***Or* is semantically symmetric**

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There is no consensus in the literature regarding whether *or* is symmetric. Karttunen & Peters (1979) treat it as symmetric. They observe that in disjunctions, a disjunct whose presuppositions conflict with the assertion of some other disjunct does not project its presuppositions globally. This applies both in (1a) and (1b) which are – according to K-P – semantically equivalent.

(1) a. (Either) Jack has no children or his children are away.
    b. (Either) Jack's children are away or he has no children.

Others (e.g., George 2008) have claimed that symmetry in disjunctions depends on the trigger itself. Thus, it is sometimes claimed, (2a) and (2b) are not equivalent (contra K-P): (2b) is odd (unless *too* is anaphoric to some previously mentioned individual).

(2) a. (Either) Mary is not coming or Sally is coming too.
    b. (Either) Sally is coming too or Mary is not coming.

We aim to provide some evidence supporting K-P.

Firstly, we point out that regardless of order, disjunctive antecedents of conditionals show the strict/sloppy ambiguity (first observed in Rooth & Partee 1982), illustrated in (3). That the strict/sloppy ambiguity arises regardless of the order of the disjuncts is shown in (4).

(3) a. If Mary is swimming or dancing, then Sue is.
    b. Strict VP reading:
       $(\text{SWIMMING}(m) \vee \text{DANCING}(m)) \rightarrow (\text{SWIMMING}(s) \vee \text{DANCING}(s))$
    c. Sloppy VP reading:
       $(\text{SWIMMING}(m) \rightarrow \text{SWIMMING}(s))\ \&\ (\text{DANCING}(m) \rightarrow \text{DANCING}(s))$

(4) a. (i) If Mary is (either) childless or abusive towards her children, then Sue is.
       (ii) If Mary is (either) abusive towards her children or childless, then Sue is.
    b. Strict VP reading:
       $(\text{CHILDLESS}(m) \vee \text{ABUSVE}(m)) \rightarrow (\text{CHILDLESS}(s) \vee \text{ABUSVE}(s))$
    c. Sloppy VP reading:
       $(\text{CHILDLESS}(m) \rightarrow \text{CHILDLESS}(s))\ \&\ (\text{ABUSIVE}(m) \rightarrow \text{ABUSIVE}(s))$

Furthermore, the sloppy VP readings of both (4a-i) and (4a-ii) have the same conditional presupposition, namely: Sue has children if Mary does. This is unexpected unless the following three are met: (I) *or* is symmetric, (II) both (4a-i) and (4a-ii) have the two LFs in (5a) and (5b), and (III) *if* is a flexible non-symmetrical universal quantifier that can quantify over properties (such as CHILDLESS and ABUSIVE).

(5) a. Strict VP LF:
       if [*Mary is childless or abusive to her children*][*Sue is ~~childless or abusive to her children~~*]
    b. Sloppy VP LF:
       if [*Mary is childless or abusive to her children*][λ_3 [Sue *is* t_3]]

Secondly, as observed in Abenina-Adar & Sharvit (2018), (6a,b) intuitively express the same alternative question; neither (6a) nor (6b) presupposes that Jack has children.

(6) a. Does Jack have no children↑ or are his children away↓
    b. Are Jack's children away↑ or does he have no children↓

Now consider (7): the prosody is not an alternative prosody (as there is no falling intonation at the end). But again, neither (7a) nor (7b) presupposes that Jack has children.

(7) a. Does Jack have no children↑ or are his children away↑
    b. Are Jack's children away↑ or does he have no children↑

What is the difference between (6) and (7)? Interrogatives with the prosody in (7) usually cannot be answered with one *No*-reply (see Hoeks 2018, Hoeks & Roelofsen 2019). Thus, *Mary doesn't speak French* is not a good reply to (8b). It is a good reply to (8a) because – by the uniqueness presupposition of alternative questions – it implies automatically that Mary speaks Spanish.

