Symmetrical predicates in verb phrase ellipsis

November 16, 2019

Abstract

This paper engages with the issue of identity in ellipsis licensing by adding verb phrase ellipsis with symmetrical predicates to the literature on ellipsis mismatches. Symmetrical predicates support participant and transitivity switching verb phrase ellipsis, where syntactic identity between the antecedent and elided verb phrases is lacking. Such syntactic mismatches are predicted to be tolerable by a semantic identity condition on ellipsis. Elided material must be contained in a phrase with a semantically parallel antecedent, defined in terms of focus, as commonly assumed; a requirement that is enforced only in one direction between antecedent and ellipsis (Rooth, 1992b; Fox, 2000) rather than both (Merchant, 2001; Griffiths, 2019). In addition, the phrase containing elided material must properly contrast with its antecedent (Stockwell, 2018; Griffiths, 2019).

Keywords: verb phrase ellipsis, symmetry, identity conditions on ellipsis, semantic parallelism, contrast, focus
1 Introduction

This paper engages with the issue of identity in ellipsis licensing by adding verb phrase ellipsis (VPE) with symmetrical predicates to the literature on ellipsis mismatches. To illustrate, consider (1). On its intended interpretation, the naturally occurring newspaper headline in (1a) questions whether the Tories will let Cameron work with Merkel. This interpretation is represented in (1b), where strikeout indicates elided structure:

(1) a. EU referendum: Merkel will work with Cameron on EU —
    but will Tories let him?

b. EU referendum: Merkel\_i will work with Cameron\_j on EU —
    but will Tories let him\_j work with her\_j?

(1) exemplifies what I dub ‘participant switching verb phrase ellipsis’. The participants switch over between the conjuncts: Merkel is the subject of the first, but the object of the second; while Cameron is the object of the first but the subject of the second. VPE is licensed despite the mismatching objects between the antecedent VP (Cameron) and the elided VP (Merkel).

Further constructed examples of participant switching VPE are given below. Again, the subject and object switch between the antecedent and elided VPs. Ellipsis can apply to the lowest VP, as in (2), or to a higher VP, as in (3):

(2) John\_1 wanted to dance with Mary\_2, but she\_2 didn’t want to dance with him\_1.

(3) John\_1 wanted to meet Mary\_2, even though she\_2 didn’t want to meet him\_1.

In overview, I will show that participant switching VPE is possible only with symmetrical predicates — e.g. work with (1), dance with (2), meet (3) — and argue that the syntactic mismatch is irrelevant to a semantic identity condition on ellipsis comprising focus membership and proper contrast.
In outline, section 2 establishes the empirical generalisation that participant switching VPE is possible only with symmetrical predicates. Section 3 shows that participant switching VPE poses a challenge for syntactic identity in ellipsis. Section 4 introduces a widely assumed semantic identity condition on ellipsis in terms of focus membership (Rooth, 1992b; Fox, 2000), but motivates an additional requirement for ‘proper’ contrast (Stockwell, 2018; Griffiths, 2019). Section 5 shows how this strengthened licensing condition successfully accounts for participant switching VPE, encompassing discussion of verum focus (Höhle, 1992), contrast, and negation. Lastly, section 6 introduces a further kind of verb phrase ellipsis with symmetrical predicates, ‘transitivity switching VPE’, which provides evidence that the focus membership condition is enforced only in one direction between antecedent and ellipsis (Rooth, 1992b; Fox, 2000) rather than both (Merchant, 2001; Griffiths, 2019). Section 7 concludes.

2 Symmetry

This section sets out the empirical landscape of participant switching VPE, establishing the generalisation that it is possible only with symmetrical predicates. The elliptical sentences in the introduction all involved symmetrical predicates — *work with* in (1), *dance with* in (2), and *meet* in (3). These predicates all conform to the definition of symmetry in (4); for example, if person x meets person y, it follows automatically that y meets x, and vice versa:²

\[(4) \text{ Symmetry: For all } x, y: R(x,y) \leftrightarrow R(y,x)\]

Non-symmetrical predicates, on the other hand, do not license participant switching VPE; e.g. *criticise* in (5):

\[(5) \ast \text{ John}_1 \text{ criticised Mary}_2, \text{ even though she}_2 \text{ wasn’t supposed to criticise him}_1.\]
Participant switching VPE is indifferent as to whether symmetry is lexical or derived. With *meet* (3), symmetry is lexical: a meeting event cannot but involve co-participants, each of whom meets the other. Another lexically symmetrical predicate is *marry* in (6). But for *work with* (1), symmetry is derived via a *with*-prepositional phrase adjoined to the otherwise non-symmetrical *work*, adding a co-agent in the event (Siloni, 2012). A further example along similar lines is given in (7), where the *with*-phrase derives a symmetrical predicate from the non-symmetrical *build a house*. Whereas *with*-phrases add a participant, symmetry can also be derived by removing a participant via passivisation, as for *be introduced to* in (8). Lastly, *dance with* (2) presents an intermediate case between lexical and derived symmetry, due to the possibility for intransitive *dance* to take an individual subject or a plural subject viewed collectively or distributively. A similar case is *talk with* in (9):³

(6) John₁ yearned to marry Mary₂, and she₂ did yearn to marry him₁, too.

(7) John₁ intended to build a house with Mary₂, but she₂ most certainly did not intend to build a house with him₁.

(8) John₁ needed to be introduced to Mary₂, and (in the end) she₂ was introduced to him₁.

(9) John₁ hoped to talk with Mary₂, but she₂ hoped not to have to talk with him₁.

Participant switch readings are genuinely available. With lexically symmetrical predicates like *meet* (3) and *marry* (6) the participant switch reading is inevitable, since their inherent symmetry means multiple co-participants are semantically required. But further argument is necessary to confirm that participant switch readings are genuine with derived symmetrical predicates. Consider the reconstructed version of (1) involving *work with* in (10). The participant switch reading is indicated in
(10a). However, the reading in (10b) is also available for some speakers, where the ellipsis is resolved using only the verb, to the exclusion of the with-phrase. This way of resolving the ellipsis is obligatory for all speakers based on the same antecedent when there is an overt contrasting with-phrase, as in (10c). We might then worry that the ‘verb only’ reading in (10b) is in fact the only reading of this sentence, since it entails the participant switch reading from (10a): if Mary doesn’t want to work, it follows that she doesn’t want to work with anyone, John included. However, the existence of the participant switch reading is confirmed by the felicity of (10d), where the continuation follows naturally on from the participant switch reading in (10a): Mary may not want to work with John, but she could still be perfectly happy to work with someone else. On the other hand, this continuation contradicts the second conjunct of (10b), as indicated in (10e): being happy to work with Bill contradicts Mary not wanting to work at all. We therefore conclude that the participant switch reading in (10a) is a genuine reading of (10):

(10) John₁ wanted to work with Mary₂, but she₂ didn’t want to.
    a. John₁ wanted to work with Mary₂, but she₂ didn’t want to work with him₁.
    b. John₁ wanted to work with Mary₂, but she₂ didn’t want to work.
    c. John₁ wanted to work with Mary₂, but she₂ didn’t want to work with Bill₃.
    d. John₁ wanted to work with Mary₂, but she₂ didn’t want to work with him₁. She₂ was only willing to work with Bill₃.
    e. # John₁ wanted to work with Mary₂, but she₂ didn’t want to work. She₂ was only willing to work with Bill₃.

In any case, no such ambiguity along the lines of (10a) versus (10b) arises with
lexically symmetrical predicates like *meet*, which have exclusively participant switch readings.

The empirical generalisation that participant switching VPE is licensed by the semantic notion of symmetry urges an analysis in terms of a semantic identity condition on ellipsis. But before beginning that task in section 4, the next section considers the challenge that participant switching VPE poses to syntactic identity in ellipsis.

## 3 Challenges for syntactic identity

The previous section established that there are genuine participant switch readings with symmetrical predicates in VPE. The way I have been indicating the participant switch readings — with objects and *with*-phrases inside the elided verb phrase — poses a major challenge for syntactic identity: the antecedent and elided VPs have starkly different structures, since the object of the verb or preposition switches between them. In (11), for example, the antecedent VP is *work with Mary*, whereas the elided VP is *work with him*; but despite this mismatch in form, ellipsis is happily licensed:

(11) John$_1$ wanted to work with Mary$_2$, but she$_2$ didn’t want to work with him$_1$.

As represented in (11), then, simplistic syntactic identity does not hold. This section considers three attempts to reconcile the participant switch reading with a (more) syntactically identical structure: partial control *PRO*, Vehicle Change, and voice mismatch.

To begin, note that a more complete representation of (11) would include an obligatory control *PRO* above both the antecedent and elided VPs, as in (12):

(12) John$_1$ wanted PRO$_1$ to work with Mary$_2$, but she$_2$ didn’t want PRO$_2$ to work with him$_1$.  

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It might then be countered that the ellipsis site does not take the form indicated in (11) and (12), but rather includes only the verb *work*. The participant switch reading would then be supported by a partial control *PRO* above the ellipsis site. In (13), *PRO*\textsubscript{1+2} is partially controlled by *she*\textsubscript{2}, with *John*\textsubscript{1}’s index added:

\begin{equation}
(13) \quad \text{John}_1 \text{ wanted to } \text{PRO}_1 \text{ work with Mary}_2, \text{ but she}_2 \text{ didn’t want } \\
\quad \text{PRO}_1+2 \text{ to } \text{work}.
\end{equation}

The representation in (13) makes significant progress towards syntactic identity. The direct mismatch between *Mary* and *him* in (11) has been replaced by a mismatch in the presence of a *with*-phrase in the antecedent, *work with Mary*, and its absence in the ellipsis, *work*. The difference between exhaustive and partially controlled *PRO* is semantic, and in any case lies above the ellipsis site. This structure might begin to lend itself to a syntactic identity condition on ellipsis couched in non-distinctness (Chomsky 1965, Ranero 2019), and where reduction in structure is tolerated from antecedent to ellipsis (Thoms 2013, at least for adjuncts).

