Interpretations of VP anaphora through reference to salient events

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Overview

- Verb Phrase Ellipsis:
  - "I'm going to add a cup of sugar to my tea"
    "I wouldn't ___"

- "Do that" Verb Phrase Anaphora:
  - "I'm going to add a cup of sugar to my tea"
  - "I wouldn't do that"

Overview

- Verb phrase ellipsis (VPE) interpretations are sensitive to nonlinguistic manipulations under certain conditions (Geiger & Xiang 2017)

- What is the relationship between nonlinguistic (contextual) and linguistic (antecedent) information in determining VPE interpretations?

Overview

- New experiment examining role of nonlinguistic context in determining interpretations of verbal anaphor "do that" and comparison to VPE

- Results: Both VPE and "do that" are sensitive to nonlinguistic contextual manipulations, but the role of context is much more restricted for VPE

Background

- Traditionally, Verb Phrase Ellipsis (VPE) is thought to be resolved mainly through identity with an overt linguistic antecedent. (Hankamer & Sag, 1976; Fiengo & May, 1994; Merchant, 2001, 2004, i.a.)

Linguistic Antecedent

- Hankamer: I'm going to stuff this ball through this hoop.

- Sag: It's not clear that you'll be able to _____ .

Non-Linguistic Context

- [Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop]

- #Sag: It's not clear that you'll be able to _____ .

Background

- The possibility of exophoric (antecedent-less) VPE under certain conditions calls this into question. (Miller & Pullum, 2013)

- Ex: [a child pulling her mother through a store aisle toward a rack of DVDs]:
"Can we __? Can we __?"

Background

- Two possible explanations:
  - VPE can freely be resolved to any salient discourse item (linguistic or non-linguistic). Linguistic antecedents are much more likely than non-linguistic contexts to fulfill the requirements for resolution. (Miller & Pullum, 2013)

  - VPE cannot be resolved with respect to a nonlinguistic event. Exophoric VPE is "defective", and requires resolution through other means. (Merchant, 2004)

Background

- Geiger & Xiang (2017) looked at the interpretation of VPE when the interpretation supported by the antecedent and the non-linguistic context competed.

- Results: Salient contextual information not present in the antecedent can be considered, but antecedent-identical interpretations are always preferred.

Background

- Verb Phrase Anaphora (VPA) such as "do it/this/that" is often contrasted with VPE, as these expressions *can* be resolved with respect to a non-linguistic context. (Hankamer & Sag, 1976)

Linguistic Antecedent

- Hankamer: I'm going to stuff this ball through this hoop.

- Sag: It's not clear that you'll be able to do it .

Non-Linguistic Context

- [Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop]

- Sag: It's not clear that you'll be able to do it .

Background

- This recalls the resolution of the demonstratives "this" and "that", which can felicitously be used to refer to highly salient discourse entities. (Gundel et al., 1993)

Question

- What interpretations of VPA are available given competing linguistic and non-linguistic contexts?

- VPA may be resolved through reference to a salient discourse event.

- Comparison to VPE should reveal whether VPE can freely be interpreted with respect to linguistic *and* nonlinguistic discourse events.

Experiment

- Judgment Task using Amazon Mechanical Turk

- Subjects were asked to rate a possible VPA interpretation based on non-linguistic and linguistic contexts

- Mirrors design of Geiger & Xiang (2017), replacing VPE with VPA

At the grocery store

Non-Linguistic Context

Son: I want to buy candy bars! ← Linguistic Antecedent

Father: We can't do that.

On a scale of 1 to 7, where 1 is the least likely and 7 is the most likely, how likely do you think it is that the father meant:

We can't buy five candy bars today, but maybe we could get fewer. ← Interpretation

(Unlikely) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | *(Likely)*

Use number keys or click boxes to answer.

Experiment
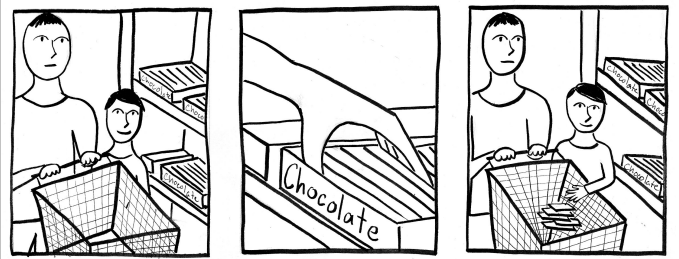
Experiment

Experiment

Context Type (3)	Antecedent Type (3)	Response	Interpretations (2)
Unavailable Context-	**No Antecedent-** [No Antecedent]		**Unmodified Interpretation-** On a scale from 1 to 7, where 1 is the least likely and 7 is the most likely, how likely do you think it is that the father meant: We can't buy any candy bars today.
Available Context-	**Unmodified Antecedent-** Child: "I want to buy candy bars!"	Father: "We can't do that."	
Salient Context-	**Modified Antecedent-** Child: "I want to buy five candy bars!"		**Modified Interpretation-** … : We can't buy five candy bars, but maybe we could buy fewer.

