

Special Issue: Intonational constraints on pragmatic inferences

Guest Editors: Pilar Prieto and Victoria Escandell-Vidal

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Introduction to the Special Section: Intonational constraints on pragmatic inferences

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Guest Edited by Pilar Prieto and Victoria Escandell-Vidal

Intonational constraints on pragmatic inferences

One of the most challenging tasks that a linguist faces is that of accounting for the contribution of intonation to utterance interpretation. Though in general terms languages can be described as communication systems that systematically pair sounds with meaning, it is easy to demonstrate that the use of language to communicate involves considerably more than simply applying a linguistic code. In real communicative situations, linguistic systems never act in isolation, and disentangling the contribution of linguistic forms to communication from those of extra-linguistic channels can prove to be extremely difficult. The intricacies of meaning which intonation can add to speech reflect this multi-faceted nature of linguistic interaction. Variations in intonational contours can not only help a listener to guide the interpretation of a verbal message but also encode linguistic categories and distinctions. In fact, cross-linguistic and cross-dialectal differences suggest that the contribution of intonation cannot be limited to natural links between sound events and emotions but must also invoke conventional encoding.

The goal of this group of papers is to present the current understanding of intonational meaning from an interdisciplinary perspective. In recent decades, research into prosody has focused on the study of intonational form, while the contribution of intonation patterns to utterance interpretation has been relatively neglected. Similarly, the fields of semantics and pragmatics have tended to pay little attention to the meaning and pragmatic uses of intonation. As a result, there is no clear agreement within the linguistics community on how to integrate the analysis of intonational meaning across languages into a unified prosodic, semantic, and pragmatic approach.

The four papers in this special section examine cases where the contribution of intonation places specific constraints on utterance interpretation by invoking additional pragmatic assumptions connecting the utterance with other assumptions about the status and structure of the knowledge involved. All four focus on two particular units of intonation, namely pitch accents and nuclear contours and how they affect the pragmatic interpretation of an utterance.

Two of the papers look at the way in which pitch accents in English determine the recovery of inferred content. The L+H* accent tends to activate sets of alternatives, and this activation gives rise to implicatures that bias the interpretation towards rejecting other possible members of the set. Thus, when the set includes various alternative states-of-affair, the pragmatic enrichment tends to favour an interpretation of change of state. In contrast, when it contains different values along a single dimension, the interpretation tends to concentrate on the expressed value and discard other

competing alternatives. In both cases, intonation guides the interpretation process by making some inferential routes more accessible than others.

Dennison and Schafer's paper, "Processing intonationally implied contrast versus negation in American English," measures the effects of sentential prosodic properties, including pitch accents and final contours, over processing time in implicature recovery. More specifically, the authors seek to establish the strength of the tune L+H* L-H% in activating contrasting alternatives and the processing load of this kind of inference. In order to isolate the role and strength of the intonational properties, the authors have set up an experimental design that ensures there is no previous context that can bias the interpretation by pointing towards a set of alternatives. By testing the relation between the contrastive tune and the activation of alternatives, the study shows that there is a strong tendency to infer a contrasting state, though intonation does not fully determine it in all cases. As for the amount of time and lexical material needed to activate the contrastive interpretation, the experiments carried out suggest that listeners first access a literal interpretation and then move on to a richer inferential understanding, thus indicating that the interpretive effects of the L+H* L-H% tune obtain mainly over a time span. This finding is consistent with the idea that pragmatic inference is not always quick or automatic, but can require additional processing time and effort.

The paper by Tomlinson, Gotzner, and Bott, "Intonation and pragmatic enrichment: how intonation constrains *ad hoc* scalar inferences," concentrates on the role of English pitch accents in the processing of scalar implicatures. The authors assume that two accent types, H* and L+H*, are clearly distinguished by listeners, and help them to establish salience of referent in different ways, namely, salience of a referent present in the common ground versus salience of alternatives. The goal of the study described here is to examine whether L+H* favours the derivation of the scalar implicature or rather speeds up the ruling out of alternatives. Again, the idea is to determine the strength of the intonational indication when the context does not bias the choice. The results show that the pitch accent L+H* facilitates the derivation of scalar implicatures also with terms that do not belong to a lexically determined scale. In addition, the findings support the idea that pitch accent also facilitates earlier processing of the implicature. A significant hypothesis arising from these results is that the interpretive effects of pitch accent seem to be strong enough that they reduce the need for contextual clues in the derivation of scalar implicatures, whether lexical or *ad hoc*.