However, the steps taken towards syntactic identity in (13) rely on the presence of partial control *PRO*, while participant switching VPE does not. Consider first (14), where *want* embeds the elided VP but not its antecedent. There must be a *PRO* in the second conjunct, ruling out the representation in (14a); but this leaves open the possibility that *PRO* is partially controlled, as in (14b), or exhaustively controlled with a mismatching *with*-phrase, as in (14c). Of the two, the considerations in the above paragraph would favour the former option (14b):

\begin{equation}
(14) \quad \text{John}_1 \text{ worked with Mary}_2, \text{ even though she}_2 \text{ hadn’t wanted to.}
\end{equation}

\begin{enumerate}
\item [a.] *John*\textsubscript{1} worked with *Mary*\textsubscript{2}, even though *she*\textsubscript{2} hadn’t wanted \\
\quad \text{to } \text{work with him}_1.
\item [b.] John\textsubscript{1} worked with *Mary*\textsubscript{2}, even though *she*\textsubscript{2} hadn’t wanted \\
\quad \text{PRO}_1+2 \text{ to } \text{work}.
\end{enumerate}
c. John₁ worked with Mary₂, even though she₂ hadn’t wanted PRO₂ to work with him₁.

But consider now (15), where a participant switch reading is possible just as it was for (11) (recall also (8) from the previous section). Here the elided VP is not introduced by a control verb, ruling out either of the representations (15b) or (15c) involving PRO. Instead, the only structural representation to support the participant switch reading is with a mismatching with-phrase, as in (15a):

(15) John₁ wanted to work with Mary₂, but (in the end) she₂ DIDN’T.

a. John₁ wanted PRO₁ to work with Mary₂, but she₂ DIDN’T work with him₁.

b. * John₁ wanted PRO₁ to work with Mary₂, but she₂ DIDN’T PRO₁⁺₂ work.

c. * John₁ wanted PRO₁ to work with Mary₂, but she₂ DIDN’T PRO₂ work with him₁.

Since the PRO structure is only possible with control verbs, while the representation with mismatched with-phrases is possible in all cases of participant switching VPE, it will be more parsimonious to assume the mismatch structure throughout. The syntactic non-identity of the mismatching with-phrases is a problem we have to overcome to account for (15), so there is no harm done in assuming that the syntactic structure in the ellipsis site always takes the form with a direct object as in (11) (i.e. work with him), and not the form relying on partial control PRO in (13) (i.e. meet).

Moreover, participant switching VPE is indifferent to the presence of PRO in either A or E. This indifference is apparent in (16), where the complement of want involves raising-to-object rather than control; cf. also (1):

(16) Bill₃ wanted John₁ to work with Mary₂, and (in the end) she₂ DID work with him₁.
Having established that participant switching VPE can involve directly mismatching objects, we could try to reduce this mismatch to other well-known mismatches under the rubric of Vehicle Change (Fiengo and May, 1994). However, participant switch mismatches are not within the purview of Vehicle Change, which can alter the binding-theoretic status of a DP but not its reference. The classic Vehicle Change paradigm is given in (17). The second conjunct of (17a) is understood to mean that John thinks Sally admires John, based on the antecedent VP \textit{admires John} in the first conjunct. However, plugging \textit{admires John} into the second conjunct is ungrammatical in the fully pronounced (17b) due to a Condition C effect — the referring-expression John$_1$ is bound, since it is c-commanded by the coindexed pronoun he$_1$. To the extent that ellipsis cannot render ungrammatical structures grammatical (though cf. island amelioration under movement of analyses sluicing), it is therefore assumed that the structure of (17a) cannot be as in (17c). Happily, the meaning we interpret in the ellipsis site in (17a) can also be represented with a pronoun in place of the name, which is grammatical when pronounced in (17d). Following Fiengo and May (1994), the standard solution for representing the interpretation of (17a) posits a pronoun on the ellipsis site, as in (17e), which yields the observed meaning via a grammatical structure:\footnote{6}

\begin{eqnarray*}
(17) & a. & \text{Mary admires John}_1, \text{ and he}_1 \text{ thinks Sally does, too.} \\
 & b. & * \text{Mary admires John}_1, \text{ and he}_1 \text{ thinks Sally admires John}_1, \text{ too.} \\
 & c. & * \text{Mary admires John}_1, \text{ and he}_1 \text{ thinks Sally does \textit{admire} John}_1, \text{ too.} \\
 & d. & \text{Mary admires John}_1, \text{ and he}_1 \text{ thinks Sally does \textit{admire him}_1, \text{ too.}} \\
 & e. & \text{Mary admires John}_1, \text{ and he}_1 \text{ thinks Sally does \textit{admire him}_1, \text{ too.}} \\
\end{eqnarray*}

Thus DPs can shift their binding-theoretic status from Referring expression (e.g. \textit{John}) to a pronoun (e.g. \textit{him}) in ellipsis sites. However, Vehicle Change cannot alter the reference of a DP. In principle, changing the reference of the DP in the ellipsis
site from John to someone else would have been another way to fix the Condition C violation in (17c), but this is not something Vehicle Change can do — (17a) cannot mean that John thinks Sally admires Bill, for example. Applied to participant switching VPE, a sentence like (18) involves a change of reference from Mary to John. Hence Vehicle Change cannot help: ⁷

(18) John₁ wanted to meet Mary₂, but she₂ didn’t want to meet him₁.

Lastly, participant switching VPE cannot be assimilated to voice mismatches. Active-passive mismatches like (19) are often highly acceptable (Merchant 2013, Merchant, 2008, 169, ex. 2b). But applying such an analysis to (18) would involve the unintuitive continuation in (20a), which is at best marginal when overt in (20b). Further, the presence of the agent by-phrase, necessary to derive the participant switch reading, would raise issues of syntactic identity similar to with-phrases above, but which do not arise in (19). Moreover, a voice mismatch analysis would predict participant switching VPE to be possible below passive be, which is crashingly bad in (20c):

(19) The janitor must remove the trash whenever it is apparent that it should be removed.

(20) a. John₁ wanted to meet Mary₂, but she₂ didn’t want to be met by him₁.
    b. ?? John₁ wanted to meet Mary₂, but she₂ didn’t want to be met by him₁.
    c. * John₁ wanted to meet Mary₂, but she₂ didn’t want to be met by him₁.

In sum, participant switching VPE poses a challenge to syntactic identity, since it involves mismatching object DPs or with-phrases. In some cases, the object mismatch problem could be circumvented by appealing to partial control $PRO$; but this analytical option is not available when the ellipsis site is not embedded under a control predicate. The key examples in this regard were (15) and (16), repeated here:
Further, the syntactic mismatch is not one that can be remedied by Vehicle Change or voice mismatch. Instead, it seems that syntactic non-identity is just something we have to accept when confronted with participant switching VPE: ellipsis is licensed despite mismatching form, with the objects switching over between the antecedent and elided VPs.

In any case, the empirical generalisation from the previous section that participant switching VPE is licensed by symmetrical predicates is a semantic one. The rest of this paper pursues an account of participant switching VPE in terms of the semantic identity condition on ellipsis discussed in the next section.

4 Semantic parallelism

We saw in section 2 that participant switching VPE conforms to the semantic generalisation that the ellipsis must involve a symmetrical predicate; and we saw in the previous section that in these semantically defined circumstances participant switching VPE causes syntactic mismatches among elided direct objects and with-phrases. From the perspective of participant switching VPE, therefore, it is appropriate to pursue a semantic licensing condition for ellipsis.

This section outlines such a licensing condition. Semantic identity for ellipsis is widely held to consist in finding a ‘parallel’ antecedent which is one of the focus alternatives to a constituent containing the ellipsis (section 4.1). However, there is evidence that semantic identity additionally requires ‘proper’ contrast between the antecedent and the clause containing ellipsis (section 4.2). Section 5 will show how
this identity condition accounts for participant switching VPE.

4.1 Parallelism as focus membership

Following Rooth (1992b), many researchers investigating the identity condition on VPE have hypothesised that ellipsis is subject to the focus membership condition in (21) (for example, Heim 1997; Fox 1999; Fox 2000: 85, ex. 16; Takahashi and Fox 2005). This condition requires that a phrase E containing an elided constituent ε have an antecedent A; and that the ordinary semantic value of A be a member of F(E), the focus semantic value of E. F(E) is calculated by replacing F(ocus)-marked constituents with variables of the same type, and collecting them into a set. If E does not contain any F-marked constituents, F(E) is the singleton set containing the ordinary value of E. This condition is often termed the parallelism condition on ellipsis licensing, since it requires a phrase containing ellipsis to have a semantically ‘parallel’ antecedent:

(21) The focus membership condition: 8

For ε to be elided, ε must be inside a phrase E that has an antecedent A s.t.:

\[ [A] \in F(E) \]

To take a simple example, the focus membership condition correctly predicts ellipsis to be grammatical in (22):

(22) John left, and Bill did, too.

In fact, the focus membership condition makes a doubly correct prediction for (22) (Rooth 1992b: exx. 22, 23; 32). For one option, we take A and E to be the main clauses of each conjunct. Assuming focus on \( BILL_F \), focus membership is satisfied via this route in (23). Informally, John leaving is a member of the focus alternatives to Bill leaving — someone left: 9
(23) John left, and BILLF did leave, too.  \( \varepsilon = \text{leave} \)

\[
\begin{align*}
E &= \text{BILLF left} & [E] &= \text{leave}'(b) & F(E) &= \{ \text{leave}'(x) \mid x \in D_e \} \\
A &= \text{John left} & [A] &= \text{leave}'(j) & [A] &\in F(E)
\end{align*}
\]

In detail, the elided constituent \( \varepsilon \) is the predicate \( \text{leave} \). Parallelism is evaluated at the clause level, setting \( E \) to \( \text{BILLF left} \). Since \( E \) contains a focused constituent, its focus value is the set of propositions where something leaves, for each thing in the domain of individuals. Setting \( A \) to \( \text{John left} \), focus membership is satisfied, since the proposition that John left is one of the propositions that something left.

In addition to taking \( A \) and \( E \) to be the main clauses, focus membership can be satisfied just as well by taking \( A \) and \( E \) to be the VP of each conjunct, as in (24). Informally, leaving is a member of the focus value of leaving — the singleton set containing leaving:

(24) John left, and Bill did leave, too.  \( \varepsilon = \text{left} \)

\[
\begin{align*}
E &= \text{left} & [E] &= \text{leave}' & F(E) &= \{ \text{leave}' \} \\
A &= \text{left} & [A] &= \text{leave}' & [A] &\in F(E)
\end{align*}
\]

In detail, the elided constituent \( \varepsilon \) is the predicate \( \text{leave} \). This time parallelism is evaluated at the level of the elided material, setting \( E \) also to \( \text{leave} \). Since \( E \) does not contain any focused constituents, its focus value is simply the singleton set containing its ordinary value. Setting \( A \) to \( \text{leave} \), focus membership is satisfied trivially.

