

Common Ground and Granularity of Referring Expressions

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Background and Motivation. Speakers can refer to the same entities in many different ways. For instance, a speaker may choose to refer to a dog simply with the expression 'dog' or with the more specific expression 'poodle'; she may choose to refer to a meeting time with the expression 'in the morning' or with the more precise, numeric expression 'at 10:30am'. The relevant difference here is one of level of precision or *granularity*: the idea is that fewer kinds of entities and distinctions are taken into account on a coarse-grained level than on a fine-grained level. Granularity is often related to vagueness. For instance, Krifka shows that round numbers that operate at a coarse level of granularity (such as 'a hundred kilometers away') have vague interpretations ('approximately one hundred kilometers'), which he argues are pragmatically more efficient than the corresponding precise interpretations of such numbers. Yet, precision can sometimes be regarded as increasing the pragmatic value of an utterance by making it more informative ('the seminar is at 4pm' vs. 'the seminar is in the afternoon').

The common assumption is that the pragmatic appropriateness of choosing a level of granularity (of choosing, for instance, vagueness over precision or vice versa) depends on the contextual situation and the purpose at hand. What this assumption exactly entails, however, is often left unexplained in theoretical accounts and has certainly not been sufficiently investigated experimentally. An issue that is particularly unclear is to what extent cooperative speakers choose the level of granularity of their utterances as a function of what they know about their addressees' interests and knowledge. According to the Gricean Cooperative Principle, cooperative speakers and hearers take into account the perspective of their partners during interaction—a phenomenon which in the psycholinguistics literature has been called "*audience design*" or "*perspective-taking*". The central idea behind these notions is that speakers and addressees make use of what they consider to be their *common ground* with the interlocutor.

Aims and Methodology. Our proposed project is intended as a first step in a larger experimental programme to evaluate the processing demands of vague versus precise language in speaking and understanding. The first step is to examine the role of expertise and common ground in the choice of level of granularity, where the available options may include vague versus precise language. We have pilot data suggesting that, at least under certain circumstances, listeners find vague statements easier to interpret than precise statements. But can speakers actually recognize and adapt their speech to situations in which a vague expression or an expression with a coarser level of granularity would facilitate listener understanding?

The general methodology we will use in the project is referential communication: a speaker and a listener perform a collaborative task in which the speaker uses language to identify a referent for the listener from a visually presented array of objects. We propose to collect production data for the first experiment to determine whether speakers choose expressions with a coarser level of granularity when this would benefit the listener. We then intend to follow this up with a visual-world eye-tracking study to validate our assumptions about the kinds of expressions that would be beneficial or harmful to the listener.