Priming local accommodation of hard triggers in disjunction

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1 Introduction

The literature has identified two classes of presupposition triggers. [1]

(e.g. Karttunen 1971; Zeevat 1992; Abusch 2002; Abbott 2006; Charlow 2009; Abrusán 2016)

- **The key difference:** whether or not the presupposition can be suspended.

Soft triggers:

- The Ps can be suspended:

  (1) a. John either <u>started</u> smoking or he <u>stopped</u> smoking.   (Abusch, 2002)

     → no Ps that John did (*stop*) or didn't (*start*) used to smoke.

  b. John has been moody lately. I'm not sure whether he's a smoker.
     ✓ But, is it possible he just <u>stopped</u> smoking?

     → Ps that John used to smoke explicitly denied in context.

- The Ps is interpreted locally within the scope of a higher operator.

  (2) **Illustrative paraphrase of (2-b)**
     "Is it possible that [<u>John used to smoke and</u>, as of recently, doesn't smoke]."

- Triggers considered soft:
  uniqueness/existence of definite determiner, aspectual verbs (*stop*, *continue*), cognitive factives (*know*, *discover*), ...

Hard triggers:

- The Ps cannot be suspended, or at least resists suspension:

  (3)   a.   #After the first meeting, John will either
                 attend the second meeting <u>too</u>,
                 or he will miss the second meeting <u>too</u>.   (Abusch, 2002)

                 → conflicting Ps that John attended and missed the first meeting.

         b.   **Context:** John looks very sick. I don't know whether he's had scurvy
                 before, but I hear having scurvy twice can make you look this way.
                 #Is it possible that John has scurvy <u>again</u>?→ Ps that John has had scurvy
                 before conflicts with denial in context.

- Triggers considered hard: *again*, *too*, clefts, emotive factives (*be surprised*) ...

Two hypotheses as to how classes differentiate:

- **The Heterogeneity Hypothesis:**
  Presuppositions of soft and hard triggers derive from entirely different mechanisms.

  – Hard triggers *semantically* encode a Ps:

     (4)   **Representation of hard trigger**
            $[\![\text{again}]\!] = \lambda p_{it} \, . \, \lambda t_i : \underline{\exists t' < t \, [p(t')]} \, . \, p(t)$

  – Soft triggers don't, but they have complex lexical entailments:

     (5)   **Representation of soft trigger**[2]
            $[\![\text{stop}]\!] = \lambda f_{<e,it>} \, . \, \lambda x_e \, . \, \lambda t_i \, . \, \exists t' < t \, [f(x)(t')] \, \& \, \neg f(x)(t)$

  – For soft triggers, the pragmatics can elevate a lexical entailment to Ps.

     * Abusch (2002): triggers have lexical alternatives, and a lexical entailment
       shared by all alternatives becomes a soft Ps (e.g. {*stop, continue*}).

     * Simons et al. (2010): a lexical entailment which does not directly address
       the question under discussion projects as a soft Ps.

     * Abrusán (2011): we pay attention to certain lexical entailments more than
       others; those not part of the "main point" of the utterance become soft Ps.

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[2]The first entailment of *stop* is simplified for purposes of illustration.

– **Upshot:**
The pragmatics (e.g. the QUD or the main point) is variable, so the lexical entailment is sometimes not elevated to Ps status, giving the illusion of suspension.

- **The Homogeneity Hypothesis:** all Ps derive in the same way and can, in principle, be suspended. Independent factors make suspension unlikely with hard triggers.

    – Mixed empirical results for unavailability of local readings for hard triggers (e.g., Jayez et al. 2015 for sentences like (3-a))

    – Theoretical variants:

        * Abrusán (2016): all Ps are pragmatically derived, but the information structural properties of hard triggers result in the "main point" being less variable than with soft triggers.

        * Semantic version: all Ps are semantically encoded, but a grammatical mechanism can cancel a Ps ("local accommodation", Heim 1983). Availability of this mechanism can be modulated by independent factors.

Plan for today:

- *Overarching question:* are different Ps derived by different mechanisms, or not?

