A Corpus Study of Left-Dislocation and Topicalization

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April 8, 2005
Introduction

• How to choose among truth-conditionally equivalent constructions?

• Left-dislocation construction (LDC):
  Burlington’s crime, it doesn’t involve children.

• Topicalization construction (TPZ):
  And that I couldn’t watch [ ]
Factors

• Which factors are significant in differentiating these constructions?

• Hypotheses from the literature:
  – General
  – Specific to these constructions
General Factors

• Animacy (e.g. Dative alternation Bresnan and Nikitina 2003)

• Grammatical Weight (e.g. Heavy NP Shift, Wasow 1997)
Hypotheses specific to LDC and TPZ


• 3 disjoint functions for LDC:
  
  – Simplifying LDC
  
  – P(artially) O(rdered) Set LDC
  
  – Island Topicalization LDCs
Prince’s functions of LDC: Simplifying LDC

- removes fronted NPs that refer to discourse-new entities from a syntactic position (subject) that disfavors them

- ‘Two of my sisters were living together on 18th Street. They had gone to bed, and this man, their girlfriend’s husband came in. He started fussing with my sister and she started to scream. The landlady, she went up, and he laid her out. So my sister went to get a wash cloth to put on her, he stabbed her in the back...’ Terkel, Welcomat, 12/2/81, p.15

- predicts that there should be more discourse-new left dislocations from subject
Prince’s functions of LDC: Poset LDC

- triggers the hearer to infer that the entity to which the fronted NP refers is in a salient ‘partially-ordered set’ relation to some previous entity in the discourse

- A: I would like to be a little more into investigating some of the other countries in the world and their educational problems. And to come up with something a little better than what we’ve got.
  B: Uh-huh. Yeah, it’s tough to, to say what, uh, you know, what, uh, as far as this, that good or bad or what.
  A: But, uh, I was just talking to somebody else, and all those European countries, they pay all the way through college and stuff like that.

- predicts more set relations between left-dislocated NPs and previous discourse
Prince’s functions of LDC: Island Topicalization LDCs

- topicalization from extraction islands surfaces as LDC

- 'My first book, I paid half of each trick to the person who gave it to me.' (Terkel)

- none in Switchboard corpus
Prince’s functions of TPZ

- Poset inference
- Focus-Focus Frame
Prince’s functions of TPZ: Focus-Focus Frame

• the focus is the prosodically prominent constituent within the clause that follows the fronted NP

• focus frame is the rest of the clause, with the focussed constituent replaced by a variable

• 'She had an idea for a project. She’s going to use three groups of mice. One, she’ll feed them mouse chow, just the regular stuff they make for mice. Another, she’ll feed them veggies. And the third, she’ll feed e junk food.'

• predicts a strong correlation between the accented constituent following the fronted NP and discourse newness
Hypotheses specific to LDC and TPZ

- Referential Distance (Givón 1983)
  - LDC ‘re-introduces’ a topic
  - There once lived a gracious king in an enchanted forest. He was married to a beautiful queen, and she wasn’t only beautiful but also smart, so she soon became the real power in the realm. In a forest clearing near the palace there lived a poor prince, and the queen used to visit him and have lunch. Now the king, he didn’t like that one bit...
  - Predicts referential distance should peak at higher number of utterances back, like Givón found for a smaller corpus (11-20 utterances back)
The Corpus

- Treebank Switchboard - syntactically annotated

- annotated for information status by Paraphrase-Link project (Nissim et al, 2004)

  - old: identity, event, general, generic, identity-generic

  - mediated: general, bound, possession, part, situation, event, set, func-value, aggregation

  - new
- also annotated for animacy (Zaenen et al, 2004)
  human, organization, animal, machine, vehicle, place, time, concrete, nonconcrete
Data Extraction

• used “tgrep2”

  – 121 LDC in annotated part of corpus (406 total)
  – 29 TPZ in annotated part (104 total)

• Factors:

  – those mentioned above (referential distance was hand coded on a smaller sample)
  – grammatical function (of gap or resumptive pronoun)
  – speaker

• also extracted control NPs, which were in S’s that were not in questions, topic-constructions (5750)
Data Analysis

- mixed-model Logistic Regression with speaker as random factor
- significance tests by ANOVA
  - LDC: animacy significant at $p < 0.05$, all other factors significant at $p < 0.001$
  - TPZ: animacy, information status, weight significant at $p < 0.01$, GF at $p < 0.001$
Results: Information status categories

- Set relation is by far the most common for LDCs (46.3%) and TPZs (55.2%), as compared to the controls (5.2%)

- Logistic regression: LDC is 80% more likely to be in a set relation than others, verifying Prince’s POSet function

- TPZ is 1.6 times more likely to be in a set relation than others
Results: Fine information status categories
Results: Information status categories

- Prince’s ‘Simplifying’ function predicts that there should be more discourse-new left dislocations from subject

- also verified: $\chi^2$, Fisher’s exact tests $p < .0001$

- but vastly fewer new LDCs than old or mediated, so function is quite small
Results: Coarse information status categories
Results: Referential distance

LDCs and TPZs tend to have been last referred to further back in the discourse than control NPs, but not the qualitative difference Givón predicts.
Results: Animacy

- animates are 1.5 times more likely than inanimates to be in a LDC
- inanimates are 7.6 times more likely than animates to be in a TPZ
Results: Grammatical weight
LDCs and TPZs tend to be heavier than control NPs
Conclusion

• logistic regression of corpus data can determine the factors that contribute to the choice of construction, even for infrequent constructions such as TPZ and LDC

• tested hypotheses from the literature
  
  – verified Prince’s predictions that were testable with this corpus
  
  – Givón’s predictions not supported

• new results: ‘anti-animacy’ effect for TPZ problematic for theories that predict animacy has a direct effect on the linearization of arguments (Cueni, Snider, & Zaenen 2005)
Acknowledgments

• valuable direction: Annie Zaenen and Tom Wasow

• also the rest of my committee: Dan Jurafsky and Ivan Sag

• help with the analysis: Anna Cueni and Joan Bresnan

• data extraction: Doug Rohde and Jean Carletta
## LDC Logistic Regression

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