The Pragmatics of Metaphor Understanding: A Computational Approach

Justine T. Kao (justinek@stanford.edu)
Department of Psychology
Stanford, CA, USA **Noah D. Goodman (ngoodman@stanford.edu)**
Department of Psychology
Stanford, CA, USA

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Abstract

Abstract goes here.

Keywords: language understanding; metaphor; pragmatics; computational models

1 Introduction

Brief description of the importance of metaphor. Describe different approaches to studying metaphor understanding (cognitive, linguistic, relevance theory, etc). Zoom into approaches that emphasize pragmatics.

Motivate need to formalize theories of pragmatic metaphor understanding using computational models. Describe rational speech act models on a high level and how they can be naturally extended to non-literal language understanding such as metaphor. Main ideas to introduce and motivate:

(1) Metaphor understanding involves prior knowledge of source and target

(2) Metaphor interpretation driven by context and question under discussion

(3) Metaphors can sometimes communicate information more efficiently than literal statements and hence can be optimal and rational speech acts.

2 Behavioral Experiments

Outline the three different experiments and the purpose of each.

Experiment 1: elicit sets of common features for each animal category.

Experiment 2: elicit priors for these features associated with animals and people.

Experiment 3: measure people's interpretation of literal or metaphorical descriptions under different QUDs (implicit or explicit).

2.1 Materials and Methods

Describe details of each of the three experiments (how many subjects, materials, setup, etc).

2.1.1 Results

Show results from Experiment 3. Questions: Where should results for Exp 1 and 2 go? Also, which is more important/interesting, Effect 1 or Effect 2?

Effect 1: Metaphorical response introduces ambiguity regarding feature 1 but also communicates information about features 2 and 3.

Effect 2: Explicit QUD changes interpretation and increases probability of the feature under discussion being true.

Figure 1: This is a figure.

3 Computational Model

Introduce intuition for the model. Literal listener, recursive social reasoning, QUD and satisfaction of communicative goal, etc.

Lay out mathematical details of model.

Describe how priors from Experiment 2 get plugged into the model.

3.1 Results

Show qualitative results of model predictions:

Effect 1: The model interprets metaphors more ambiguously but makes inferences about additional features

Effect 2: Model interprets metaphors differently under different QUDs

4 Model Comparison

Compare model predictions to behavioral results. Scatter plot.

Compare with baseline models such as just animal prior or just human prior. Compare with baseline that does not have QUD.

5 Discussion

Discuss implication of results on the pragmatics of metaphor; discuss other effects we could explore using the modeling framework; suggest future directions.

5.1 Footnotes

5.2 Tables

Table 1: Sample table title.

Error type	Example
Take smaller	63 - 44 = 21
Always borrow	96 - 42 = 34
0 - N = N	70 - 47 = 37
0 - N = 0	70 - 47 = 30

5.3 Figures

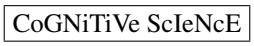

Figure 2: This is a figure.

6 Acknowledgments

Place acknowledgments (including funding information) in a section at the end of the paper.

7 References