Introduction & Motivation

Accessible at: http://madlyambiguous.osu.edu

- Madly Ambiguous is an open-source, in-browser online game aimed at teaching audiences of all ages about structural ambiguity and some of the difficulties it poses for natural language processing.
- Developed as an outreach component of a project whose aim is to develop methods for avoiding ambiguity in natural language generation and for using disambiguating paraphrases to crowd-source interpretations of structurally ambiguous sentences.
- Made for the Language Pod at COSI, which had no general audience demos that dealt with syntax-related linguistic phenomena.

Interface

Users first read an introduction to structural ambiguity and to the rules of the game, in which they will try to trick the computer.

Users are then challenged to fill in the blank in the sentence, “Jane ate spaghetti with ___.”

The system guesses whether the filled-in content is intended as a utensil, part, manner, or company; the user confirms or denies.

Finally, users read an explanation of the NLP behind the system.

Educational & Illustrative Components

Illustrations are a central component of making the game accessible to all ages. Some are more generally explanatory (left), while others humorously show the ridiculous interpretations of the sentences (center). All explanations are narrated by Mr. Computer Head (right), who challenges users to trick him by completing the sentence in a way that he will misinterpret.

NLP

The system uses two methods of guessing the interpretation:

- Basic mode, a traditional rule-based approach, uses part-of-speech tagging, lemmatization, and WordNet.
- Advanced mode, closer to the state-of-the-art, uses clusters of word embeddings.

Feedback

- Demo went live online in Summer 2017, with widespread community feedback as well as classroom usage.
- Users go to great lengths to win, coming up with creative examples like “a cucumber dressed as a person.”

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