Thus the focus membership condition in (21) makes a doubly correct prediction with respect to ellipsis in simple sentences like (22). Focus membership can be satisfied substantively, as in (23), where \( \text{leave}'(j) \) is one among the many members of the set \( \{ \text{leave}'(x) \mid x \in D_e \} \); or vacuously, as in (24), where \( \text{leave}' \) is a member — in fact, the only member — of the degenerate singleton set \( \{ \text{leave}' \} \).

However, it has been argued that there is more to semantic parallelism than focus membership alone. In particular, Stockwell (2018) and Griffiths (2019) argue that semantic parallelism additionally requires ‘proper’ contrast between the antecedent and
the constituent containing ellipsis. That is, A cannot be the trivial member of F(E), namely the ordinary meaning of E. The next subsection brings this proper contrast requirement to light by considering trivial sentences, which eliminate contrasting material (Stockwell, 2018). We will be forced to revise the parallelism calculations for (22), discarding (24) for failing proper contrast. The resulting increased complexity of the analysis will stand us in good stead in accounting for participant switching VPE in section 5.

4.2 The contrast condition

Consider again the focus membership condition from (21) (Rooth (1992b); Heim 1997; Fox 1999; Fox 2000: 85, ex. 16; Takahashi and Fox 2005):

(21) The focus membership condition:

For ε to be elided, ε must be inside a phrase E that has an antecedent A s.t.:

\[ [A] \in F(E) \]

There is reason to think that the focus membership condition needs to be strengthened by a contrast condition that requires A to be a ‘proper’ alternative to E. As Stockwell (2018) argues, focus membership alone makes incorrect predictions with respect to a pair like (25). While we can say trivial things, like the tautologous conditional in (25a), we cannot say the same sentence with ellipsis in (25b):

(25) a. If John _j_ is wrong, then he _j_ is wrong.

b. *If John _j_ is wrong, then he _j_ is _wrong_.

But if the focus membership condition from (21) is all there is to semantic parallelism, then ellipsis in (25b) is incorrectly predicted (X) to be grammatical. As in (26), F-marking on is introduces polar focus alternatives, satisfying focus membership:

(26) X If John _1_ is wrong, then he _1_ is _F wrong_. \( \epsilon = \text{wrong} \)
In detail: the elided constituent $\varepsilon$ is the predicate $wrong$, and parallelism is evaluated at the clause level, setting $E$ to $he is_{F} wrong$. Focus on $is_{F}$ introduces polar focus alternatives for $E$: $John is wrong, John is not wrong$. The antecedent $John is wrong$ is indeed one of the members of this set, so the focus membership condition is satisfied.

Based on (25), Stockwell (2018) argues that ellipsis is governed by a more stringent licensing condition than (21). In addition to focus membership, $A$ and $E$ must stand in a relation of ‘proper’ contrast. This requirement is spelled out in clause (ii) of the ellipsis parallelism condition in (27), where $A$ and $E$ must have distinct ordinary meanings (cf. Griffiths 2019):

(27) For $\varepsilon$ to be elided, $\varepsilon$ must be inside a phrase $E$ that has an antecedent $A$ s.t.:

(i) $[A] \in F(E)$, the focus membership condition; and

(ii) $[A] \neq [E]$, the contrast condition.

This strengthened parallelism condition applies to the elliptical tautologous conditional from (25b) as in (28). The sentence is correctly predicted to be bad, since it fails the contrast condition:

(28) * If $John_{1}$ is wrong, then $he_{1}$ is_{F} wrong. $\quad \varepsilon = \text{wrong}$

$E = he_{1}$ is_{F} wrong $\quad A = John_{1}$ is wrong

$[E] = \text{wrong}'(j) \quad [A] = \text{wrong}'(j)$

$F(E) = \{\text{wrong}'(j), \text{not-wrong}'(j)\} \quad [A] \in F(E) \quad \text{but} \ [A] = [E]$
Incorporating the contrast condition into the ellipsis parallelism condition in (27) follows the spirit of Rooth (1992b), who claims to be applying Rooth’s (1992a) theory of focus directly to ellipsis licensing. Rooth (1992a: 90, 93) includes the contrast condition in his constraint on focus interpretation in (29). (29) requires that a phrase Φ containing focus have an antecedent A; that the ordinary semantic value of A be a member of F(Φ), the focus semantic value of Φ; and that A and Φ must stand in a relation of proper contrast, having distinct ordinary meanings:

\[
(29) \text{Focus at the level of a phrase } Φ \text{ requires an antecedent } A \text{ such that:}
\]

\[
\text{(i) } [A] \in F(Φ); \text{ and}
\]

\[
\text{(ii) } [A] \neq [Φ]
\]

Rooth (1992a) does not provide any empirical motivation for including the contrast condition in (29); instead, Rooth (1992a: 90) acts out of a methodological concern to constrain the theory as much as possible while retaining generality. With the elliptical tautologous conditional in (25b), however, we have a case where the contrast condition, as carried over from focus in (29), has empirical bite in ellipsis licensing.

The contrast condition has empirical bite in ellipsis beyond tautologous conditionals. Stockwell (2018) notes that the ellipsis contrast with tautologous free relatives in (30) could submit to a similar explanation (cf. Horn, 1981, 326 and Russell’s (1905) ambiguity in comparatives):

\[
(30) \begin{align*}
\text{a. } & \text{John eats what he eats.} \\
\text{b. * John eats what he does eat.}
\end{align*}
\]

Likewise, ellipsis is impossible in sentences expressing iteration, as in (31). The repetition must be whole, whether of sentences (31a) or verb phrases (31c). Ellipsis in the corresponding (31b) and (31d) is ruled out by the contrast condition, as in
(31e), since there is no available antecedent with a distinct meaning from the clause containing ellipsis:

(31)  
  a. They talked and they talked and they talked.  
  b. * They talked and they did talk and they did talk.  
  c. They talked and talked and talked.  
  d. * They talked and did talk and did talk.  
  e. $A = E = \text{they talk}$

Furthermore, Griffiths (2019) argues that the contrast condition in ellipsis parallelism is responsible for so-called MaxElide effects, exemplified in (32). From a base sentence like (32a), sluicing is possible in (32b), but VP ellipsis is not in (32c). Using the theory of ellipsis parallelism in (27), Griffiths argues that ellipsis is not licensed in (32c) because the clause containing ellipsis does not contrast with its antecedent, as in (32d):

(32)  
  a. John will hire someone, but I don’t know who he will hire $t$. No ellipsis  
  b. John will hire someone, but I don’t know who he will hire $t$. Sluicing  
  c. * John will hire someone, but I don’t know who he will hire $t$. VPE  
  d. $A = E = \lambda x. \text{John will hire } x$

In sum, the contrast condition, which was introduced for focus by Rooth (1992a) for methodological considerations, has been shown by Stockwell (2018) and Griffiths (2019) to explain the ungrammaticality of non-contrasting ellipses. We will see that it has explanatory power with respect to participant switching VPE in section 5.4, below.

Let us now consider how semantic parallelism as strengthened by the contrast condition in (27) applies to the simple case of ellipsis in (22). The sentence and the
two options for the level at which to evaluate parallelism are collected together in (33). The overall prediction of grammaticality is unchanged, but now ellipsis is licensed only if the full conjuncts are taken as A and E (33a), not just the VPs (33b). While both options continue to pass the focus membership condition, only choosing the clause level for E as in (33a) satisfies contrast — informally, John leaving means something different from Bill leaving. Setting E to be the same as $\varepsilon$ in (33b), on the other hand, fails to properly contrast — leave means leave:

(33) John left, and BILL$_F$ did leave, too. $\varepsilon$ = leave

a. E = BILL$_F$ left \[E] = \textit{leave}'(b) \quad \text{F}(E) = \{\textit{leave}'(x) \mid x \in D_e\}
A = John left \quad [A] = \textit{leave}'(j) \quad [A] \in \text{F}(E) \text{ and } [A] \neq [E]

b. E = left \quad [E] = \textit{leave}' \quad \text{F}(E) = \{\textit{leave}'\}
A = left \quad [A] = \textit{leave}' \quad [A] \in \text{F}(E) \text{ but } [A] = [E]

With the semantic identity condition on ellipsis now in hand, comprising focus membership and proper contrast, the next section returns to participant switching VPE and shows how it can be accounted for in terms of (27).

5 Semantic identity in participant switching VPE

The previous section reviewed parallelism as focus membership and argued for proper contrast, arriving at the semantic identity condition on ellipsis in (27), repeated here:

(27) For $\varepsilon$ to be elided, $\varepsilon$ must be inside a phrase E that has an antecedent A s.t.:

(i) $[A] \in \text{F}(E)$, the focus membership condition; and

(ii) $[A] \neq [E]$, the contrast condition.

This section accounts for participant switching VPE in terms of (27), beginning with simple cases (section 5.1). Further examples motivate consideration of verum focus
(section 5.2), account for why switching is obligatory (section 5.3), and show that participant switching is another case where the contrast condition has empirical bite in ellipsis licensing (section 5.4), albeit with some complications when it comes to negation (section 5.5).

5.1 Symmetry and focus membership

Participant switching VPE submits to the focus membership condition by virtue of the symmetry of the predicate; for example, meet in (34):

(34) John \(_1\) wanted to meet Mary \(_2\), and she \(_2\) wanted to meet him \(_1\), too.

The focus membership condition makes a doubly correct prediction that ellipsis will be licensed in (34), but in a slightly different way than in (22). Note first that evaluating parallelism at the same level as the elided material, as we did in (22), fails for (34) as in (35). Informally, a meeting involving Mary is not a member of the set containing a meeting involving John:

(35) \(\not\exists\) John \(_1\) wanted to meet Mary \(_2\), and she \(_2\) wanted to meet him \(_1\), too.
\[\varepsilon = \text{meet him} \_1\]
\[A = \text{meet Mary} \quad [A] = \lambda x.\text{meet}'(x, m)\]
\[E = \text{meet John} \quad [E] = \lambda x.\text{meet}'(x, j)\]
\[F(E) = \{\lambda x.\text{meet}'(x, j)\} \quad [A] \notin F(E)\]

Still, evaluating parallelism at either the embedded or main or clause level will succeed in satisfying the focus membership condition. The symmetry of meet is crucial to supporting focus membership. We begin with the embedded clause level in (36). Informally, John meeting Mary, which by symmetry means the same as Mary meeting John, is a member of the set containing Mary meeting John:

(36) John \(_1\) wanted to meet Mary \(_2\), and she \(_2\) wanted to meet him \(_1\), too.
\[\varepsilon = \text{meet him} \_1\]
A = \text{PRO}_j \text{ to meet Mary} \quad [A] = \text{meet}'(j,m) = \text{meet}'(m,j)

E = \text{PRO}_m \text{ to meet John} \quad [E] = \text{meet}'(m,j)

F(E) = \{ \text{meet}'(m,j) \} \quad [A] \in F(E)

In detail, the elided constituent \( \varepsilon \) is \text{meet him}_1. Parallelism is evaluated at the level of embedded clause which contains the elided material, setting \( E \) to \( \text{PRO}_m \text{ to meet him}_1 \). Since \( E \) does not contain any focus, its focus value is the singleton containing its ordinary value. Setting \( A \) to \( \text{PRO}_j \text{ to meet Mary} \), focus membership is satisfied based on the trivial singleton, since by symmetry \([A] = [E] \).  

