Symmetrical predicates in verb phrase ellipsis

29 March 2021

0 Abstract

This paper studies the behaviour of symmetrical predicates (e.g. *meet, dance with*) in verb phrase ellipsis. In adding to the literature on ellipsis mismatches, it engages with the issue of identity in ellipsis licensing. 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 focus-based semantic identity condition on ellipsis: ellipsis must be contained in a phrase with a semantically parallel antecedent (Rooth 1992b et seq.); and in addition, the phrase containing ellipsis must contrast with its antecedent (Stockwell 2018; Griffiths 2019). Furthermore, transitivity switching with partially symmetrical predicates (e.g. *kiss*) shows that the semantic parallelism is enforced in only one direction between antecedent and ellipsis (Rooth 1992b, Fox 2000) rather than both (Merchant 2001, Griffiths 2019).

Keywords: verb phrase ellipsis, symmetry, ellipsis identity, semantic parallelism, focus, contrast

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).[1] On its intended interpretation, the naturally occurring newspaper headline in (a) questions whether the Tories will let Cameron work with Merkel. This interpretation is represented in (b), 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 $\text{Cameron}_{\text{j}}$ on EU —
but will Tories let him_{j} ~~work with her_{i}~~?

Example (1) exemplifies what I dub 'participant switching verb phrase ellipsis'. The participants switch over between the conjuncts: *Merkel* is the subject of the first conjunct, but the object of the second; while *Cameron* is the object of the first conjunct but the subject of the second. VPE is licensed despite the mismatching objects across the VPs.

Constructed examples of participant switching VPE are given in (2) and (3). Again, subject and object switch between antecedent and ellipsis. With primary focus on *SHE* (indicated by capitalisation), ellipsis can apply to the lower VP (a) or the higher VP (b). With primary focus on *DID(N'T)*, ellipsis can apply to the lower VP to the exclusion of the higher (c):

(2) a. John_1 wanted to dance with Mary_2, but SHE_2 didn't want to
~~dance with him_1~~.

b. John_1 wanted to dance with Mary_2, but SHE_2 didn't
~~want to dance with him_1~~.

c. John_1 wanted to dance with Mary_2, but (in the end) she_2 DIDN'T
~~dance with him_1~~.

(3) a. John$_1$ wanted to meet Mary$_2$, and SHE$_2$ wanted to ~~meet him$_1$~~, too.

b. John$_1$ wanted to meet Mary$_2$, and SHE$_2$ did ~~want to meet him$_1$~~, too.

c. John$_1$ wanted to meet Mary$_2$, and (as things turned out) she$_2$ DID ~~meet him$_1$~~.

In overview, this paper shows that participant switching VPE is possible only with symmetrical predicates — e.g. *work with* (1), *dance with* (2), *meet* (3) — and argues that the syntactic object mismatch is irrelevant to a semantic identity condition on ellipsis comprising focus membership and 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 (Rooth 1992b; Fox 2000), and shows how it accounts for the symmetry generalisation and obligatory switching. Section 5 argues that participant switching VPE motivates an additional requirement for contrast (cf. Stockwell 2018; Griffiths 2019), which in turn urges consideration of verum focus and negation. Lastly, section 6 marshals data from 'transitivity switching VPE' to show that the focus membership condition is enforced in only one direction from antecedent to 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. The generalisation is that participant switching VPE 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 conform to the definition of symmetry in (4):[2]

(4) Symmetry: For all x, y: $R(x,y) \leftrightarrow R(y,x)$

For example, if person x meets person y, it follows automatically that y meets x, and vice versa.

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

(5) * John_1 criticised Mary_2, even though she_2 wasn't supposed to ~~criticise him_1~~.

While participant switching VPE relies crucially on symmetry, it is indifferent as to whether the symmetry is lexical or derived. With *meet* in (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):

(6) John_1 yearned to marry Mary_2, and she_2 did ~~yearn to marry him_1~~, too.

For *work with* from (1), on the other hand, symmetry is derived by adjoining a *with*-prepositional phrase to the otherwise non-symmetrical *work*, adding a co-agent in the event (Siloni 2012). The *with*-phrase likewise derives a symmetrical predicate from non-symmetrical *build a house* in (7):[3]

(7) John_1 intended to build a house with Mary_2, but she_2 most certainly did not ~~intend to build a house with him_1~~.

Lastly, *dance with* in (2) presents an intermediate case between lexical and derived symmetry. Intransitive *dance* is not symmetric when it takes an individual subject or a plural subject interpreted distributively. But *dance* is symmetric when it takes a plural subject interpreted collectively, or after the addition of a *with*-phrase. A similar case is *talk with* in (8):

(8) John_1 hoped to talk with Mary_2, but she_2 hoped not to have to ~~talk with him_1~~.

Participant switch readings are genuinely available. Lexically symmetrical predicates like *meet* require co-participants; viz. the ungrammaticality of **Mary met*. Throughout (3), therefore, the interpretation of the elliptical second conjunct must include a co-participant; the most obvious candidate being *John* from the first conjunct.[4] Thus a participant switch reading results.

Participant switch readings are likewise genuinely available with derived symmetrical predicates. Consider the reconstructed version of (1) involving *work with* in (9). The participant switch reading is indicated in (a). However, the reading in (b) is also available where the ellipsis is resolved using only the verb, to the exclusion of the *with*-phrase.[5] This way of resolving the ellipsis is obligatory when there is an overt contrasting *with*-phrase, as in (c). One might then object that the 'verb only' reading in (b) is in fact the only reading of (9), since it entails the participant switch reading from (a) — if Mary doesn't want to work, it follows that she doesn't want to work with anyone, John included:

(9) John$_1$ wanted to work with Mary$_2$, but she$_2$ didn't want to.

a. John$_1$ wanted to work with Mary$_2$, but she$_2$ didn't want to ~~work with him$_1$~~.

b. John$_1$ wanted to work with Mary$_2$, but she$_2$ didn't want to ~~work~~.

c. John$_1$ wanted to work with Mary$_2$, but she$_2$ didn't want to ~~work~~ with Bill$_3$.

d. John$_1$ wanted to work with Mary$_2$, but she$_2$ didn't want to ~~work with him$_1$~~ / # ~~work~~. She$_2$ was only willing to work with Bill$_3$.

e. Mary$_2$ was perfectly willing to work, but only with Bill$_3$. John$_1$ really wanted to work with Mary$_2$. But since Mary$_2$ got her$_2$ way, she$_2$ didn't have to
~~work with John$_1$~~ / # ~~work~~.

However, the existence of the participant switch reading is confirmed by the felicity of (d). The continuation follows on naturally from the participant switch reading in (a) —

Mary may not want to work with John, but she could still be perfectly happy to work with someone else. By contrast, the continuation contradicts the second conjunct of (b): being happy to work with Bill is incompatible with Mary not wanting to work at all. Parallel reasoning applies to (e). This time, the sentence contradicting the 'verb only' reading precedes the elliptical one; thus the participant switch reading is the only one available on encountering the ellipsis site. Notice that the preceding sentence still does not provide a direct antecedent for ellipsis of *work with John*; this interpretation arises only via participant switching. We therefore conclude that the participant switch reading indicated in (a) is a genuine reading of (9).

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. Before undertaking that task in sections 4 and 5, the next section considers how participant switch readings might be syntactically supported, and the challenge this poses to syntactic identity in ellipsis.

3 Syntax and non-identity

This section situates VPE with symmetrical predicates in the context of identity. Theories differ as to whether VPE is subject to fundamentally syntactic (e.g. Chomsky 1965, Sag 1976, Williams 1977, Fiengo & May 1994) or semantic identity conditions. Among theories in terms of semantic identity, there is a further division regarding the presence of syntactic structure in the ellipsis site (e.g. Sag & Hankamer 1984, Rooth 1992b, Merchant 2001) or its absence (e.g. Dalrymple et al. 1991, Hardt 1993, Ginzburg & Sag 2000). As urged by the semantic generalisation of symmetry, the following sections will argue that participant switching VPE is best explained by a semantic identity condition. This section shows that if there is syntactic structure in participant switching ellipsis sites, it is not identical with its antecedent.

The previous section established that there are genuine participant switch readings with symmetrical predicates in VPE. The way participant switch readings have been indicated so far — 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. As represented in (10), for example, simplistic syntactic identity does not hold. The antecedent VP is *work with Mary*, whereas the elided VP is *work with him*.[6] Despite this mismatch in form, ellipsis is licensed:

(10) John$_1$ wanted to work with Mary$_2$, but she$_2$ didn't want to ~~work with him$_1$~~.

This section presents the challenge that VPE with symmetrical predicates poses to syntactic identity in ellipsis. The first three subsections consider attempts to reconcile participant switched interpretations with syntactically identical structures. However, attempts to do so in terms of partial control *PRO*, Vehicle Change, and voice mismatch fail. All the while, the challenge posed to syntactic identity does not amount to an argument in favour of purely anaphoric theories of ellipsis, where the ellipsis site is a pro-form resolved in discourse (e.g. Dalrymple et al. 1991, Hardt 1993, Ginzburg & Sag 2000). As reviewed in the final subsection, a standard argument for the presence of syntactic structure in ellipsis sites can be run no less well on participant switching VPE. The conclusion will be that syntactic mismatches of the limited kind involved in VPE with symmetrical predicates must be tolerated, with their grammaticality resting far more on the semantic factors discussed in sections 4 and 5.

3.1 Partial control *PRO*

This subsection considers an attempt to represent participant switching VPE with greater syntactic identity between the ellipsis and its antecedent in terms of partial control *PRO*.

To begin, notice that a more complete representation of (10) would include an obligatory control *PRO* above both the antecedent and elided VPs, as in (11):

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

It might then be countered that the ellipsis site does not take the form indicated in (10) and (11), but rather includes only the verb *work*. The participant switch reading would then be supported by a partial control *PRO* above the ellipsis site, as in (12) — *PRO*$_{1+2}$ is partially controlled by *she*$_2$, with *John*$_1$'s index added:

(12) John$_1$ wanted to PRO$_1$ work with Mary$_2$, but she$_2$ didn't want PRO$_{1+2}$ to ~~work~~.

