Pragmatic Question Answering: Generic versus Specific Responses

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Asking questions is a fundamental human activity. Questions of the form *"What objects X have property Y?"* can be viewed as having two types of responses: specific (extensional) and generic (intensional). A specific response to the question *"Who got a raise this year?"* is a list of individuals who got a raise this year. A generic response to this question is a description of the criteria used in determining who got a raise, for example, *"all employees with greater than five years of service and good reviews"*. The focus of this research is to determine the circumstances that dictate whether a generic or specific referent constitutes the most appropriate response to a question.

The most appropriate response to a question is one that best conforms to Gricean maxims of conversation (Grice 1975) — guidelines that describe cooperative conversational behavior. For example, it is critical that a response not mislead a questioner. Kaplan addresses this problem with respect to failed presuppositions (Kaplan 1981). When a questioner asks how many students received 'F' grades in a particular linguistics course, if no such students can be found many computer systems will respond *"none"* even if the linguistics course in question does not exist. A cooperative response in this case should indicate that there is no such course.

Specific responses fail to correct misapprehensions and do not inform a questioner about general properties that can enhance her overall understanding of a set of data. Generic responses may be evasive if what is desired is a list of facts. A computer system that is not capable of responding appropriately can mislead and frustrate a user.

A number of researchers have worked on the problem of providing cooperative response to questions. Recent work by Gaasterland, Godfrey, and Minker (Gaasterland, Godfrey, & Minker 1994) provides a foundation for my work: developing a model that predicts whether a generic or specific response is most appropriate for a question. This model comprises a representation of the discourse context, the state of knowledge of the respondent (including what the respondent knows about the questioner: the user model), and a grammar. This information is represented using SNePS (Shapiro & Rapaport 1992), a semantic network knowledge representation and reasoning system.

The optimal structure and relative importance of the model's components is being determined empirically. Question-response pairs from corpora and human subjects will be analyzed to help gain an understanding of what constitutes the "best" response to a question. The model will be tested in several different domains.

References

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