The role of event knowledge in semantic interpretation
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INTRODUCTION
What can semantic ambiguity reveal about underlying language processing mechanisms?

Heuristic vs. algorithmic processing (Simon, 1956; Caramazza & Zuriff, 1976; Fodor, 1982)
• Examine Quantifier Scope Ambiguity
• Every N1 visited a N2

Two possible meanings:
Meaning determined by the order of interpretation of quantifiers (i.e. scope interpretation)

THE PRESENT STUDY cont’d
• The data of events had been defined by types of participants, temporal and causal properties (Johnson-Laird, 1983; Altmann & Kamilis, 1999; Madden & Zesai, 2003). However, the number of participants per event has yet to be investigated.

Hypothesis
• SG vs. PL judgments for sentences Every kid climbed a tree, Every jeweller appraised a diamond should serve as good predictors for judgments for word triplets kid climb tree, jeweller examine diamond.

METHODS

EXPERIMENTAL CONDITIONS

<table>
<thead>
<tr>
<th>FILLER CONDITION</th>
<th>FORMAT</th>
<th>EXAMPLE</th>
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</thead>
</table>
| Fill Determiner Singular (Ss) & 
Fill Determiner Plural (Ps) | A
& 
A | THE TREE, THAT | KID CLIMB TREE |
| Fill Determiner Plural & 
Fill Determiner Singular | A
& 
A | MANY BEAVER BUILD DAMS, BANDIT ROB ALL TRAIN | TIMELUMBAR CHOP LOG |
| Fill Determiner Plural & 
Fill Determiner Singular | A
& 
A | FIREMAN EXAMINE LADDER, NANNY MAKE THAT BREAKFAST | FILLER CONDITION |
| Fill Number, 
Fill Determiner Singular, 
Fill Determiner Plural | N
& 
V
& 
N | TEN FAX ARRIVE | TEN FAX ARRIVE |
| Fill Number, 
Fill Determiner Singular, 
Fill Determiner Plural | N
& 
V
& 
N | ten male | QNUMERAL-N-V |

Table 1. Conditions, format and examples of critical stimuli.

METHODS

Stimuli were created from 168 ambiguous sentences in Dwivedi et al., 2010 by altering the number phrases in the sentence to create singular/plural conditions. The stimuli were presented on a computer screen for 1000 ms; participants were required to press either “L” or “R” on the keyboard depending on whether they thought the sentence was singular or plural.

Procedure
• Participants were instructed to read triplets for interpretive purposes, as if these were telegrams
• Each word-triplet was presented to participant for computer speed at 1000 ms; participants were required to press either “L” or “R” on an on-screen button indicating which picture they felt best matched the telegram.

RESULTS
• A binary logistic regression analysis of the full model against a constant only model, using SPSS, indicated that proportion of plural judgments for full sentences in Dwivedi et al., 2010 significantly predicted binary plural judgments for word triplets in the present work (chi square = 5.43, p=0.020, with df1), confirmed by Wald criterion, (p=0.022).

• In addition, perhaps absence of inflection led participants to interpret words as SG vs. quantifiers.

DISCUSSION

• Other preliminary results suggest that quantifier ALL was most difficult and took most time as compared to number judgments for full sentences.

FUTURE STUDIES

• Add more linguistic context to force participants to more deeply interpret event (oversome SG bias due to lack of inflection?) and/or include a plausibility judgment task to force event interpretation.

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• Examine interpretation of number in quantifier sentences/events in special populations (e.g. individuals with dyscalculia).

SELECTED REFERENCES