The representation in (12) makes significant progress towards syntactic identity. The direct mismatch between *Mary* and *him* in (10) has been replaced by a mismatch in the presence of a *with*-phrase in the antecedent, *work with Mary*, and its absence from the ellipsis site, *work*. This structure might begin to lend itself to a syntactic identity condition on ellipsis in terms of non-distinctness (Chomsky 1965, Ranero 2019), and where reduction in structure is tolerated from antecedent to ellipsis (Thoms 2013, at least for adjuncts). Meanwhile, the difference between exhaustive and partially controlled *PRO* is semantic, and in any case lies above the ellipsis site.

However, the steps taken towards syntactic identity in (12) rely on the presence of partial control *PRO*, while participant switching VPE does not. In (13), a participant switch reading is possible, just as much as for (10). Since the elided VP is not introduced by a control verb, the only structural representation available to support the participant switch reading is (a), involving a mismatching *with*-phrase; the representations in (b) and (c), with *PRO* above the ellipsis site, are ruled out. Similar considerations apply to (14), where there is additionally no *PRO* in the antecedent clause:

(13) John$_1$ wanted to work with Mary$_2$, but (in the end) she$_2$ DIDN'T.

a. John$_1$ wanted PRO$_1$ to work with Mary$_2$, but she$_2$ DIDN'T ~~work with him$_1$~~.

b. ✗ John$_1$ wanted PRO$_1$ to work with Mary$_2$, but she$_2$ DIDN'T PRO$_{1+2}$ ~~work~~.

c. ✗ John$_1$ wanted PRO$_1$ to work with Mary$_2$, but she$_2$ DIDN'T PRO$_2$ ~~work with him$_1$~~.

(14) Bill$_3$ expected John$_1$ to work with Mary$_2$, and (in the end) she$_2$ DID ~~work with him$_1$~~.

Still, one might object that the ellipsis site could syntactically contain just *work* in (13) and (14). Notwithstanding the contextualisations in (9) in the previous section, the participant switched interpretation might arise from extra-grammatical reasoning about plausible situations. This objection rests on plain intransitive *work* being a grammatical possibility as the ellipsis; viz. *Mary worked*. However, as foreshadowed by the remarks on *meet* in the previous section, there is no plain intransitive option with collective predicates, which require co-participants; viz. **Mary met*. In (15), where there are no *PRO*s, mismatching direct objects are the only way that the participant switch reading can be grammatically represented:

(15) Bill$_3$ expected John$_1$ to meet Mary$_2$, and (in the end) she$_2$ DID ~~meet him$_1$~~ / *~~meet~~.

A parallel point can be made for mismatching *with*-phrases rather than mismatching direct objects based on (16), which adds *with* to (15):

(16) Bill$_3$ expected John$_1$ to meet with Mary$_2$, and (in the end) she$_2$ DID ~~meet with him$_1$~~ / *~~meet~~.

In conclusion, syntactically identical representations of participant switch readings cannot be achieved by appealing to partial control *PRO*. Rather, if syntactic structure is present in participant switching VPE, it must be allowed to mismatch with its antecedent.

3.2 Vehicle Change

The previous subsection concluded that the mismatches involving *with*-phrases and direct objects in participant switching VPE cannot be explained away in terms of partial control *PRO*. A second attempt at reconciling these mismatches with syntactic identity might be to try and reduce them to other well-known mismatches under the rubric of Vehicle Change (Fiengo & 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.

A classic Vehicle Change paradigm is given in (17). The second conjunct of (a) is understood to mean that John thinks Sally admires John, based on *admires John* in the first conjunct. However, plugging *admires John* into the second conjunct is ungrammatical when fully pronounced in (b). The referring-expression $John_1$ is bound, since it is c-commanded by the coindexed pronoun he_1, giving rise to a Condition C effect. To the extent that ellipsis cannot render ungrammatical structures grammatical,[7] the badness of (b) means that the structure of (a) cannot be as in (c). Happily, the interpretation of (a) can also be represented with a pronoun in place of the name, which is grammatical when pronounced in (d). Following Fiengo & May (1994), the solution for representing (a) posits a pronoun in the ellipsis site, as in (e), yielding the available interpretation via a grammatical structure:[8]

(17) a. Mary admires John$_1$, and he$_1$ thinks Sally does, too.

b. * Mary admires John$_1$, and he$_1$ thinks Sally admires John$_1$, too.

c. ✗ Mary admires John$_1$, and he$_1$ thinks Sally does ~~admire John$_1$~~, too.

d. Mary admires John$_1$, and he$_1$ thinks Sally does admire him$_1$, too.

e. Mary admires John$_1$, and he$_1$ thinks Sally does ~~admire him$_1$~~, too.

Thus DPs can shift their binding-theoretic status from Referring expression (e.g.

John) to a pronoun (e.g. *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 in the object from Mary to John:[9]

(18) John$_1$ wanted to meet Mary$_2$, but she$_2$ didn't want to ~~meet him$_1$~~.

Hence Vehicle Change cannot reconcile participant switching VPE with syntactic identity.

3.3 Voice mismatch

Lastly, participant switching VPE cannot be reconciled with syntactic identity by assimilation to voice mismatches. Active-passive VPE mismatches like (19) are often highly acceptable (Merchant 2008a, 2013):

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

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

Notice from the contrast between (a) and (b), however, that the passive auxiliary *be* must be pronounced above the ellipsis site. Yet there is no such requirement for *be* to be pronounced above the ellipsis site in (20). This difference regarding *be* strongly favours representing the participant switch reading as in (a) over an elided passive structure like (b):

(20) John$_1$ wanted to meet Mary$_2$, but she$_2$ didn't want to.

a. John$_1$ wanted to meet Mary$_2$, but she$_2$ didn't want to ~~meet him$_1$~~.

b. ✗ John$_1$ wanted to meet Mary$_2$, but she$_2$ didn't want to ~~be met by him$_1$~~.

Furthermore, voice mismatch would fail to capture the necessity of symmetry to participant switched interpretations. Compare (20) involving symmetrical *meet* with (21) involving involving non-symmetrical *criticise*. Their contrasting grammaticality would not be reflected by the passive (b) representations, which share the same fault in eliding rather than pronouncing *be*:

(21) * John$_1$ wanted to criticise Mary$_2$, but she$_2$ didn't want to.

a. * John$_1$ wanted to criticise Mary$_2$, but she$_2$ didn't want to ~~criticise him$_1$~~.

b. ✗ John$_1$ wanted to criticise Mary$_2$, but she$_2$ didn't want to ~~be criticised by him$_1$~~.

In sum, assimilating participant switching VPE to voice mismatch fails on two counts, leaving unexplained why no passive auxiliary is pronounced, and missing the empirical generalisation of symmetry.

3.4 Interim summary

To summarise this section so far, 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 unavailable when the ellipsis site is not embedded under a control predicate. Further, the syntactic mismatch is not one that can be remedied by Vehicle Change or voice mismatch. Instead, it seems that limited syntactic non-identity must be tolerated in the face of participant switching VPE — ellipsis is licensed despite mismatching objects switching over between the antecedent and elided VPs.[10] At the same time, this challenge for syntactic identity does not amount to an argument in favour

of non-syntactic ellipsis sites. As the next subsection shows, a strong argument in favour of syntactic structure in ellipsis sites can be run perfectly well on participant switching VPE.

3.5 Syntactic structure in ellipsis sites

The challenge that participant switching VPE poses for syntactic identity might look to favour anaphoric theories of ellipsis over more heavily syntactic ones; that is, theories where the ellipsis site contains no more than a pro-form (e.g. Dalrymple et al. 1991, Hardt 1993, Ginzburg & Sag 2000) rather than syntactic structure that is deleted at PF (e.g. Merchant 2001). However, the question of whether syntactic structure is present is separate from the question of whether that syntactic structure is identical to an antecedent. This subsection shows that a central argument in favour of there being syntactic structure in the ellipsis site can be run on participant switching VPE just as well as plainer cases. The conclusion is that a limited amount of mismatch must be allowed in the syntactic structure that supports participant switch readings.

The argument runs as follows on (22) (Johnson 2001: 456f.). A'-movement requires a structurally represented lower position — a trace, or copy. This requirement should continue to hold in ellipsis sites, as indicated in (a). Overt pro-forms like *do so*, on the other hand, do not support A'-movement, as shown in (b):

(22) a. I know which car John bought *t*, and which car Mary did ~~buy *t*~~.

b. * I know which car John bought *t*, and which car Mary did so.

All else equal, overt and covert pro-forms are expected to behave the same way with respect to A'-movement. Hence the contrast between (a) and (b) argues in favour of syntactic structure in the ellipsis site, and against it consisting of a silent pro-form.

This argument can be run just as well on participant switching VPE. In (23), an object DP is topicalised out of the VPs by A'-movement. The participant switch reading remains

intact under ellipsis in (a). Parallel to the contrast in (22), however, the overt pro-form version of (a) is ungrammatical in (b):

(23) a. The waltz, John wanted to dance *t* with Mary;
but the tango, Mary didn't want to ~~dance *t* with John~~.

b. * The waltz, John wanted to dance *t* with Mary;
but the tango, Mary didn't want to do so.

The argument for structurally representing A'-movement from ellipsis sites is strengthened by its sensitivity to islands outside the ellipsis site (Haïk 1987). Adding a wh-island to the (a) examples from (22) and (23) results in ungrammaticality equally in (24) and (25):

(24) * I know which car John bought *t*, and which car Sarah asked why Mary did ~~buy *t*~~.

(25) * The waltz, John wanted to dance *t* with Mary; but the tango, Susan asked why Mary didn't want to ~~dance *t* with John~~.

Overall, if participant switching VPE is to be supported by syntactic structure inside the ellipsis site, it involves a tolerable syntactic mismatch. In any case, the empirical generalisation from the previous section — that participant switching VPE is licensed by symmetrical predicates — was a semantic one. The rest of this paper pursues an account of participant switching VPE in terms of semantic identity, comprising alternative-hood (section 4) and contrast (section 5). [11]

4 Alternative-hood

We saw in section 2 that participant switching VPE conforms to the semantic generalisation that the predicate must be symmetrical. And we saw in the previous section that,

in these semantically defined circumstances, participant switching VPE causes syntactic mismatches among direct objects and *with*-phrases. From the perspective of participant switching VPE, therefore, it is appropriate to pursue a semantic licensing condition for ellipsis.