    – Subquestion: can a hard trigger ever *not* be associated with a global Ps?

- *Our contribution:* to probe for latent non-global readings using experimental methods designed to bring out latent readings (priming).

    – Testing ground: *again* in disjunction.

- *Two sets of experimental results:*

    – Exp. 1: there is *some* latent non-global reading — but leaves open what that that reading is (e.g. is the Ps locally accommodated or just cancelled?).

    – Exp. 2: there is a latent reading where the Ps is interpreted *locally*.

- *Upshot:* results provide support for the claim of the **Homogeneity Hypothesis** that suspension is in principle possible with hard triggers as well.


2 Exp. 1: a non-global reading with hard triggers

Goal: to test whether speakers can access *any* reading of a complex sentence with *again* where the Ps of *again* does not project as a global Ps.

Our testing ground:

- We look at a complex construction: **disjunction**.

- Test sentence proto-types (disjunct order varied between groups):

  (6)   a.   On Wednesday, John either went to the movies, or he went to the <u>orchard again</u>.

            b.   On W, John either went to the <u>orchard again</u>, or he went to the movies.

- Disjunction allows for multiple possible readings depending on what happens with Ps (underlined material):

  (7)
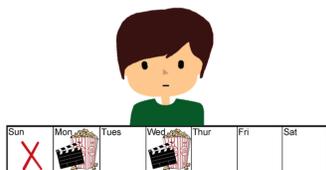
  (8)   a. $\boxed{\text{orchard}<\text{Wd \&}}$ (movies-Wd $\vee$ orchard-Wd)   *Global Ps ✗*

            b. $\boxed{\text{(movies-Wd)} \vee}$ (<u>orchard$<$Wd</u> & orchard-Wd)   *Local Ps ✓*

            c. $\overline{\boxed{(\neg\text{movies-Wd} \rightarrow} \text{orchard}<\text{Wd})}$

               ($\boxed{\text{movies-Wd} \vee}$ orchard-Wd)   *Conditional Ps ✓*

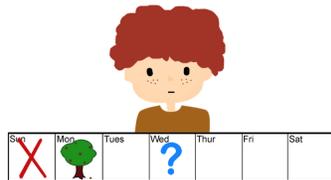   d.   ($\boxed{\text{movies-Wd} \vee}$ orchard-Wd)   *Ps cancelled ✓*

- **Key question:** the intuitive default is for the global reading, but are any of the non-global readings in (8-b)-(8-d) available?

2.1 Exp. 1a: Covered box task

Our paradigm:

- We use a Covered Box design (Huang et al., 2013; Pearson et al., 2010; Kotek et al., 2011, a.o.)

- The pictures show an individual and a calendar strip depicting that individual's activities on particular days (after Schwarz 2015).

    – Participants are presented with two such pictures: a target and a picture with partial information hidden, indicated by '?' (our variant of the CB).

- The Target picture — (8) in the critical conditions — is inconsistent with the global reading, but consistent with all non-global readings.

- The Covered Box is manipulated between *two blocks of trials*:

    – Block **Ps**+ (1st): overt information in CB satisfies global Ps.
    – Block **Ps**? (2nd): CB is merely *compatible* with the global Ps.

(9)   **Ps+: satisfying global Ps**   (10)   **Ps?: compatible with global Ps**
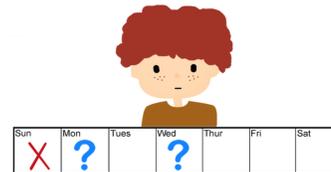
    – The CB is always merely *compatible* with the assertion ($\rightarrow$ Wed-?).

- **Key feature of design:** to select the Target over the CB in the critical conditions, the participant must access a non-global reading (cf. (7)).

    $\rightarrow$ I.e. Target selection = diagnostic for availability of a non-global reading.

Result (for 36 items with 36 fillers, 29 ppts): Critical **Target accepted $\approx$ 10%**

- **No significant differences** between **Ps+**-CB, **Ps?**-CB or disjunct orders.

- Target choices in control conditions with a false assertion (and true Ps) are descriptively higher than **Ps+** and **Ps?**.