Experiment

- Each scenario had 18 variations (3 Context x 3 Antecedent x 2 Interpretation)

- 6 different scenarios, with 10 fillers

- Participants: 89 subjects, all native English speakers, recruited through Amazon Mechanical Turk, $1.50 compensation, aged between 18 and 49 (mean: 29)

Predictions

- Hypothesis 1: VPE and VPA equally sensitive to nonlinguistic context
  - Antecedent-identical interpretation always dominant
  - Interpretation matching non-linguistic context is weaker
  - VPA results = VPE results

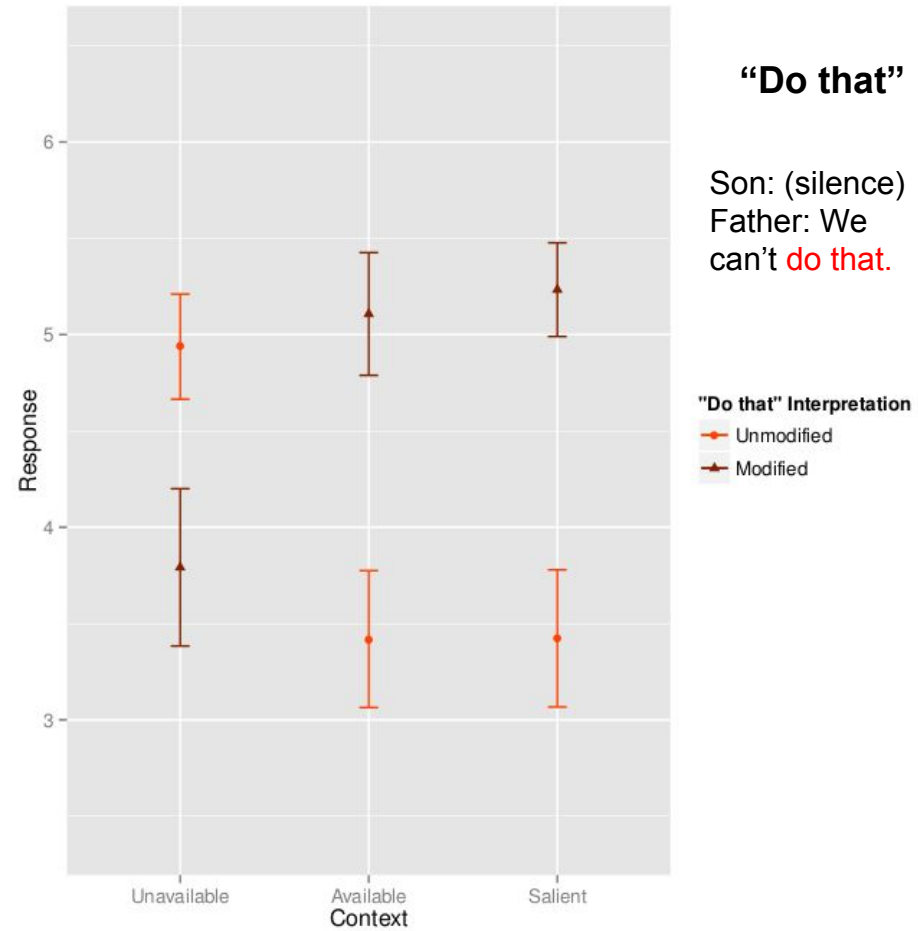 - Consistent with Miller & Pullum (2013)

Predictions

- Hypothesis 2: Role of context for VPE is more restricted than VPA
    - Context-supported interpretation relatively stronger for VPA than for VPE
    - Antecedent-identical interpretation might be subsumed by context-supported interpretation
    - VPA results ≠ VPE results

