  
 1SG.PERF.DJ-1-visit even 1.Laura  
 ‘I visited even Laura’

(11) Makhuwa (van der Wal 2009:236)

- a. CJ *o-lomw-é ehopa paáhi*  
 1-fish-PERF.CJ 10.fish only  
 ‘he caught only fish’

<sup>5</sup> As mentioned in the introduction, I leave to one side so-called ‘second occurrence focus’, where one of the focus-sensitive operators is not associated with the focus of the sentence.

- b. DJ \* *oo-lówá ehópá paáhi*  
 1.PERF.DJ-fish 10.fish only  
 int. 'he caught only fish'

The difficulty here is whether the exclusive reading of the DP could be brought about by the use in a certain strategy by itself (e.g. the conjoint verb form), or whether the exclusive interpretation is due to the presence of the particle ('only'). In other words, do we interpret 'cookies' in 'it's only cookies that I ate' as exhaustive because of 'only' or (also) because of the cleft construction? A more general research question is: why would an element that is lexically specified as exhaustive by the use of a particle in addition have to be marked as such by other strategies?

#### *Test 5: critique*

The previous test relates directly to a test that Wedgwood (2007, 2009), É.Kiss (2010) and Zimmermann and Onea (2011) attribute to Horn (1981), showing that English it-clefts do not have exhaustivity as part of their inherent meaning. If the it-cleft would specify exhaustivity, the felicity of (12b) would be expected, on a par with (12a).

- (12) a. I know that Marcel had a pizza, but I just discovered that it was only a pizza that he had.  
 b. # I know that Marcel had a pizza, but I just discovered that it was a pizza that he had.

## 4. Quantifiers

The use of quantifiers as focus tests is largely based on their entailment scales. Six tests have been found that make use of quantifiers to establish the type of focus interpretation (exclusive/non-exclusive) that a certain strategy expresses. Naturally, whether these tests can be used depends on the existence of quantifiers and indefinites in the language.

#### *Test 6: Numerals become exact*

Numerals normally have an underspecified interpretation either as the given quantity, or as a lower boundary 'at least this amount' (Horn 1972, Levinson 2000). However, in (exhaustive) focus numerals refer only to the exact quantity. É.Kiss (2010) shows this interpretation for the preverbal focus position in Hungarian. When 'one million' follows the verb as in (13a), or is topicalised as in (13b), we get the lower-bound reading, but in the directly preverbal focus position (13c), the meaning narrows down to only the value given in the focused constituent, that is, exactly one million.

- (13) Hungarian (É.Kiss 2010:21)  
 a. *János meg keres egy milliót havonta*  
 John PRT earns one million.ACC monthly  
 'John earns a/one million a month.'  
 → (one million or more)

- b. *Egy milliót meg keres János havonta*  
 ‘A/one million, John earns (it) a month.’  
 → (one million or more)
- c. *János EGY MILLIÓT keres meg havonta*  
 ‘It is one million that John earns a month.’  
 → (exactly one million)

### Test 7: Weak quantifiers

Another test uses the indefinite quantifiers ‘some’ and ‘few’. “These quantifiers are upward entailing, i.e. they imply that the denoted quantity reaches at least a minimum from a scale of potential quantities.” (Skopeteas and Fanselow 2010:1387). Skopeteas and Fanselow (2010) illustrate the normal upward entailing reading with the Georgian examples in (14).

- (14) Georgian (Skopeteas and Fanselow 2010:1387)
- |             |                  |              |                           |
|-------------|------------------|--------------|---------------------------|
| <i>čven</i> | <i>ramdenime</i> | <i>lar-i</i> | <i>še-v-a-grov-e-t...</i> |
| 1PL.ERG     | some/a.few(NOM)  | lari.NOM     | PR-S.1-gain-AOR-PL        |
- ‘we gained some/a few of Lari...’  
 (... , so we can buy the present.)  
 # (... , so we cannot buy the present.)

When these indefinite quantifiers are in exhaustive focus, the alternative quantities “that are contextually relevant, e.g., the expected, the usual, or the necessary amount of Lari” are excluded. This has an effect on the felicitous continuation (can/cannot buy the present), as shown in (15): when ‘some lari’ has sentence stress, the only felicitous continuation is the negative, suggesting that the minimal-amount reading is no longer available.