The other two papers consider the contribution of nuclear contours and their relationship with evidential encoding in questions. They essentially examine the same topic, namely, the way in which different final contours interact with interrogative modality to give rise to specific and systematic interpretive effects, using data from Catalan and Spanish. The two papers defend the view that some of the prosodic patterns found in polar interrogatives encode evidential indications. Though the effects are seen at the level of utterance interpretation, the contribution of the various contours operates at the level of encoded meaning, thus supporting the idea that some prosodic patterns are the expression of a grammatical category, and hence part of the grammar of the language.

In "Intonation and evidentiality in Spanish polar interrogatives," Escandell-Vidal focuses on the intonational contours found in polar questions in Castilian Spanish. The proposal is that the three different nuclear contours found in this variety can be accounted for as the expression of the grammatical categories of interrogativity and evidentiality. The low-rise contour L+H* H% only expresses the interrogative operator (ranging over the two possible values of sentence polarity) and represents the unmarked, neutral option. The high-rise H* H% combines the meaning of the interrogative operator with an evidential indication that the speaker is the source for the true answer to the question. Finally, the rise-fall, circumflex contour L+_iH*L% indicates that the question is echoing an utterance of a different individual or attributing a thought or an utterance to them. Using data excerpted from a lengthy conversation, the paper shows that the distinctions encoded constitute a micro-system: speakers are consistent in their choice of intonational contours depending on

the kind of interpretation they want to convey, so it is possible to make predictions about when a given contour will appear. This has a number of interesting implications for a more restrictive theory of the meaning encoded by prosodic patterns.

The paper by Vanrell, Armstrong, and Prieto, "Experimental evidence for the role of intonation in evidential marking," examines polar questions in Majorcan Catalan. Elaborating on previous work, the authors seek to establish how the various intonational patterns available for polar questions in this language constrain possible interpretations, and also the way in which nuclear contours combine with the interrogative particle *que*. Their hypothesis is that the contribution of prosody to utterance interpretation is that it provides evidential indications. To test this, the authors carried out a perception experiment to determine whether each of the prosodic patterns found in Majorcan interrogatives correlates with a specific interpretation indicating the source of the information that serves as the basis for the question. The results show that the upstepped falling contour $\uparrow H+L^* L\%$ is neutral, so it does not convey any specific evidential indication. By contrast, the falling contour $H+L^* L\%$ allows inferences from various, non-defined sources. Finally, the nuclear contour $L+H^* L\%$ (together with the interrogative particle *que*) is consistently used to present the question as putting forward an inference based on perceptual evidence, either visual or otherwise. This result also suggests a link between direct perception and entailments of degree of certainty. Most significantly, the paper provides evidence for the hypothesis that intonational and morphological resources can work together as grammatical markers of an evidential distinction.

It should be noted that the four studies described in these papers use a variety of empirical methods to investigate intonational meaning. The first two papers rely on online processing experiments based on either the picture naming paradigm (Dennison and Schafer) or the mouse-tracking paradigm (Tomlinson, Gotzner, & Bott). Both of these methods analyze the time (and also mouse trajectories in the case of the mouse-tracking experiment) that listeners take to arrive at a certain interpretation of a set of sentences on the basis of a set of intonational contours. The third paper uses grammaticality judgments to test the appropriateness of the three different nuclear contours found in Spanish polar questions to a set of different contexts in order to tease out the meanings associated with these intonational contours (Escandell-Vidal). The last paper uses behavioral responses obtained through an acceptability judgment task in which listeners are asked to select the appropriate intonation contour (uttered by one of two twins) that best matches the previous discourse context (Vanrell, Armstrong, & Prieto).

It is hoped that the cutting-edge theoretical and experimental investigations brought together in this volume will help to bring linguistics research closer to a more fine-grained characterization of the relationship between grammar and prosody and thus one step further on the road to a full integration of the various disciplines involved. Though the more immediate goal of this section is clearly to highlight specific lines of research underway at the moment, we also hope that it will have the effect of inspiring new research directions in this area.