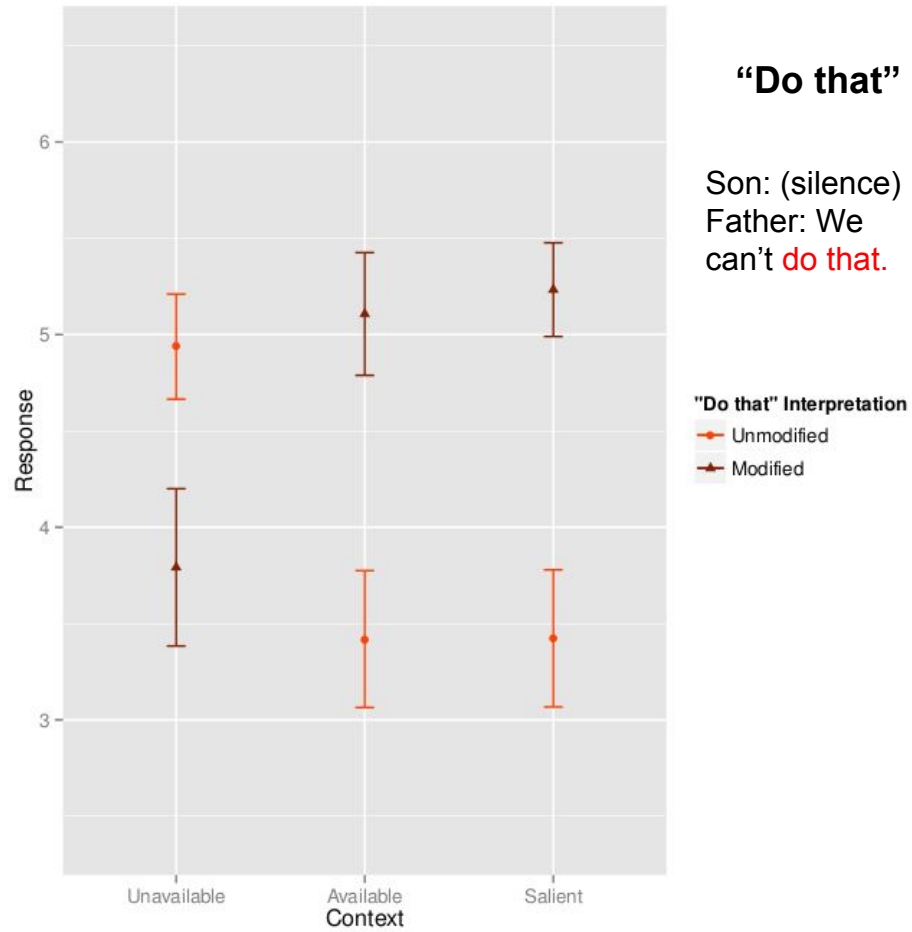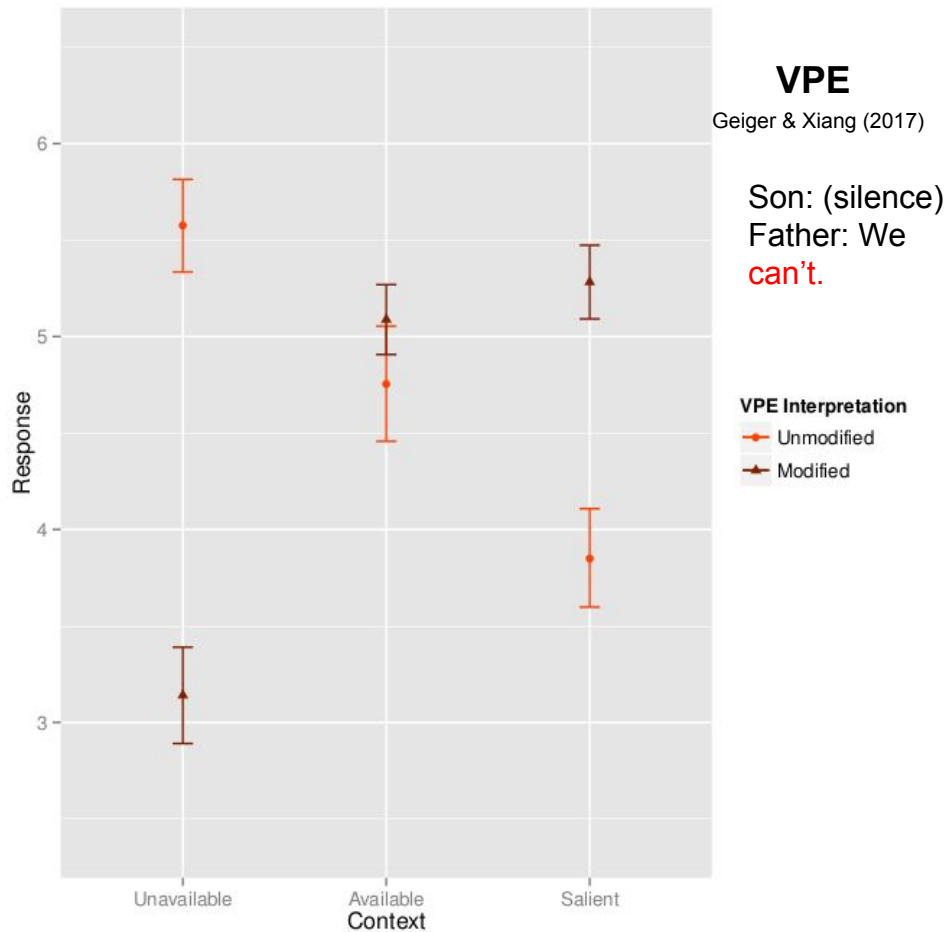   - Consistent with Hankamer & Sag (1976), Merchant (2004)