- (15) Georgian (Skopeteas and Fanselow 2010:1387)
- |             |                  |              |                           |
|-------------|------------------|--------------|---------------------------|
| <i>čven</i> | <i>RAMDENIME</i> | <i>lar-i</i> | <i>še-v-a-grov-e-t...</i> |
| 1PL.ERG     | some/a.few(NOM)  | lari.NOM     | PR-S.1-gain-AOR-PL        |
- ‘we gained some/a few of Lari...’  
 # (... , so we can buy the present.)  
 (... , so we cannot buy the present.)

### Test 8: Non-specific NPs

Indefinite non-specific NPs are incompatible with exclusivity. As a simple illustration, when Mark Ronson sings ‘I want somebody to love me’, this can be anyone, that is, nobody is excluded. This has interesting repercussions for the possible interpretations of ‘person’ in some Bantu languages. In Makhuwa, for example, it can be ‘somebody’ or ‘a

specific person' when used with the so-called disjoint verb form,<sup>6</sup> but when used with the alternating conjoint verb form, which expresses exclusive focus on the element following the verb, the reading can only be a generic and hence specific one.

- (16) Makuwa (Van der Wal 2011:1740)
- |    |    |   |               |                    |
|----|----|---|---------------|--------------------|
| a. | DJ | <i>ko-m-wéha</i>                            | <i>ítthu</i>  |                    |
|    |    | 1SG.SM.PERF.DJ-1OM-look                     | 1.person      |                    |
|    |    | 'I saw someone' (specific/non-specific)     |               |                    |
| b. | CJ | # <i>ki-m-weh-alé</i>                       | <i>ntthú</i>  |                    |
|    |    | 1SG.SM-1OM-look-PERF.CJ                     | 1.person      |                    |
|    |    | int: 'I saw someone'                        |               |                    |
| c. | CJ | <i>ki-m-weh-alé</i>                         | <i>ntthú,</i> | <i>nki-weh-álé</i> |
|    |    | 1SG.SM-1OM-look-PERF.CJ                     | 1.person      | NEG.1SG-look-PERF  |
|    |    | <i>enáma</i>                                |               |                    |
|    |    | 9.animal                                    |               |                    |
|    |    | 'I saw a person/human being, not an animal' |               |                    |

### Test 9: Not all

Adding 'primarily', 'least of all', or 'for the most part' to a focused element entails that there are viable alternatives and hence that the strategy is not exhaustive. Wedgwood, Pethő and Cann (2006) use this test to show that the Hungarian preverbal focus position is not inherently exhaustive.

- (17) Hungarian (Wedgwood et al. 2006)
- |   |                              |               |                      |                     |          |                   |
|---|------------------------------|---------------|----------------------|---------------------|----------|-------------------|
| <i>A</i>  | <i>Zöld</i>                  | <i>Párt</i>   | <i>1980-as</i>       | <i>megalakulása</i> | <i>a</i> | <i>legkevésbé</i> |
| the   | Green                        | Party         | 1980-in              | formation-POSS.3SG  | the      | least             |
| [ <i>ökológiai problémákhoz</i> ] <i>volt köthető</i> |                              |               |                      |                     |          |                   |
| ecological  | problems-to                  | was           | connectable          |                     |          |                   |
| - <i>annak ellenére, hogy az atomerőművek s a</i>     |                              |               |                      |                     |          |                   |
| that.DAT  | notwithstanding              | that          | the                  | atomic.power.plants | and      | the               |
| <i>nukleáris átmeneti tárolók [...]</i>               | <i>ellen alakult polgári</i> |               |                      |                     |          |                   |
| nuclear   | transitory                   | stores        | against formed civil |                     |          |                   |
| <i>kezdeményezésekből [...] szerveződött párttá.</i>  |                              |               |                      |                     |          |                   |
| initiatives-from                                      |                              | was.organised | party.into           |                     |          |                   |
- 'The formation of the Green Party in 1980 had least to do [with ecological problems], notwithstanding that it became a party out of civil initiatives against nuclear power plants and nuclear intermediate storage sites.'

<sup>6</sup> Four basic Makuwa tenses come in pairs of alternating conjoint and disjoint verb forms. The conjoint verb form indicates that the element immediately following the verb is in exclusive focus; the disjoint verb form does not have that interpretation (Van der Wal 2009, 2011).

*Test 10: Unique referent*

Kenesei (1986, 2006) remarks that no alternatives exist for a unique referent and that hence no alternatives can be excluded. Therefore, he reasons, if a focus strategy is incompatible with a unique referent, it expresses exclusive focus. If the Hungarian preverbal focus position is associated with exclusivity, the referent ‘the sun’ is predicted to be ungrammatical, as there is only one sun in our galaxy (18).

