

Sorta hedging objects, verbs, and whole sentences

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Main claims

- Experimental evidence for the existence of object, verb, and whole sentence hedging
- Effects of verb type, definiteness, and stress on the availability of object hedging with **sorta** (originally proposed in Anderson 2014)
- Proposal: no hard constraints against object hedging; plausibility determines acceptability

1. sorta hedging (Anderson 2014)

- A *hedge* such as “loosely speaking” or “**sorta**” signals a mismatch between what is said and what is actually meant
- A hedge might be used when the speaker doesn’t know a more correct word or phrase to use at the time of utterance
- Sorta** modifies verb phrases and acts as an *approximative*; natural paraphrases express that “**sorta** VERB” is similar to but not “VERB” in some respect (Anderson 2014)
- Sorta** is able to modify VPs headed by most types of verbs

- (1) I was running on concrete and accidentally **sorta** kicked the ground -- that is to say, I didn’t really kick the ground, but it was like kicking the ground.

(Anderson 2014:2, ex. 2)

Claim: certain verbs (intensional transitive verbs and verbs of creation) also allow a second reading, where **sorta** hedges the direct object Anderson (2014)

Intensional transitive verbs (ITV)

- (2) I’m sorta looking for a horse.
a. *V-hedging*: I’m only half-heartedly looking for a horse.
b. *O-hedging*: I’m looking for something like a horse.

Creation verbs

- (3) The carpenter sorta built a barn.
a. *V-hedging*: The carpenter did something that was like building a barn (e.g., putting together a prefabricated structure).
b. *O-hedging*: The carpenter built something like a barn (e.g., a shed).

Other verbs

- (4) The soccer player sorta kicked a ball.
a. *V-hedging*: The soccer player did something that was like kicking to a ball.
b. *O-hedging*: *The soccer player kicked something that was like a ball.
(5) The woman sorta ate a cracker.
a. *V-hedging*: The woman did something that was like eating to a cracker.
b. *O-hedging*: *The woman ate something that was like a cracker.

(Anderson 2014:2,3, ex. 5-7, 10-11)

- According to Anderson, only indefinite objects may be hedged

2. Analysis of sorta (Anderson 2014)

- Verb hedging**: **sorta** approximates via *slack regulation* (Lasersohn 1999)
- Derived through *alternative semantics* (Morzycki 2011)

$$\begin{aligned} & \llbracket \text{sorta PREC swim} \rrbracket^{d',C} \\ &= \lambda x \exists d \left[\begin{array}{l} d \leq \text{standard}(\llbracket \text{PREC swim} \rrbracket^{d',C}) \wedge \\ \exists f \in \left\{ \begin{array}{l} \text{swim,} \\ \text{float,} \\ \text{wade,} \\ \dots \end{array} \right\} [f(x)] \end{array} \right] \end{aligned}$$

- Object hedging**: **sorta** modifies object of ITV/CREATION verbs indirectly
- Pointwise Hamblin Function Application allows object alternatives to project -- this projection is allowed only for ITV/CREATION verbs
- Anderson: ITV/CREATION verbs take property-type arguments, and the lexical semantics of verbs that take property-type arguments is such that they allow alternatives to project
- Alternatively, ITV/CREATION verbs compose via Restrict (Chung & Ladusaw 2004), which allows alternatives to project
- Definite DET (*the*) treated as choice function, only a single alternative

$$\text{VP: } \left\{ \begin{array}{l} \lambda x [\text{build}(x)(\text{a-house})], \\ \lambda x [\text{piece-together}(x)(\text{a-house})], \end{array} \right. \quad \left\{ \begin{array}{l} \lambda x [\text{build}(x)(\text{a-shack})], \\ \lambda x [\text{piece-together}(x)(\text{a-shack})] \end{array} \right\}$$

$$\text{V: } \left\{ \begin{array}{l} \lambda f \lambda x [\text{build}(x)(f)], \\ \lambda f \lambda x [\text{piece-together}(x)(f)] \end{array} \right\} \quad \text{DP: } \left\{ \begin{array}{l} \text{a-house,} \\ \text{a-shack} \end{array} \right\}$$

build *a house*

(Anderson 2014:12, ex. 40)