Results

- The overall mixed-effect model showed a significant three-way interaction between Non-linguistic Context, Antecedent, and Interpretation (p<.01)
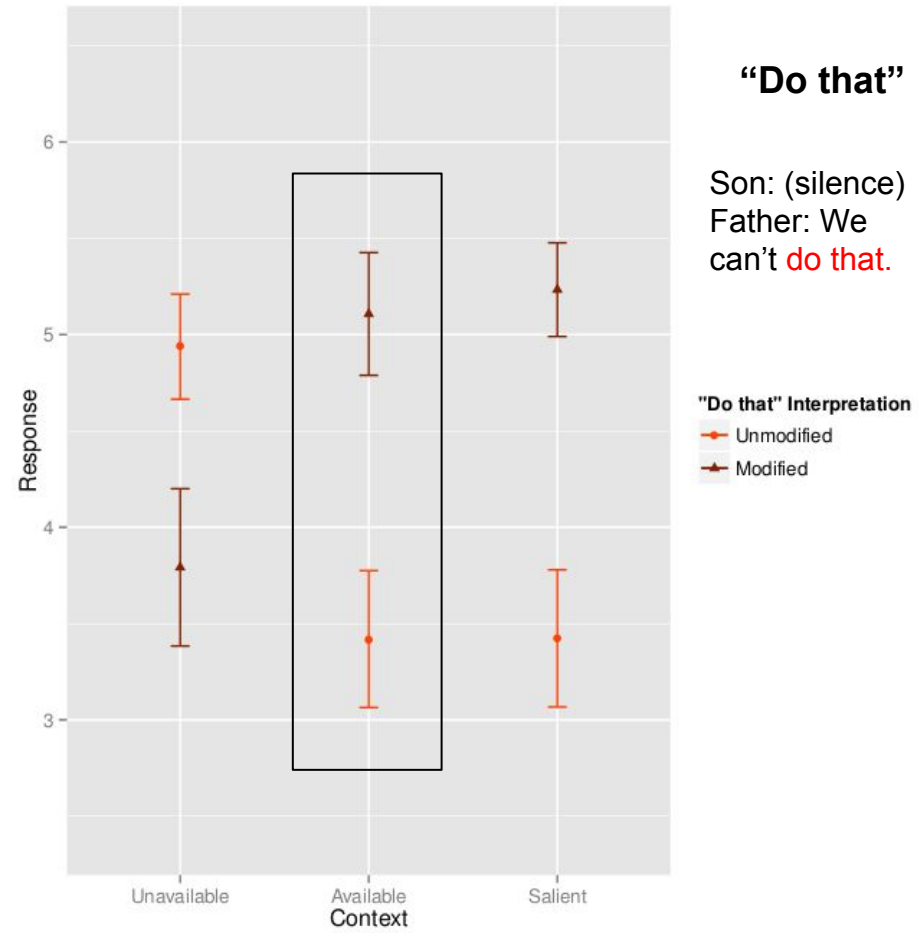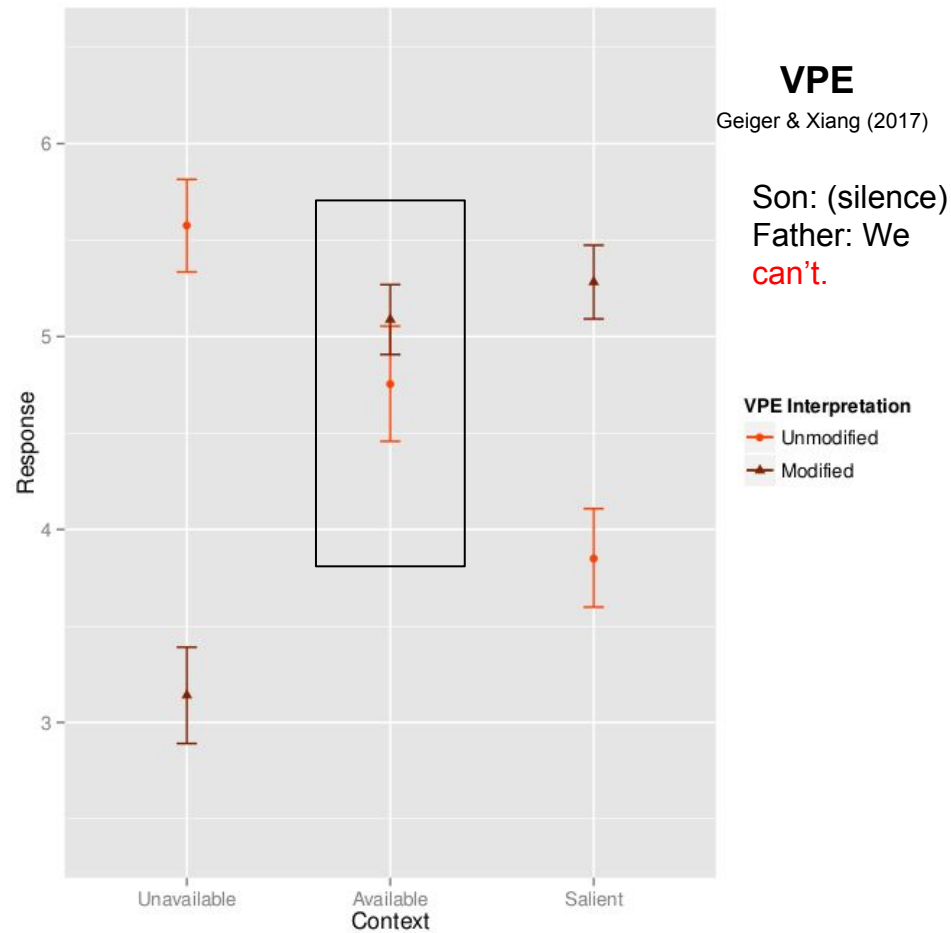
- Separate analyses were done by antecedent type

Results - No Antecedent

"Do that"

Son: (silence)
Father: We can't do that.

Results - No Antecedent

VPE

Geiger & Xiang (2017)

Son: (silence)
Father: We
can't.

"Do that"

Son: (silence)
Father: We
can't do that.

Results - No Antecedent

VPE

Geiger & Xiang (2017)

Son: (silence)
Father: We can't.

VPE Interpretation
- Unmodified
- Modified

"Do that"