(18) Hungarian (Kenesei 1986, 2006)

- a. *A nap sütött ki a felhök mögöl.*  
 the sun shone out the clouds from.behind  
 ‘The sun shone from behind the clouds.’
- b. \**A nap ki-sütötta felhök mogul.*  
 ‘The sun shone through the clouds.’

However, this test can quite easily be shown to be flawed, as native speakers report that (18b) is felicitous in a plausible context where there is a contrast with the moon, for example.

*Test 11: Universal quantifiers*

The universal quantifiers ‘all’ and ‘every’ can be used as a test, as they are incompatible with exclusive focus (É.Kiss 1998): all referents are included in ‘all’ and therefore there is no exclusion of alternatives in the same set. For example, the Hausa ex-situ focus position may not house a universal pronoun; hence this strategy/position can hence be said to express exclusive focus.

(19) Hausa (Green and Jaggat 2003:200)

- a. *Kōwā yanā sá hūlā*  
 everybody 3M.IMPF put hat  
 ‘Everybody wears a hat.’
- b. \**Kōwā (nē) yakē sá hūlā*  
 everybody FM.M 3M.FOC.IMPF put hat  
 ‘It’s everybody who wears a hat.’

However, the incompatibility can be remedied by specifying the set of alternatives for the universally quantified DP, for example by adding a relative clause (specifying within the referents of the universally quantified DP), or mentioning an alternative set in the context (specifying the whole set as an alternative to other whole sets). So although alternatives cannot be excluded from the set designated by ‘every cookie’, this is possible for ‘every cookie that Margareth made’ (the alternatives being all the cookies she did not make), or equally when ‘all the cookies’ are opposed to ‘all the milk shakes’.

- (20) Hungarian (Wedgwood 2012)
- a. \* *minden regényt olvasott el*  
 every novel.ACC read VM  
 ‘He read every novel.’
- b. *minden regényt olvasott el (nem minden cikket)*  
 every novel.ACC read VM not every  
 article.ACC  
 ‘He read every novel (not every article).’

## 5. Co-text

The largest inventory of focus tests is found in placing a linguistic strategy before, after or between other text. This I refer to as ‘co-text’, since it involves the linguistic preceding and following text, and not the broader *context*. The tests all rely on the speaker’s judgement of contextual felicity.

### *Test 12: That is the problem*

This test indicates the scope of focus, rather than the semantic/pragmatic type of focus. Adding ‘That is the problem’ after a sentence will create some inferences, and these can be used to see which constituents are in the scope of focus. Kasimir (2005:7) gives the following examples:

- (21) a. SHE stole the bicycle. That is the problem.  
 → if someone else had stolen the bicycle, that wouldn’t necessarily be a problem = focus on the subject ‘she’
- b. She stole the Bicycle. That is the problem.  
 → If she had stolen something else, that wouldn’t necessarily be a problem = focus on the object ‘bicycle’  
 → If she had done something else, that wouldn’t necessarily be a problem = focus on the verb phrase ‘stole the bicycle’

The same holds for adding adverbs like ‘surprisingly’, where the nature of the surprise shows the focused constituent in the clause, as in ‘SHE stole the bicycle, surprisingly’, etc.

### *Test 13: ‘Which context best?’*

As the focus of a sentence is dependent on the context, one of the easiest tests is to present speakers with a sentence containing the strategy to be tested and ask their intuitions about when it could felicitously or most naturally be used. This often gives a good indication of the information structure of the sentence, for example when speakers come up with a preceding question, or following contrasting clause. An example is given in (22) where a contrastive and corrective interpretation appear from the situations provided by the consultants.

- (22) Luganda  
*muwála y' aa-súlá-mu*  
 1.girl 1.FOC 1SM-sleep-18.LOC  
 'a girl sleeps there'  
 sit1: "there are two, a boy and a girl, which one sleep there?" (contrastive)  
 sit2: "you expect a man to be sleeping there" (corrective)

*Test 14: '... (and) not Y'*

The co-text can also indicate a contrast. Notice that this is a syntagmatic use of 'contrast', indicating a contrast in the explicit environment of a sentence, and not a paradigmatic contrast with the triggered alternatives for the focused constituent (cf. Molnár 2002). The contrastive co-text for a sentence focussing X can be a following '... and not Y' (Chafe 1976). For example, in Gâbunke this test reveals that the focussing suffix on the verb indicates verb focus. This is compatible with an exclusive reading, as one alternative is explicitly excluded.