The next two sections outline such a licensing condition and show how it accounts for participant switching VPE. Semantic identity is widely held to consist in finding an antecedent that is a member of the focus alternatives of a constituent containing ellipsis. This section introduces this 'alternative-hood' condition (section 4.1), and shows how it accounts for participant switching VPE (section 4.2) and the obligatory consistency of the symmetrical participants (section 4.3). The next section shows that alternative-hood is a necessary but not sufficient condition on VPE, which needs to be strengthened by a requirement for contrast.

4.1 Focus alternatives and ellipsis

Following Rooth (1992b), a great deal of research investigating the identity condition on VPE has hypothesised that ellipsis is subject to the focus-based condition in (26) (e.g., Heim 1997; Fox 1999, 2000; Drummond 2021; cf. Tancredi 1992):

(26) Ellipsis as alternative-hood:[12]

For ε to be elided, ε must be inside a phrase E that has an antecedent A such that: $[\![A]\!] \in F(E)$

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 the focus semantic value of E, F(E). F(E) is calculated by replacing F(ocus)-marked constituents in E with things of the same type and collecting the results into a set. If E does not contain any F-marked constituents, F(E) is the singleton set containing the ordinary value of E. In other words, F(E) is the set of alternatives to E. Hence (26) amounts to the requirement that A

be an alternative to E.

To take a simple example, ellipsis as alternative-hood correctly predicts ellipsis to be grammatical in (27):

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

Taking A and E to be the main clauses of each conjunct, and assuming focus on $BILL_F$, (26) is satisfied as in (28). Informally, John leaving is an alternative to Bill leaving:

(28) John left, and BILL_F did ~~leave~~, too. ε = leave

E = BILL_F left	$[\![\text{E}]\!]$ = leave'(b)	$\text{F(E)} = \{ \text{leave'(x)} \mid \text{x} \in \text{D}_\text{e} \}$
A = John left	$[\![\text{A}]\!]$ = leave'(j)	$[\![\text{A}]\!] \in \text{F(E)}$

In detail, the elided constituent ε is the predicate *leave*. Ellipsis is evaluated at the clause level, setting E to $BILL_F$ *left*. Since E contains a focused constituent, its focus value is the set of propositions of the fom *x leaves*, for each *x* in the domain of individuals. Setting A to *John left*, alternative-hood is satisfied.

In fact, ellipsis as alternative-hood permits two independent analyses of (27) (Rooth 1992b: exx. 22, 23; 32). In addition to taking A and E to be the main clauses in (28, focus membership can be satisfied just as well by taking A and E to be the VP of each conjunct, as in (29). Informally, leaving is a member of the focus value of leaving — the singleton set containing leaving:

(29) John left, and Bill did ~~leave~~, too. ε = leave

E = leave	$[\![\text{E}]\!]$ = leave'	$\text{F(E)} = \{ \text{leave'} \}$
A = leave	$[\![\text{A}]\!]$ = leave'	$[\![\text{A}]\!] \in \text{F(E)}$

The elided constituent ε is the predicate *leave*. This time parallelism is evaluated at the level of the elided material, setting E also to *leave*. Since E does not contain any focused constituents, its focus value is the singleton set containing its ordinary value. Setting A to *leave*, alternative-hood is satisfied trivially.

Thus the alternative-hood condition in (26) makes a 'doubly' correct prediction with respect to ellipsis in simple sentences like (27). Focus membership can be satisfied substantively, as in (28), where *leave'(j)* is one among the many members of the set { leave'(x) | x ∈ D_e }; or vacuously, as in (29), where *leave'* is a member — in fact, the only member — of the degenerate singleton set { leave' }.

The next subsection shows how the alternative-hood condition in (26) captures simple cases of participant switching VPE.

4.2 Symmetry and alternative-hood

Participant switching VPE submits to the focus membership condition by virtue of the symmetry of the predicate; for example, *meet* in (30):

(30) John$_1$ wanted to meet Mary$_2$, and she$_2$ wanted to ~~meet him$_1$~~, too.

The alternative-hood condition makes a 'doubly' correct prediction that ellipsis will be licensed in (30), but in a slightly different way than in (47). Notice first that evaluating parallelism at the level of the elided material, as we did in (47b), fails for (30) as in (31). Informally, a meeting involving Mary is different to a meeting involving John:

(31) ✗ John$_1$ wanted to meet Mary$_2$, and she$_2$ wanted to ~~meet him$_1$~~, too.

ε = meet him$_1$

A = meet Mary	$[\![A]\!]$ = λx. meet'(x,m)
E = meet John	$[\![E]\!]$ = λx. meet'(x,j)
F(E) = { λx. meet'(x,j) }	$[\![A]\!] \notin F(E)$

The elided constituent ε is *meet him$_1$*. Ellipsis is evaluated at the level of the elided material, setting E to *PRO$_m$ to meet him$_1$*. Since E does not contain any focus, its focus value is the singleton set containing its ordinary value. Setting A to *meet Mary*, alternative-hood fails — a meeting involving Mary is not a member of the set containing a meeting

involving John.

Still, evaluating ellipsis at either the embedded or main or clause level will succeed in satisfying alternative-hood. In both cases, the symmetry of *meet* is crucial. We begin with the embedded clause level in (32). Informally, John meeting Mary, which by symmetry means the same as Mary meeting John, is a member of the set containing Mary meeting John:[13]

(32) John_1 wanted to meet Mary_2, and she_2 wanted to ~~meet him_1~~, too.

ε = meet him_1

A = PRO_j to meet Mary $\quad$ $[\![A]\!]$ = meet'(j,m) = meet'(m,j)

E = PRO_m to meet John $\quad$ $[\![E]\!]$ = meet'(m,j)

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

The elided constituent ε is *meet him$_1$*. Parallelism is evaluated at the level of embedded clause, setting E to *PRO$_m$ to meet him$_1$*. Since E does not contain any focus, its focus value is the singleton set containing its ordinary value. Setting A to *PRO$_j$ to meet Mary*, alternative-hood is satisfied based on the trivial singleton, since by symmetry $[\![A]\!] = [\![E]\!]$.

Turning to the main clause level, alternative-hood is satisfied equally well in (33). Intuitively, focus on *SHE* sets up a contrast between John and Mary with respect to wanting to meet the other:

(33) John_1 wanted to meet Mary_2, and $\text{SHE}_{2,F}$ wanted to ~~meet him_1~~, too.

ε = meet him_1

A = John want PRO_j meet Mary

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

E = MARY_F want PRO_m meet John $\quad$ $[\![E]\!]$ = want'(meet'(m,j))(m)

F(E) = { want'(meet'(m,j))(x) | x $\in D_e$ } $\quad$ $[\![A]\!] \in F(E)$ **and** $[\![A]\!] \neq [\![E]\!]$

The elided constituent ε remains *meet him$_1$*. Ellipsis 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, alternative-hood 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.[14]

Thus, as for the simple case of ellipsis in the previous subsection, the alternative-hood condition in (26) makes a 'doubly' correct prediction with respect to participant switching ellipsis like (30). Alternative-hood can be satisfied vacuously, as in (32), where *meet'(j,m)* is the only member of the degenerate singleton set $\{$ meet'(j,m) $\}$; or it can be satisfied substantively, as in (33), where *want'(meet'(m,j))(j)* is one among the many members of the set $\{$ want'(meet'(m,j))(x) | $x \in D_e$ $\}$.

Regardless whether alternative-hood is evaluated at the embedded or main clause level, the symmetry of the predicate is crucial. Attempting participant switching VPE with a non-symmetrical predicate like *criticise* fails the alternative-hood condition, correctly predicting ungrammaticality in (34). Alternative-hood fails regardless of the level at which ellipsis is evaluated. Informally, evaluating ellipsis at the level of the elided material fails in (34a) because criticising Mary is not a member of the set containing criticising John. Similarly, evaluating ellipsis at the level of the embedded clause fails in (34b) because John criticising Mary is not a member of the set containing Mary criticising John. This failure would persist in attempts to evaluate parallelism at any higher level:[15]

(34) * John_1 wanted to criticise Mary_2, but she_2 didn't want to ~~criticise him_1~~.

a. A = criticise Mary — $[\![A]\!] = \lambda x.$ criticise'(m)(x)
   E = criticise John — $[\![E]\!] = \lambda x.$ criticise'(j)(x)
   $F(E) = \{ \lambda x.$ criticise'(j)(x) $\}$ — $[\![A]\!] \notin F(E)$

b. A = PRO_j to criticise Mary — $[\![A]\!] =$ criticise'(m)(j) $\neq$ criticise'(j)(m)
   E = PRO_m to criticise John — $[\![E]\!] =$ criticise'(j)(m)

$F(E) = \{$ criticise'(j)(m) $\}$ $\quad\quad\quad$ $[\![A]\!] \notin F(E)$

Overall, symmetry preserves alternative-hood in spite of participant switching. Without it, participant switching is correctly ruled out for failing alternative-hood. The next subsection shows that symmetry and alternative-hood together result in participant switching being obligatory.

4.3 Obligatory switching

The symmetrical co-participants must remain constant across antecedent and ellipsis in participant switching VPE. Recall (14) from above:

(14) Bill$_3$ expected John$_1$ to work with Mary$_2$, and (in the end) she$_2$ DID$_F$ ~~work with him$_1$~~.

Notice now that the meaning indicated in (14) 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, as indicated in (35), is ungrammatical:

(35) * Bill$_3$ expected John$_1$ to work with Mary$_2$, and (in the end) she$_2$ DID$_F$ ~~work with him$_3$~~.

The attempt to bring out the 'Bill reading' in (36) accordingly fails. The 'John reading' is the only grammatical possibility, but is odd in this context:

(36) ?? Bill$_3$ really liked Mary$_2$, but he expected John$_1$ to work with her$_2$.
Though as it turned out, she$_2$ DID$_F$ ~~work with him$_{??1/*3}$~~!

The obligatoriness of participant switching is predicted by the interplay of alternative-hood and symmetry. As sketched in (37), alternative-hood is satisfied for (14) on the 'John reading' (a), but not the 'Bill reading' (b):

(37) a. work-with'(j,m) $\in \{$ work-with'(m,j) $\}$, since

work-with'(j,m) = work-with'(m,j)

b. work-with'(j,m) $\notin$ { work-with'(m,b) }, since
work-with'(j,m) $\neq$ work-with'(m,b)

As ever with participant switching VPE, symmetry is the crucial factor. Alternative-hood is mediated via symmetry, and the relevant equalities hold only if the participants remain the same. John working with Mary means the same as Mary working with John, but does not mean the same as Mary working with Bill. Hence the symmetrical co-participants must remain constant across A and E.