Son: (silence)
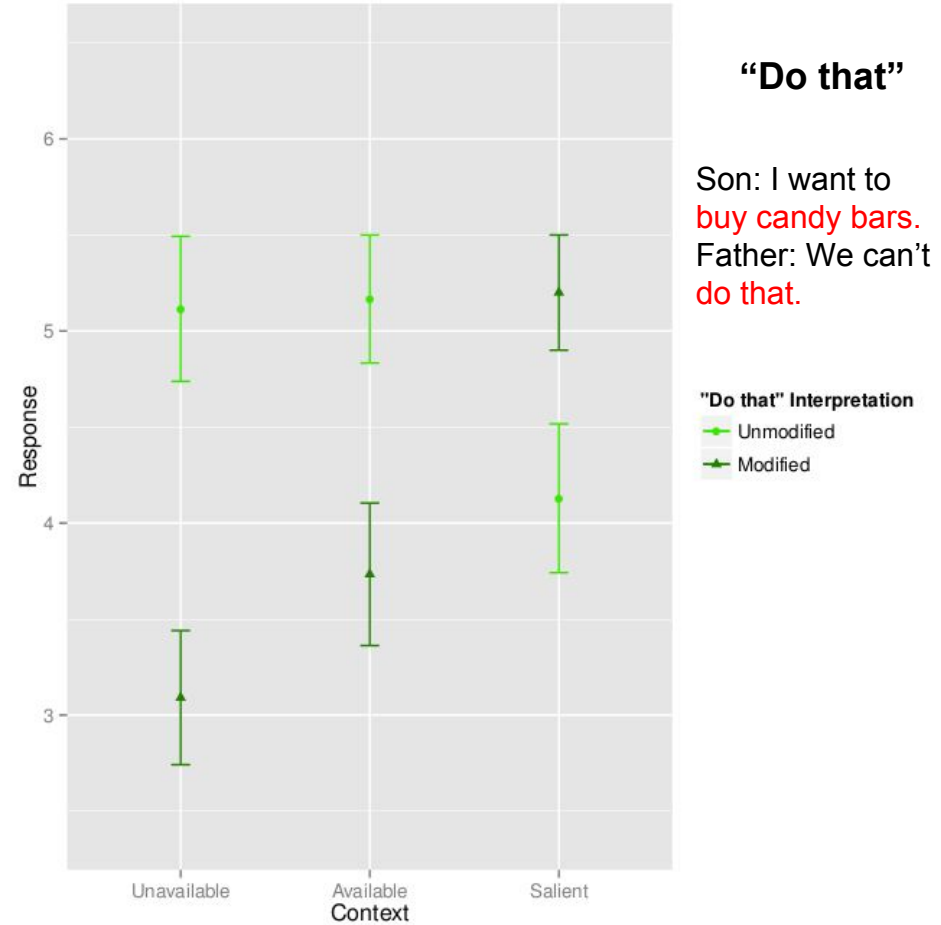Father: We can't do that.

"Do that" Interpretation
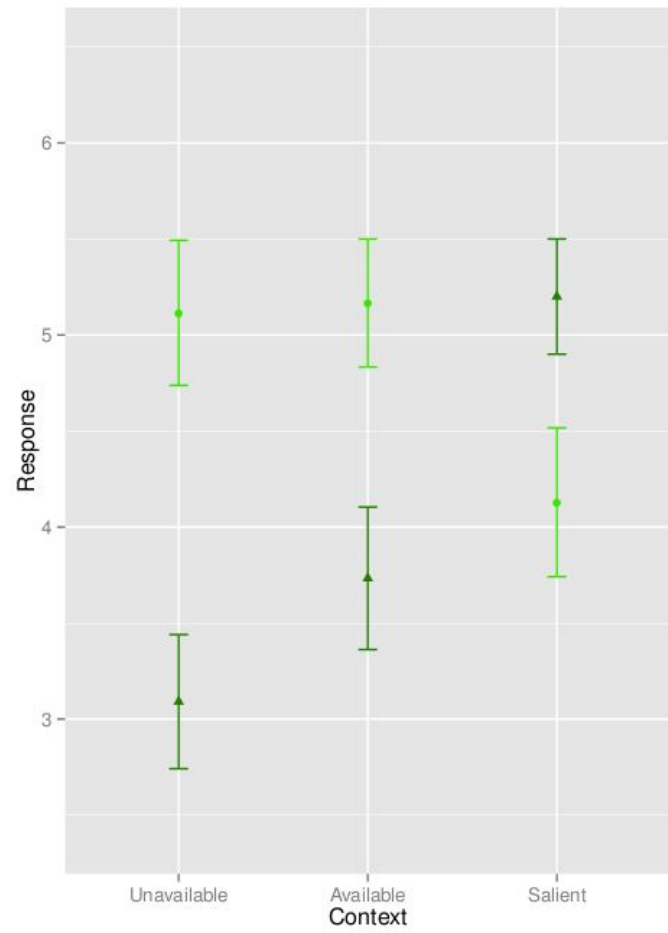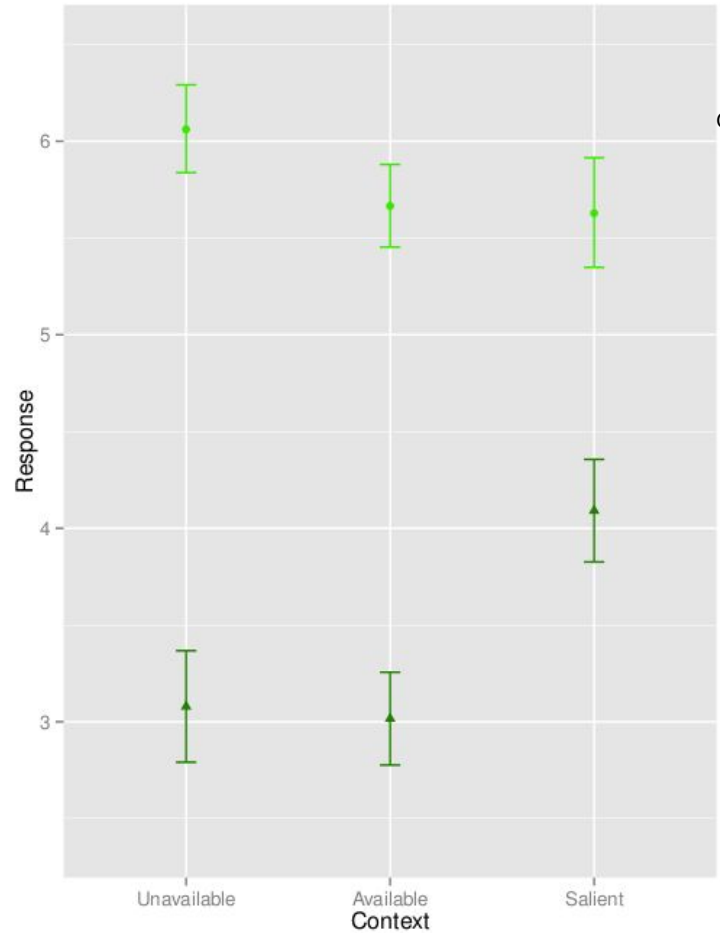- Unmodified
- Modified

