Learning word meaning by inferring speakers' intended referents:

An incremental approach to socially-guided statistical learning

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Many thanks to ...

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Abstract

How do children learn word meanings?

Introduction

Model

Model Specification

$$P(L,I|W,O) \propto P(W,O|L,I)P(L,I)) \tag{1}$$

But the objects O are observed in the context, and by the generative model (Figure **??**), the remaining expression can be factored as follows:

$$P(L,I|W,O) \propto P(W|I,L)P(I|O)P(L)P(I) \tag{2}$$

Inference

Batch inference using a gibbs sampler.

Incremental inference using a particle filter.

Simulations

Cross-situational word learning with adults

Yu & Smith (2007).

Experiments with children

Disambiguation.

Dewar & Xu (2007).

Corpus simulations

Rollins subset (Frank, Goodman, & Tenenbaum, 2009)

Fernald & Morikawa (Johnson, Demuth, & Frank, 2012)

Discussion