- (23) Gâbunke Fula (Labatut 1986 via Robert 2010:237)  
*cukalel ngel ayn-u puccu ngu,*  
 child the tend-PERF1.VB.FOC horse the  
*ngel lootaani ngu*  
 he wash.PERF.NEG the  
 'The child TENDED the horse, he did not wash it.'

The test has also been used to distinguish the scope of focus in situations of potential ambiguity, for example with focus projection (24), where the stressed element is the same, but the scope of focus could potentially extend beyond it.

- (24) They only investigated [<sub>DP1</sub> the question whether you know [<sub>DP2</sub> the woman who chaired [<sub>DP3</sub> the ZONING board.]]]  
 a. \*not the SCHOOL board.  
 b. \*not the woman who chaired the SCHOOL board.  
 c. √not the question of whether you know the woman who chaired the SCHOOL board.  
 (Drubig 1994)

Note that adding such a contrast can be instrumental in creating the required set of alternatives, whereby "nonindividuals, too, can be individualized" (É.Kiss 1998:262). This is what Szabolcsi (1983) and É.Kiss (1998) argue to be the case in (25): a non-referential adjective, such as 'sick', can normally not be focussed in an (exclusive) it-cleft, but becomes more acceptable when contrasted.

- 
- (25) a. ? It's not sick that she was, but tired.  
 b. \* It's sick that she was.  
 (É.Kiss 1998:262, adapted)<sup>7</sup>

### *Test 15: Juxtaposition*

Another way to find a contrast in the co-text is by juxtaposing two sentences with the same format (Dik's 1997 parallel focus), as in 'Birgit wrote an article and Michelle wrote a novel'. This explicitly contrasts Birgit with Michelle and 'article' with 'novel'. Zimmermann and Onea (2011:1651-1670) state in more precise terms that a "focus constituent X is used contrastively if [the referent] is juxtaposed to one or more elements of A that are denoted by constituents Y, Z, ... in the preceding discourse, where Y, Z, ... are of the same syntactic category and denote into the same semantic word field as X". The difficulty of this test lies in its compatibility with both topic and focus: in the definition of topic as 'what the sentence is about', Birgit and Michelle are the topic of their respective clauses; nevertheless, they are contrasted in the co-text.

This forms a motivation for some researchers to take 'contrast' as a notion separate from focus, as in some languages linguistic strategies or rules can be shown to apply to contrasted elements regardless of whether they form the new information or theme of the sentence (Vallduvi and Vilkuna 1998, Neeleman et al. 2009, Neeleman and Vermeulen 2012).

### *Test 16: Answer to a loaded yes/no question*

A third type of pragmatic focus diagnosed by the co-text is the corrective or replacive focus (Dik 1981, 1997). A first test in this category is the answer to a yes/no question, for example in the Q-A pair 'did Romney win the presidential elections?' '(No), Obama won the presidential elections', where Obama replaces Romney in the answer. Similar tests may be carried out with pictures as in the QUIS, where the picture for example shows a woman with cheese, the question is 'Does Elena have soup?' and the answer is 'Elena has cheese', replacing and focusing the object.

Potential trouble for this test is that the semantic/truth-conditional nature of the exclusive reading can only be proven when an explicit negation is used - strictly speaking Elena could have both soup and cheese, so the perceived exclusion of 'soup' is only necessary when the answer is preceded by 'no'.

### *Test 17: Reply to an incorrect statement*

Similarly, when the interlocutor disagrees with something the speaker says, he/she will correct it, as in the QUIS test shown in (26) and (27). Kim (2012) uses this test to show that the Korean suffix *-ka* expresses identification, whereas *-nun* does not (28).

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<sup>7</sup> Note that these examples are not exactly parallel; the equivalent should be 'it's sick that she was, not tired'. A short informal survey shows that grammaticality judgements vary for all three sentences, also depending on the accompanying intonation.