However, in the same breath as supporting focus membership, symmetry causes a contrast failure. The fact that John meeting Mary means the same thing as Mary meeting John makes \( \text{meet}'(j,m) \) a member of \( \{ \text{meet}'(m,j) \} \); but at the same time results in \( A \) and \( E \) failing to properly contrast, since both come out to mean John and Mary meeting. This contrast failure is spelled out in (37):

\[
(37) \quad [A] = \text{meet}'(j,m) = [E] = \text{meet}'(m,j)
\]

Hence drawn up against the parallelism condition in (27), strengthened by ‘proper’ contrast, our choice of the embedded clauses as \( A \) and \( E \) from (36) falls short. Just as the contrast condition forced us to evaluate parallelism at a higher level in the simple case of ellipsis in (33), failure to satisfy contrast on the embedded clauses in (36) forces us to use the higher clauses when evaluating parallelism in participant switching VPE.

Happily, focus membership is also satisfied by evaluating parallelism at the level of the higher clause, assuming focus on \( \text{SHE} \) as in (38). Intuitively, focus on \( \text{SHE} \) sets up a contrast between John and Mary with respect to wanting to meet the other:

\[
(38) \quad \text{John}_1 \text{ wanted to meet Mary}_2, \text{ and \ SHE}_{2,F} \text{ wanted to meet him}_1, \text{ too.}
\]

\( \varepsilon = \text{meet him}_1 \)
A = John want PRO$_j$ meet Mary

\[ A = \text{want}'(\text{meet}'(j,m))(j) = \text{want}'(\text{meet}'(m,j))(j) \]

E = MARY$_F$ want PRO$_m$ meet John

\[ E = \text{want}'(\text{meet}'(m,j))(m) \]

F(E) = \{ \text{want}'(\text{meet}'(m,j))(x) \mid x \in D_{\varepsilon} \}

In detail, the elided constituent $\varepsilon$ is want to meet him$_1$. Parallelism is evaluated at the level of the entire conjunct of each clause, setting E to MARY$_F$ want PRO$_m$ to meet him$_1$. E contains focus on the subject, so its focus value is the set of all propositions of someone wanting Mary and John to meet. Setting A also at the full clause level, focus membership is satisfied based on symmetry in the embedded VP: just as John meeting Mary means the same as Mary meeting John, so John wanting a meeting between John and Mary means the same as John wanting a meeting between Mary and John. The parallelism calculation in (38) satisfies the contrast condition in addition to focus membership. John wanting a John and Mary meeting is not the same as Mary wanting one, as spelled out in (39):

(39) \[ A = \text{want}'(\text{meet}'(j,m))(j) = \text{want}'(\text{meet}'(m,j))(j) \]

\[ \neq E = \text{want}'(\text{meet}'(m,j))(m) \]

To take stock, focus membership alone makes a doubly correct prediction with respect to ellipsis in participant switching sentences like (34). Focus membership can be satisfied vacuously, as in (36), where meet'$(j,m)$ is a member — in fact, the only member — of the degenerate singleton set \{meet'$(j,m)$\}; or it can be satisfied substantively, as in (38), where want'(meet'(m,j))(j) is one among the many members of the set \{want'(meet'(m,j))(x) \mid x \in D_{\varepsilon} \}. Semantic parallelism as strengthened by the contrast condition in (27) does not change the overall prediction for participant switching VPE; while the calculation in (36) fails, ellipsis is successfully licensed based on (38). However, the contrast condition will have accurate empirical bite in more complex cases of participant switching VPE, below.

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The symmetry of the predicate was crucial to satisfying focus membership. Attempting participant switching VPE with a non-symmetrical predicate like *criticise* fails the focus membership condition, correctly predicting ungrammaticality in (40).

Focus membership fails regardless of the level at which parallelism is evaluated. Informally, evaluating parallelism at the level of the elided material fails in (40a) because criticising Mary is not a member of the set containing criticising John. Similarly, evaluating parallelism at the level of the embedded clause fails in (40b) because John criticising Mary is not a member of the set containing Mary criticising John:

(40) * John₁ was supposed to criticise Mary₂, but she₂ wasn’t supposed to criticise him₁.

a.  ε = criticise him₁

\[ A = \lambda x.\text{criticise}'(m)(x) \]
\[ E = \lambda x.\text{criticise}'(j)(x) \]
\[ F(E) = \{ \lambda x.\text{criticise}'(j)(x) \} \]
[\( A \notin F(E) \)]

b.  ε = criticise him₁

\[ A = \text{PRO}_j \text{ to criticise Mary} \]
\[ E = \text{PRO}_m \text{ to criticise John} \]
\[ F(E) = \{ \text{criticise}'(j)(m) \} \]
[\( A \notin F(E) \)]

In sum, symmetry meant that despite participant switching, the two clauses were semantically parallel in (38), allowing focus membership to go through at a level that also satisfied contrast. Without symmetry, participant switching is correctly ruled out as focus membership failure.

5.2 VERUM focus

In the previous subsection, participant switching was licensed for ellipsis of the lower VP. Illustrating in this subsection with *work with*, ellipsis of the higher VP
including *want* is licensed in a parallel fashion, based on the same size A and E:

(41) John$_1$ wanted to work with Mary$_2$, and SHE$_2,F$ did

\[ \varepsilon = \text{want to work with him}_1 \]

\[ A = \text{John want PRO}_j \text{ work with Mary} \]

\[ E = \text{MARY}_F \text{ want PRO}_m \text{ work with John} \]

\[ F(E) = \{ \text{want}'(\text{work-with}'(m, j))(x) \mid x \in D_e \} \]

However, with focus on DID rather than SHE, we are able to interpret the ellipsis site as containing only the lower VP of the first clause, to the exclusion of *want*.

In (42), we have only one option for E that passes focus membership, namely the whole second conjunct. But any attempt to evaluate parallelism that sets A to the lower clause of the first conjunct, which is the same size as E, will inevitably fall to a contrast failure, as was the case for (36) in (37):

(42) * John$_1$ wanted to work with Mary$_2$, and (in the end) she$_2$ DID$_F$

\[ \varepsilon = \text{work with him}_1 \]

\[ A = \text{PRO}_j \text{ to work with Mary} \]

\[ E = \text{Mary work with John} \]

The solution to correctly ruling in (42) while respecting the contrast condition lies in taking DID to mark verum focus (Höhle, 1992). Stress on an auxiliary can signal polar focus, where the alternatives are the truth or falsity of the proposition, as was assumed in the discussion of tautologous conditionals in section 4.2 above.

But stress on an auxiliary can also signal focus not on the polarity itself, but on a predicate operator VERUM, which means roughly ‘it is true that’ or ‘it is for sure that’, defined in (44) (Romero and Han 2004: 627, ex. 43):
Focus on VERUM contributes alternatives to the proposition being true: it is merely possible, or someone expects or wants or hopes it to be true or not true, etc. The focus set of alternatives of this modal-like operator VERUM is sketched in (44) (Hardt and Romero 2004: 405, ex. 97):

(44) \[ F(\text{VERUM}_F \ p) = \{ \text{it is for sure true that } p, \text{ it is possible that } p, \text{ it is hoped that } p, \text{ it is doubted that } p, \text{ it is wanted that } p, \text{ it is expected that } p, ..., \text{John expects that } p, \text{ John hopes that } p, \text{ Sam expects that } p, ..., \text{it is for sure true that } \neg p, \text{ it is possible that } \neg p, \text{ it is hoped that } \neg p, \text{ it is doubted that } \neg p, \text{ it is wanted that } \neg p, \text{ it is expected that } \neg p, ..., \text{John expects that } \neg p, \text{ John hopes that } \neg p, \text{ Sam expects that } \neg p, ... \} \]

To illustrate without ellipsis first, consider (45) (Hardt and Romero 2004: 405, ex. 94). Focus on DID clearly does not signal contrast with the polarity of the previous clause, since both A’s statement and S’s response are positive polarity. Instead, auxiliary stress marks contrast between the operator VERUM and the attitude expressed by A, namely I hope:

(45) A: I hope she finished her work on time.
    S: She DID finish it on time.
    LF: [VERUM\_F [she finished it on time]]

To add in ellipsis, consider (46) (Hardt and Romero 2004: 406, ex. 99). Focus membership is satisfied via VERUM. Informally, John wanting to go to Rome is an alternative to John not actually going to Rome. Meanwhile, though Hardt and Romero (2004) do not discuss the contrast condition, we can add that it is satisfied — John wanting to go to Rome is different from it not actually happening.\textsuperscript{13}
(46) John wanted to go to Rome, but he DIDN’T.

[[John wanted to go to Rome]] \in F([he DIDN’T go to Rome]) =
\{ \text{it is for sure true that John did not go to Rome, it is for sure true that John went to Rome, ..., John wanted that John goes to Rome, John wanted that John doesn’t go to Rome, ... } \}

Armed with VERUM, we can revise the participant switching VPE example from (42) as in (47). Intuitively, focus on DID sets up a contrast between John’s desires and the actual world. Setting A to the the whole first conjunct is necessary to satisfy focus membership of the alternatives to VERUM. Informally, John wanting a John and Mary collaboration is an alternative to a John and Mary collaboration actually taking place. Setting A to include John wants happily also resolves the contrast problem, since A and E now mean very different things — John wanting to collaborate with Mary is different from him actually doing so:

(47) \begin{align*}
\text{John}_1 & \text{ wanted to work with } \text{Mary}_2, \text{ and (in the end) she}_2 \text{ DID}_F \\
& \text{work with him}_1. \\
\epsilon & = \text{ work with him}_1 \\
A & = \text{ John wanted PRO}_j \text{ to work with Mary} \\
\llbracket A \rrbracket & = \text{want}'(\text{work-with}'(j,m))(j) = \text{want}'(\text{work-with}'(m,j))(j) \\
E & = \text{ Mary VERUM}_F \text{ work with John} \\
\llbracket E \rrbracket & = \text{FOR-SURE(} work-with'(m,j)\text{)} \\
F(E) & = \{ \text{it is for sure true that Mary worked with John, it is possible that Mary worked with John, ..., Sue wanted/expected that Mary worked with John, John wanted that Mary worked with John, ... } \}
\end{align*}

With focus on VERUM supporting focus membership, we expect participant switching VPE to be good with all other intensional embedding, which provides
members of the set of focus alternatives to VERUM. As expected, and further to embedding under an intensional verb like want, embedding participant switching VPE under other intensional operators works just as well in (48); including modal auxiliaries like should in (48a), or other partial control predicates like glad to (Pearson, 2016) in (48b):¹⁴

(48)  
  a. John₁ should have danced with Mary₂, but (in the end) she₂ DIDN’T dance with him₁.  
  b. John₁ was glad to have danced with Mary₂, and she₂ WAS glad to have danced with him₁, too.