In sum, the view that ellipsis is licensed by alternative-hood successfully captures the symmetry generalisation and the obligatoriness of participant switching VPE. The next section argues based on contrast failures in participant switching that VPE is subject to a strengthened condition of 'proper' alternative-hood.

5 Contrast

This section argues that VPE requires contrast. Data involving participant switching VPE motivate such a requirement (section 5.1), adding to empirical and conceptual considerations in the VPE literature (Stockwell 2018, Griffiths 2019) (section 5.2). Strengthening alternative-hood into 'proper' alternative-hood continues to account for participant switching VPE (section 5.3), while urging consideration of verum focus (section 5.4) and negation (section 5.5).

5.1 Contrast failure

Consider the variation on (56) in (38). Conjunction scopes low, with both conjuncts embedded under *Bill expected*. The sentence in (a) might be redundant, but it is perfectly grammatical. The attempt at participant switching VPE in (b), however, is ungrammatical.

Notice that the alternative-hood condition is met by the symmetry of *work-with*, per (37) at the end of the previous section:

(38) a. Bill_3 expected both for John_1 to work with Mary_2, and for her_2 to work with him_1.

b. * Bill_3 expected both for John_1 to work with Mary_2, and for her_2 to ~~work with him_1~~.

The same point can be made without adding *Bill* as an attitude holder separate from the symmetrical event. In (39), the fully pronounced (a) may be very redundant, but is perfectly grammatical; whereas the attempt at participant switching VPE in (b) is completely ungrammatical:

(39) a. John_1 wanted both to meet Mary_2, and for her_2 to meet him_1 (, too).

b. * John_1 wanted both to meet Mary_2, and for her_2 to ~~meet him_1~~ (, too).

Arriving now at full-blown redundancy, consider (40). While the fully pronounced (a) is perfectly grammatical, the attempt at participant switching VPE in (b) is again ungrammatical:

(40) a. John_1 danced with Mary_2, and she_2 danced with him_1.

b. * John_1 danced with Mary_2, and she_2 did ~~dance with him_1~~.

Alternative-hood is satisfied throughout, via symmetry; so something else must be responsible for making the elliptical (b) examples ungrammatical compared to their redundant, fully pronounced (a) counterparts. Common to these examples is a lack of contrast. Most baldly in (40), John dancing with Mary is exactly the same as Mary dancing with John. The same same-ness is embedded under John's desires in (39) and Bill's expectations in (38). As contextualised in the next section, (38-40b) can be ruled out by the contrast condition — while alternative-hood is satisfied, 'proper' alternative-hood is not.

5.2 The contrast condition

Consider again the alternative-hood condition from (26):

(26) Ellipsis as alternative-hood:

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

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

While section 4 showed that (26) is a necessary condition on VPE, the data in the previous subsection show that it is not sufficient. Alternative-hood allows ellipsis to be licensed in the absence of focus, based on membership of trivial singleton sets. In such cases, the ordinary meanings of A and E are the same: $[\![A]\!] = [\![E]\!]$.

Instead, it seems that A and E are required to have distinct ordinary meanings: $[\![A]\!] \neq [\![E]\!]$. The condition on ellipsis in (41) supplements alternative-hood from (26) with this contrast condition. Thus the requirement overall is for 'proper' alternative-hood:

(41) Ellipsis as proper alternative-hood:

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

i. $[\![A]\!] \in F(E)$ — the alternative-hood condition; and

ii. $[\![A]\!] \neq [\![E]\!]$ — the contrast condition.

The participant switching data in the previous subsection adds to independent empirical and conceptual motivation for the contrast condition. Empirically, Stockwell (2018) argues that the contrast condition is active in ellipsis licensing based on the ungrammaticality of ellipsis in tautologous conditionals like (42). While we can say trivial things, like the tautologous conditional in (a), we cannot say the same sentence with ellipsis in (b):

(42) a. If John_j is wrong, then he_j is wrong.

b. * If John_j is wrong, then he_j is ~~wrong~~.

Alternative-hood alone incorrectly predicts ellipsis in (b) to be grammatical, as in (43). F-marking on *is* introduces polar focus alternatives, and alternative-hood is satisfied:

(43) ✗ If John$_1$ is wrong, then he$_1$ is$_F$ ~~wrong~~. ε = wrong

E = he$_1$ is$_F$ wrong A = John$_1$ is wrong

⟦E⟧ = wrong'(j) ⟦A⟧ = wrong'(j)

F(E) = { wrong'(j), not-wrong'(j) } ⟦A⟧ ∈ F(E)

The prediction for (42) can be corrected by subjecting ellipsis to the more stringent licensing condition in (41). Ellipsis then fails the contrast condition, as in (44):

(44) * If John$_1$ is wrong, then he$_1$ is$_F$ ~~wrong~~. ε = wrong

⟦E⟧ = wrong'(j) ⟦A⟧ = wrong'(j) ⟦A⟧ = ⟦E⟧

Similarly, Griffiths (2019) argues that the contrast condition is responsible for Max-Elide effects (Schuyler 2001, Merchant 2008b), exemplified in (45). From a base sentence like (a), sluicing is possible in (b), but VP ellipsis is not in (c). Using the theory of ellipsis parallelism in (41), Griffiths (2019) argues that ellipsis is not licensed in (c) because the clause containing ellipsis does not contrast with its antecedent, along the lines of (d) (though cf. Charlow 2021):

(45) 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 = John will hire x

Conceptually, incorporating contrast into the proper alternative-hood condition on ellipsis in (41) fulfills the spirit of Rooth (1992b) in applying Rooth's (1992a) theory of focus to ellipsis in its entirety. Rooth (1992a: 90, 93) includes the contrast condition in his constraint on focus interpretation. In the literature on contrastive focus, there is no question that ⟦A⟧ ≠ ⟦E⟧ is a crucial component of the theory (e.g. in overview Repp 2016: esp. ex. 9). It might be surprising from the perspective of 'identity' as crucial to

ellipsis licensing that difference should play such a role. This surprise dissipates, however, considering that (41) is fundamentally a focus condition.

Thus the proper alternative-hood condition in (41) delivers fully on the idea that the semantic identity condition on VPE is focus-based by transposing the requirements for both alternative-hood and contrast. Ellipsis must be contained in a constituent E with an antecedent A that is not only an alternative to E, but a proper alternative. Consequently, A cannot be the trivial member of F(E) — namely the ordinary meaning of E. The rest of this section shows that this strengthened condition is successful on participant switching VPE (section 5.3), once verum focus (section 5.4) and issues surrounding negation (section 5.5) are taken into account.

5.3 Contrast success

Proper alternative-hood successfully rules out the contrast failures in participant switching VPE from the first subsection. The elliptical (b) examples from (38)-(40) are repeated in (46). In each case, ellipsis falls to contrast failure:

(46) a. * Bill_3 expected both for John_1 to work with Mary_2, and for her_2 to ~~work with him_1~~.
$[\![A]\!]$ = work-with'(j,m) = $[\![E]\!]$ = work-with'(m,j)

b. * John_1 wanted both to meet Mary_2, and for her_2 to ~~meet him_1~~ (, too).
$[\![A]\!]$ = meet'(j,m) = $[\![E]\!]$ = meet'(m,j)

c. * John_1 danced with Mary_2, and she_2 did ~~dance with him_1~~.
$[\![A]\!]$ = dance-with'(j,m) = $[\![E]\!]$ = dance-with'(m,j)

At the same time, proper alternative-hood continues to rule in the successful examples of VPE from section 4. Before turning to participant switching, let us review a simple case of ellipsis. The sentence from (27) and the two options for the level at which to evaluate parallelism are collected together in (47):

(47) John left, and BILL_F did ~~leave~~, too.

a.	E = BILL_F left	$[\![\text{E}]\!]$ = leave'(b)	F(E) = { leave'(x) | x ∈ D_e }
	A = John left	$[\![\text{A}]\!]$ = leave'(j)	$[\![\text{A}]\!]$ ∈ F(E) **and** $[\![\text{A}]\!] \neq [\![\text{E}]\!]$
b. ✗	E = left	$[\![\text{E}]\!]$ = leave'	F(E) = { leave' }
	A = left	$[\![\text{A}]\!]$ = leave'	$[\![\text{A}]\!]$ ∈ F(E) **but** $[\![\text{A}]\!] = [\![\text{E}]\!]$

We saw above in (28) and (29) that both options satisfy alternative-hood. Applying the contrast condition, ellipsis is licensed only if the full conjuncts are taken as A and E (a), not just the VPs (b). A clause level E (a) satisfies contrast — informally, John leaving means something different from Bill leaving. Setting E to be the same as ε (b), on the other hand, fails to contrast — leave means leave. Still, with the success of (a), the overall prediction of grammaticality is unchanged.[16]

Parallel considerations apply to participant switching VPE. The sentence from (30), and the two successful alternative-hood calculations from section 4.2 are collected together in (48):

(48) John_1 wanted to meet Mary_2, and she_2 wanted to ~~meet him_1~~, too.

a.	E = MARY_F want PRO_m meet John	$[\![\text{E}]\!]$ = want'(meet'(m,j))(m)
	A = John want PRO_j meet Mary	$[\![\text{A}]\!]$ = want'(meet'(j,m))(j)
	F(E) = { want'(meet'(m,j))(x) | x ∈ D_e }	$[\![\text{A}]\!]$ ∈ F(E) **and** $[\![\text{A}]\!] \neq [\![\text{E}]\!]$
b. ✗	E = PRO_m to meet John	$[\![\text{E}]\!]$ = meet'(m,j)
	A = PRO_j to meet Mary	$[\![\text{A}]\!]$ = meet'(j,m)
	F(E) = { meet'(m,j) }	$[\![\text{A}]\!]$ ∈ F(E) **but** $[\![\text{A}]\!] = [\![\text{E}]\!]$

We saw above in (33) and (32) that both options satisfy alternative-hood, based on the symmetry of *meet*. However, in the same breath as supporting alternative-hood, symmetry causes contrast failure in (b). The equivalence of John meeting Mary and Mary meeting John makes *meet'(j,m)* a member of { meet'(m,j) }; but at the same time results in an

embedded clause A and E failing to contrast. Still, contrast is satisfied in by the clause level calculations in (a). John wanting a John and Mary meeting is not the same as Mary wanting one. Hence the overall prediction that (48) is grammatical remains unchanged.