- (26) A: 'The woman ate the beans.'  
 B: '(No,) (she didn't eat the beans,) she ate the rice.'  
 (from QUIS)
- (27) A: 'The woman didn't eat the beans.'  
 B: 'She did eat the beans.'  
 (from QUIS)
- (28) Korean (Kim 2012 and p.c.)  
 A: *John-i ku phathi-ey ka-ss-e*  
 John-NOM the party-DAT go-PAST-DEC  
 'John went to the party.'  
 B: *aniya. Mary-ka/#nun ka-ss-e*  
 no Mary-NOM/#NUN go-PAST-DEC  
 'No. Mary went (to the party).'

Because in these tests one of the alternatives is specifically denied, the referent of the constituent that replaces the previously asserted one must be in exclusive focus. Again, the exclusive reading is only clear with an explicit negator.

#### *Test 18: Reply to an incomplete statement*

A corrective clause can also indicate non-exhaustivity when replying 'no, also Y', thereby showing that the previous clause did in fact have an exhaustive reading. É.Kiss (1998) attributes this test to Donka Farkas and illustrates it with the Hungarian preverbal focus position, as in (29). The fact that the exclusivity can be negated in B's reply ('it was a hat but not only a hat') indicates that the focus strategy used by A (in this case the preverbal position) is used for exhaustive focus.

- (29) Hungarian (É.Kiss 1998)  
 A: *Mari egy kalapot nezett ki maganak.*  
 Mary a hat.ACC picked out herself.DAT  
 'It was a hat that Mary picked for herself.'  
 B: *Nem, egy kabatot is ki nezett.*  
 no a coat too out picked  
 'No, she picked a coat, too.'

#### *Test 19: Reply to an overcomplete statement*

In the same vein, Szabolcsi (1981) devised a test where the second clause corrects the first only on the exhaustive aspect, by explicitly mentioning the larger set to which the predicate applies. She gives the opposing (Hungarian equivalent to the) sentences 'It wasn't Peter who slept on the floor, but Peter and Paul', which again does not correct the truth of the predicate applying to the focused element ('sleeping on the floor' for 'Peter',

which is still true), but corrects merely the exhaustivity. Green and Jaggard (2003) show the same test in Hausa, where the preverbal position (30) but not the postverbal one (31) seems to trigger an exhaustive reading.

- (30) Hausa (Green and Jaggard 2003:201)  
*Bã Audù dà Mūsā ba nē Kànde takè sô...*  
 NEG Audu and Musa NEG (FM.PL) Kande 3F.FOC.IMPF love  
 ‘it’s not Audu and Musa that Kande loves...’  
 ... *Audù nē takè sô*  
 Audu (FM.M) 3F.FOC.IMPF love  
 ‘...it’s Audu she loves.’
- (31) Hausa (Green and Jaggard 2003:201)  
*Kànde bā tà sôn Audù dà Mūsā...*  
 Kande NEG 3F.IMPF love Audu and Musa  
 ‘Kande doesn’t love Audu and Musa...’  
 # ... *tanà sôn Audù*  
 3F.IMPF love Audu  
 ‘...she loves Audu.’

Nevertheless, Hartmann and Zimmermann (2007) show that the exhaustive interpretation of the preverbal focus position in Hausa is only a tendency and not a clear-cut semantic property of this focus position.

Onea (2007) points out that this effect can be due to constructing the sentence as a singular event (Kratzer 2009), or it can be due to metalinguistic negation, that is, objecting to a previous utterance on the basis of its implication (Horn 1985). This is seen in utterances like ‘I don’t like reggae – I love it’, where what is negated is not the act of liking but the implication that it is merely liking and nothing more. In our case, the reply in (30b) would negate the implication that it is only Audu and Musa and nobody else. This is compatible with an analysis in which the exhaustivity effect is pragmatic rather than semantic.

### *Test 20: Be explicit*

A very straightforward way to spot the (non-)exclusivity in the co-text is to explicitly mention this, by adding ‘among other things/people’ for a non-exhaustive reading or ‘and nothing else’ for an exhaustive reading. The non-exhaustive reading can also be made explicit by continuing ‘... and also Y’. These tests are proposed by É.Kiss (1998) to show the exhaustive reading of the preverbal position in Hungarian and the it-cleft in English. Torregrossa (2012) applies the same tests to Italian and finds that for this test, there is no difference between the preverbal and postverbal focus. That is, the non-exhaustive continuation in (32c) is felicitous after both the postverbal focus in (32a) and the preverbal focus in (32b).

- (32) Italian (Torregrossa 2012:164, 165)
- a. *Ha invitato Marco.*  
He invited Marco.
  - b. *MARCO ha invitato.*  
It was MARCO that he invited.
  - c. *... e forse ha invitato anche Davide. ...*  
and, perhaps, he also invited Davide.

