Prosody, Syntax, and Conversational Language

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Prosody is not merely ornamental; it is a rich source of information for grouping words into linguistic constituents, the fundamental units of language processing. Decades of careful research using tightly controlled materials and robust experimental methods has established some important relationships between prosody and syntax. For example, word lengthening and pauses often signal the boundary of a syntactic constituent, and the more prominent the syntactic boundary, the stronger these prosodic cues tend to be. Intonational phrases also often correspond to syntactic clauses, indicating that pitch serves as another cue to syntactic constituency. Recently, findings from cognitive neuroscience have reinforced many of these behavioral results: For example, magnetoencephalography (MEG) has shown that syntactic boundaries are more easily recoverable from the neural record when they are accompanied by a prosodic boundary [1], and other research indicates that cortical activity previously linked to syntactic boundaries may be more accurately associated with prosodic constituency [2]. There appears to be little doubt, then, that prosodic information can reflect syntactic and prosodic constituency.

One limitation of much of this experimental work relates to the reliance on artificial and sometimes contrived materials. Of course, to some extent this is unavoidable: Given that speech sounds vary in intrinsic acoustic properties and that people differ in their degree of prosodic "exuberance", it is useful to control for lexical content, phrase length and type, and speaker characteristics. But this scientific approach sidesteps some critical psycholinguistic questions, including what we mean by syntax and what kinds of syntactic structures we should investigate. Many of the syntactic constructions used in controlled experiments occur only rarely in naturalistic conversations. A recent analysis of three large corpora of spoken language shows that the utterances people generate in conversations are short and often semi-grammatical [3]. For example, a Dutch corpus revealed that 69% of all utterances were either just one or two words long (and this value excludes backchannel responses etc.). Conversations are often merely "good enough" to allow interlocutors to communicate and socially engage, but the utterances people generate are usually short and not always well-formed from the perspective of formal linguistic analysis. Our research also indicates that utterances produced even in monologues tend to be syntactically spare [4]. Given this reality and the current focus in the language sciences on language use "in the wild", it seems critical to scrutinize our assumptions about the kinds of multiword structures we wish to relate to prosodic features. Moreover, as we expand our theories to include coverage of messy, interactive, and multimodal language, the distinction between prosody and performance effects will likely become blurred (*c.f.* [5]). The challenge for the next generation of scientists will be to figure out how to study the prosody-syntax relationship for this type of naturalistic language without sacrificing scientific rigor and interpretability.

References

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