3. Current study

- Inter-speaker variation?**
Judgments of availability of readings don’t align from person to person, and seem context-dependent
➔ Goal: systematically collect data from adult native speakers through an online judgment task, testing for definiteness and verb type effects
- Whole sentence hedging?**
Destressing **sorta** appears to give rise to a third reading, where the speaker seems to distance herself from the assertion
➔ Goal: test for availability of this *whole sentence hedge* reading
- (6) Bob **sorta** baked a cake.
(The speaker doesn’t want to fully admit what Bob did, perhaps because Bob wasn’t supposed to bake a cake.)
- (7) Jane **sorta** broke the vase.
(The speaker doesn’t want to fully admit what Jane did, perhaps because it will get Jane in trouble.)
- Effect of stress?**
Stressed **sorta** makes object hedge easier to access regardless of verb type, while whole sentence hedge appears harder to access with stress
➔ Goal: test for effect of stress
- (8) The soccer player SORTA kicked a ball.
(_)The soccer player kicked something that was like a ball (perhaps a crumpled up wad of paper made for an impromptu soccer game).
- (9) The woman SORTA ate a cracker.
(_)The woman ate something that was like a cracker (perhaps a hardened piece of week-old toast).

4. Experiment

- Designed to test for: (i) availability of object, verb, and whole sentence hedging; (ii) effect of verb type, definiteness, and stress on availability of object hedging
- 2x2x2 within-subject design
 - ➔ *verb type* : ITV/CREATION vs. OTHER
 - ➔ *definiteness* : definite vs. indefinite
 - ➔ *stress* : stressed **sorta** vs. unstressed **sorta**
- Online multiple choice task created and hosted on IBEX 0.3.6
- Participants were 26 adults recruited via Amazon Mechanical Turk
- On each trial, participants saw a sentence containing **sorta**, followed by the question: “What is the speaker hedging?” and three hedge options
- Hedge options were presented in randomized order
- Before beginning the task, participants saw a set of instructions
- The instructions included an explanation of *hedging*, and provided examples of O, V, and whole sentence hedging
- Participants were instructed that stressed “sorta” would appear in bold, large font (**sorta**), while unstressed **sorta** would appear in smaller font (**sorta**)
- Example trial:

Charlie **sorta** fell in a pit.

What is the speaker hedging?

- “a pit”: e.g., What Charlie fell in was actually more like a medium-size hole.
- “fell in”: e.g., Charlie actually just got his foot caught in it.
- whole sentence: e.g., The speaker is trying not to fully admit what Charlie did, perhaps to avoid upsetting the person the speaker is talking to.

Indefinite trials:

- ➔ 4 [+ITV/CREATION,+stress]
- ➔ 4 [+ITV/CREATION,-stress]
- ➔ 4 [-ITV/CREATION,+stress]
- ➔ 4 [-ITV/CREATION,-stress]

Definite trials:

- ➔ 2 [+ITV/CREATION,+stress]
- ➔ 2 [+ITV/CREATION,-stress]
- ➔ 2 [-ITV/CREATION,+stress]
- ➔ 2 [-ITV/CREATION,-stress]