Comparing the contrast failures in participant switching in (46) with the success in (48), the difference is clausal embedding. In (46), both conjuncts are embedded in the same way — under *Bill expected* (a) and *John wanted* (b) — or there is no embedding at all (c). In (48), on the other hand, the difference between *John wanted* and *Mary wanted* satisfies contrast. The next subsection considers cases where one of the conjuncts is embedded, and shows that ellipsis can be licensed while respecting contrast after taking account of verum focus.

5.4 Focus on VERUM

In this section so far, we have considered participant switching with ellipsis of the lower VP. Ellipsis of the higher VP including *want* is licensed in the same way in (49), based on the same size A and E:

(49) John_1 wanted to work with Mary_2, and $\text{SHE}_{2,F}$ did ~~want to work with him_1~~, too.

ε = want to work with him_1

A = John want PRO_j work with Mary

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

E = MARY_F want PRO_m work with John $\quad [\![E]\!]$ = want'(work-with'(m,j))(m)

$F(E) = \{ \text{want'(work-with'(m,j))(x)} \mid x \in D_e \}$ $\quad [\![A]\!] \in F(E)$ **and** $[\![A]\!] \neq [\![E]\!]$

However, with focus on *DID* rather than *SHE*, we are able to interpret the ellipsis site as containing just the lower VP of the first clause, to the exclusion of *want*. In (50), there is only one option for E that passes alternative-hood, 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 syntactic size as E, will inevitably fall to a contrast failure:

(50) ✗ John$_1$ wanted to work with Mary$_2$, and (in the end) she$_2$ DID$_F$ ~~work with him$_1$~~.

ε = work with him$_1$

A = PRO$_j$ to work with Mary ⟦A⟧ = work-with'(j,m) = work-with'(m,j)

E = Mary work with John ⟦E⟧ = work-with'(m,j)

⟦A⟧ = ⟦E⟧

Example (14), which was used to illustrate obligatory switching in section 4.3, presents the same problem, as abbreviated in (51):

(51) ✗ Bill$_3$ expected John$_1$ to work with Mary$_2$, and (in the end) she$_2$ DID$_F$ ~~work with him$_1$~~. ⟦A⟧ = ⟦E⟧

A = John to work with Mary ⟦A⟧ = work-with'(j,m) = work-with'(m,j)

E = Mary work with John ⟦E⟧ = work-with'(m,j)

A solution to correctly ruling in (50) and (51) while respecting the contrast condition lies in taking full account of focus on *DID*. Stress on an auxiliary can signal polar focus (Höhle 1992), where the alternatives are the truth or falsity of the proposition, as was assumed in the discussion of tautologous conditionals in section 5.2 above. But stress on an auxiliary can also signal focus not on polarity, but a predicate operator VERUM, introduced by Romero & Han (2004), which means roughly 'it is for sure that'.[17] Focus on VERUM contributes alternatives to the proposition being for-sure true: the proposition 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 (52) (Hardt & Romero 2004: 405, ex. 97):

(52) F(VERUM$_F$ p) = {it is for sure true that p, it is possible that p, it is hoped that p, it is doubted that p, it is wanted that p, it is expected that p, ..., John expects that p, John hopes that p, Sam expects that p, ..., it is for sure true that ¬p, it is

possible that ¬p, it is hoped that ¬p, it is doubted that ¬p, it is wanted that ¬p, it is expected that ¬p, ..., John expects that ¬p, John hopes that ¬p, Sam expects that ¬p, ... }

To illustrate first without ellipsis, consider (53) (Hardt & Romero 2004: 405, ex. 94). Focus on *DID* does not signal contrast with the polarity of the previous clause, since both A's statement and S's response are positive in polarity. Instead, auxiliary stress marks contrast between the operator VERUM and the attitude expressed by A, namely *I hope*:

(53) A: I hope she finished her work on time.
S: She DID finish it on time.
LF of S: [VERUM_{F} [she finished it on time]]

To add in ellipsis, consider (54) (Hardt & 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. The contrast condition is also satisfied — John wanting to go to Rome is different from it not actually happening:[18]

(54) John wanted to go to Rome, but he DIDN'T.
$[\![$[John wanted to go to Rome]$]\!] \in$ F([he DIDN'T go to Rome]) =
{ 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, the failed attempt at licensing participant switching VPE in (50) can be revised as in (55). Intuitively, focus on *DID* sets up a contrast between John's desires and the actual state of affairs. Setting A to be the whole first conjunct is necessary to satisfy focus membership among 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* 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:

(55) $John_1$ wanted to work with $Mary_2$, and (in the end) she_2 DID_F ~~work with him_1~~.

ε = work with him_1

A = John wanted PRO_j to work with Mary

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

E = $VERUM_F$ Mary work with John $[\![E]\!]$ = for-sure'(work-with'(m,j))

F(E) = {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, ... }

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

We are also now in a position to give a contrast-respecting account of (51). Contrast is satisfied in (56) along the same lines as in (55), via VERUM. Bill expecting a John and Mary collaboration is a proper alternative to such a collaboration actually taking place:

(56) $Bill_3$ expected $John_1$ to work with $Mary_2$, and (in the end) she_2 DID_F ~~work with him_1~~.

ε = work with him_1

A = Bill expected John to work with Mary

$[\![A]\!]$ = expect'(work-with'(j,m))(b) = expect'(work-with'(m,j))(b)

E = $VERUM_F$ Mary work with John $[\![E]\!]$ = for-sure'(work-with'(m,j))

F(E) = { 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, ..., Sue expected that Mary didn't work with John, Bill expected that Mary worked with John, ... }

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

With focus on modal-like VERUM supporting alternative-hood, we expect participant switching VPE to be good with all other intensional embedding, which supplies members of the set of focus alternatives to VERUM. Further to embedding under an intensional verb like *want*, other intensional operators work just as well in (57), including a modal auxiliary like *should* in (a), or another partial control predicate like *resolve* (Pearson 2016) in (b):[19]

(57) a. A: John$_1$ should have danced with Mary$_2$.
B: Wait, but she$_2$ DID$_F$ ~~dance with him$_T$~~!

b. John$_1$ resolved to dance with Mary$_2$, and eventually she$_2$ DID$_F$ ~~dance with him$_T$~~.

Non-intensional embedding under an extensional aspectual verb like *start* (Pearson 2016), on the other hand, does not support participant switching VPE in (58):

(58) * John$_1$ started to dance with Mary$_2$, and she$_2$ DID$_F$ ~~dance with him$_T$~~.

Failure of alternative-hood is responsible for the ungrammaticality of (58). Alternatives to VERUM are inherently intensional, encompassing desires or possibilities; whereas *start* is about the extent to which something actually happened. Hence *John start* is not a member of F(VERUM$_F$). Thus the attempt at participant switching ellipsis in (58) is a focus membership failure, just as much as the attempt at plain ellipsis in (59):

(59) * John$_1$ started to work, and he$_1$ DID$_F$ ~~work~~.

In sum, the contrast condition can be respected in participant switching VPE via focus on VERUM, which in turn explains the restriction to intensional embedding. The final subsection considers negation, which satisfies the contrast condition, with an interesting exception.

5.5 Negation and contrast

The grammatical examples of participant switching VPE in this section so far, collected in (60), were positive polarity in both conjuncts:

(60) a. John$_1$ wanted to meet Mary$_2$, and SHE$_{2,F}$ wanted to ~~meet him$_1$~~, too. = (33)

b. John$_1$ wanted to work with Mary$_2$, and SHE$_{2,F}$ did ~~want to work with him$_1$~~, too. = (49)

c. John$_1$ wanted to work with Mary$_2$, and (in the end) she$_2$ DID$_F$ ~~work with him$_1$~~. = (55)

d. Bill$_3$ wanted John$_1$ to work with Mary$_2$, and (in the end) she$_2$ DID$_F$ ~~work with him$_1$~~. = (56)

All the sentences in (60) remain grammatical with negative polarity in the second conjunct, as in (61), with F-marked *DIDN'T* and concomitant changes from *and ... too* to *but*:

(61) a. John$_1$ wanted to meet Mary$_2$, but SHE$_{2,F}$ DIDN'T$_F$ want to ~~meet 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$_1$~~.

The proper alternative-hood condition in (41) correctly predicts all the sentences in (61) to be grammatical. The opposition of positive and negative polarity satisfies

alternative-hood and contrast, as sketched in (62). Taking focus on *DIDN'T* to evoke polar focus alternatives rather than focus on VERUM suffices:[20]

(62) A = work with Mary

$[\![A]\!]$ = work-with'(j,m) = work-with'(m,j)

E = NOT_F work with John

$[\![E]\!]$ = not-work-with'(m,j)

F(E) = { work-with'(m,j), not-work-with'(m,j) }

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

We now turn to the ungrammatical contrast failures in (38)-(40), which we predict should be rescued by negation. For (38) and (39), this prediction is borne out in (63) and (64). There is no additional unacceptability in going from the fully pronounced sentences in (a) to the elliptical versions in (b):

(63) a. Bill_3 wanted both for John_1 to meet Mary_2,
and for her_2 NOT_F to meet him_1.

b. Bill_3 wanted both for John_1 to meet Mary_2,
and for her_2 NOT_F to ~~meet him~~$_T$.

(64) a. John_1 wanted (both) to meet Mary_2, and for her_2 NOT_F to meet him_1.

b. John_1 wanted (both) to meet Mary_2, and for her_2 NOT_F to ~~meet him~~$_T$.

The contrast between positive and negative means parallelism can be successfully evaluated at the level of the embedded clauses based on polar focus, as in (65):

(65) A = John to meet Mary $\quad$ $[\![A]\!]$ = meet'(j,m) = meet'(m,j)

E = Mary NOT_F to meet John $\quad$ $[\![E]\!]$ = not-meet'(m,j)

F(E) = { meet'(m,j), not-meet'(m,j) } $\quad$ $[\![A]\!] \in F(E)$, $[\![A]\!] \neq [\![E]\!]$

Arriving now at triviality, however, negation does not rescue the contrast failure from (40). As shown in (66), the fully pronounced (a) is a contradictory but perfectly grammat-

ical sentence. Unlike for (40), the attempt at participant switching VPE in (b) remains ungrammatical, despite the opposition between positive A and negative E:

(66) a. # John$_1$ danced with Mary$_2$, but she$_2$ didn't dance with him$_1$.

b. * John$_1$ danced with Mary$_2$, but she$_2$ didn't ~~dance with him$_1$~~.