For Chinese, Pan shows that the *shi...de* construction (33b) cannot be felicitously continued with a mentioning of further referents, which suggests it is exhaustive.

- (33) Mandarin Chinese (Pan 2012)
- a. *Shi nǎ-bu dianying, kan-guode ren bu-shao?*  
be which-CL movie see-EXP de person not-few?  
'Which movie is it that the people who saw (it) are many?'
  - b. # *Shi Hali Bote, kan-guo de ren bushao...*  
'It is Harry Potter that the people who saw (it) are many...  
...*shi Zhihuan Wang, kan-guo de ren ye bushao*  
...it is also The Lord of the Rings that the people who saw (it)  
are many.'

### Test 21: Conjunctions

The 'and also' test in fact depends on the conjunction that is used as well. The choice of the conjunction 'and' or 'but' in the second clause can tell us about its compatibility with the first sentence: if 'and' creates a contradiction, for example in (non-)exhaustive interpretation of the second clause, then 'but' will be used. In (34), the second clause is non-exhaustive ('also') and perfectly compatible with the first sentence with a non-contrastive conjunction 'and', showing that the postverbal position in English is not exhaustive.

- (34) ('What did Wilbert order?') Wilbert ordered a cheese sandwich...
- a. ... and also a salad.
  - b. ... but also a salad.

If the most natural continuation would have 'but' as a coordinating conjunction, this indicates the opposition with the exhaustive nature of the focus in the first sentence. This test is further illustrated in section 6. Problematic is, again, the pragmatic or semantic nature of the exclusivity: does 'but' contrast with an encoded or implied exclusivity (34b)?

### Test 22: Entailments

Another test involving coordination evaluates the sentences with respect to their entailments, as first used by Szabolcsi (1981). "Szabolcsi's [1981] test involves a pair of

sentences in which the first sentence contains a focus consisting of two coordinate DPs [e.g. *Yani and Maria*] and the second sentence differs from the first one only in that one of the two coordinate DPs has been dropped [e.g. *Yani and Maria*]. If the second sentence is not among the logical consequences of the first one, the focus expresses exhaustive identification.” (É.Kiss 1998:250).

Baltazani (1998) applies this test to Greek, finding that the preverbal position has an exhaustive reading, as speakers do not count the second sentence among the entailments of the first. In (35), if it is true that I bought trousers for John and Mary only, it does not follow that I bought trousers for only John (thereby excluding also Mary).

(35) Greek (Gryllia 2009:15,16)

a. *Sto Yani ke sti Maria*  
to.the.ACC John.ACC and to.the.ACC Maria.ACC  
*agorasa padeloni*  
buy.ISG trousers.ACC  
‘I bought a pair of trousers [for John]<sub>loc</sub> and [for Mary]<sub>loc</sub>.’

DOES NOT ENTAIL

b. *Sto Yani agorasa padeloni*  
to.the.ACC John.ACC buy.ISG trousers.ACC  
‘I bought a pair of trousers [for John]<sub>loc</sub>.’

This contrasts with the postverbal position (36), where the second sentence is entailed by the first, showing that this focus strategy is not exhaustive.

(36) a. *Agorasa padeloni sto Yani*  
buy.ISG trousers.ACC to.the.ACC John.ACC  
*ke sti Maria*  
and to.the.ACC Maria.ACC  
‘I bought a pair of trousers [for John]<sub>loc</sub> and [for Mary]<sub>loc</sub>.’

ENTAILS

b. *Agorasa padeloni sto Yani*  
buy.ISG trousers.ACC to.the.ACC John.ACC  
‘I bought a pair of trousers [for John]<sub>loc</sub>.’

Gryllia (2009) finds that this is not the only interpretation. Instead, she shows that if the entailment does not go through, the preverbal element is interpreted collectively (as ‘John and Mary’ rather than ‘John’ and ‘Mary’). On a distributive reading, which can be controlled for by using ‘each’, the entailment does go through: ‘I bought John and Mary a pair of trousers each’ entails ‘I bought John a pair of trousers’, in either the preverbal or postverbal position. According to Gryllia (2009), this shows that the preverbal focus in Greek is not necessarily exhaustive, but depends on the collective or distributive reading.

