Symposium: The Role of Alternatives in Pragmatic Inference

Judith Degen (jdegen@stanford.edu) and Noah Goodman (ngoodman@stanford.edu)
Department of Psychology, Stanford University
Stanford, CA USA 94350

Roni Katzir (rkatzir@post.tau.ac.il)
Department of Linguistics and Sagol School of Neuroscience, Tel Aviv University
Ramat Aviv, 69978 Israel

David Barner (barner@ucsd.edu)
Department of Psychology, University of California, San Diego
La Jolla, CA USA 92093

Albert Gatt (albert.gatt@um.edu.mt)
Institute of Linguistics, University of Malta
Tal-Qroqq Msida MSD2080, Malta

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Introduction

When interpreting a speaker's utterance, listeners routinely go beyond the information that is linguistically encoded and draw *pragmatic inferences* about what the speaker intended to convey. A core aspect of pragmatic inference is that it requires listeners to take into account *alternative utterances* that a speaker could have produced, but didn't. For example, a listener who believes that the more informative *Alex ate all of the cookies* was an alternative a speaker could have used instead of her actual utterance *Alex ate some of the cookies* will likely expect there to be cookies left over. Similarly, if a speaker says of Alex that *he caused the car to stop*, a listener will likely infer that he did so in a non-stereotypical way, since she could have instead uttered the simpler, more frequent, *he stopped the car*.

These and many other types of inferences have been studied extensively in the linguistic, philosophical, and psychological literature. While there is consensus that taking into account alternative utterances is important, developing a full-fledged theory of the role of alternatives in pragmatic inference has so far proved elusive due to the complex interactions of various aspects of alternative utterances - top-down information about their relative informativeness, structural complexity, and contextual relevance, as well as bottom-up information like frequency and contextual salience.

The symposium aims to bring together researchers from a wide range of perspectives and disciplines who have contributed to fundamental questions about the role that alternatives play in pragmatic inference and communication more generally: what are the formal constraints on alternatives - how does an utterance become an alternative to a target utterance? How does the naturalness and availability of alternatives affect online processing of pragmatic inferences? How early are children capable of evaluating a target utterance against alternatives? How do speakers choose between alternatives in the first place and can machines be taught to make these choices as humans would?

Our plan is to have four 15-minute talks headed by an overview of the many ways in which alternatives are relevant to language use and followed by a 20-30 minute discussion. The overview will be provided by **N. Goodman**. **R. Katzir** will then speak about the formal constraints on alternatives in terms of structural complexity, and the reflexes of these constraints in various pragmatic inferences like scalar implicature and association with focus. **J. Degen** will present work showing that the time course of processing of scalar implicatures is affected by the naturalness of the target utterance, as well as the naturalness and availability of alternatives. **D. Barner** will address the role that different types of alternatives play in acquisition, in particular on children's ability to compute various types of scalar and exhaustivity implicatures. **A. Gatt** will then shift the perspective to how speakers choose between different utterance alternatives. In particular, he will explore the way in which informativeness and contextual salience interact in the production of referring expressions, and developments in modeling this choice computationally. This will set the stage for our discussion, to be facilitated by **Goodman** and **Degen**, with the active involvement of audience participants as well as all our speakers.

Roni Katzir: formal constraints on alternatives

The consistent interpretation of the alternative-sensitive linguistic phenomena scalar implicature, association with focus, and free focus indicates that there is a set of constraints on the set of available alternatives, and that these constraints should produce a characterization of the alternatives that correctly predicts the observed inferences. I will argue in particular that alternatives are defined structurally rather than through their semantic properties, and that the involvement of context in the selection of alternatives is restricted to a narrow role (Fox & Katzir, 2011; Katzir, 2007, 2013). I will present the view

that the process of defining the set of alternatives is identical for scalar implicature, association with focus, and free focus and involves markedness-based substitutions within focused constituents, where markedness is defined in terms of structural complexity.

Judith Degen: alternatives in online processing

Recent psycholinguistic work on scalar implicatures has yielded a set of divergent findings - in some cases, the inference process is delayed compared to the computation of literal content; in other cases, it is not. I will argue that one possible way to unify this literature is by taking into account the alternatives that listeners are considering in the interpretation process. In particular, I will show that the availability of number terms inhibits the processing of vague quantifiers like *some* and implicatures to *not all* for set sizes where the number terms are more natural. This work suggests that the alternatives listeners consider in online processing are highly context-dependent (Degen & Tanenhaus, to appear, under review).

David Barner: alternatives in acquisition

Pragmatic inference requires both a capacity to compute inferences and access to knowledge structures over which these inferences operate. I will argue that childrens ability to compute scalar implicatures is limited by their access to relevant knowledge structures (i.e., the set of relevant scalar alternatives), and not by limitations in inference making, theory of mind, or working memory. To make this case, I will discuss children's differential acquisition of contextual and non-contextual scalar alternatives and how this affects their ability to compute inferences in each case (Barner & Bachrach, 2010; Barner, Brooks, & Bale, 2011). Also, I will discuss related phenomena from the word learning literature, where lexical knowledge structures also restrict inferences regarding the meanings of new words (e.g., in domains like color, time, and number).

Albert Gatt: alternatives in the production of referring expressions

How do speakers choose between varying utterance alternatives that can communicate similar meanings? The production of referring expressions provides a rich domain for investigating the tradeoff between the discriminative power—or informativeness—and the bottom-up contextual salience of utterance alternatives. I will argue that in many cases, low-level production pressures win out over high-level pressures to communicate informatively and discuss the challenges that this presents for automatic generation of referring expressions (Gatt, Krahmer, van Gompel, & van Deemter, 2013; van Deemter, Gatt, van Gompel, & Krahmer, 2012).

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