Domain Restriction and Discourse Structure – Evidence from Processing

Abstract

- Uniqueness with defines requires contextual domain restriction (DR)
- Both Pragmatic and Syntactic mechanisms have been proposed to add DR to interpretation
- How and when are domains selected online?
- Expt. pits visual against linguistic context to investigate factors affecting choice of DR
- Discourse structure (PP-Position) affects DR choice
- DR effects arise early (within 600ms)
  - Might favor syntactic accounts (or provide evidence for rapid pragmatic processing)

Syntactic Accounts

DR via syntactically represented variables: Silent pronouns that get a value via the assignment function

C-variables

Predicate variable whose value gets intersected with the noun

Linguistic antecedent / contextually salient property

- Parallel to personal pronouns

\([\text{The circle C} \text{ is green}]\) (von Fintel, 1994; Szabo 2000)

Situation pronouns

Predicates interpreted relative to partial situations

\([\text{The circle s} \text{ is green}]\) (g(s) = top row situation) (Kratzer 2007; Schwarz 2009)

Pragmatic Accounts

DR is purely pragmatic (e.g., Neale 2004; Bach 1994)

- Pragmatic reasoning supplies sensible interpretation
- DR processing might be delayed

Experimental Designs & Task

- Arrays with non-unique shapes + auditory text
- Context sentence with domain-providing PP (e.g., on the top) in various positions

Task

- Target sentence (The circle is black)
  - Followed by Truth Value Judgment

- TV reveals choice of referent
  - 'false' adjectives (green): Charity vs. DR 'stickiness'
- Eye movements: time course of DR selection

Eye Data

- Target Adv. & Competitor %
  - Noun + Adj:
    - PPNP vs. PPNFront/PNPPred: domain unique interactions + simple domain effects
  - Noun: 2x3 & 2x2 interactions for PPNFront/PNPPred/NP + simple effects
  - PPNP/PPFront/PNPPred

Eye Data

- Target Adv. & Competitor %
  - Noun + Adj:
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  - PPNP/PPFront/PNPPred

Time Course of DR Processing

- DR effects arise relatively early
  - (mean N + Aux duration = 600-800ms)
- IF processing of pragmatic reasoning requires extra time (Implicature processing), this speaks against purely pragmatic accounts
- But evidence on pragmatic processing is mixed.
  - Alternatively, more evidence for rapid pragmatic processing!

Summary of Results

- Cues from linguistic context are utilized online for DR for definites when visual display has multiple possible referents
- Frame Adverbial PP has the strongest effect
- Deaccented NP-modifier PP has comparable effect on judgments, but not on eye movement patterns.
- PPNFront/PPFirst vs. PPNP/PPPred/OneLast, provide cues for discourse structure
  - QUD concerning the top row of shapes
- Eye movement effects primarily arise in measures reflecting the consideration of the competitor
- Both direct and indirect antecedents (Ant / Two) outweigh PP-based discourse structure effects and Charity

Fronted PP can serve as discourse topic

- How does integration of discourse information get incorporated theoretically?

Situation Domain Restriction:

- Topic situations derived from QUD
- Discourse structure directly affects DR choice
- DR effects: arise early (within 600ms)

C-variables:

- If C is just like pronoun with PP as antecedent, PP position doesn’t matter:
  - (A circle appeared / This is a circle). It is black.
  - (On the top)… / …(on the top). The circle C…

Purely Pragmatic Accounts:

- On par with C-variables? (role of antecedents?)
- Specific predictions would require more elaborate model (interaction with Charity?)

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Selected References


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