Ellipsis, Parallelism, and Polarity

We present novel data involving VP ellipsis whose antecedents contain polarity items (henceforth, PIs). The data can be explained on theories of PIs that assume a dependency relation between PIs and the licensing operators governing their distribution.

1. Background. Sequences like (1) have been treated as showing that PIs like *any* can be replaced with indefinites at the ellipsis site without disrupting the parallelism condition on ellipsis, henceforth Parallelism (e.g., Sag 1976, Johnson 2001, Merchant 2013).

(1)   John didn't read any book. But Paul$_F$ did$_F$ $\triangle$.

Following Fox (2000, Ch. 3), Parallelism can be stated as a requirement that the structured meaning of some constituent that reflexively dominates the antecedent VP, PD$_A$, is in the focus value – a set of structured meanings – of a constituent that reflexively dominates the elided VP, PD$_E$. Parallelism is satisfied in (1), that is, $[\![PD_A]\!] \in F(PD_E)$:

(2)   [$_{PD_A}$ [neg [John read any book]]]. [$_{PD_E}$ [did$_F$ [Paul$_F$ read a book]]].

2. Free choice puzzle. *Any* may occur in existential modal sentences in which it gives rise to, roughly, a reading paraphrasable with wide-scope *every*: if John is allowed to read any book, then every book is such that he is allowed to read it (see Menéndez-Benito 2010 for qualification). Such occurrences of *any* are acceptable in antecedents of VP ellipsis only if the elided VP occurs below an existential modal:

(3)   John is allowed to read any book.
       a. Paul$_F$ may $\triangle$ too.   b. #Paul$_F$ has$_F$ to $\triangle$.   c. #Paul$_F$ already did$_F$ $\triangle$.

This pattern is *ceteris paribus* unexpected on the extant approaches to ellipsis and PIs. On the one hand, if free choice *any* is treated as an indefinite whose universal interpretation is generated by it being an associate of some external mechanism (e.g., Menéndez-Benito 2010, Chierchia 2013), represented with OP$_{FC}$ in the following, Parallelism should be satisfied in (3b) and (3c) on the following construals, respectively:

(4)   a.   [OP$_{FC}$ [$_{PD_A}$ [J. is allowed to read any book]]]. [$_{PD_E}$ [P.$_F$ has$_F$ to read a book]].
       b.   [OP$_{FC}$ [John is allowed [$_{PD_A}$ ~~John~~ to read any book]]]. [$_{PD_E}$ [Paul$_F$ read a book]].

On the other hand, if free choice *any* is treated as a universal quantifier that must be interpreted above an appropriate operator (e.g., Dayal 1998, Sæbø 2001), Parallelism should be satisfied in (3b) on a construal with wide-scope *every* in PD$_E$:

(5)   [$_{PD_A}$ [any book]$_x$ [J. is allowed to read x]]. [$_{PD_E}$ [every book]$_x$ [P.$_F$ has$_F$ to read x]].

3. Proposal. We resolve the free choice puzzle by relying on Parallelism and a novel implementation of the so-called operator theories of PIs, which treat PIs as associates of covert alternative-sensitive operators (e.g., Krifka 1995, Lahiri 1998, Chierchia 2013). For concreteness, we adopt the *even* approach to PIs (e.g., Lahiri 1998). Building on Alrenga & Kennedy's (2014) proposal for NegDPs, we cash out the approach by decomposing *any* into (i) a weak degree quantifier that is an associate of covert *even* and (ii) *many*, as defined in (6) (cf. Kennedy 2013 on numerals). *Even* effectively requires the sentence to be ranked above its alternatives on a salient scale, say, an entailment or a likelihood scale.

(6)   a.   (Uninterpretable) base structure of *any books*: [[[even one] many$_D$] books]
       b. $[\![\text{even one}]\!]^g = \lambda D_{dt}: \forall d>1(\hat{}D(1) \prec_c \hat{}D(d)). \, D(1).$
       c. $[\![[\text{d many}_D] \text{ books}]\!]^g = \lambda P_{et}. \, \exists X \in D([\![\text{books}]\!]^g(X) = P(X) = 1 \, \& \, \mu(X) \geq d).$

In order to avoid contradiction, the weak degree quantifier has to (and is thus licensed to) move above a non-upward-entailing operator at LF, say, negation (cf. e.g. Lahiri 1998):

(7)   a.   [even one] λd [not [John read [d many$_D$] books]]
       b.   Presup: $\forall d>1(\neg J. \text{ read 1 book} \prec_c \neg J. \text{ read d books})$ (trivial if $\prec_c$ entailment)

In case of free choice, *even one* must move above OP_{FC} that associates with the stranded indefinite *many*. The assertive meaning of the resulting structure is that, roughly, for any sum of books X measuring at least 1 book, John can read X. Since this asymmetrically entails all the focus alternatives (for any sum of books X consisting of at least d books, John can read X), it is trivially ranked above them on the entailment scale.

