

Title: **Negation at the interfaces. New perspectives on experimental research**

I. Background. Much research in recent minimalist thinking has been devoted to reducing complexity and redundancy in the theoretical apparatus, and to identifying the features that act as motor of syntactic operations. Within this line of research attempts have been made to reduce the macroparametric distinction between double negation (DN) and negative concord (NC) languages in terms of microvariation of features (Zeijlstra 2004, and ff.; Déprez 2011; a.o.) and feature hierarchy (Longobardi 2005; Gianollo, Guardiano, Longobardi 2008; Biberauer, Roberts, Sheehan 2014; Biberauer & Roberts 2013, 2015; a.o.). This investigation has boosted feature structure for the grammar of negation, with a focus on the various types of negative expressions found in natural languages (negative quantifiers, n-words, negative markers; de Swart 2010), the mechanisms that give rise to DN and NC readings (iteration vs. resumption of polyadic quantifiers; Haegeman & Zanuttini 1991, 1996; Haegeman 1995; de Swart & Sag 2002), and on those aspects of negation at the lexicon-syntax interface that may trigger specific diachronic shifts (e.g., from a DN system such as Classical Latin to a NC system such as Romance languages, Gianollo 2016; and from a NC system such as Middle Dutch to a DN system such as Modern Dutch, Zeijlstra 2010).

Besides, the phenomenon of DN and, especially, its triggering factors, have received special attention in the linguistic literature. Different scholars have highlighted the relevance of conversational and discourse factors (Prince 1992, Dryer 1996, Geurts 1998), prosodic factors (prosodic phrasing, stress, contrastive focus, intonation) (Corblin 1996; Huddleston 2010; Puskás 2006, 2009, 2012), semantic factors (May 1989, de Swart 2010), morphosyntactic factors (Acquaviva 1995, Déprez 2000), processing factors (Corblin and Derzhanski 1997) and sociolinguistic factors (Labov 1972, Larrivé 2004).

II. The **aim** of this talk is to present various relevant results of a research project currently being developed on the interaction of syntax with other cognitive systems. We aim at discussing the following questions: (i) how, from a dialogical (Question-Answer) perspective, can negation in NC languages be composed at the syntax-semantics interface? And (ii) how can prosody and gesture constrain DN interpretations for NC languages at the syntax-prosody interface and at the semantics-pragmatics interface?

III. Aspects of negation at the syntax-semantics interface. We will show that, in contrast to traditional descriptions of Catalan, and independently of particular favouring contexts, a non-negligible amount of DN readings may arise in this language, mainly when the negative marker co-occurs with pre-verbal n-words (1), and when these n-words have a complex DP structure. We account for these experimental findings within a microparametric approach that features ambiguous n-words (non-negative vs. negative) and a possible ambiguous negative marker *no* (negative vs. expletive) variably available for Catalan speakers.

- (1) *Ningú* (*no*) pensa *res*.
nobody not thinks nothing
'Nobody is thinking anything.' – *NC reading*
'Everybody is thinking something' – *DN reading*

IV. Aspects of negation at the syntax-prosody interface and at the semantics-pragmatics interface. In this part of the talk, following previous studies on the topic (Prieto & Rigau 2007, Bocci 2013), we will first report on a set of perception experiments with Catalan participants that support the hypothesis that different formal conditions in Q-A utterances (specifically, a command negative *wh*-Q combined with a contradictory intonational contour L+H* LM⁰ in the A) affect the corresponding interpretation, and that intonation encodes procedural restrictions on the proposition expressed. Results from these perception experiments confirm that the intonation contour of the negative word *ningú* 'nobody' is the key factor triggering a DN interpretation.

Second, we will report on two perception experiments with Catalan and Spanish native speakers that reveal that (i) syntax and prosody interact: prosodic contours enhance processing of syntactic structures; (ii) not only isolated but also preverbal n-words may convey DN interpretations when associated with a special intonation; and (iii) Catalan and Spanish hearers show form-meaning preferences between syntactic forms and prosodic contours: interestingly, hearers do not reject marked forms that should be discarded by a theory of grammar that only takes into account syntactic constituents and their merging possibilities according to their formal features, but they interpret them in the only way they can be interpreted, as a presupposition denial.

Third, we will report on an additional set of perception experiments where participants of these languages were presented with audio and video files producing two target negative words, namely Catalan *ningú* and Spanish *nadie* ‘nobody’, with two different prosodic and gestural patterns that correlate with single negation or DN interpretations. Participants were asked about their preferred interpretation of the target negative word as meaning either ‘nobody’ or ‘everybody’. Responses were obtained for an auditory-only (AO) condition, a video-only (VO) condition, and an audiovisual condition (AV) with congruent and incongruent multimodal matches. Faced with AO and VO conditions, participants of both languages preferred DN readings when the negative word was accompanied with a contradictory intonational contour and with specific denial gestures respectively. In the AV condition, DN readings were picked up when prosody and gesture converged on the DN interpretation, otherwise single negation was preferred, with an increase in reaction times.

Finally, we will be concerned with the expression of REJECT (a semantic operation that signals a contradiction move with respect to the common ground) in three languages belonging to three typologically distinct answering systems, namely Catalan (polarity-based), Russian (a mixed system using polarity-based, truth-based, and echoic strategies) and Mandarin Chinese (truth-based). We will assess empirically the relevance of prosodic and gestural patterns in the interpretation of rejecting responses to negative polar questions, and we will test the claim that speakers resort to strikingly similar universal strategies at the time of expressing rejecting answers to discourse accessible negative assertions and negative polar questions. This result puts into question the macroparametric division between truth-based and polarity-based languages and calls for a more general view of the instantiation of a REJECT speech act operator that integrates lexical and syntactic strategies with prosodic and gestural strategies.

V. Overall, the results of this research project support the conclusion that prosodic patterns and speech-accompanying gestures can crucially contribute “multidimensional meanings” which interact with other meanings contributed by lexico-syntactic features (i.e., the inherent contribution of negative markers, negative quantifiers and n-words). Our results also support the existence of a universal answering system for rejecting negative polar questions that integrates lexical and syntactic strategies with prosodic and gestural patterns. Thus, we advocate for a full integration of the pragmatic and semantic meanings contributed by prosody and gesture in linguistic research.

Selected references

- Biberauer, T. & I. Roberts. 2015. Rethinking formal hierarchies. A proposed unification. *Cambridge Occasional Papers in Linguistics* 7.1: 1-31.
- Bocci, G. 2013. *The syntax-prosody interface. A cartographic perspective with evidence from Italian*. Amsterdam: John Benjamins.
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