Non-intensional embedding under an extensional aspectual verb like start (Pearson, 2016), on the other hand, does not support participant switching VPE (49):

(49)  * John₁ started to dance with Mary₂, and she₂ DID dance with him₁.

We take focus membership failure to be responsible for the ungrammaticality of (49). Alternatives to VERUM are inherently intensional, encompassing desires or possibilities of something happening; whereas start is about the extent to which something actually happened. Hence John start is not a member of F(VERUM), making the attempt at participant switching ellipsis in (49) a focus membership failure, just as much as the attempt at ellipsis in (50):

(50)  * John₁ started to work, and he₁ DID work.

In sum, the section so far has shown how participant switching VPE can be accounted for in terms of the semantic parallelism condition on ellipsis from (27). Focus membership is unaffected by participant switching so long as the predicate is symmetrical, while the contrast condition can be respected by appealing to VERUM focus, which in turn explains the restriction to intensional predicates. The remainder of this section presents cases where participant switching VPE fails the contrast con-
dition, including one case involving negation, after considering how the participants must remain constant in participant switching VPE.

5.3 Obligatory switching

We are now in a position to observe and account for the fact that the participants in the symmetrical event must remain constant across antecedent and ellipsis in participant switching VPE. Recall (16) from above, where participant switching VPE is licensed in the same way as for (47), as in (51). Bill wanting a John and Mary collaboration is an alternative to such a collaboration actually taking place, and there is contrast between A and E:

\[(51) \quad \text{Bill}_3 \text{ wanted John}_1 \text{ to work with Mary}_2, \text{ and (in the end)} \]
\[
\begin{align*}
\varepsilon & = \text{work with him}_1 \\
A & = \text{Bill wanted John to work with Mary} \\
\{A\} & = \text{want}'(\text{work-with}'(j, m))(b) = \text{want}'(\text{work-with}'(m, j))(b) \\
E & = \text{Mary VERUM work with John} \quad \{E\} = \text{FOR-SURE(}\text{work-with}'(m, j)) \\
F(E) & = \{\text{it is for sure true that Mary worked with John,} \\
& \text{it is possible that Mary worked with John,} ..., \\
& \text{Sue wanted/expected that Mary worked with John,} \\
& \text{John wanted that Mary worked with John,} ..., \\
& \text{Sue expected that Mary didn’t work with John,} \\
& \text{Bill wanted that Mary worked with John,} ... \} \\
\{A\} \in F(E) \text{ and } \{A\} \neq \{E\}
\end{align*}
\]

Consider now that the meaning indicated in (51) is the only one available. In particular, despite the sentence providing another potential antecedent in Bill, the elided pronoun him must refer to John. Taking him to refer to Bill is ungrammatical, and is
correctly ruled out as a failure of focus membership in (52). Informally, Bill wanting a collaboration between John and Mary is not an alternative to a collaboration actually taking place between Mary and Bill:

(52) * Bill\textsubscript{3} wanted John\textsubscript{1} to work with Mary\textsubscript{2}, and (in the end)

\[ \text{she}_2 \text{DID}_F \text{ work with him}_1. \]
\[ \varepsilon = \text{work with him}_1 \]
\[ A = \text{Bill wanted John to work with Mary} \]
\[ [A] = \text{want}'(\text{work-with}'(j, m))(b) = \text{want}'(\text{work-with}'(m, j))(b) \]
\[ E = \text{Mary VERUM}_F \text{ work with John} \quad [E] = \text{FOR-SURE}(\text{work-with}'(m, j)) \]
\[ F(E) = \{ \text{it is for sure true that Mary worked with John,} \]
\[ \text{it is possible that Mary worked with John,} ..., \]
\[ \text{Sue wanted/expected that Mary worked with John,} \]
\[ \text{John wanted that Mary worked with John,} ..., \]
\[ \text{Sue expected that Mary didn’t work with John,} \]
\[ \text{Bill wanted that Mary worked with John,} ... } \]
\[ [A] \notin F(E) \quad [A] \neq [E] \]

Thus our analysis accounts for the fact that the participants must remain constant across antecedent and ellipsis in participant switching VPE.

### 5.4 Contrast failures in participant switching VPE

Even with VERUM and other attitude holders around, it remains eminently possible for participant switching VPE to fail the contrast condition. In (51) contrast was satisfied by the opposition between Bill wanting Mary and John to collaborate, and such a collaboration actually taking place. This contrast relied on the high scope of conjunction, with want only in the first conjunct. We remove the possibility for this contrast to arise in (53), where conjunction scopes low, with both conjuncts embedded under Bill wanted. The sentence in (53a) might sound somewhat redundant, but
is perfectly grammatical. The attempt at participant switching VPE in (53b), on the other hand, is completely ungrammatical. In this configuration, both or neither of A and E will include Bill wanted, resulting in a contrast condition failure. The differing status of (53a) and (53b) shows that this is a fact about ellipsis — in particular, the contrast condition:

(53) a. Bill3 wanted both for John1 to work with Mary2, and for her2 to work with him1.

    b. * Bill3 wanted both for John1 to work with Mary2, and for her2 to work with him1.

Erring closer towards redundancy, the same point can also be made without adding an attitude holder in Bill who is separate from the symmetrical event. In (54), the fully pronounced (54a) might be very redundant, but is perfectly grammatical; whereas the attempt at participant switching VPE in (54b) is completely ungrammatical. Again, both or neither of A and E will include John wanted, resulting in a contrast condition failure:

(54) a. John1 wanted to meet Mary2, and for her2 to meet him1.

    b. * John1 wanted to meet Mary2, and for her2 to meet him1.

Arriving now at tautology, the contrast condition is also responsible for the differing grammaticality in (55). Despite being a tautology, the fully pronounced (55a) is perfectly grammatical. The attempt at participant switching VPE in (55b), on the other hand, is ruled out as a contrast failure, since by symmetry John and Mary dancing means the same as Mary and John dancing:

(55) a. John1 danced with Mary2, and she2 danced with him1.

    b. * John1 danced with Mary2, and she2 did dance with him1.
The next subsection adds negation into the mix. For the grammatical examples in this section so far, the analysis remains substantially the same. But for the ungrammatical contrast failures, there will be more to say about the contribution of negation. Negation generally counts for satisfying contrast, and in participant switching VPE suffices to make the negative versions of (53) and (54) grammatical in (56a) and (56b). And yet, negation still does not rescue (55) in (56c):

(56)  
\begin{align*}
\text{a. } & \text{Bill}_3 \text{ wanted both for } \text{John}_1 \text{ to work with } \text{Mary}_2, \text{ and for her}_2 \text{ not to work with him}_1. \\
\text{b. } & \text{John}_1 \text{ wanted to meet } \text{Mary}_2, \text{ and for her}_2 \text{ not to meet him}_1. \\
\text{c. } & * \text{John}_1 \text{ danced with } \text{Mary}_2, \text{ but she}_2 \text{ didn’t dance with him}_1.
\end{align*}

5.5 Negation and contrast

All the grammatical examples from this section so far, collected in (57), were positive polarity in both conjuncts:

(57)  
\begin{align*}
\text{a. } & \text{John}_1 \text{ wanted to meet } \text{Mary}_2, \text{ and SHE}_{2,F} \text{ wanted to meet him}_1, \text{ too. } = (38) \\
\text{b. } & \text{John}_1 \text{ wanted to work with } \text{Mary}_2, \text{ and SHE}_{2,F} \text{ did want to work with him}_1, \text{ too. } = (41) \\
\text{c. } & \text{John}_1 \text{ wanted to work with } \text{Mary}_2, \text{ and (in the end) she}_2 \text{ DID}_{F} \text{ work with him}_1. \text{ } = (47) \\
\text{d. } & \text{Bill}_3 \text{ wanted } \text{John}_1 \text{ to work with } \text{Mary}_2, \text{ and (in the end) she}_2 \text{ DID}_{F} \text{ work with him}_1. \text{ } = (51)
\end{align*}

All the sentences in (57) remain grammatical with negative polarity in the second conjunct, with F-marked \textit{DIDN’T} and concomitant changes from \textit{and ... too} to \textit{but}, as in (58):
(58) 

a. John$_1$ wanted to work with Mary$_2$, but SHE$_{2,F}$ DIDN’T$_F$ want to work with him$_1$.

b. John$_1$ wanted to work with Mary$_2$, but SHE$_{2,F}$ DIDN’T$_F$ want to work with him$_1$.

c. John$_1$ wanted to work with Mary$_2$, but (in the end) she$_2$ DIDN’T$_F$ work with him$_1$.

d. Bill$_3$ wanted John$_1$ to work with Mary$_2$, but (in the end) she$_2$ DIDN’T$_F$ work with him$_1$.

Our licensing condition of focus membership plus contrast correctly predicts all the sentences in (58) to be grammatical. Regardless of the size of ellipsis, the sentences (58a) and (58b) with want in the second conjunct are licensed as in (59):

(59) John$_1$ wanted to work with Mary$_2$, but SHE$_{2,F}$ DIDN’T$_F$ want to work with him$_1$.

ε = (want to) work with him$_1$

A = John want PRO$_j$ work with Mary

$[A] = \text{want}'(\text{work-with}'(j,m))(j) = \text{want}'(\text{work-with}'(m,j))(j)$

E = MARY$_F$ DIDN’T$_F$ want PRO$_m$ work with John

$[E] = \neg \text{want}'(\text{work-with}'(m,j))(m)$

F(E) = \{want'(work-with'(m,j))(x), \neg want'(work-with'(m,j))(x) | x \in D_e\}

$[A] \in F(E) \text{ and } [A] \neq [E]$
being a polar alternative to not wanting. In addition to focus membership, contrast
is also satisfied: John wanting a John and Mary collaboration is different from Mary
not wanting a John and Mary collaboration.