(8)   a.   [even one] λd [OP_{FC} [$\Diamond$ [John read [d many$_D$] books]]]]
       b.   Presup: $\forall d>1(\forall X_{\mu(X)\geq 1}\Diamond(\text{John read X}) \prec_c \forall X_{\mu(X)\geq d}\Diamond(\text{John read X}))$ (trivial)

Now, to the ellipsis data. Parallelism is satisfied in (1) on the construal in (9): since the presupposition of *even* in PD_A is trivial (see (7) above), it holds that $[\![PD_A]\!] \in F(PD_E)$.

(9)   [$_{PD_A}$[even one]λd[neg [J. read [d many] b.]]. [$_{PD_E}$[one]λd[did$_F$[P.$_F$ read [d many] b.]]].

But Parallelism is not satisfied in the examples (3bc). It is well-known that a free choice reading of *any* is unavailable under universal modals like *has to*. This is usually derived from OP_{FC} yielding a contradictory meaning in a configuration with the universal modal (see e.g. Menéndez-Benito 2010, §3, and Chierchia 2013, §6.3). Since Parallelism can only be satisfied if there is OP_{FC} in PD_E, PD_E cannot have a licit meaning and also satisfy Parallelism, unless the elided VP occurs below an existential modal, (3a), as illustrated in (10). Note also that constituents in (10) that do not contain the binder of the trace d, that is, *even one* or *one*, do not satisfy Parallelism either (cf. Heim 1997, Fox 2000, i.a.).

(10)   a. PD_A: [even one] λd [OP_{FC} [$\Diamond$ [John read [d many$_D$] book]]]]
       b. PD_E: [one] λd [OP_{FC} [$\Box_F$ [Paul$_F$ read [d many$_D$] book]]] (illicit meaning, (3b))
       c. PD_E: [one] λd [($\Box_F$) [Paul$_F$ read [d many$_D$] book]]   (parallelism #, (3b)/(3c))
       d. PD_E: [one] λd [OP_{FC} [$\Diamond_F$ [Paul$_F$ read [d many$_D$] book]]] (parallelism ✓, (3a))

4. Some predictions. Isomorphism. A correct prediction of the above proposal is that VP ellipsis whose antecedent contains an NPI will be acceptable only if there is structural isomorphism between the NPI licenser in PD_A and (focused) material in PD_E:

(11)   a.   I'm surprised that John read Anna Karenina. Paul$_F$ did $\triangle$ too.
       b. #I'm surprised that John read any book. Paul$_F$ did $\triangle$ too.
       c.   I'm surprised that John read any book. I expect$_F$ that Paul$_F$ did $\triangle$ too.
(12)   a. PD_A: [even one] λd [I am surprised [John read d many book]]
       b. PD_E: [one]λd[#(I expect$_F$)[P.$_F$ read d many b.]]] (parallelism ✓ with '*I expect*')

Non-monotone licensers. If the NPI in the antecedent VP is in a non-monotone environment, the presupposition of *even* is not trivial in PD_A (cf. Crnič 2014). To satisfy Parallelism, accordingly, PD_E has to contain *even one*. But then PD_E's presupposition will be illicit unless it contains an appropriate non-monotone operator:

(13)   a.   Exactly 1 girl read Anna Karenina. Paul$_F$ did $\triangle$ too.
       b.   Exactly 1 girl read anything. Exactly [2 boys]$_F$ did $\triangle$ too./#Paul$_F$ did $\triangle$ too.
(14)   a. PD_A: [even one] λd [exactly one girl read [d many$_D$] books]].
       b. PD_E: [even one] λd [Paul$_F$ read [d many$_D$] book]].   (illicit meaning)

5. Further work. (i) There are several questions raised by our implementation of the operator theories of PIs as involving movement of a degree quantifier, in particular, questions pertaining to the properties of this movement. We plan to address them as well as alternative implementations that do not raise them in the paper. (ii) There are several empirical predictions of the proposal that we did not discuss above for reasons of space, e.g., predictions pertaining to intervention and the size of deletion in ellipsis (MaxElide).

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