Hedging arguments

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Main findings

- Experimental evidence for an effect of verb type on the availability of object hedging with sorta (originally proposed in Anderson 2013)
- No effect of definiteness (contra Anderson 2013)
- Experimental evidence for availability of whole sentence hedging
- Effect of stress on availability of different hedge readings
- New scope puzzle: only narrow scope objects can be hedged

1. sorta hedging (Anderson 2013)

- 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 2013)
- 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 2013:2, ex. 2)

> **Claim:** certain verbs (intensional transitive verbs and verbs of creation) also allow a second reading, where sorta hedges the direct object
> Anderson (2013)

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.
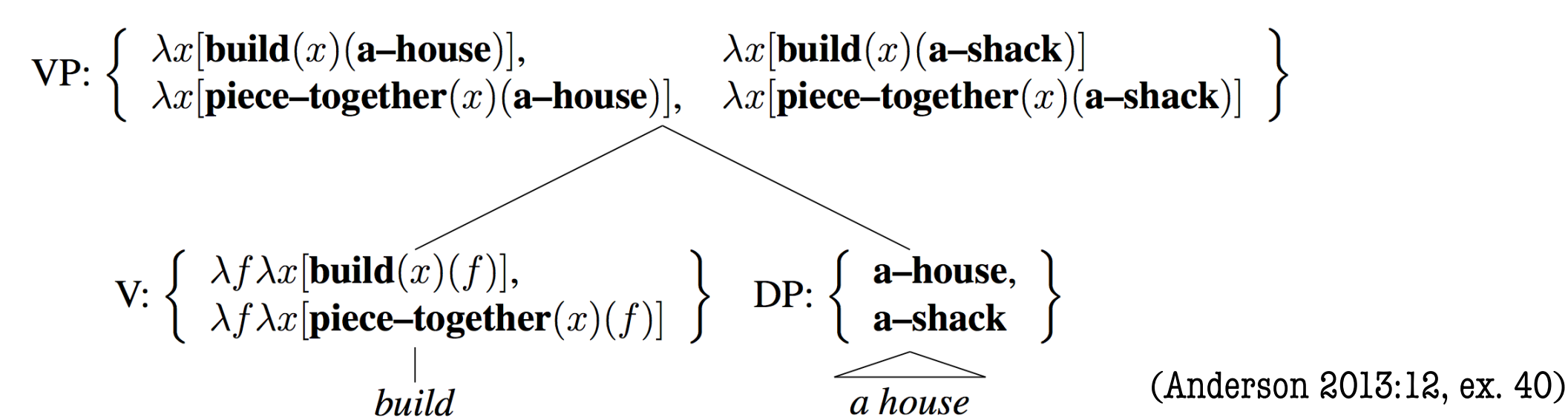(Anderson 2013:2,3, ex. 5-7, 10-11)

- According to Anderson, only indefinite objects may be hedged

2. Analysis of sorta (Anderson 2013)

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

$$[\![sorta \text{ PREC } swim]\!]^{d',C}$$
$$= \lambda x \exists d \begin{bmatrix} d < \textbf{standard}([\![\text{PREC } swim]\!]^{d',C}) \wedge \\ \exists f \in \begin{Bmatrix} \textbf{swim,} \\ \textbf{float,} \\ \textbf{wade,} \\ \dots \end{Bmatrix} [f(x)] \end{bmatrix}$$
(Anderson 2013:11, ex. 36)

- **Object hedging:** sorta modifies object of ITV/CREATION verbs indirectly
  - Pointwise Hamblin Function Application allows object alternatives to project
  - Projection allowed only for ITV/CREATION verbs
  - Anderson suggests that ITV/CREATION verbs take property-type arguments; moreover, the lexical semantics of verbs that take property-type arguments is such that these verbs provide an escape hatch for alternative projection
  - Alternatively, ITV/CREATION verbs compose via Restrict (Chung & Ladusaw 2004), which allows alternatives to project
  - Definite determiner as choice function, only one alternative

$$\text{VP:} \begin{Bmatrix} \lambda x[\textbf{build}(x)(\textbf{a-house})], & \lambda x[\textbf{build}(x)(\textbf{a-shack})] \\ \lambda x[\textbf{piece-together}(x)(\textbf{a-house})], & \lambda x[\textbf{piece-together}(x)(\textbf{a-shack})] \end{Bmatrix}$$