Results - No Antecedent

- For VPE, the Unmodified and Modified Interpretations are similar in the Available Context

- For VPA, the Unmodified Interpretation is dispreferred in the Available Context

- The contextually salient event (in this case favoring the Modified Interpretation) is more accessible for VPA than VPE
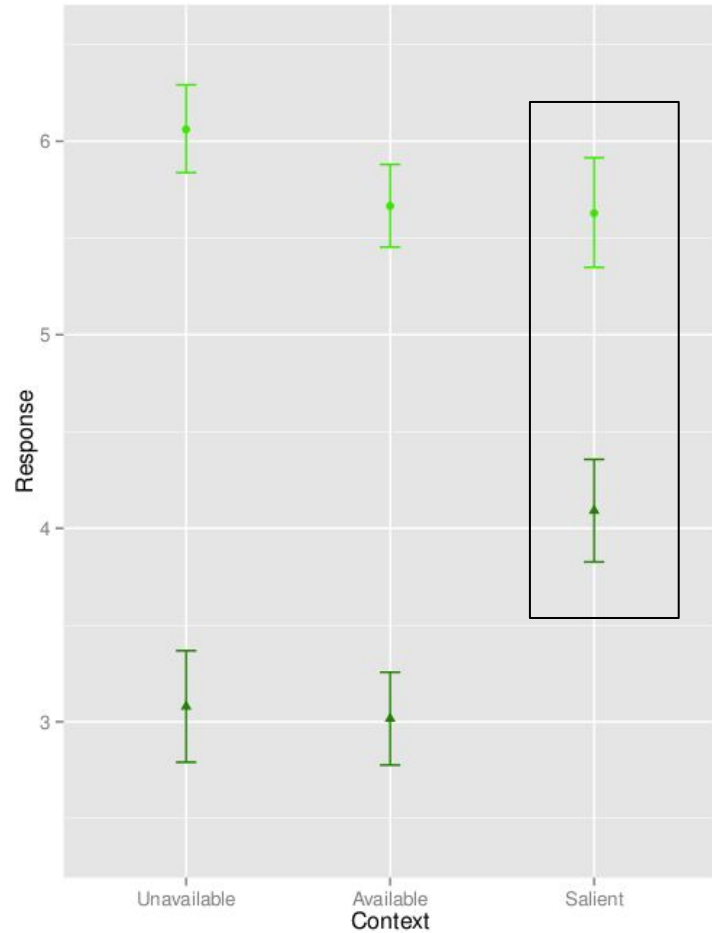
Results - Unmodified Antecedent

"Do that"

Son: I want to buy candy bars. Father: We can't do that.

Results - Unmodified Antecedent

VPE

Geiger & Xiang (2017)

Son: I want to buy candy bars. Father: We can't.

VPE Interpretation
- Unmodified
- Modified

"Do that"

Son: I want to buy candy bars. Father: We can't do that.

"Do that" Interpretation
- Unmodified
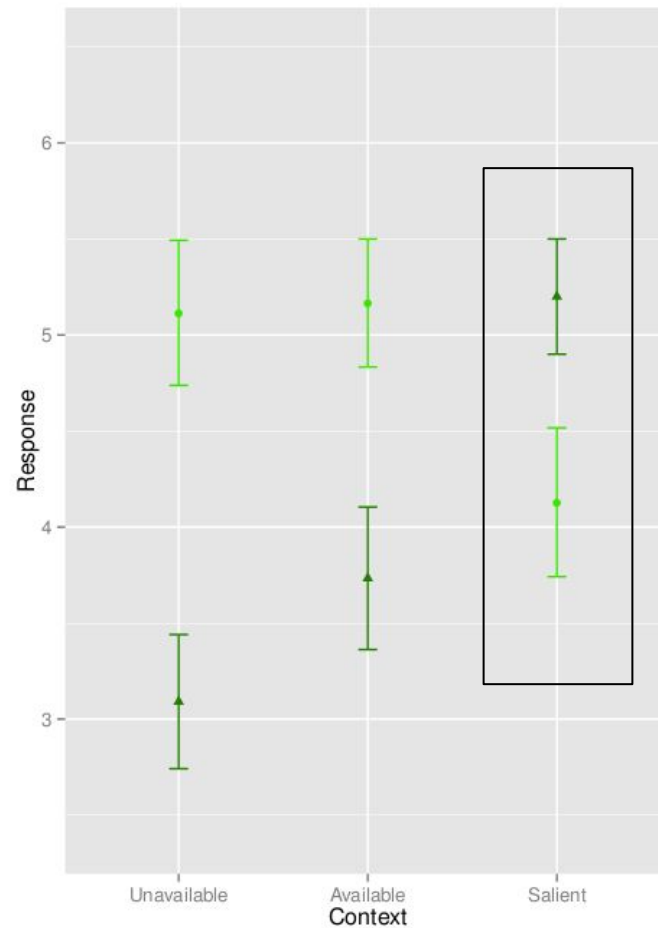- Modified

Results - Unmodified Antecedent

VPE

Geiger & Xiang (2017)

Son: I want to buy candy bars. Father: We can't.

