What is ‘it’? Disambiguating pronominal object vs. event reference

Eva Wittenberg & Victor Ferreira
ewittenberg@ucsd.edu  vferreira@ucsd.edu

PERSONAL vs. DEMONSTRATIVE PRONOUNS

• Lots of work on pronominal reference resolution, but mostly on ambiguous gender pronouns (he/she)
• Results: People’s interpretations depend on a mix of syntactic biases, semantics, discourse factors, event structure, and non-linguistic cues (Hartshorne & Snedeker, 2013; Kehler & Rohde, 2013; Nappa & Arnold, 2014; Rohde & Kehler, 2014)
  ➔ What about demonstratives or neuter pronouns, like it and that?
• Accessibility account: it and this/that ‘are indistinguishable with respect to the description they provide for the intended referent (an inanimate object)’ (Ariel, 2001, p.29)
• Discourse account: it is for topics, that is for content which is activated in discourse, but not the topic (Gundel et al., 1993)
• Mixed account: Personal pronouns like it are sensitive to syntactic prominence, while demonstrative pronouns like standalone that are sensitive to discourse status (Brown et al., 2005; Kaiser & Trueswell, 2008)
• Related accounts: Centering Theory (Grosz et al., 1995), Focus Theory (Strauss, 2002), Space stacks theory (Grosz & Sidner, 1986)
  ➔ How do people decide which meaning is intended?

Study I: Interpretation biases

- 40 two-sentence vignettes with questions like in (1a) and (1b); forced choice between two answers (2a, b)
- answer choices either picked out the event (2a) or the object of the event (also the syntactic object; 2b):

  (1) a. Adam cooked lasagna last night. Rachel really liked that.
     What did ‘that’ refer to?
     b. Adam cooked lasagna last night. Rachel really liked it.
     What did ‘it’ refer to?
  
  (2) a. Adam cooking lasagna
  b. the lasagna Adam cooked

Study II: The role of discourse

- Same two-sentence vignettes with questions like in (1a) and (1b), but preceded by an event-biasing sentence (3a), or an object-biasing sentence (3b).
- Again, answer choices either picked out the event (2a) or the object of the event (2b):

  (3) a. Adam never did anything at home.
     b. Rachel loved Italian food.
  ➔ Testing Hypothesis II

STUDY I: INTERPRETATION BIASES

- 120 English native speakers
- Linear mixed-effects model; Predictors:
  • pronoun (it vs. that)
  • answer order (2a vs. 2b first);
  • random slopes for participants and items;
  • model comparisons

- Results:
  • No effect of order of answer choices or interaction of answer choice with pronoun (it vs. that, X²=0.01, p>.91)
  • Significant effect of it vs. that (X²=84.50, p<.01)

STUDY II: THE ROLE OF DISCOURSE CONTEXT

- 120 English native speakers
- Linear mixed-effects model; Predictors:
  • pronoun (it vs. that),
  • context (3a vs. 3b);
  • random intercepts for participants and items;
  • model comparisons

- Results:
  • Significant main effect of pronoun (X²=72.75, p<.01)
  • Significant main effect of context (X²=181.00, p<.01)
  • No significant interaction (X²=1.46, p >.22)

CONCLUSIONS

- Main effect of pronoun, Exp. 1 and 2: As predicted by Hypothesis I, it tends to refer to an object, and that, to the whole event
- Main effect of context, Exp.2: As predicted by Hypothesis II, object-contexts induced more object interpretations for both it and that, and event contexts induced more event interpretations for both it and that
  ➔ both discourse status and lexical preferences influence the interpretation of personal and demonstrative pronouns

We would like to thank Jane Angelte, Suhas Arehalli, and Nina Clark for assistance. This work was supported by a German Academic Exchange Service (DAAD) postdoctoral scholarship to Eva Wittenberg, and an NIH HD051030 grant to Victor Ferreira.