The degraded status of (66b) is even starker across speakers. The infelicity of sentence-internal contradiction is diffused across different speakers' utterances in an exchange like (67) (cf. xii). Yet (66b) remains bad, even when spread across the exchange in (68):

(67) A: John$_1$ is wrong. B: But he$_1$ isn't ~~wrong~~.

(68) A: John$_1$ danced with Mary$_2$. B: * But she$_2$ didn't ~~dance with him$_1$~~.

The overall empirical picture is that negation counts for contrast in ellipsis parallelism in general, including in participant switching VPE in (38) and (39); just not in (66) and the related (68). What makes these the odd ones out is that the assertion contradicts the ellipsis licensing calculations. The licensing of participant switching VPE makes crucial use of the symmetry of the predicate in satisfying focus membership. That is, the ellipsis is licensed for (66b) based on the equivalence spelled out in (69):

(69) dance-with'(j,m) = dance-with'(m,j)

At the same time, however, (66) asserts that this equality does not hold, as in (70):

(70) dance-with'(j,m) ≠ dance-with'(m,j)

There is thus a conflict between ellipsis licensing, which requires symmetrical equality, and the sentence, which asserts inequality. In other words, (66) contradicts the route to its own construction. Such 'internal contradiction' results in ungrammaticality.[21] Compare (63) and (64), where embedding under *want* avoids directly asserting the inequality in (70).[22] Overall, while negation generally counts for contrast, it is not possible to rely on symmetry in ellipsis licensing calculations while at the same time denying that it holds.

In sum, this section has argued that the alternative-hood condition on ellipsis from section 4 should be reinforced by the contrast condition. The resulting requirement for proper alternative-hood correctly rules out contrast failures in participant switching VPE, and continues to correctly rule in other cases, after taking account of focus on VERUM and negation. The next section turns from participant switching VPE to another kind of ellipsis involving symmetrical predicates, and considers what it shows about the directionality of the alternative-hood condition.

6 Transitivity switching and semantic identity

This section introduces another kind of ellipsis involving symmetrical predicates, 'transitivity switching VPE', exemplified in (71):

(71) 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$_1$.~~

The first subsection shows how the proper alternative-hood condition on ellipsis from (41) correctly predicts transitivity switch mismatches, and some related data from Webber (1978), to be possible. The second considers how transitivity switching, in concert with participant switching, can adjudicate among theories of how much semantic identity is required for ellipsis. The discussion concludes that alternative-hood only needs to hold in one direction (Rooth 1992b; Fox 2000), namely A $\in$ F(E) as in (26) and (41) above. It is not necessary for alternative-hood to hold the other way round (Merchant 2001; Griffiths 2019), i.e. E $\in$ F(A).

6.1 Transitivity switch mismatches

Transitivity switching VPE, introduced in (71), presents a problem for syntactic identity, since an object DP comes and goes between the antecedent and elided VPs. In (a)

the antecedent VP is transitive, but the elided VP is intransitive. Conversely in (b), 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 alternative-hood. Symmetrical predicates like *meet* have the entailment pattern summarised in (72). Intransitive *meet* entails both transitive alternates, which in turn individually entail back to the intransitive, as in (a). Hence the equalities in (b) hold:

(72) a. John and Mary met $\longleftrightarrow$ John met Mary $\wedge$ Mary met John

b. 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 (71) as in (73) and (74):[23]

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

ε = meet

A = John wanted PRO$_j$ to meet Mary

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

E = VERUM$_F$ they meet $\quad\quad$ $[\![E]\!]$ = 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 $[\![A]\!] \neq [\![E]\!]$

(74) John$_1$ and Mary$_2$ met, because she WANTED$_F$ to ~~meet him$_1$~~.

ε = meet him$_1$

A = John and Mary met $\quad\quad$ ⟦A⟧ = meet'(j+m) = meet'(m,j)

E = Mary WANT$_F$ to meet John $\quad\quad$ ⟦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⟧ ∈ F(E) and ⟦A⟧ ≠ ⟦E⟧

Similar examples to transitivity switching were observed by Webber (1978) and taken up by Hardt (2004, 2007). Consider (75) (Webber 1978: 128, 165):

(75) Irv and Martha want to dance together, but Martha can't ~~dance with Irv~~, since her husband is here.

The antecedent VP cannot plug directly into the ellipsis site, since ungrammaticality would result from the clash between a singular subject and the plurality-seeking *together*, as in (76):

(76) * Martha can't dance together.

For Hardt (2004, 2007), this semantically unacceptable agreement violation triggers inferencing from Irv and Mary wanting to dance together to Mary wanting to dance with Irv in (75).[24] Without such a violation, no such inferencing is required or allowed. In (77) the ellipsis site can only be resolved as *dance together*, not *dance with Irv*:

(77) 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 (75) and (77) without invoking inference triggering. For (75), focus membership is satisfied along the same lines as (74). For (77), meanwhile, focus membership would fail on the unavailable switch interpretation. Informally, Irv and Martha dancing together is not a member of alternatives to some

other people wanting to dance with Irv. Indeed empirically, transitivity switching does not need to be triggered. This point was obscured by the plurality-seeking *meet* at the outset in (71). There the ellipsis site could not be resolved merely with *met*, since **Martha met* is ungrammatical. But a transitivity switch reading remains available in (78), which removes *together* from (75). This is so despite the grammaticality of *Martha danced*, and in the absence of anything else to trigger inferencing:

(78) Irv and Martha want to dance, but Martha can't ~~dance with Irv~~,
since her husband is here.

Again, on our analysis transitivity switching is possible in (78) based on the symmetry of *dance (with).*

In sum, the proper alternative-hood condition, which the foregoing motivated and applied to participant switching, also accurately captures transitivity switching VPE with a fully symmetrical predicate like *meet*. The next subsection presents partially symmetrical predicates like *kiss* in participant and transitivity switching VPE. Their behaviour applies to the question of the directionality of alternative-hood: whether it needs to be satisfied only in one direction, or whether E also needs to be a member of the focus value of A.

6.2 Unidirectional entailment

In the section 4, we adopted (26), repeated here, as part of our semantic parallelism condition on ellipsis:

(26) Ellipsis as alternative-hood:
For ε to be elided, ε must be inside a phrase E that has an antecedent A such that:
$[\![A]\!] \in F(E)$

Based on participant and transitivity switching VPE with partially symmetrical predicates like *kiss*, this subsection argues that the statement of alternative-hood in (26) is correct. In

particular, (26) imposes only a 'one-way' requirement (Rooth 1992b; Fox 2000; cf. Kroll 2019): 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 alternatives to A. However, a 'two-way' version of the focus membership condition has been entertained. Merchant (2001) does so in terms of entailment, requiring antecedent and elided VPs to be mutually entailing, modulo focus closure. Griffiths (2019) does so in terms of focus membership, along the lines of (79) (cf. also Merchant 2018: 260):

(79) Ellipsis as double alternative-hood:
For ε to be elided, ε must be inside a phrase E that has an antecedent A such that:
$[\![A]\!] \in F(E)$ **and** $[\![E]\!] \in F(A)$

With certain assumptions about F-marking in A, all of the grammatical examples in this paper so far could be made to conform to the 'two-way' version of focus membership in (79). For example, (33) 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 (80):

(80) $\text{JOHN}_{1,F}$ wanted to meet Mary_2, and $\text{SHE}_{2,F}$ did ~~want to meet him_1~~, too.
ε = want to meet him_1
A = JOHN_F want PRO_j meet Mary
$[\![A]\!]$ = want'(meet'(j,m))(j) = want'(meet'(m,j))(j)
F(A) = { want'(meet'(j,m))(x) | $x \in D_e$ }
E = MARY_F want PRO_m meet John
$[\![E]\!]$ = want'(meet'(m,j))(m) = want'(meet'(j,m))(m)
F(E) = { want'(meet'(m,j))(x) | $x \in D_e$ }
$[\![A]\!] \in F(E)$ **and** $[\![E]\!] \in F(A)$ and $[\![A]\!] \neq [\![E]\!]$

With focus on the subject in A as well as 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, so 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- (26) or two- (79) way version of focus membership, the behaviour of partially symmetrical predicates under participant and transitivity switching VPE supports the one-way version in (26). Fully symmetrical predicates like *meet* have the entailment pattern from (72), repeated here as (81). 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 (82). In its intransitive guise (a), *kiss* is symmetrical, denoting a mutual kiss (e.g. on the lips) that entails the two transitive conjuncts. But in its transitive guise (b), *kiss* is not symmetrical, since it denotes a unidirectional kiss (e.g. on the cheek):[25]

(81) John and Mary met $\longleftrightarrow$ John met Mary $\wedge$ Mary met John

(82) a. John and Mary kissed $\longrightarrow$ John kissed Mary $\wedge$ Mary kissed John

b. John kissed Mary $\not\longrightarrow$ John and Mary kissed

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 (34) above, alternative-hood fails in (83); informally, since John kissing Mary is not the same as Mary kissing John:

(83) * John_1 wanted to kiss Mary_2, and $\text{SHE}_{2,F}$ did ~~want to kiss him_1~~, too.

ε = want to kiss him_1

A = John want PRO_j kiss Mary $\quad\quad$ $[\![A]\!]$ = want'(kiss'(m)(j))(j)

E = MARY_F want PRO_m kiss John $\quad\quad$ $[\![E]\!]$ = want'(kiss'(j)(m))(m)

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

Tellingly, intransitive *kiss* only partially supports transitivity switching VPE. In (84), *kiss* does not support transitivity switching from transitive to intransitive. John kissing Mary transitively (on the cheek) is not a member of the alternatives to John and Mary wanting to share a mutual kiss (on the lips):

(84) ?? John$_1$ kissed Mary$_2$, because they$_{1+2}$ WANTED$_F$ to ~~kiss~~.