VPE Interpretation
- Unmodified
- Modified

"Do that"

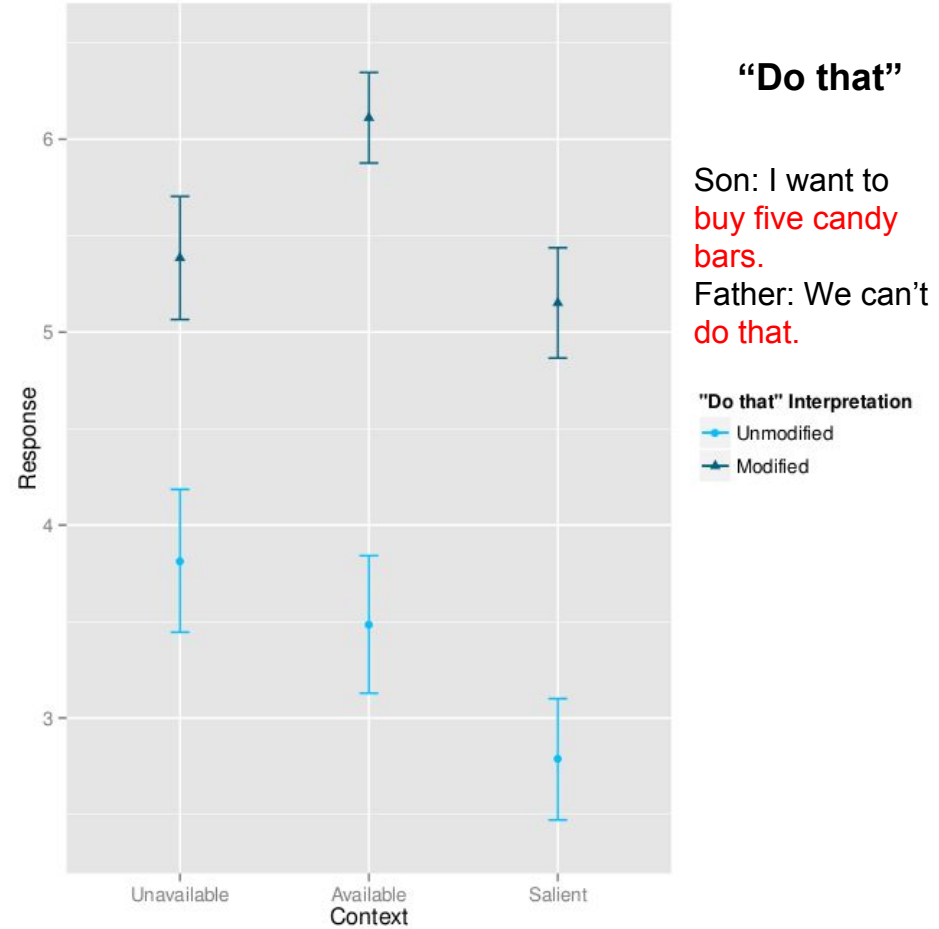Son: I want to buy candy bars. Father: We can't do that.