Indeed more generally, negation provides a way to satisfy the contrast condition,
in that the difference between a positive and negative version of the same proposi-
tion suffices for contrast. Stockwell (2018) showed that negation counts for contrast,
even when eliding in trivial sentences like the tautologous disjunction in (60) or the
contradictory conjunction in (61):

\[(60)\] Either John₁ is wrong, or he₁ isn’t wrong.

\[(61)\] John₁ is wrong and he₁ isn’t wrong.

Including negation in ellipsis licensing calculations — in particular, including
not as part of E — the semantic parallelism condition on ellipsis from (27) correctly
predicts both (60) and (61) to be grammatical as in (62). Focus on ISN’T is taken
to evoke polar alternatives, while the opposition of a positive A and a negative E
satisfies the contrast condition:

\[(62)\] E = he₁ ISN’T wrong \quad A = John₁ is wrong

\[\begin{align*}
[E] &= \text{not-wrong}'(j) \\
[A] &= \text{wrong}'(j) \\
F(E) &= \{\text{wrong}'(j), \text{not-wrong}'(j)\} \\
[A] &\in F(E), [A] \neq [E]
\end{align*}\]

In detail, the elided wrong is contained in E he is not wrong. Focus on ISN’T in-
troduces polar focus alternatives for E: John is wrong, John is not wrong. The an-
tecedent John is wrong is indeed a member of this set, so the focus membership
condition is satisfied, similar to the elliptical tautologous conditional (25b) in (28).
But, unlike with (25b), the ordinary meanings of A and E are distinct: A is positive,
whereas E contains sentential negation. So the contrast condition is satisfied, and
(60) and (61) are correctly predicted to be grammatical.⁴

Moving to the two sentences without want in the second conjunct, the analysis
is the same regardless of the whether the attitude holder in the first conjunct is included in the symmetrical event (58c) or not (58d). As above, we assume that focus on \textit{DIDN'T} here signals verum focus rather than polar focus. Informally, John (or Bill for (58d)) wanting a John and Mary collaboration is an alternative to a John and Mary collaboration not actually taking place:

(63) \begin{equation*}
\text{John}_1 \text{ wanted to work with Mary}_2, \text{ but (in the end) she}_2 \text{ DIDN'T}_F \text{ work with him}_1.
\end{equation*}

\[ \varepsilon = \text{work with him}_1 \]

\[ A = \text{John wanted PRO}_j \text{ to work with Mary} \]

\[ [A] = \text{want}'(\text{work}-\text{with}'(j, m))(j) = \text{want}'(\text{work}-\text{with}'(m, j))(j) \]

\[ E = \text{Mary FALSUM}_F \text{ work with John} \]

\[ [E] = \text{NOT-FOR-SURE}(\text{work}-\text{with}'(m, j)) \]

\[ F(E) = \{ \text{it is not for sure true that Mary worked with John, \ldots} \}
\]

\[ \text{John wanted that Mary worked with John, \ldots} \}

\[ [A] \in F(E) \text{ and } [A] \neq [E] \]

Thus our analysis happily accommodates negated versions of the grammatical data in the previous section.

We now turn to the ungrammatical contrast failures in (53)-(55), which we predict should be rescued by negation. For (53) and (54), this prediction is borne out in (64) and (65), respectively. In (64), there is no additional unacceptability in going from the pronounced (64a) to the elliptical (53b). The same goes for (65). The contrast between positive and negative means we can evaluate parallelism successfully at the level of the embedded clauses, as in (66):

(64) \begin{enumerate}
\item Bill$_3$ wanted both for John$_1$ to meet Mary$_2$, and for her$_2$ NOT$_F$ to meet him$_1$.
\item Bill$_3$ wanted both for John$_1$ to meet Mary$_2$, and for her$_2$ NOT$_F$ to meet him$_1$.
\end{enumerate}
(65)  a. John₁ wanted (both) to meet Mary₂, and for her₂ \( \text{NOT}_F \) to meet him₁.
    b. John₁ wanted (both) to meet Mary₂, and for her₂ \( \text{NOT}_F \) to be meet him₁.

(66)  \( \varepsilon = \text{meet him}_1 \)

\[
A = \text{John to meet Mary} \quad \quad [A] = \text{meet}'(j, m) = \text{meet}'(m, j)
\]

\( E = \text{Mary NOT}_F \) to meet John \quad \quad [E] = \text{meet}'(m, j) \)

\( F(E) = \{ \text{meet}'(m, j), \neg \text{meet}'(m, j) \} \) \[A] \in F(E), [A] \neq [E] \)

In detail, the elided constituent \( \varepsilon \) is \( \text{meet him}_1 \). Parallelism is evaluated at the level of the embedded conjuncts, to the exclusion of \( \text{John wanted} \). \( E \) is set to \( \text{Mary NOT}_F \) to \( \text{meet John} \), with stress on \( \text{NOT} \) evoking polar focus alternatives: Mary met John, or Mary didn’t meet John. Setting \( A \) also at the embedded level, focus membership is satisfied based on symmetry. In addition to focus membership, and unlike for (53b), contrast is also satisfied: John and Mary meeting is different from John and Mary not meeting.

Arriving back at triviality, however, negation does not rescue the contrast failure from (55), as shown in (67). The fully pronounced (67a) is a contradiction, but is a perfectly grammatical sentence. Unlike for (55), the attempt at participant switching VPE in (67b) remains ungrammatical, despite the opposition between positive \( A \) and negative \( E \):

(67)  a. John₁ danced with Mary₂, but she₂ didn’t dance with him₁.
    b. * John₁ danced with Mary₂, but she₂ didn’t \underline{dance with him₁}. 

The degraded status of (67b) is even starker across speakers. The infelicity of sentence-internal contradiction is diffused by distributing it across different utterances in an exchange like (68). Yet (67b) remains bad, even when spread across an exchange in (69):

(68)  A: John₁ left. \quad \quad B: But he₁ didn’t leave.
(69) A: John$_1$ danced with Mary$_2$. B: * But she$_2$ didn’t dance with him.

Overall, the empirical picture seems to be that negation counts for contrast in ellipsis parallelism in general, including in participant switching VPE in (53) and (54), just not in (67). What makes (67) the odd one out seems to be that the assertion contradicts the ellipsis licensing calculations. The licensing of participant switching VPE makes crucial use of the symmetry of the predicate in the ellipsis site to satisfy focus membership. Any attempt to license ellipsis in (67b) would make crucial use of the equivalence spelled out in (70):

$$(70) \quad range-with'(j, m) = range-with'(m, j) = [A]$$
$$\in F(E) = \{range-with'(m, j), ¬range-with'(m, j)\}$$

However, (67) asserts that this equality does not hold, as in (71):

$$(71) \quad range-with'(j, m) \neq range-with'(m, j)$$

Thus there is a conflict between ellipsis licensing, which requires equality, and the sentence, which asserts inequality. This conflict marks out (67) as the exception to negation counting for contrast in participant switching VPE, and ellipsis more generally: the assertion cannot contradict ellipsis licensing calculations. Compare (64) and (65), where embedding under want avoids directly asserting the inequality in (71).$^{16}$

To summarise this section, the semantic identity condition motivated in section 5, comprising focus membership and proper contrast, accurately accounts for participant switching VPE. Symmetry preserves focus membership, despite syntactic changes between antecedent and ellipsis. The contrast condition urged us to consider VERUM, and had empirical bite in ruling out contrast failures in participant switching VPE. Finally, while negation generally counts for contrast, it is not possible to rely on symmetry in ellipsis calculations while at the same time denying it holds.
The next section extends from participant switching VPE to consider another kind of ellipsis involving symmetrical predicates.

6 Transitivity switching and focus membership

This section introduces another kind of ellipsis involving symmetrical predicates, which I dub ‘transitivity switching VPE’. Exemplified in (72), our semantic identity condition on ellipsis correctly predicts transitivity switch mismatches, and some related data from Webber (1978), to be possible (section 6.1):

(72) a. John$_1$ wanted to meet Mary$_2$, and (in the end) they$_{1+2}$ DID$_F$ meet.

b. John$_1$ and Mary$_2$ met, because she$_2$ wanted to meet him$_1$.

In combination with participant switching VPE, transitivity switching VPE will allow us to adjudicate among theories of how much semantic identity is required to license ellipsis. The discussion concludes that focus membership only needs to hold in one direction, namely A ∈ F(E) as in (21) and (27) above; and that it is not necessary for it to hold the other way round, i.e. E ∈ F(A) (section 6.2):

6.1 Transitivity switch mismatches

Transitivity switching VPE presents a problem for syntactic identity, since an object DP comes and goes between the antecedent and elided VPs in (72). In (72a) the antecedent VP is transitive, but the elided VP is intransitive. Conversely in (72b), the antecedent VP is intransitive, and the elided VP is transitive.

As with participant switching, transitivity switching VPE is licensed by virtue of the symmetry of the predicate, which supports focus membership. Symmetrical predicates like *meet* have the entailment pattern indicated in (73): intransitive *meet* entails both transitive alternates, which in turn individually entail back to the intransitive. Hence the equalities in (74) hold:
(73) John and Mary met $\iff$ John met Mary $\land$ Mary met John

(74) $meet'(j + m) = meet'(j, m) = meet'(m, j)$

These equalities are impervious to how the meeting event is stated syntactically, allowing focus membership to go through and license the transitivity switching ellipses in (72), as in (75) and (76).\(^{17}\)

(75) John\textsubscript{1} wanted to meet Mary\textsubscript{2}, and (in the end) they\textsubscript{1+2} DID\textsubscript{F} meet.

$\varepsilon = meet$

$A =$ John wanted PRO\textsubscript{j} to meet Mary

$[A] = want'(meet'(j, m))(j) = want'(meet'(j + m))(j)$

$E =$ They VERUM\textsubscript{F} meet $\quad [E] =$ FOR-SURE($meet'(j + m)$)

$F(E) =$ \{it is for sure true that Mary and John met, it is possible that Mary and John met, …, Sue wanted/expected that Mary and John met, John wanted that Mary and John met, …\}$

$[A] \in F(E)$ and $[A] \neq [E]$

(76) John\textsubscript{1} and Mary\textsubscript{2} met, because she WANted\textsubscript{F} to meet him\textsubscript{1}.