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

build   *a house*
(Anderson 2013:12, ex. 40)

3. Current study

- **Inter-speaker variation?**
  Judgments of availability of readings don't always align from person to person, and seem context-dependent
  ➡ Goal: systematically collect data from adult native speakers through an online judgment task (test for Anderson's definiteness and verb type effects)

- **Whole sentence hedging?**
  In certain cases, a "politeness" reading seems to arise, regardless of verb type
  ➡ 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.CRE 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
- 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 be represented by bolded sorta, while unstressed sorta was indicated in smaller font (sorta)
- Example trial:

> Charlie **sorta** fell in a pit.
>
> What is the speaker hedging?
>
> 1. "fell in": e.g., Charlie actually just got his foot caught in it.
>
> 2. 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.
>
> 3. "a pit": e.g., What Charlie fell in was actually more like a medium-size hole.

- Each participant saw a randomized order of 16 indefinite trials and 8 definite trials

Indefinite trials:	Definite trials:
‣ 4 [+ITV.CREATION,+stress]	‣ 2 [+ITV.CREATION,+stress]
‣ 4 [+ITV.CREATION,-stress]	‣ 2 [+ITV.CREATION,-stress]
‣ 4 [-ITV.CREATION,+stress]	‣ 2 [-ITV.CREATION,+stress]
‣ 4 [-ITV.CREATION,-stress]	‣ 2 [-IT.CREATION,-stress]

- Ibex generated random assortment from following lists:
- List of [+ITV.CRE] verb phrases (16)
  ➤ build a barn; write a novel; eat a pizza; draw a wolf; knit a scarf; dig a pit; compose a symphony; want a raise; need a blender; beg for a trophy; look for a mountain; rummage around for a pen; pray for a storm; be afraid of a bee; be afraid of a puppy; ask for a sandwich
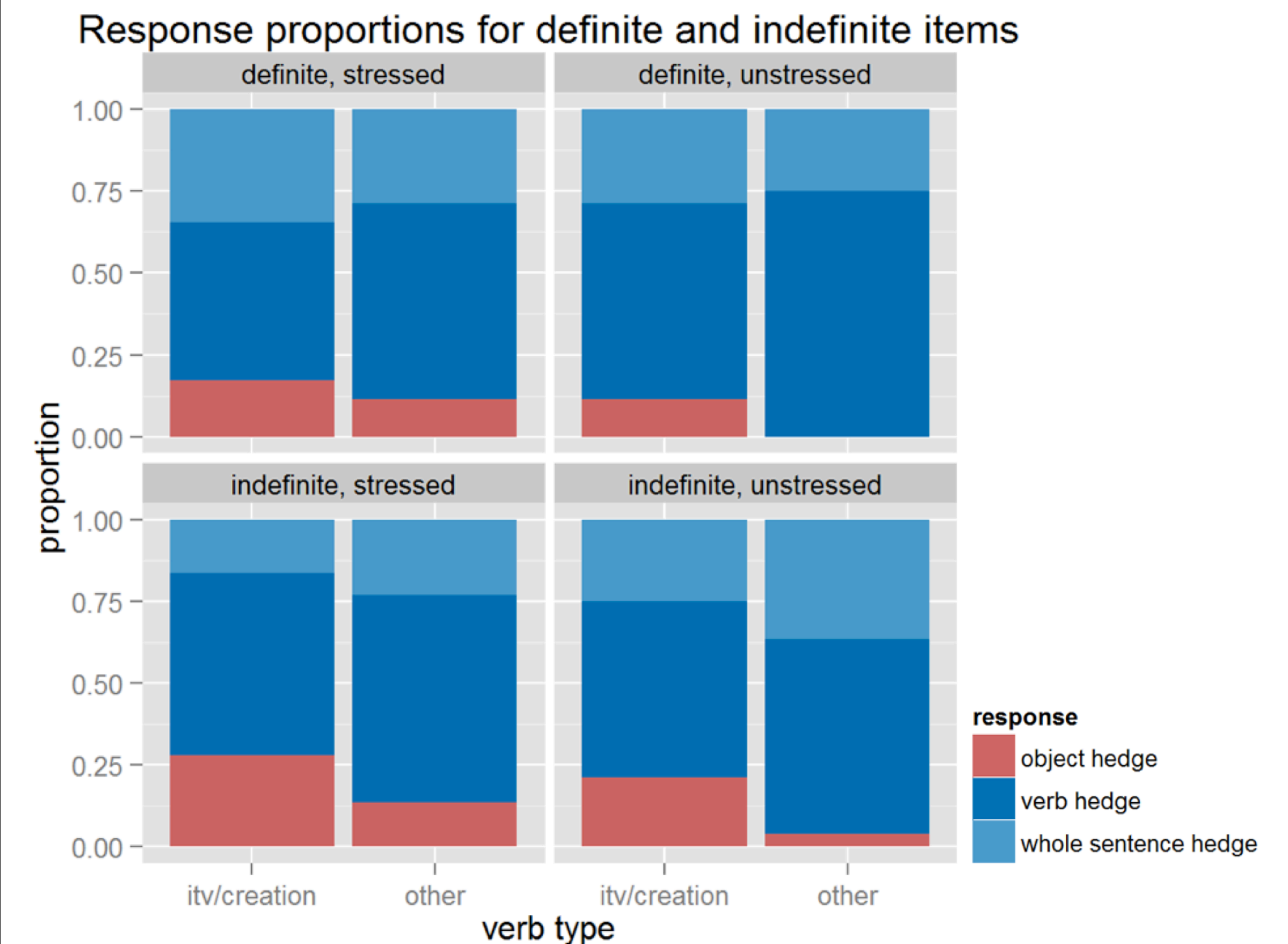- List of [-ITV.CRE] verb phrases (32)
  ➤ clean a barn; buy a novel; eat a pizza; pet a wolf; borrow a scarf; fall in a pit; listen to a symphony; slice an orange; refuse a raise; try to find a blender; earn a trophy; climb a mountain; throw away a pen; fly through a storm; yell at a bee; visit a castle; hammer a nail; wear a skirt; refuse a raise; try to find a blender; earn a trophy; climb a mountain; throw away a pen; fly through a storm; yell at a bee; visit a castle; hammer a nail; wear a skirt; sit on a pillow; watch a movie; compose a sonnet; create a mess