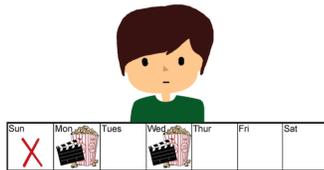**Conclusion so far:** no evidence yet for a non-global reading.

2.2 Exp. 1b: CB + priming

- One tool to bring out latent readings: **priming**

    - A latent reading may be facilitated through exposure in priming trials to the mechanism required to derive that reading.

- Possibility: non-global readings in our stimuli may emerge with priming.

- We introduce a new first block of priming trials (**Ps−**; see below).

    - Block order: **Ps−** < **Ps**? < **Ps+**.

Designing priming trials (Ps−):

- Priming effects are generally strongest when the stimuli in priming trials are very similar to the test stimuli (e.g. syntactic priming yields stronger effect when same lexical items are used in priming and sentences, Hartsuiker et al. 2008).

- We create priming trials with a minimal modification to the test stimuli:

    - Target picture the same as in critical conditions:
    - The CB is modified to be incompatible with the global Ps:
    - The Target and the CB are *both* incompatible with the global Ps.

(11)   **Target in priming trials *(= (7))***   (12)   **Ps− CB, priming trials**


- In the priming **Ps−** trials, ppts must select a picture in which the global Ps is not satisfied, so if they *can* access a non-global reading, they *will* in these trials.

- If so, a non-global reading may be facilitated in subsequent critical trials.

- **Key question:** does the rate of Target selection increase with priming — and is there evidence that it is genuinely a non-global reading that is primed?

Results (for 36 items with 36 fillers, 32 ppts):

- Rate of Target selection with (Exp. 1b) and without (Exp. 1a; repeated) priming:

    (13)   **Effect of priming on Target selection**
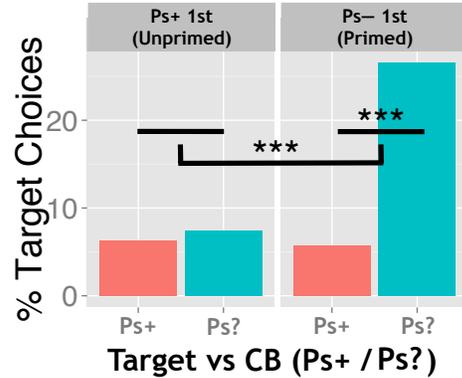
- **Results for Ps+ trials:** when the CB has the Ps overtly true, ppts predominantly select the CB, regardless of whether they saw a **Ps−** block earlier in the task.

- **But, the result for Ps? is different:** when the CB is only compatible with the Ps, the rate of Target selection increases to >25% with priming (ie. after **Ps−**).

Explaining the priming effect:

1. **The data can be explained if a latent non-global reading is primed.**

    - **Without priming (Exp. 1a):** non-global readings are not sufficiently active that ppts ever access them in this task.

    - **With priming (Exp. 1b):**

        – Priming facilitates a non-global reading enough that ppts often access it when the global Ps is not obviously satisfied in CB (**Ps?**).

        – When the global Ps is overtly met in the CB, ppts continue to prefer the dominant global reading (**Ps+**), despite uncertainty on the assertion (W-?).

Conclusion from Exp. 1: the data are most straightforwardly explained if hard triggers allow latent non-global reading(s) that can be facilitated with priming.

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3 Exp. 2: Isolating a local reading

Recall: Exp. 1 results were compatible with ppts accessing different non-global readings.

> **Goal now:** to diagnose *what* non-global reading(s) hard triggers allow — in particular, do hard triggers allow local readings, like (8-b)?

One way to isolate the local reading: introduce negation.
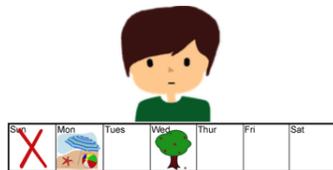
- We minimally modify Exp. 1 stimuli by replacing *either/or* with *neither/nor*:

    (14)   On W, John neither went to the movies nor did he go to the orchard <u>again</u>.

