Understanding hypothetical events in discourse
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THE PRESENT STUDY

According to Stumpf (1985), would prefers hypothetical context for semantic interpretation. This is not the case for should.
Interpretation of would vs. should sentences examined in Hypothetical vs. Factual contexts; mini-2 sentence discourse is followed by comprehension questions.

Hypotheses

• If language processing proceeds along heuristic first mechanism, no differences expected in word-by-word RTs.
• Algorithmic effects are only expected at (non-superficial) questions.
• Two levels of predictions:
• First, regarding modal type and context: should observe facilitation effect for would sentences in Hypothetical but not Factual contexts. No such difference expected for should.
• Second, regarding Dwivedi 2013 model: these effects should only be observed at questions, not during sentence comprehension.

METHOD

Participants
• 48 right-handed native English speakers from Brock University (39 female, mean age 20.8 years, range 18 to 30 years)

Materials
• 32 2-sentence scenarios with follow-up questions
• Divided into 4 lists via Latin Square design
• Correct answers were counterbalanced for left-right position on screen, and for True vs. False

Procedure
• Non-cumulative self-paced reading task (Just, Carpenter, & Wooley, 1982) followed by true-false questions

RESULTS

Self-Paced Word-by-Word Reading Time Results
• A repeated measures ANOVA was conducted for S2 Reading Times
• No main effects or interactions associated with Context or Modal (all F<2).

DISCUSSION

• Sentences embedded in discourse are not processed deeply, exhibit “good enough” processing (cf. Barton & Sanford, 1993; Daneman, Lennertz & Hannon 2007)
• Would sentences show facilitation effect for question-response accuracy when algorithmic properties are met.
• Should sentences show a cost for building (the not-grammatically-required) hypothetical context for comprehension.
• Language processing for such sentences exhibits: Heuristic first, algorithmic second processing (Dwivedi, 2013)
• Allocation of attentional resources determines depth of language processing (Kemnes & Kemper, 1999)
• As a result, RT data show sensitivity to heuristic properties of sentences
• Application of semantic (algorithmic) rules only occurs if required
• This computation is independent of event/lexical/conceptual-semantic interpretation
• Therefore, algorithmic processing does not apply first
• In other words, these streams do not apply in parallel, nor is there a primacy for grammatical considerations.
• Not all human brains perceive language as linguistic professors!
• Important to use converging methodologies (on-line behavioural and ERP, as well as off-line ratings)

FUTURE STUDIES

• Examine other sentence types in order to test heuristic first, algorithmic second model (see Dwivedi, E. Gibson, et al., in prep)
• Investigate individual differences associated with such processes (see Dwivedi et al., 2015)

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