(8) a. Does Mary speak French↑ or Spanish↓

b. Does Mary speak French↑ or Spanish↑

But this does not suffice to explain (7a,b), where the disjuncts themselves are informationally asymmetric. *Jack has children* seems incomplete, while *Jack's children are/aren't away* seems complete. Crucially, (6a,b) exhibit no such asymmetry: *Jack has children* is a good/complete reply to both. In addition, when an adverb such as *alternatively* is added, the alternative prosody can be maintained in (9a), only if the proposition expressed by *Jack's children are away* is understood as an alternative to the proposition expressed by *Jack has no children*. If the prosody is changed such that the first and second disjuncts are polar questions (as in (9b)), the question expressed by *Are Jack's children away for the summer* is understood as an alternative question to the question expressed by *Does Jack have no children*. Importantly, *alternatively* disregards the informational asymmetry in (7a): (9a) is felicitously answered with *Jack has children*. Likewise, (10) exhibits a linear asymmetry which disregards the informational asymmetry in (7b).

(9) a. Does Jack have no children↑ or, alternatively, are his children away↓

b. Does Jack have no children↑ or alternatively, are his children away↑

(10) Are Jack's children away↑ or alternatively, does he have no children↑

Given this, we claim that the linear asymmetry in (9a,b) and (10) comes exclusively from *alternatively* and the informational asymmetry in (7a,b) comes from the disjuncts themselves. Neither type of asymmetry comes from the meaning of *or* (which is, itself, symmetric).

In sum, *or* itself is a symmetric connective (with a conditional presupposition in the spirit of K-P). Specifically, *or* and *if* have the meanings below (*or* has a property-incarnation as well).

(11) $[\![or^{st}]\!]^{w,g}(p_1{}^{st})\ldots(p_n{}^{st})(q^{st})$ is defined iff:

(i) $w \in \mathrm{Dom}(q)$,

(ii) $q = p_1 \vee \ldots \vee q = p_n$, and

(iii) for all $q' \in \{p_1, p_2, \ldots, p_n\}$ such that $w \notin \mathrm{Dom}(q')$:

$\exists S[S \subseteq \{p_1, p_2, \ldots, p_n\} \wedge \{w' |\, S \subseteq \{r |\, w' \in \mathrm{Dom}(r)\}\} \not\subseteq \mathrm{Dom}(q') \wedge$

$\mathrm{SIM}(w)(\{w' |\, S \subseteq \{r |\, r(w') = 0\}\}) \neq \emptyset \wedge$

$\mathrm{SIM}(w)(\{w' |\, S \subseteq \{r |\, r(w') = 0\}\}) \subseteq \mathrm{Dom}(q')]$

where for any X, $\mathrm{SIM}(w)(X) = \{w' |\, w' \in X$, and w' resembles w no less than any $w' \neq w''$ such that $w'' \in X\}$.

If defined, $[\![or^{st}]\!]^{w,g}(p_1{}^{st})\ldots(p_n{}^{st})(q^{st}) = 1$ iff $q(w) = 1$.

(12) For any $\mathcal{Q}$, $\mathcal{P}$ and $n \geq 0$:

$[\![if]\!]^{w,g}(\mathcal{Q})(\mathcal{P})$ is defined iff:

(i) $\{(P^{(s,\sigma t)}{}_1, \ldots, P^{(s,\sigma t)}{}_n) |\, \mathcal{Q}(w)(P_1)\ldots(P_n)$ is defined$\} \neq \emptyset$, and

(ii) for all $(P^{(s,\sigma t)}{}_1, \ldots, P^{(s,\sigma t)}{}_n)$ such that $\mathcal{Q}(w)(P_1)\ldots(P_n)$ is defined:

$\mathrm{SIM}(w)(\{w' |\, \mathcal{Q}(w')(P_1)\ldots(P_n) = 1\}) \neq \emptyset \wedge$

$\mathrm{SIM}(w)(\{w' |\, \mathcal{Q}(w')(P_1)\ldots(P_n) = 1\}) \subseteq \{w' |\, \mathcal{P}(w')(P_1)\ldots(P_n)$ is defined$\}$.

If defined, $[\![if]\!]^{w,g}(\mathcal{Q})(\mathcal{P}) = 1$ iff:

for all $(P^{(s,\sigma t)}{}_1, \ldots, P^{(s,\sigma t)}{}_n)$ such that $\mathcal{Q}(w)(P_1)\ldots(P_n)$ is defined:

$\mathrm{SIM}(w)(\{w' |\, \mathcal{Q}(w')(P_1)\ldots(P_n) = 1\}) \subseteq \{w' |\, \mathcal{P}(w')(P_1)\ldots(P_n) = 1\}$.