Presupposition projection from 'or' vs. 'and' - an experimental comparison

Alexandros Kalomoiros & Florian Schwarz
University of Pennsylvania

A key question for theories of presupposition projection is the role of linear order for 'filtering'. Early work, starting with Stalnaker and experimentally substantiated by Mandelkern et al. 2020, observed an asymmetry in conjunction, which only allows left-to-right filtering. However, disjunction complicates the picture, as in so-called 'Bathroom sentences' (Partee), the second disjunct can support a presupposition in the first, if its negation entails it: 'Either *the bathroom* is in a weird place or <u>this house has no bathroom</u>'. Recent accounts take projection to be generally asymmetric, and account for this apparently symmetric disjunction via additional costly aspects of deriving the relevant interpretation: Schlenker (2009) posits costly symmetric filtering as overriding the asymmetric left-to-right processing default. Hirsch & Hackl (2014) posit (costly) local accommodation But Kalomoiros and Schwarz (2021) report experimental data adapting the paradigm of Mandelkern et al. (2020) for conjunction (which shows that asymmetry in conjunction cannot be overridden) to disjunction, finding no evidence for asymmetry. However, they provide no direct comparison between these connectives, and differences from Mandelkern et al.'s design complicate a cross-experiment comparison. We report novel experimental data providing a direct comparison, which confirm that the two connectives indeed differ w.r.t. the role of linear order for projection.

Design: We created 6 bathroom-disjunction items (DISJ) using different triggers (*continue*, *again*, *aware*, *find out*, *happy*, *stop*), as well as minimally different conjunction counterparts (CONJ), presented in context. The triggers were embedded under 'could' to allow dissociation of global accommodation and filtering in conjunctions, (parallel to the if-clauses in Mandelkern et al.). Each item came in 6 conditions: Simple presuppositional sentences in Support (S) and Explicit Ignorance (EI) contexts (preventing global projection; Abusch, 2010) established a baseline for the acceptability of local accommodation. Disjunctions/ conjunctions with the presupposition (PS) in either conjunct (FIRST vs. SECOND) were presented in EI contexts, to assess whether filtering from the other conjunct was available (as otherwise, only local accommodation could make the sentence acceptable in context). There also were non-presuppositional control variants (NO-PS).

(1) **Contexts:** My friend John researches 20th century literature. One day, I stopped by his house and I saw a copy of Tolkien's 'The Fellowship of the Ring' lying around. I tried to figure out why that book was there.

    a. I know that John had research interests in Tolkien in the past, . . .   **(S)**

    b. I don't know if he ever did have interests in Tolkien,. . .   **(EI)**

    . . . so I thought:

(2) It could be the case that John continues having research interests in Tolkien, so that's why he's reading the book.   (**SIMPLE-PS**)

(3) **Disj:** It could be the case that either John {currently has/ continues having} research interests in Tolkien or he never used to have such interests, so I should ask him why he's reading this book. **Conj:** It could be the case that John {currently has / continues having} research interests in Tolkien and used to have research interests in Tolkien's fantasy writings, so he is reading the book for work.   (**(NO-)PS-FIRST**)

(4) **Disj:** It could be the case that either John never used to have research interests in Tolkien or he {continues having / currently has} such interests, so I should ask him why he's reading this

book. **Conj:** It could be the case that John used to have research interests in Tolkien's fantasy writings and {continues having / currently has} research interests in Tolkien, so he is reading the book for work. **((No-)Ps-Second)**

Participants & Procedure: 552 participants from Prolific and our university's subject pool saw one item per trigger and condition, in a Latin square design, with coordination (Disj vs. Conj) as a between subjects factor, along with 12 filers (18 items total, presented in random order).The task was to indicate on a 9-point scale how natural the sentence sounds in the given context.

Predictions: Uniformly asymmetric accounts of projection predict PsFirst to be less acceptable than PsSecond, in a way independent of order effects measured in NoPs controls, for both coordination types. If the role of linear order for projection is different for *and* and *or*, on the other hand, we expect an interaction between Disj-PsFirst/Second and Conj-PsFirst/Second. For conjunction, we expect the standard asymmetry, as above and in Mandelkern et al. For disjunction, we expect no order effect, in line with the findings of Kalomoiros & Schwarz 2021.

Results: In order to find potentially subtle differences, we began by testing whether participants appropriately differentiated 3 good and bad fillers, respectively, in their ratings, with a difference of at least 3 points on the scale. We then test for various key effects using mixed effect logistic regression models. A significant difference between the SimplePs and Support conditions ($p < .001$) confirms that we are able to detect the acceptability decrease associated with local accommodation. We then focus on the theoretically most relevant comparisons, first, a direct comparison between coordinations in terms of the linear order, finding a significant interaction ($p < 0.01$). This is driven both by a marginally significant simple effect advantage for PsSecond in the conjunction condition ($p < 0.1$) - in line with Mandelkern et al. - and, more surprisingly, an advantage for PsFirst for disjunction ($p < .05$). Possibly due to power limitations of our design with only 6 items, we do not find a signficant interaction for

Fig. 1. Mean acceptability rating by condition

conjunction relative to the non-presuppositional controls (found in Mandelkern et al.), while we do find a marginal interaction for disjunction. (No order effects for NoPs are found.)

Discussion: The interaction between Disj-Ps and Conj-Ps clearly shows that the impact of linear order on projection from disjunctions and conjunction is different. This is incompatible with domain-general processing account of projection asymmetries grounded in linear order alone (Schlenker 2009), which predict uniformity across connectives. While we at least partly replicate the findings in Mandelkern et al. supporting left-to-right filtering in conjunction, we surprisingly find a reverse effect for disjunction. However, we think it unlikely that this is attributable to the presupposition filtering mechanism (which would be out of line with just about any theory of projection). In that case PsSecond should be significantly less felicitous than NoPsSecond. Instead, there are likely independent pragmatic properties of our stimuli at play (which need to be explored to further). In theoretical terms, these results put a strong constraint on accounts of projection: they provide evidence against any theory that predicts uniform (a-)symmetry in projection across embedding connectives; importantly, this even extends to theories that make room for both symmetric and asymmetric filtering options, to the extent that the factors affecting the choice between those, and the cost associated with them, is independent of the connectives involved (as
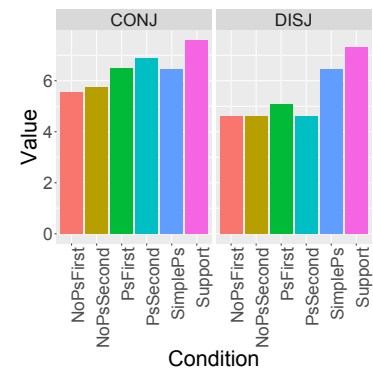
in Schlenker (2009)), again, given the problematic prediction of parallel effects across conjunction and disjunction. Consequently, one either has to embrace lexical specification of projection properties of connectives (which may be conceptually unattractive), or else develop accounts of the impact of linear order on projection with varying effects for different connectives.