$\varepsilon =$ meet him\textsubscript{1}

$A =$ John and Mary met

$[A] = meet'(j + m) = meet'(m, j)$

$E =$ Mary WANT\textsubscript{F} to meet John $\quad [E] =$ want'($meet'(m, j))(m)$

$F(E) =$ \{Mary wants Mary meet John, Mary expects Mary meet John, Mary hopes Mary meet John, … Mary meet John, …\}$

$[A] \in F(E)$ and $[A] \neq [E]$

Similar examples to transitivity switching were observed by Webber (1978) and taken up by Daniel Hardt. Consider first (77) (Webber 1978: 128, 165):

(77) Irv and Martha want to dance together, but Martha can’t dance with Irv, since her husband is here.
Hardt (2004, 2007) advances an account of the interpretation of the ellipsis site in (77) in terms of repair. The antecedent VP cannot be plugged directly into the ellipsis site, since ungrammaticality would result from the clash between a singular subject and the plurality-seeking *together*, as in (78):

(78) * Martha can’t dance together.

This semantically unacceptable agreement violation triggers inferencing from Irv and Mary wanting to dance together to Mary wanting to dance with Irv. Since there is no such violation in (79), no such inferencing is required or allowed; the ellipsis site can only be resolved as *dance together*, not *dance with Irv*:

(79) Irv and Martha wanted to dance together, but Tom and Susan didn’t want to dance together / *dance with Irv.*

Our analysis based on focus membership accounts for (77) and (79) without invoking repair. Focus membership is satisfied in (77) along the same lines as (76); while focus membership would fail on the unavailable switch interpretation of (79), informally since Irv and Martha dancing together is not a member of alternatives to some other people wanting to dance with just Irv.

Moreover, transitivity switching is possible in the absence of an unacceptable agreement trigger like *together*. This point is obscured by the plurality-seeking *meet* in (76), where the ellipsis site could not be resolved merely by the ungrammatical *Martha met*. But a transitivity switch reading remains available in (80); this despite the grammaticality of *Martha danced*, and in the absence of anything else to trigger inferencing:

(80) Irv and Martha want to dance, but Martha can’t dance with Irv, since her husband is here.

Hardt (1993a,b) first proposed the triggering analysis based on the slightly different example from Webber (1978: 165) in (81), with *each other* rather than *together*:
(81) Irv and Martha want to dance with each other, but Martha can’t
dance with Irv, since her husband is here.

Again, the antecedent VP cannot be plugged directly into the ellipsis site, since
ungrammaticality would result from the reciprocal each other lacking a local plural
binder, as in (82):

(82) * Martha can’t dance with each other.

This semantically unacceptable agreement violation triggers repair. Drawing on the
analysis of reciprocals in Heim et al. (1991), Hardt assumes that each other makes
two separate semantic contributions: each is a distributive operator (DIST) applied to
the VP; while other is a variable that is bound outside the VP. Hence the structure of
the antecedent in (81) is as in (83):

(83) Irv and Martha [vp DIST [vp λx.want(x, dance(x, y))]]

Ellipsis repair discards the distributive contribution of each, but retains the variable
contributed by other. In the ellipsis site, this variable is free, and its referent is deter-
mined by the context. In (81), it is resolved the salient individual, Irv.

This account predicts that, given sufficient salience, the variable could be re-
solved to someone other than Irv. But this is not the case. Recall (51) from section
5.3, repeated here:

(51) Bill_3 wanted John_1 to meet Mary_2, and (in the end) she_2 DID_F meet him_1/3.

Hardt’s analysis incorrectly predicts that the variable in the ellipsis site can be re-
solved to Bill, who is salient as the attitude holder. Our account, on the other hand,
correctly excludes this possibility: focus membership only holds via symmetry if the
switching participants remain constant between A and E. The same is true of (84)
with each other, even when trying to push the ‘Bill’ reading with the surrounding
context:

(84) Bill_3 wanted John_1 to meet each other, and (in the end) she_2 DID_F meet him_1/3.
Bill likes Mary, but accepts that John and Mary want to dance with each other. Unfortunately, Mary can't dance with John/Bill, since her husband is here.

In sum, the semantic identity condition of focus membership plus proper contrast, motivated and applied to participant switching above, also accurately captures transitivity switching VPE, without recourse to a notion of repair. Despite the syntactic transitivity differences, each way of saying John and Mary met or John met Mary or Mary met John amount to the same meaning.

This much is true of a fully symmetrical predicate, like meet. The next subsection presents the behaviour of partially symmetrical predicates as kiss in participant and transitivity switching VPE, and applies it to the question of whether focus membership needs to be satisfied in one direction, or also that E needs to be a member of the focus value of A.

### 6.2 Unidirectional entailment

In the first half of section 4, we adopted (21) as part of our semantic parallelism condition on ellipsis, repeated here (Rooth (1992b), followed by e.g. Heim 1997; Fox 1999; Fox 2000: 85, ex. 16; Takahashi and Fox 2005):

\[(21) \quad \text{The focus membership condition:} \]

\[\text{For } \varepsilon \text{ to be elided, } \varepsilon \text{ must be inside a phrase } E \text{ that has an antecedent } A \text{ s.t.:} \]

\[ [A] \in F(E) \]

In this section, we return to the focus membership condition, and use participant and transitivity switching VPE to show that the statement of it in (21) is correct. In particular, the condition in (21) places only a 'one-way' requirement on focus membership: A is required to be a member of the focus alternatives to E, but not the other way round. That is, there is no requirement for E to be a member of the focus al-
ternatives to A. However, a ‘two-way’ version of the focus membership condition has been entertained. Merchant (2001) does so in terms of entailment, requiring the antecedent and elided VPs to be mutually entailing, modulo focus closure; while Griffiths (2019) does so in terms of focus membership, along the lines of (85):

(85) The double focus membership condition:

For ε to be elided, ε must be inside a phrase E that has an antecedent A s.t.:

\[ [A] \in F(E) \text{ and } [E] \in F(A) \]

All of the grammatical examples in the paper so far could be made to conform to the ‘two-way’ version of focus membership in (85), with certain assumptions about F-marking in A. For example, (38) from above would pass the double focus membership condition providing the subject of the first conjunct is F-marked in addition to the subject of the second, as in (86):

(86) JOHN\textsubscript{1,F} wanted to meet Mary\textsubscript{2}, and SHE\textsubscript{2,F} did \textit{want to meet him\textsubscript{1}}, too.

\[ \varepsilon = \text{want to meet him}_1 \]
\[ A = \text{JOHN}_F \text{ want PRO}_j \text{ meet } \text{Mary} \]
\[ [A] = \text{want'}(\text{meet'}(j, m))(j) = \text{want'}(\text{meet'}(m, j))(j) \]
\[ F(A) = \{ \text{want'}(\text{meet'}(j, m))(x) \mid x \in D_e \} \]
\[ E = \text{MARY}_F \text{ want PRO}_m \text{ meet } \text{John} \]
\[ [E] = \text{want'}(\text{meet'}(m, j))(m) = \text{want'}(\text{meet'}(j, m))(m) \]
\[ F(E) = \{ \text{want'}(\text{meet'}(m, j))(x) \mid x \in D_e \} \]
\[ [A] \in F(E) \text{ and } [E] \in F(A) \]
\[ \text{and } [A] \neq [E] \]

In detail, A now contains focus on the subject in addition to E. The focus values of A and E are the same: the set of all propositions of someone wanting Mary and John to meet. Just as A was a member of the focus value of E before, now E is also a member of the focus value of A.
However, while our examples so far would all be compatible with either the one-
(21) or two- (85) way version of the focus membership condition, the behaviour of
partially symmetrical predicates under participant and transitivity switching VPE
supports the one-way version in (21).

Fully symmetrical predicates like *meet* have the entailment pattern from (73).
Intransitive *meet* entails both transitive alternates, which in turn (individually) entail
back to the intransitive. By contrast, partially symmetrical predicates like *kiss* have
the entailment pattern in (87). In its intransitive guise, *kiss* is symmetrical, denoting a
mutual kiss (on the lips) that entails the two transitive conjuncts. But in its transitive
guise, *kiss* is not symmetrical, since it denotes a unidirectional kiss (on the cheek):\(^{19}\)

\[(73) \quad \text{John and Mary met} \iff \text{John met Mary} \land \text{Mary met John}\]

\[(87) \quad \text{John and Mary kissed} \implies \text{John kissed Mary} \land \text{Mary kissed John}\]

Given the symmetry generalisation from section 2, it is unsurprising that non-
symmetrical transitive *kiss* does not support participant switching VPE. Just as with
non-symmetrical *criticise* in (40) above, focus membership fails as in (88). Inform-
ally, John wanting John to kiss Mary is not a member of the set of someone want-
ing Mary to kiss John, since transitive *kiss* is not symmetrical:

\[(88) \quad \ast \text{John}_1 \text{ wanted to kiss Mary}_2, \text{ and SHE}_{2,F} \text{ did want to kiss him}_1, \text{ too.} \]

\[\varepsilon = \text{want to kiss him}_1\]

\[A = \text{John want PRO}_j \text{ kiss Mary} \quad [A] = \text{want}'(\text{kiss}'(m)(j))(j)\]

\[E = \text{MARY}_F \text{ want PRO}_m \text{ kiss John} \quad [E] = \text{want}'(\text{kiss}'(j)(m))(m)\]

\[F(E) = \{\text{want}'(\text{kiss}'(j)(m))(x) \mid x \in D_{\varepsilon}\} \quad [A] \notin F(E)\]

In detail, the elided constituent \(\varepsilon\) is *want to kiss him\(_1\)*. Parallelism is evaluated at the
level of the entire conjunct of each clause, setting E to \(\text{MARY}_F \text{ want PRO}_m \text{ to kiss him}_1\). E contains focus on the subject, so its focus value is the set of all propositions
of someone wanting Mary to kiss John. Setting A also at the full clause level, focus
membership is not satisfied, since transitive kiss is not symmetrical: John kissing
Mary is not the same as Mary kissing John. Thus, without symmetry, participant
switching with kiss is correctly ruled out as focus membership failure: A is not a
member of the focus value of E.

Tellingly, intransitive kiss only partially supports transitivity switching VPE. In
(89), kiss does not support transitivity switching from transitive to intransitive. Inform-
ally, John kissing Mary transitively (on the cheek) is not a member of the alternatives to John and Mary sharing a mutual kiss (on the lips):

(89) ?? John₁ kissed Mary₂, because they₁⁺₂ WANTEDₚ to kiss.