ε = kiss

A = John kiss Mary

$[\![A]\!]$ = kiss'(m)(j)

E = they WANT$_F$ PRO$_{j+m}$ kiss $\quad [\![E]\!]$ = want'(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)

In (85), however, *kiss* supports switching in the opposite direction from intransitive to transitive. Accounting for (85) requires appeal to 'indirect parallelism' (Fox 2000; cf. note 24). Alternative-hood may not be satisfied by A itself, but it is by an entailment of A, notated as $A_{\Rightarrow}$ in (85):

(85) John$_1$ and Mary$_2$ kissed, because she$_2$ WANTED$_F$ to ~~kiss him$_1$~~.

ε = kiss him$_1$

A = John and Mary kiss $\quad [\![A]\!]$ = kiss'(j+m)

$[\![A]\!] \Rightarrow A_{\Rightarrow}$ = kiss'(j)(m)

E = Mary WANT$_F$ PRO$_m$ kiss John $\quad [\![E]\!]$ = want'(kiss'(j)(m))(m)

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

$A_{\Rightarrow} \in$ F(E) and $A_{\Rightarrow} \neq [\![E]\!]$

Thus, granting indirect parallelism, the one-way version of alternative-hood correctly predicts switching from intransitive to transitive in (85) to be grammatical. The partial

symmetry of *kiss* supports an entailment from A to a member of the focus value of E. The two-way version of alternative-hood, on the other hand, would make the wrong prediction for (85). alternative-hood does not go through from E to A. The failed calculation would be similar to (84), 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. Hence the two-way version of alternative-hood would incorrectly predict switching from intransitive to transitive in (85) to be ungrammatical.

In sum, the behaviour of a partially symmetrical predicate like *kiss* provides evidence for a one-way requirement on alternative-hood (26) (Rooth 1992b; Fox 2000) and against a two-way version (79) (Griffiths 2019, cf. Merchant 2001). That is, A has to be a member of the focus alternatives to E, but there is no requirement that E be a member of the focus alternatives to A.[26] Overall, therefore, the statement of the semantic identity condition on ellipsis from (41), incorporating one-way alternative-hood, 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 switch between antecedent and ellipsis. Such switching engenders a tolerable syntactic mismatch, which cannot be circumvented by partial control *PRO*, Vehicle Change or voice mismatch. This syntactic non-identity, along with the empirical generalisation of symmetry, urged an analysis in terms of semantic identity. Subjecting VPE to a focus-based alternative-hood (Rooth 1992b et seq.) successfully captures participant switching: symmetry preserves alternative-hood between the elliptical phrase and its antecedent, and enforces consistency of the participants between them. Contrast failures in participant switching VPE motivated strengthening alternative-hood into proper alternative-hood (cf. Stockwell 2018, Griffiths 2019), The resulting condition of proper

alternative-hood urged consideration of focus on VERUM and the restriction to intensional embedding; and the role of negation, which counts for contrast, except when it contradicts the symmetry necessary for ellipsis licensing. 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) requirement for alternative-hood.

References

Charlow, Simon. 2021. ∃-closure and alternatives. *Linguistic Inquiry* 52(1). 143–152.

Chomsky, Noam. 1965. *Aspects of the theory of syntax*. Cambridge, MA: MIT Press.

Dalrymple, Mary, Stuart Shieber & Fernando Pereira. 1991. Ellipsis and higher-order unification. *Linguistics and Philosophy* 14(4). 399–452.

Drummond, Alex. 2021. Remarks on Rule H. *Glossa* 6(1). 13.

Fiengo, Robert & Robert May. 1994. *Indices and identity*. Cambridge, MA: MIT Press.

Fox, Danny. 1999. Focus, parallelism and accommodation. In *Proceedings of SALT IX*, 70–90. Ithaca, NY: CLC Publications.

Fox, Danny. 2000. *Economy and Semantic Interpretation*. Cambridge, MA: MIT press.

Ginzburg, Jonathan & Ivan Sag. 2000. *Interrogative investigations*. Stanford, CA: CSLI.

Gleitman, Lila R., Henry Gleitman, Carol Miller & Ruth Ostrin. 1996. Similar, and similar concepts. *Cognition* 58(3). 321–376.

Grant, Margaret, Charles Clifton Jr. & Lyn Frazier. 2012. The role of non-actuality implicatures in processing elided constituents. *Journal of Memory and Language* 66. 326–343.

Griffiths, James. 2019. Beyond MaxElide: An investigation of A'-movement from elided phrases. *Linguistic Inquiry* 50(3). 571–607.

Haïk, Isabelle. 1987. Bound VPs that need to be. *Linguistics and Philosophy* 10. 503–530.

Hardt, Daniel. 1993. *Verb phrase ellipsis: Form, meaning, and processing*. Philadelphia, PA: University of Pennsylvania dissertation.

Hardt, Daniel. 2004. Ellipsis resolution and inference. *Acta Linguistica Hafniensia: International Journal of Linguistics* 36. 65–77.

Hardt, Daniel. 2007. Inference, ellipsis and deaccenting. In *Copenhagen studies in language*, 67–73. Denmark: Samfundslitteratur.

Hardt, Daniel & Maribel Romero. 2004. Ellipsis and the structure of discourse. *Journal of*

Semantics 21(4). 375–414.

Hartman, Jeremy. 2009. When eGIVENness overpredicts identity. Paper presented at Brussels Conference in Generative Linguistics 4, Brussels.

Hartman, Jeremy. 2011. The semantic uniformity of traces: Evidence from ellipsis parallelism. *Linguistic Inquiry* 42. 367–388.

Heim, Irene. 1997. Predicates or formulas? Evidence from ellipsis. In Aaron Lawson & Eun Cho (eds.), *Proceedings of SALT VII*, 197–221. Ithaca, New York: CLC Publications.

Höhle, Tilman. 1992. Über Verum-Fokus im Deutschen. In J. Jacobs (ed.), *Informationsstruktur und grammatik*, 112–142. Germany: Westdeutscher Verlag Opladen.

Johnson, Kyle. 2001. What VP-ellipsis can do, and what it can't, but not why. In Mark Baltin & Chris Collins (eds.), *The handbook of contemporary syntactic theory*, 439–479. Oxford: Blackwell.

Kehler, Andrew. 2000. Coherence and the resolution of ellipsis. *Linguistics and Philosophy* 23(6). 533–575.

Kehler, Andrew. 2002. *Coherence, reference, and the theory of grammar*. Stanford: CSLI.

Kroll, Margaret. 2019. Polarity reversals under sluicing. *Semantics and Pragmatics* 12(18). 1–49.

Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.

Merchant, Jason. 2008a. An asymmetry in voice mismatches in VP-ellipsis and pseudogapping. *Linguistic Inquiry* 39(1). 169–179.

Merchant, Jason. 2008b. Variable island repair under ellipsis. In Kyle Johnson (ed.), *Topics in Ellipsis*, 132–153. Cambridge: Cambridge University Press.

Merchant, Jason. 2013. Voice and ellipsis. *Linguistic Inquiry* 44(1). 77–108.

Merchant, Jason. 2018. Verb-stranding predicate ellipsis in Greek, implicit arguments, and

ellipsis-internal focus. In Jason Merchant, Line Mikkelsen, Deniz Rudin & Kelsey Sasaki (eds.), *A reasonable way to proceed: Essays in honor of Jim McCloskey*, 229–269. University of California eScholarship.

Messick, Troy & Gary Thoms. 2016. Ellipsis, economy, and the (non)uniformity of traces. *Linguistic Inquiry* 47. 306–332.

Pearson, Hazel. 2016. The semantics of partial control. *Natural Language & Linguistic Theory* 34. 691–738.

Ranero, Rodrigo. 2019. The eventive core is not special in ellipsis: a reply to Rudin (2018). Unpublished ms., University of Maryland.

Repp, Sophie. 2016. Contrast: Dissecting an elusive information-structural notion and its role in grammar. In Caroline Féry & Shinichiro Ishihara (eds.), *Oxford handbook of information structure*, 270–289. Oxford: Oxford University Press.

Romero, Maribel & Chung-Hye Han. 2004. On negative yes/no questions. *Linguistics and Philosophy* 27(5). 609–658.

Rooth, Mats. 1992a. A theory of focus interpretation. *Natural Language Semantics* 1. 75–116.

Rooth, Mats. 1992b. Ellipsis redundancy and reduction redundancy. In Berman & Hestvik (eds.), *The Stuttgart Ellipsis Workshop*, SFB 340.

Ross, John R. 1967. *Constraints on variables in syntax*. Cambridge, MA: MIT dissertation.

Sag, Ivan. 1976. *Deletion and logical form*. Cambridge, MA: MIT dissertation.

Sag, Ivan & Jorge Hankamer. 1984. Toward a theory of anaphoric processing. *Linguistics and Philosophy* 7. 325–345.

Schuyler, Tamara. 2001. Wh-movement out of the site of VP-ellipsis. In Seamas Mac Bhloscaidh (ed.), *Syntax and semantics at Santa Cruz 3*, 1–20. University of California, Santa Cruz, Linguistics Research Center.

Siloni, Tal. 2012. Reciprocal verbs and symmetry. *Natural Language & Linguistic Theory*

30(1). 261–320.

Stalnaker, Robert. 1978. Assertion. In P. Cole (ed.), *Pragmatics,* Vol. 9 of Syntax and Semantics, 315–322. New York: Academic Press.

Stockwell, Richard. 2018. Ellipsis in tautologous conditionals: the contrast condition on ellipsis. In Sireemas Maspong, Brynhildur Stefánsdóttir, Katherine Blake & Forrest Davis (eds.), *Proceedings of SALT 28*, 584–603.

Takahashi, Shoichi & Danny Fox. 2005. MaxElide and the re-binding problem. In Efthymia Georgala & Jonathan Howell (eds.), *Semantics and Linguistic Theory 15 (SALT 15)*, 223–240.

Talmy, Leonard. 1983. How language structures space. In H. Pick & L. Acredolo (eds.), *Spatial orientation: Theory, research, and application*, 225–281. New York: Plenum Press.

Tancredi, Christopher. 1992. *Deletion, deaccenting and presupposition*. Cambridge, MA: MIT dissertation.

Thoms, Gary. 2013. Lexical mismatches in ellipsis and the identity condition. In S. Keine & S. Sloggett (eds.), *Proceedings of NELS 42*, 559–72. Amherst, MA: GLSA.