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*Test 23: Non-focussable constituents*

A further test involving the co-text is the non-focusability of cognate objects, dummy objects and objects in idioms. The logic is that focus naturally only applies to contentful elements that can be conceived of as the new or contrasted information. Fanselow and Lenertová (2011) show that in German a subpart of the focus can be fronted, even if this fronted element is part of an idiom and does not have any meaning by itself, as in (37). If you can use a strategy with these objects, it shows that the strategy is not a dedicated marker of new information or contrast on the affected phrase. Instead, it may be that such a marked construction is underspecified for broad or narrow focus (cf. the next test on unexpectedness).

- (37) German (Fanselow and Lenertová 2011:176)  
 [Den GARaus]<sub>i</sub> hat er ihr t<sub>i</sub> gemacht.  
 the.ACC garaus has he her.DAT made  
 ‘He killed her.’

The fact that the English it-cleft does not preserve the idiomatic meaning shows that it must be different from the German focus strategy.

- (38) a. She popped her clogs.  
       ‘She died.’  
       b. ?? It was her clogs that she popped.
- (39) a. They painted the town red.  
       ‘They went out and had a really exciting time.’  
       b. It was red that they painted the town.  
       (only literal meaning)

*Test 24: Unexpectedness*

So-called ‘mirative focus’ has been proposed as another pragmatic type of focus. It involves a higher degree of unexpectedness for the element surfacing in the focus strategy, described by Skopeteas and Fanselow (2011:1698) as “attracting the hearer’s attention to that portion of the utterance that may not be in line with the hearer’s expectations”. Skopeteas and Fanselow (2011) argue that the influence of non-predictability calls for a more flexible or underspecifying approach to focus: “whenever the speaker selects a marked construction, the hearer infers that there is at least one reason motivating the choice of a marked rather than an unmarked pattern” (Skopeteas and Fanselow 2011:1699). The strategy is thus used not only to establish a contrast with logical alternatives, but also has the marking of unexpectedness as one of its pragmatic functions. One could see this as a contrast with expectations. This is what Frascarelli & Jiménez-Fernandez (2013) describe for the focus in sentences like (40): “Contrast is established with an element that is part of the shared knowledge of the participants and can be semantically characterized as a “proposal to negotiate a shared evaluation”

(Bianchi 2012)” (cf. Brunetti 2009, Cruschina 2012, Bearth 1992, Martins 2012, Zimmermann 2008). It remains to be seen whether we would want to include this as a type of sentence focus (or have a separate notion of contrast, as mentioned above, which may be divided into different subtypes, cf. Frascarelli and Ramaglia 2013).

(40) Italian (Cruschina 2012:120)

- a. *Ma guarda te! IN BAGNO hai messo*  
 but look.IMP.2SG you in bathroom have put  
*le chiavi!*  
 the keys  
 ‘Look at that! He put the keys in the bathroom!’
- b. *Non-ci posso credere!*  
 not-to.it can.PRES.1SG believe  
*DUE BOTTIGLIE ci siamo bevuti!*  
 two bottles REFLCL be.PRES.1PL drink.PP  
 ‘I can’t believe it! We drank two bottles!’

## 6. Stimuli

In order to obtain semi-spontaneous speech, stimuli can be used with the instruction to simply describe the (visual) stimulus, or answer a question with respect to it.

One such task is describing a picture or series of pictures. The QUIS contains some single pictures to be described (swimming cat, burning house) out of the blue, and should result in an all-focus sentence. As mentioned above, people can easily accommodate the information and describe the picture with a categorical sentence, i.e., not resulting in the solicited all-focus. Description tasks of sequences of situations can also be used to contrast information in the earlier and later pictures, or to present a referent that counts as ‘given’ in a later picture.

Map-tasks are particularly useful for eliciting corrective statements.<sup>8</sup> In a map-task, two participants are given similar but not identical maps, and one of them explains a route indicated on his map to the other participant. As they cannot see the other person’s map (and assume that the maps are the same), at some point they will start asking and correcting: “So I go left where the sheep are?” “No, where the house is.”

In order to trigger many spontaneous question-answer pairs, Aria Adli (p.c.) devised a game where the participants were to unravel a detective story. As this naturally happens by means of questioning, his corpora for French, Spanish and Persian contain a wealth of material for information structure purposes.

