

## **Informativity, interaction and information structure: Psycholinguistic investigations of prosody**

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It is widely accepted that prosody can signal the extent to which a word is 'informative', in an intuitive sense. Words that convey more important or more unexpected information tend to be produced with increased prosodic prominence, e.g. to be longer or louder. However, although existing work has approached the prosodic encoding of informativity from various angles, it remains uncertain how different types of informativity – in particular, factors related to information-structural notions such as 'focus' and factors related to information-theoretic notions such as predictability and frequency – are integrated, how they are encoded crosslinguistically (and what the possible extent of crosslinguistic variation is), and whether speakers consider their addressees' knowledge and other characteristics when expressing informativity. In this talk, I will present a series of psycholinguistic experiments on prosody from my lab that aim to investigate these issues.

One of our aims is to make connections between different research traditions on prosody and informativity. In one series of interactive studies (on English, work with Iris Ouyang), we provide evidence that prosody is shaped by a complex interplay between two kinds of informativity: (i) discourse information (e.g. whether a word is mentioned for the first time) and (ii) statistical factors (e.g. whether a word is a frequently-used or an infrequent word). We suggest that these results can be explained by a unifying factor, what we call 'epistemic surprisal'. The term 'epistemic surprisal' refers to the extent to which the speaker's prior assumptions (i.e. what is expected to happen) differ from reality (i.e. what actually happens). A higher degree of epistemic surprisal means a bigger mismatch between what has just happened and what the speaker had expected.

In a related series of studies (on English, work with Iris Ouyang), we further investigated whether speakers take their conversational partner's perspective into account and whether speakers can recalibrate their expectations about the addressee's knowledge. Do speakers express epistemic surprisal based on knowledge they have prior to a conversation or do they rapidly adapt to partner-specific knowledge over the course of the conversation? Our results support an analysis where the prosodic realization of information structure incorporates the interaction between speakers' prior assumptions and their observations about addressees during the course of the conversation.

To investigate the prosodic encoding of informativity, it is also important to look beyond any one language. In addition to our work on English, we have conducted comparative work in Bangla and Hindi, focusing on both production and comprehension, using parallel paradigms and materials in both languages (work with Arunima Choudhury). This allows us to closely compare how these two languages prosodically encode different kinds of information structure, with a special emphasis on different types of focus (e.g. new information focus vs. corrective focus). Our findings point to some intriguing asymmetries between Hindi and Bangla. We find that although both languages encode focus type distinctions using duration, it appears that Hindi listeners rely on duration cues during perception more than Bangla listeners. Bangla listeners, in contrast, seem to rely more on F0 cues. As a whole, our findings suggests that Bangla and Hindi, two closely-related modern Indo-Aryan languages which share a lot of common syntactic properties, differ in the details of how focus types are prosodically encoded by speakers, and moreover differ strikingly in how sensitive listeners are to different kinds of prosodic cues.

As a whole, these results highlight the benefits of looking at the prosodic encoding of informativity, broadly construed, especially by means of interactive paradigms where participants are engaged in a collaborative task. By looking across languages and by investigating the notion of informativity from different angles, we can better understand the role of prosody in communication.