5. Results

- A 2x2x2 ANOVA revealed:
  - No effect of definiteness ($F_{(1,19)}=3.22$, p=.09)
  - Main effect of verb type ($F_{(2,19)}=12.88$, p<.001)
  - Main effect of stress ($F_{(1,19)}=5.97$, p<.05)

Response proportions for definite and indefinite items

6. Discussion

- **Effect of verb type** on availability of object hedge reading -- but **no effect of definiteness**
  ➡ Nothing inherent to (in)definiteness that governs 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)

- **Effect of stress** on availability of object hedge reading
  ➡ Stress facilitates activation of the object alternatives
  ➡ May invoke contrastive focus on the *approximative* or 'loosened' sense of the object
  ➡ May be similar to effect of focus on *any*, which is claimed to widen the domain of quantification such that individuals that would otherwise be considered exceptions count as part of the domain (Kadmon & Landman 1993; Krifka 1995)

- **Further puzzle:** possible effect of syntactic position -- object hedge reading is easily available when the object remains within the VP
- When the object takes wide scope above the VP, the hedged object reading disappears, regardless of verb type

(10) All the carpenters sorta built a barn.
  a. ∃>∀: ✓ verb hedge; * noun hedge
  b. ∀>∃: ✓ verb hedge; ✓ noun hedge
(11) All the players sorta kicked a ball.
  a. ∃>∀: ✓ verb hedge; * noun hedge
  b. ∀>∃: ✓ verb hedge; ✓ noun hedge

- ITV.CREATION verbs favor (but do not require) a narrow scope reading of their object
- Moreover, ITV.CREATION verbs make the verb hedge reading quite plausible (the average person is imperfect in their barn building)

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