ε = kiss
A = John kiss Mary

\[ A = \textit{kiss'}(m)(j) \]

E = they WANTₚ PRO_{j+m} kiss  \[ E = \textit{want}(\textit{kiss'}(j+m))(j+m) \]

F(E) = \{ John and Mary want John and Mary kiss, 
John and Mary expect John and Mary kiss, ...

John and Mary kissed, ...
\}

\[ A \notin F(E) \]

Thus switching from transitive to intransitive is not possible with kiss, since A is not
a member of the focus value of E.

In (90), however, kiss supports switching from intransitive to transitive. To ac-
count for this, we have to allow focus membership to be satisfied not quite by A it-
self, but by A' an entailment of A, aka indirect parallelism (Fox, 2000) (see also note
18):

(90) John₁ and Mary₂ kissed, because she₂ WANTEDₚ to kiss him₁.

ε = kiss him₁
A = John and Mary kiss

\[ A = \textit{kiss'}(j+m) \Rightarrow [A'] = \textit{kiss'}(j)(m) \]
\[ E = \text{Mary WANT}_F \ \text{PRO}_m \ \text{kiss John} \quad [E] = \text{want}(\text{kiss}'(j)(m))(m) \]

\[ F(E) = \{ \ \text{Mary want Mary kiss John, Mary expect Mary kiss John,} \]

\[ \text{Mary kiss John, ... } \}

\[ [A'] \in F(E) \text{ and } [A'] \neq [E] \]

Thus the one-way version of focus membership correctly predicts switching from intransitive to transitive in (90) to be grammatical, with the partial symmetry of kiss supporting the entailment from A to A’, a member of the focus value of E.

However, the two-way version of focus membership would make the wrong prediction for (90). Focus membership does not go through from E to A. The failed calculation would be the same as (89), with A and E switched around. Nor does E entail an E’ that is a member of F(A), since a transitive, directional kiss does not entail an intransitive, symmetrical one. Thus the two-way version of focus membership would incorrectly predict switching from intransitive to transitive in (90) to be ungrammatical.

In sum, the behaviour of a partially symmetrical predicate like kiss provides evidence for a one-way requirement on focus membership (21) (Rooth, 1992b; Fox, 2000) and against a two-way version (85) (Griffiths 2019, cf. Merchant 2001): A has to be a member of the focus value of E, but there is no requirement that E be a member of the focus value of A. 20 Therefore the statement of the semantic parallelism identity condition on ellipsis from (27), including one-way focus membership, stands.

7 Conclusion

This paper applied novel data from verb phrase ellipsis with symmetrical predicates to the issue of identity in ellipsis licensing. In participant switching VPE, the subject and object participants can switch between antecedent and ellipsis when the predi-
cate is symmetrical. Such switching engenders a tolerable syntactic mismatch, which cannot always be circumvented by partial control PRO. This syntactic non-identity urged an analysis in terms of semantic identity. Independent of participant switching VPE, there is evidence that the widely adopted focus membership condition (Rooth, 1992b; Fox, 2000) needs to be strengthened by a requirement for ‘proper’ contrast (Griffiths, 2019; Stockwell, 2018). Combined with focus membership, the contrast condition stood us in good stead in accounting for participant switching VPE. In particular, it urged us to consider VERUM focus, which explained the restriction to intensional rather than extensional predicates, and ruled out some ungrammatical instances of participant switching VPE as contrast failures. Further, we saw that negation generally counts for contrast, except when it contradicts the symmetry by which ellipsis would be licensed. Finally, the behaviour of partially symmetrical predicates like kiss in transitivity switching VPE supported a one-way (Rooth, 1992b; Fox, 2000) rather than a two-way (Merchant, 2001; Griffiths, 2019) focus membership condition.
References


Notes


Last retrieved 2019-10-12.

2These predicates are semantically symmetrical, putting aside the non-truth-conditional Figure-Ground (Talmy, 1983) information structure contributions of syntax (Gleitman et al., 1996).

3It is the symmetric semantic contribution of the with-phrase that is crucial, rather than its syntax — participant switching VPE is not licensed by with in the non-symmetrical idiom mess with in (i):

(i) * John₁ conspired to mess with Mary₂, but she₂ didn’t want to
    mess with him₁.

4For a given speaker, the availability of the reading in (10b) seems to correlate with the availability of a reading of (ii) that omits the VP-adverb from the elided VP, as in (iib), in addition to the universally preferred (iia):

(ii) John scarpered quickly, and Mary did too.
    a. John scarpered quickly, and Mary did scarper quickly too.
    b. John scarpered quickly, and Mary did scarper too.

5Or work with John — see note 7.

6The presence of the pronoun in the ellipsis site is independently detectable in (iii), where the ungrammaticality of (iiiia) is due to a Condition B effect in (iiiib):

(iii) a. * Mary admires John₁, and he₁ does, too.
    b. * Mary admires John₁, and he₁ does admire him₁, too.

7The ellipsis site in (18) could equally well contain the proper name John rather than the pronoun him, since there is no potential condition for a condition C violation as would arise in (17). I arbitrarily show pronouns in the ellipsis site of participant switching VPE throughout.

8In this definition, inside is shorthand for non-proper containment; i.e. ε can be dominated by E, as in (23), or ε can be E, as in (24).
9 I assume that verb phrase ellipsis targets ‘big-V’P rather than ‘little-v’P, if only to avoid unnecessary complications concerning vP-internal subjects.

10 Cf. Rooth (1992a) for focus, discussed with respect to (29) below.

11 Focus membership only holds in (36) if PRO is taken to contribute its referent. Strictly speaking, obligatory control PRO does not directly contribute a referent, but is interpreted de se, contributing candidates for who the attitude holder takes themself to be. It is apparently sufficient for ellipsis licensing that focus membership holds via symmetry based on PRO contributing as a referent the ‘best counterpart’ of John — namely, John, as in (38). Taking account of the de se semantics of PRO, focus membership would fail. Abstracting away from world variables, this point is made in (iv):

(iv) John1 wanted to meet Mary2, and SHE2,F wanted to meet him1, too.

ε = want to meet him1

A = John want PRO meet Mary

\([A] = want'((\lambda y.\text{meet'}(y,m))(j)) = want'((\lambda y.\text{meet'}(m,y))(j))\)

E = MARY,F want PRO meet John

\([E] = want'((\lambda y.\text{meet'}(y,j))(m))\)

F(E) = \{want'((\lambda y.\text{meet'}(y,j))(x)) \mid x \in D_e\}

\([A] \notin F(E)\)

In detail, the elided constituent ε is meet him1, and parallelism is evaluated at the level of the entire conjunct of each clause, as before. The focus value of E is the set of all propositions of someone wanting a meeting between who they take themselves to be and John. A now means that John wants a meeting between who he takes himself to be and Mary, which by symmetry means the same as John wanting a meeting between Mary and who he takes himself to be. But focus membership does not hold here. Both A and E are about a meeting where one participant is the candidate for oneself; but the other participant differs: Mary in A versus John in E.

All this said about PRO, it is worth emphasising again that participant switching VPE is not completely bound up with PRO as an empirical phenomenon — recall (15) without PRO above the ellipsis site, and the raising-to-object examples (1) and (16), where there is no PRO at all. Moreover, this issue regarding PRO and identity in ellipsis is completely independent of participant switching — see note 13, below.

12 VERUM is a conversational epistemic operator that asserts that the speaker is certain that p should be added to the Common Ground. Epix(w) is the set of worlds that conform to x’s knowledge in w, Convx(w’) is the set of worlds where all the conversational goals of x in w’ are fulfilled,
and CG_{w} is the Common Ground or set of propositions that the speakers assume in w” to be true (Stalnaker, 1978).

13Hardt and Romero (2004: 406, ex. 99) take PRO to contribute its referent, without comment; the meaning of \( A = \) [John wanted PRO to go to Rome] is in F(E) courtesy of an alternative to E being [John wanted that John goes to Rome]. Recall note 11.

14See also the various verbs in the examples in section 2.

15The other contrast condition failures surveyed in section 4.2 are also rescued by contrast between positive and negative, as shown in (v) for iteration (31) and so-called MaxElide effects (32):

\[(v) \quad a. \ \text{They talked and they DIDN’T talk and they DID talk.} \]
\[b. \ \text{John will kiss someone, but I don’t know who he WON’T kiss.} \]

Any ameliorating effect of negation in satisfying contrast for ellipsis licensing in contradictory versions of the conditional from (25) and the free relative from (30) would be very difficult to detect, since the fully pronounced versions in (vi) are so non-sensical:

\[(vi) \quad a. \ \text{If John left, then he didn’t leave.} \]
\[b. \ \text{John eats what he doesn’t eat.} \]

16For sure, (64) and (65) attribute inconsistent desires to the attitude holders Bill and John; but ellipsis licensing does not seem to mind this.

17As well as the symmetry of meet, focus membership holds in (76) by virtue of F-marking on WANT. Intuitively, something actually happening is an alternative to someone wanting it to happen. Compositionally, we can say that an alternative to want’ of the same type is the identity function \( \lambda p \lambda x. p \). Like the question surrounding PRO and reference discussed in notes 11 and 13, this issue is entirely independent of VPE with symmetrical predicates; e.g. (vii):

\[(vii) \quad \text{Mary came because she wanted to come.} \]

18Cf. Fox’s (2000) distinction between ellipsis and deaccenting. Further inferencing of the sort required to achieve semantic parallelism in cases of Rooth’s (1992b) implicative bridging is triggered by the new, deaccented, accommodation-seeking lexical material that is present in E but not in A, as in (viii):

\[(viii) \quad \text{She called him a Republican, and then [HE₁, F insulted HE₁, F]} \]
Prosodic redundancy marking of *insulted* in the second conjunct is licensed by entailment, based on the presupposed axiom: “if x calls y a Republican, then x insults y”. From this axiom is derived *insult(x, y)*, which is the contrasting proposition for focus interpretation in the second conjunct, *insult(y, x)*. In the absence of deaccented, accommodation-seeking material in ellipsis, the implicative bridging reading is unavailable, as in (ix):

(ix) * She\(_1\) called him\(_2\) a Republican and then [HE\(_{2,F}\) did *insulted her\(_1\)*]

19 See Winter (2018), who terms predicates like *meet* plain reciprocals, and those like *kiss* pseudo reciprocals.

For a review of other challenges to mutual entailment, see Hartman (2009). For example, mutual entailment incorrectly predicts that ellipsis should be licensed in (x), since relational opposites entail one another:

(x) * John will beat someone at chess, and then Mary will *lose to someone at chess*. 