Webber, Bonnie L. 1978. *A formal approach to discourse anaphora*. Cambridge, MA: Harvard University dissertation. Published 1979 by Garland Publishing, New York.

Williams, Edwin. 1977. Discourse and logical form. *Linguistic Inquiry* 8. 101–139.

Winter, Yoad. 2018. Symmetric predicates and the semantics of reciprocal alternations. *Semantics & Pragmatics* 11(1). 1–47.

Notes

[1]http://www.theguardian.com/politics/2015/may/09/angela-merkel-cameron-eu-rightwing-tories. Last retrieved 2021-03-24.

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

[3]It 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) * John$_1$ conspired to mess with Mary$_2$, but she$_2$ didn't want to ~~mess with him$_1$~~.

[4]In fact, *John* is the only candidate; see section 4.3 on obligatory switching.

[5]For a given speaker, the prominence of the reading in (9b) seems to correlate with the availability of a reading of (ii) that omits the VP-adverb from the elided VP, as in (a), in addition to the universally preferred (b):

(ii) John left quickly, and Mary did too.

a. John left quickly, and Mary did ~~leave quickly~~ too.

b. John left quickly, and Mary did ~~leave~~ too.

[6]Or *work with John* — see note 9, below.

[7]Though cf. island amelioration under movement analyses of sluicing (Ross 1967).

[8]The presence of the pronoun in the ellipsis site in (17b) is independently detectable in (iii). The ungrammaticality of (a) is due to a Condition B effect on the elided structure indicated in (b):

(iii) a. * Mary admires John$_1$, and he$_1$ does, too.

b. * Mary admires John$_1$, and he$_1$ does ~~admire him$_1$~~, too.

[9]The ellipsis site in (18) could equally well contain the proper name *John*. Unlike in (17), there is no potential condition C violation. Pronouns are arbitrarily shown in the ellipsis site of participant switching VPE throughout.

[10]As with syntactic mismatches in voice (i), which can be tolerable in VPE (a) but not in clausal ellipsis (b) (Merchant 2013), participant switching (ii) is not possible in clausal ellipsis:

(iv) a. This information could have been released by Gorbachev, but he chose not to ~~release it~~. (Hardt 1993: 37)

b. * Joe was murdered, but we don't know who ~~murdered Joe~~. (Merchant 2001)

(v) a. John$_1$ wanted to dance with Mary$_2$. Mary$_2$ did ~~want to dance with him$_1$~~, too.

b. * John$_1$ wanted to dance with Mary$_2$. Mary$_2$ ~~wanted to dance with him$_1$~~, too.

[11]Kehler (2000, 2002) argues that the acceptability of ellipsis mismatches tracks differences in discourse coherence relations. Cause-Effect relations are sensitive to semantic constraints; hence ellipsis mismatches in voice, nominalised/clausal structure, and vehicle change are all acceptable in Cause-Effect configurations. Resemblance relations, on the other hand, require syntactic parallelism between the antecedent and elided VPs; hence mismatches are unacceptable.

This section argued that syntactic identity does not hold in participant switching VPE; the next will argue that it is instead licensed by semantic parallelism. Given the centrality of a semantic constraint, and the absence of syntactic parallelism, Kehler's discourse coherence account predicts that participant switching VPE should be acceptable with Cause-Effect relations, but not Resemblance relations.

Participant switching VPE is indeed acceptable in Cause-Effect relations, such as Result in (vi) or Explanation in (vii):

(vi) John$_1$ wanted to meet Mary$_2$, and so she$_2$ didn't want to ~~meet him$_1$~~.

(vii) Mary$_2$ wanted to work with John$_1$, because he$_1$ didn't want to ~~work with her$_2$~~.

However, foundational examples such as (2), repeated here, show that participant switching VPE is also acceptable in a Resemblance relation; here Kehler's Contrast type one:

(viii) John$_1$ wanted to dance with Mary$_2$, but she$_2$ didn't want to ~~dance with him$_1$~~.

Thus Kehler's discourse coherence account undergenerates with respect to the acceptability of participant switching VPE in Resemblance relations.

[12]In this definition, *inside* is shorthand for non-proper containment; i.e. ε can be dominated by E, as in (28) below, or ε can be E, as in (29).

[13]Focus membership holds in (32) by taking *PRO* to contribute its referent. Otherwise, focus membership would fail just as in (31). Further discussion of *PRO* is postponed to footnote 14, following the contrast-respecting licensing calculations in (33).

[14]As previewed in footnote 13, focus membership only holds in (32) 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 (33). Taking account of the *de se* semantics of *PRO*, focus membership would fail. Abstracting away from world variables, this point is made in (ix):

(ix) John_1 wanted to meet Mary_2, and $\text{SHE}_{2,F}$ wanted to ~~meet him$_1$~~, too.

A = John want PRO meet Mary — ε = meet him_1

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

E = MARY_F want PRO meet John — $[\![E]\!] = \text{want'}(\lambda y.\text{meet'}(y,j))(m)$

$F(E) = \{ \text{want'}(\lambda y.\text{meet'}(y,j))(x) \mid x \in D_e \}$ — $[\![A]\!] \notin F(E)$

The elided constituent ε is *meet him$_1$*, and parallelism is evaluated at the level of the entire conjunct of each clause, as in (33). The antecedent A means that John wants a meeting between who he takes himself to be and Mary. By symmetry, this means the same as John wanting a meeting between Mary and who he takes himself to be. The focus value of E is the set of all propositions of someone wanting a meeting between who they take themself to be and John. Consequently, focus membership does not hold, since the object mismatch has not been resolved. While A and E are both about a meeting where one participant is the candidate for oneself, 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 bound up with *PRO* as an empirical phenomenon. Recall the argument in section 3.1, and in particular example (13) without *PRO* above the ellipsis site, and the raising-to-object examples in (1) and (14)-(16) where there is no *PRO* at all. Moreover, this issue regarding *PRO* and identity in ellipsis is independent of participant switching — see note 18, below.

[15]Adding contrastive focus anywhere in (34) will not overcome alternative-hood failure. The failure is fundamental, even at the level of singleton set membership.

[16]Beyond the extremes of redundancy and triviality, therefore, the results of the contrast requirement on VPE are difficult to observe. For the most part, therefore, omitting the contrast condition and pursuing (26) is quite innocent. However, traditional theories of MaxElide effects (45) in the vein of alternative-hood (Takahashi & Fox 2005; Hartman 2011; Messick & Thoms 2016) are incompatible with the contrast condition. See Author (XXXX) for discussion.

[17]More precisely, VERUM is a conversational epistemic operator which asserts that the speaker is certain that p should be added to the Common Ground. In the definition in (i) (Romero & Han 2004: 627, ex. 43), x is a free variable whose value is contextually identified with the addressee (or the individual sum of the addressee and the speaker); $\text{Epi}_x(w)$ is the set of worlds that conform to x's knowledge in w; $\text{Conv}_x(w')$ is the set of worlds where all the conversational goals of x in w' are fulfilled (e.g., attain maximal information while preserving truth); and

$CG_{w"}$ is the Common Ground, or set of propositions that the speakers assume in w" to be true (Stalnaker 1978):

(x) $[\![\text{VERUM}_i]\!]^{g x/i} = [\![\text{really}_i]\!]^{g x/i} =$

$\lambda p_{st}\ \lambda w.\forall w' \in \text{Epi}_x(w)\ [\forall w" \in \text{Conv}_x(w')\ [\ p \in CG_{w"}\ ]\ ]$

[18]Hardt & 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 14.

[19]See also the various verbs in the examples in (6)-(8) from section 2.

[20]Indeed, negation very generally provides a way to satisfy the contrast condition. Compared with the tautologous conditional in (42), negation counts for contrast even when eliding in trivial sentences like the tautologous disjunction in (xi) or the contradictory conjunction in (xii) (Stockwell 2018):

(xi) Either John_1 is wrong, or he_1 isn't ~~wrong~~.

(xii) John_1 is wrong and he_1 isn't ~~wrong~~.

[21]Author (XXXX) analyses the voice mismatch pair in (i) along similar lines (cf. Grant et al. 2012):

(xiii) a. ? This information should have been released, but Gorbachev didn't.

b. * This information was released, but Gorbachev didn't.

Ellipsis is licensed in (a) based on the assumption that Gorbachev is the person under obligation to release the information. Where this assumption is contradicted by the assertion in (b), ungrammaticality results.

[22]For sure, (63) and (64) attribute inconsistent desires to the attitude holders Bill and John. But where contradiction has ruinous consequences for grammaticality, inconsistency apparently does not.

[23]As well as the symmetry of *meet*, focus membership holds in (74) 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 function $\lambda p \lambda x.p$. Like the issues surrounding the referential contribution of PRO discussed in notes 13, 14 and 18, this issue is entirely independent of VPE with symmetrical predicates; e.g. (xiv):

(xiv) Mary_2 came because she_2 WANTed_F to ~~come~~.

[24]Cf. the distinction between ellipsis and deaccenting. Further inferencing is required to achieve semantic parallelism in cases of 'implicative bridging' (Rooth 1992b; Fox 2000) such as (i):

(xv) She_1 called him_2 a Republican, and then [$\text{HE}_{2,F}$ *insulted* $\text{HER}_{1,F}$]

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)*. Inferencing is triggered by the new, deaccented, accommodation-seeking lexical material that is present in E but not A. In the absence of deaccented, accommodation-seeking material in ellipsis, the bridged reading is unavailable in (xvi):

(xvi) * She$_1$ called him$_2$ a Republican and then [HE$_{2,F}$ did ~~insult her$_1$~~]

Notice that participant and transitivity switching differs from implicative bridging in being compatible with ellipsis. Switches based on symmetry are apparently more automatic than inferencing of the kind in (xvi), which needs to be triggered by accommodation-seeking material. This point is made in the text shortly below with regard to (78). The sameness of the lexical material — a symmetrical predicate plus or minus a PP — is doubtless important for switching ellipsis, as opposed to implicative bridging (Rooth 1992b).

[25]See Winter (2018), who terms predicates like *meet* plain reciprocals (also *date*, *be cousins*, *be similar*), and those like *kiss* pseudo reciprocals (also *hug*, *fight (with)*, *talk (to)*.

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

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