"Do that" Interpretation
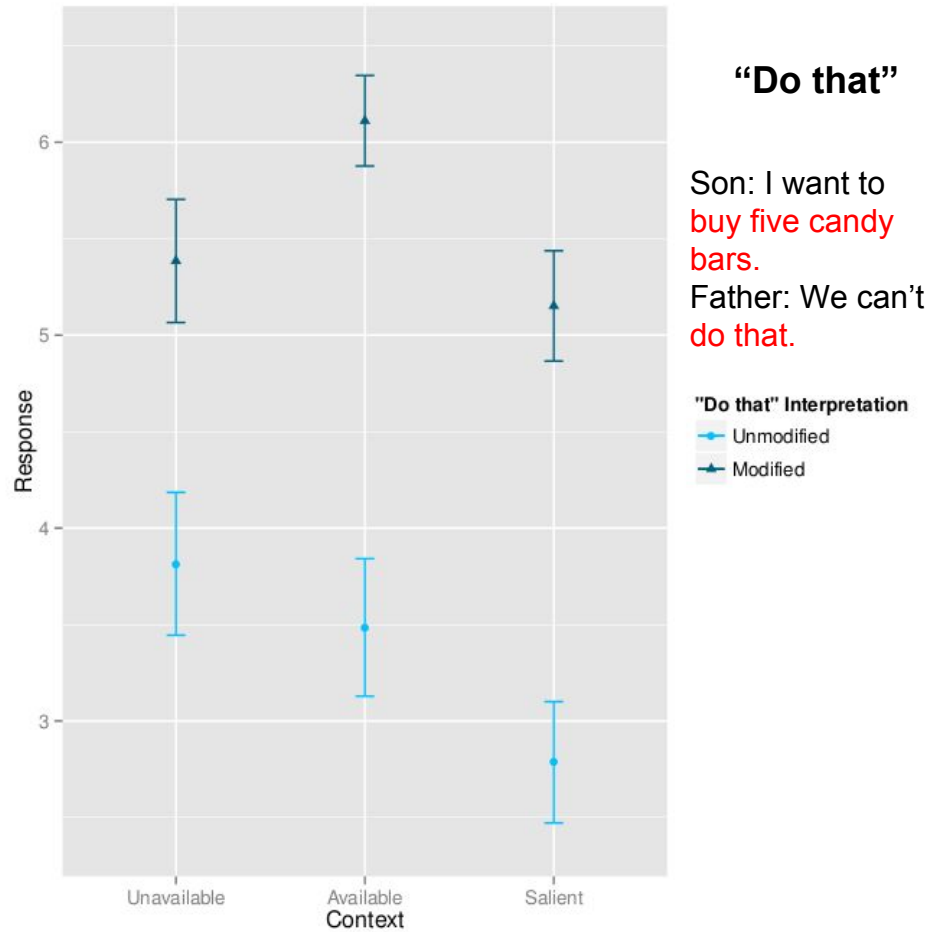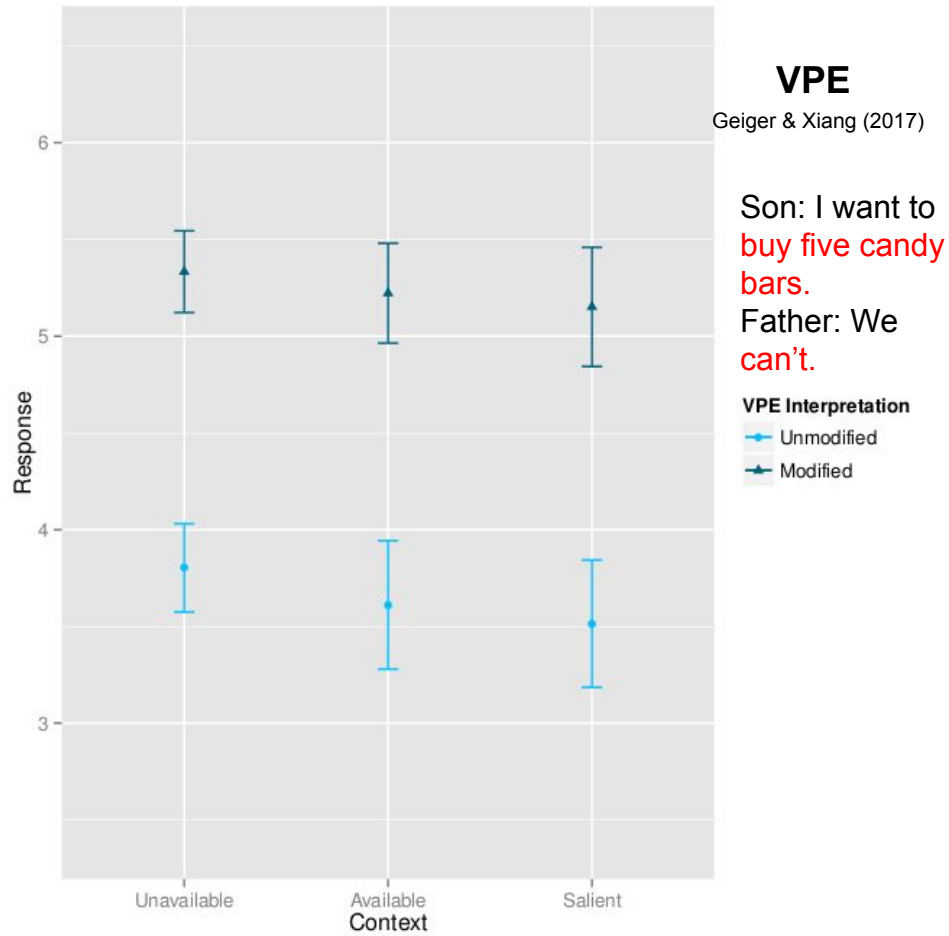- Unmodified
- Modified

Results - Unmodified Antecedent

- For VPA, the most salient non-linguistic context preferred over the conflicting unmodified antecedent

- VPE is more strongly constrained by an identical linguistic antecedent

Results - Modified Antecedent

"Do that"

Son: I want to buy five candy bars.
Father: We can't do that.

Results - Modified Antecedent

VPE

Geiger & Xiang (2017)

Son: I want to
buy five candy
bars.
Father: We
can't.

VPE Interpretation
- Unmodified
- Modified

"Do that"

Son: I want to
buy five candy
bars.
Father: We can't
do that.

"Do that" Interpretation
- Unmodified
- Modified

Results - Modified Antecedent

- For both VPA and VPE, the interpretation is dominated by the inclusion of the numeral in the antecedent

- No substantial effect of context

Conclusion

- Both VPE and VPA can be resolved by a salient non-linguistic context

- The results for VPA in the No Antecedent and Unmodified Antecedent conditions show key differences from VPE which suggest that while VPA can be resolved through reference to a salient (linguistic or non-linguistic) discourse event, while the interpretation of VPE is more constrained

Conclusion

- The differences between VPA and VPE are consistent with the view that there are additional syntactic restrictions on VPE

- VPE interpretation is not determined solely by the relative salience of the nonlinguistic and linguistic contexts

References

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