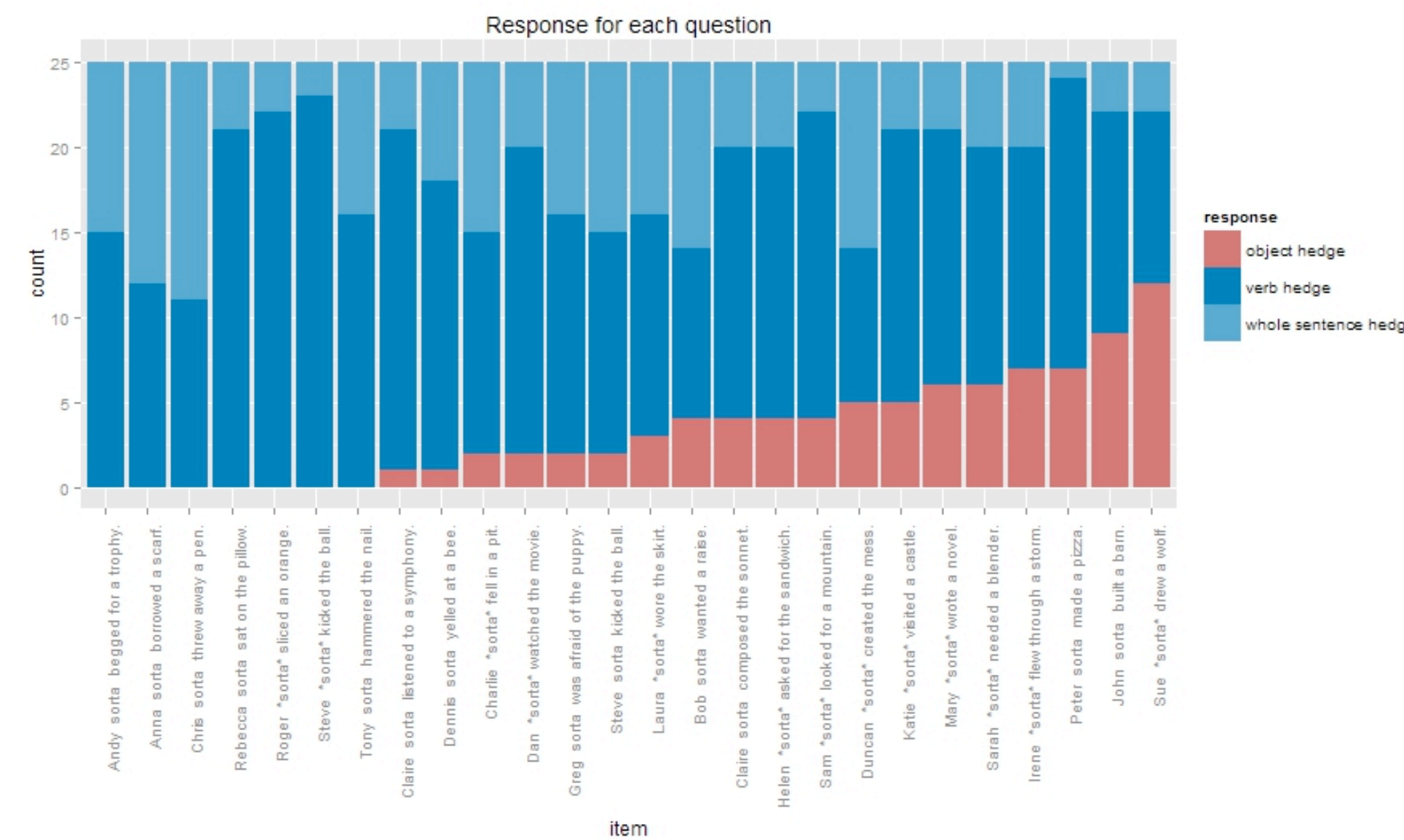
- Participants saw a randomized order of the following:
- [+ITV/CRE] verb phrases (12)
 - ➔ *compose a sonnet; create a mess; build a barn; draw a wolf; write a novel; make a pizza; need a blender; want a raise; be afraid of a puppy; beg for a trophy; ask for a sandwich; look for a mountain*
- [-ITV/CRE] verb phrases (12)
 - ➔ *borrow a scarf; sit on a pillow; wear a skirt; slice an orange; yell at a bee; listen to a symphony; watch a movie; visit a castle; throw away a pen; hammer a nail; fly through a storm; fall in a pit*