As mentioned at various points above, the stimuli can be used together with a question as input for the answer. A WH question can interrogate a constituent (who/what?) to obtain a complete or new information focus, an alternative question (X or Y?) can trigger a selective focus and a yes/no question with the ‘wrong’ constituent can trigger a replacive/corrective focus. The latter is described in the questionnaire for focus semantics. The informants are given a short story and a set of questions, for

<sup>8</sup> Thanks to Mara Frascarelli for reminding me of this test.

example a story with information about Anne living close to school and Mary and John living further away, followed by a question ‘do both Mary and Anne live near school?’, triggering a corrective/restrictive answer (‘no, (only) Anne lives near school’). See Skopeteas and Verhoeven (2014) for a meticulous application of these tests to Yucatec Maya.

Another way to use the pictures is to present them with a description that does not match the picture and asking the informants to correct the description (testing wrong, incomplete or overcomplete statements). Szabolesi’s entailment test can also be used with stimuli, for example in presenting a situation (picture) where a man caught three types of fish –cod, haddock and salmon, but describing it as ‘the man caught cod’ (i.e. only one type of fish), then asking the participant whether describing the situation in this way would be lying. If the focus strategy in the description is exhaustive, we expect participants to find that he is lying, whereas if they indicate that description and picture are compatible, this shows the non-exhaustivity of the focus strategy. Vice versa, a descriptive sentence (‘he caught a/one fish’) could be presented together with several alternative scenarios (e.g. pictures of man with one fish or with three) and the participant is asked to choose the matching scenario, and possibly to explain his/her choice. This again reveals exclusivity/exhaustivity of the focus strategy in the description.

Onega and Beaver (2011) set up a similar experiment for the ‘also’ test. Subjects are presented with a situation and a sentence, and are asked whether the sentence is true or false. The picture, for example, shows two kids who both caught a butterfly, and the sentence is a description ‘Marci caught a butterfly’ with either a “neutral” or focus strategy. The participants could answer the true/false question with ‘no, Peter also caught a butterfly’, ‘yes, and...’ and ‘yes, but...’. If the focus strategy encodes exhaustive focus, participants are expected to choose the negative answer (‘no’), indicating inherent incompatibility between the stimulus and the sentence. If the ‘yes, and...’ answer is chosen, the strategy is not exhaustive, and the ‘yes, but...’ answer indicates that the sentence is not truth-conditionally incompatible with the stimulus, but that there are still (implicational) effects of exhaustivity. The results of these tests for Hungarian as opposed to German show that the Hungarian preverbal position is much more strongly associated with an exhaustive interpretation than German focus intonation, but that this effect is pragmatic, rather than semantic.

## 7. Conclusion

Although the definitions of focus will probably remain murky, and although this is most certainly not an exhaustive list of tests, it is my hope that the current paper will give some insight into the diagnostics that have been used to claim that a certain strategy does or does not encode focus, exclusivity or exhaustivity, and some of the pitfalls that come with the tests.

As mentioned in the introduction, not all tests are equally applicable, depending on the language, the informants, test materials and availability of computer-run programmes. Furthermore, one diagnostic may not be enough to safely claim a certain interpretation/function for a given strategy, necessitating the application of various tests to show the behaviour of that strategy.

This is related to a last word of caution: showing that a certain strategy is used in a sentence with a certain interpretation (e.g., exhaustive), or is compatible with / felicitous in a certain interpretively limited context, does not necessarily mean that the strategy is a dedicated maker for this interpretation. It may be that the strategy indeed encodes focus, but is underspecified as to the precise interpretation (“type of focus”) it encodes, or it may be that the interpretation is a side-effect of some other mechanism (Matić and Wedgwood 2013). Furthermore, the boundaries between pragmatics and semantics are not as clearcut as sometimes suggested above: an exhaustive or contrastive effect may be more or less conventionally associated with a strategy (cf. Beaver and Clark 2008, Bazalgette in progress).

## Abbreviations

ACC	accusative
AOR	aorist
CJ	conjoint verb form
CL	clitic
DAT	dative
DEC	declarative
DJ	disjoint
ERG	ergative
EXP	experience in the past
F	feminine
FM	focus marker
FOC	focus
IMP	imperative
IMPF	imperfective
LOC	locative
M	masculine
NEG	negation
NOM	nominative
OM	object marker
PAST	past tense
PERF	perfective
PL	plural
PR	preverb
PRES	present tense
PRT	particle
REFL	reflexive
QUIS	Questionnaire on Information Structure (Skopeteas et al. 2006)
SG	singular
SM	subject marker
VB.FOC	emphatic verb-focusing conjugation
VM	verbal marker



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