    (*Again* is always in the 2nd disjunct in Exp. 2.)

- Only the local leading is true in (15):

    (15)

(16) a. $\boxed{\text{orchard}<\text{Wd}}$ & ¬(movies-Wd ∨ orchard-Wd)   *Global Ps:* ✗

      b. $\boxed{\text{¬(movies-Wd ∨ (\underline{orchard}<\text{Wd} \&}}$ orchard-Wd))   *Local Ps:* ✓

      c. (¬movies-Wd → orchard<Wd)
          $\boxed{\& ¬}$(movies-Wd $\boxed{∨ \text{orchard-Wd}}$)   *Conditional Ps:* ✗

      d. $\boxed{¬}$(movies-Wd $\boxed{∨ \text{orchard-Wd}}$)   *Ps cancelled:* ✗

8

Our paradigm:

1. **Priming trials**

   - In Exp. 1, latent non-local readings were observed only with priming.

     – So, we have a primed group in Exp. 2 as well.

   - Priming trials were taken directly from Exp. 1.

     – Priming stimuli do not use "neither", (17); CB task (old **Ps**− trials).

       (17)   On W, J either went to the movies, or he went to the orchard again.

2. **Critical trials**

   - New *Neither/Nor* trials (**Ps**∗) consist in a simple **truth-value judgment task**.

     – Is (14) true or false in (15), which only supports the local reading?

   - **Key feature:** True response = diagnostic for availability of the local reading.

3. **Relationship between priming and critical trials:**

   - Priming with different task and stimuli eliminates any chance that a superficial response pattern is primed.

   - It is practically more difficult to construct a prime with a TVJ task (e.g. ppts cannot be forced to respond True to a non-global picture).

   - If initial **Ps**− CB-trials have an impact on the rate of True answers in **Ps**∗, it is good evidence that a local reading is accessed in both priming and critical trials (ie. both in *either* and *neither* sentences).

Results (104 ppts):

- Proportion of True responses in **Ps∗** compared to false controls (Ps true, assertion false) without vs. with priming:

  (18) **True response rate: Exp. 2**
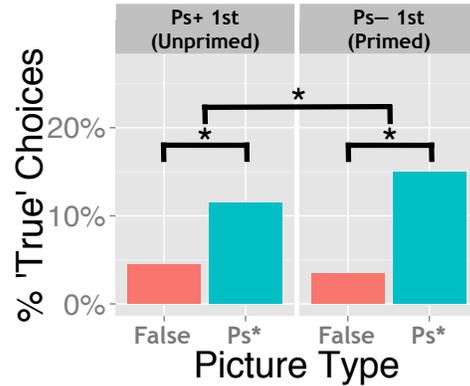
- **Even without priming:** there is a significantly higher rate of True responses with the local picture than the false control.

  – Suggests a local reading is available, and easier to access than in Exp. 1 (likely due to TVJ task).

- **Priming:** there is a small, but significant priming effect: the rate of True responses is significantly increased with priming.

  – Corroborates earlier conclusion that a non-global reading is primed — and shows that a local reading in particular can be accessed in priming trials.

- **The priming effect is much weaker than in Exp. 1, but this is expected:**

  1. The priming trials used different stimuli and a different task from the critical trials in Exp. 2, which would significantly weaken the strength of the prime.

  2. Perhaps ppts can access different non-global readings in priming trials (conditional, or cancellation besides local).

     – Exp. 1: any non-global reading primes Target selection.
     – Exp. 2: only trials where ppts access a local reading prime True responses.

4 Summary and outlook

- Our results provide evidence for **latent non-global** readings (Exp. 1) — in particular, **local** readings (Exp. 2) — with hard triggers.

- This provides new motivation to pursue the **Homogeneity Hypothesis**.

  - The most parsimonious account of soft vs. hard triggers: local readings are derived via the same mechanism for each, with that mechanism less likely to apply with hard triggers.

- **Next step:** to directly investigate the relationship between soft and hard triggers.

  - Can local readings with soft triggers prime local readings with hard triggers?
  - If so, that would provide strong evidence that local readings with both classes of triggers involve the same mechanism.

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