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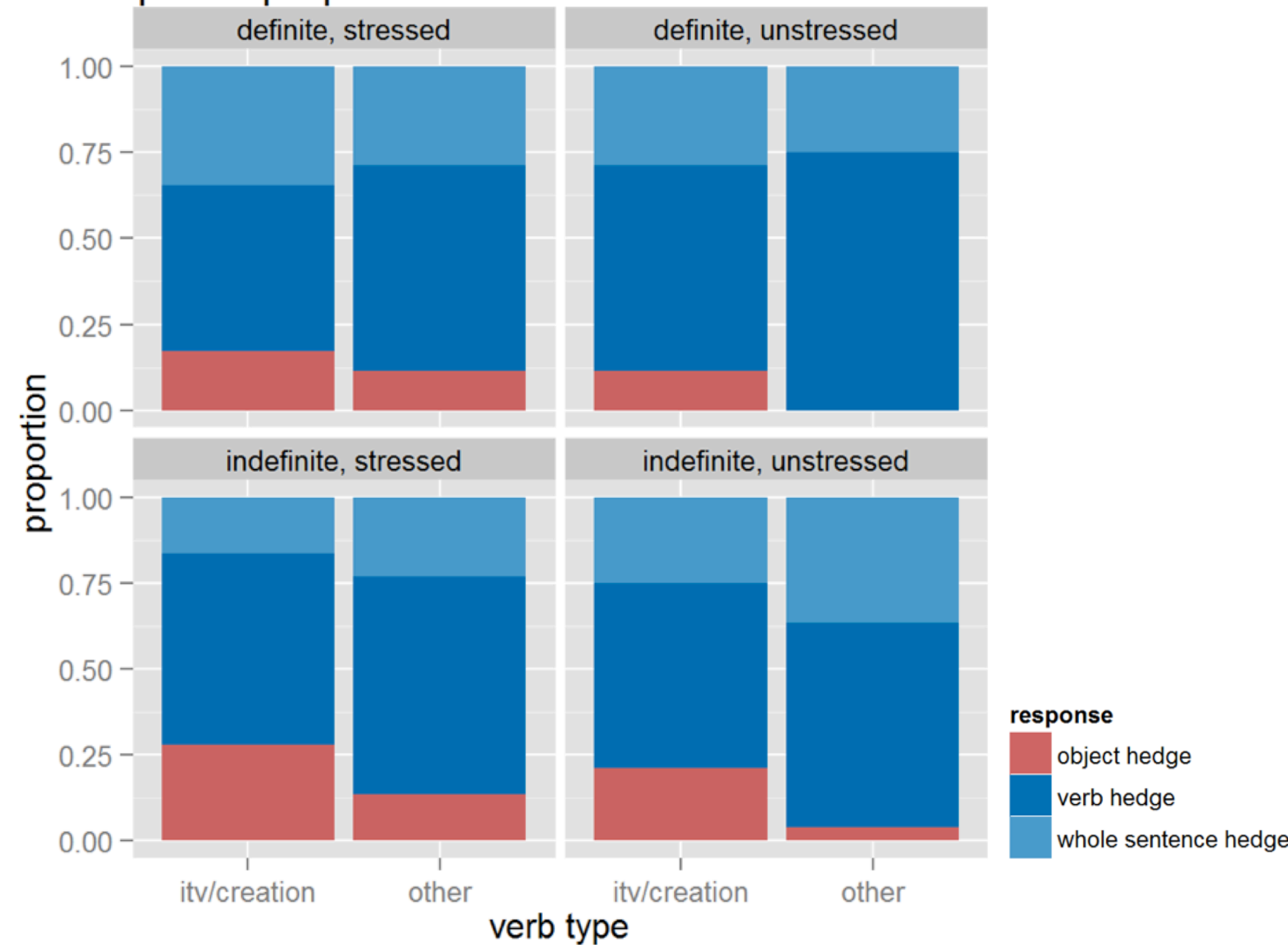
5. Results

- Participants accessed object, verb, and whole sentence hedges



- We modeled the probability of selecting the object hedge option, using mixed effects logistic regression
- Best fitting model included Participant as random effect, and main effects of Verb, Definiteness, and Stress
- Participants were more likely to choose the object hedge when:
 - Sentence contained an ITV/CREATION verb ($\beta=.37$, $SE=.03$, $p<.001$)
 - Object NP was indefinite ($\beta=-.53$, $SE=.03$, $p<.05$)
 - **Sorta** was stressed ($\beta=.37$, $SE=.03$, $p<.001$)
- While Anderson (2014) predicts a Verb x Definiteness interaction, i.e. object hedging should only be possible with ITV/CREATION verbs taking indefinite objects, our results revealed no significant interactions

Response proportions for definite and indefinite items



6. Discussion

- Effects of verb type and definiteness** on availability of object hedge reading -- but these are not hard constraints
 - ➔ Nothing inherent to verb type or (in)definiteness that dictates availability of object hedging
 - ➔ Rather it is about the plausibility of a hedged object reading
 - ➔ In particular, creation verbs make the object hedge reading very plausible (e.g., very easy to imagine loosening requirements on what counts as an X when the average person is *building* an X)
- Anderson’s semantics for **sorta** accounts for VP hedge readings, as well as object hedge readings — no special machinery required
 - ➔ Availability of VP and whole sentence hedge readings suggests possible connections with similar speech act adverbs such as predicate-modifying **-ish** and propositional **...ish** (Bochnak & Csipak 2014)
 - ➔ Whole sentence hedge reading of **sorta** may also have opposite effect of **so totally**, argued to strengthen the speaker’s commitment to a proposition (Irwin 2014)

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