Triviality and contrast in ellipsis

**Abstract** This paper compares two theories to account for the ungrammaticality of ellipsis in tautologous conditionals, e.g. *If John is wrong, then he is *(wrong)*. One theory attributes the ungrammaticality to a failure of ‘proper’ contrast as part of ellipsis parallelism (Rooth 1992a,b); the other to triviality at a more abstract, logical level (Gajewski 2009). The latter theory accounts better for the improvement of ellipsis with discourse antecedents, but the former extends more broadly, capturing: double ellipsis; the grammaticality of ellipsis in trivial sentences with negation; the ungrammaticality of ellipsis in non-trivial self-conjoined sentences expressing iteration and so-called MaxElide effects; and contrasts involving ellipsis and intensionality. As such, this paper shows that contrast is crucial to ellipsis parallelism.

**Keywords:** ellipsis, parallelism, contrast, triviality, conditionals, focus, verum, intensionality

1 **Introduction**

Ellipsis might seem to radically undermine form-meaning mapping, in that we interpret meaning in the absence of phonological form. However, the licensing conditions on ellipsis shore up the relationship between form and meaning by requiring the elided content to be recoverable from an antecedent that is in some sense ‘identical’ to the ellipsis. In (0), for example, the fully pronounced (a) has the same meaning as the elliptical (b). We interpret *wrong* in the ellipsis site in (b), drawing on the *if*-clause as antecedent:

(0) a. If John is wrong, then Bill is wrong (too).
   b. If John is wrong, then Bill is *wrong* (too).

From the perspective of ‘identity’ as the central notion in ellipsis licensing, the contrast in (1) is surprising. We can say trivial things, like the tautologous conditional in (a); but not the same sentence with ellipsis in (b):

1 Strikethrough indicates ellipsis, adopting the PF-deletion approach to ellipsis (Merchant 2001) for concreteness.
2 Out of the blue, (1b) seems at best to have a ‘main verb’ reading of *is*: ‘If John is wrong, then he exists.’ See section 4.1 below on (1b) with discourse antecedents.
(1)  a. If John is wrong, then he is wrong.
    b. *If John is wrong, then he is wrong.

Thus despite providing for complete identity with an antecedent, ellipsis is not licensed in tautologous conditionals.

The aim of this paper is to explain the differing status of (a) versus (b), for which the meaning of (1) is by the by. For what it’s worth, uttering a tautologous conditional seems to make a negative discourse move, shutting down a topic of conversation and ruling out further discussion. Thus the message conveyed by (1a) might be paraphrased as “John is wrong — deal with it!”3 But whatever the meaning of (1), the question pursued here is why (a) and (b) differ in grammaticality as a function of ellipsis.

This paper considers two competing accounts for the observation in (1) that ellipsis is ungrammatical in tautologous conditionals. According to the first, discussed in section 2, the problem is with the ellipsis, which fails to meet a semantic parallelism condition (Rooth 1992b); in particular, the clause containing ellipsis and its antecedent are not in sufficient contrast (Rooth 1992a; Griffiths 2019). According to an alternative theory, the problem is the tautology, which persists at a more abstract level to cause ungrammaticality; concretely, Gajewski’s (2009) theory of Logical-triviality can be extended to enforce ellipsis identity at the level of Logical Skeletons, as discussed in section 3. The theories account equally well for the basic facts, but their predictions are teased apart against further data in section 4. The theory based on triviality accounts better for the improvement of ellipsis in tautologous conditionals with discourse antecedents, but the theory based on parallelism and contrast extends more broadly to double ellipsis, other trivial sentences with negation, non-trivial sentences, and contrasts involving intensionality. Section 5 concludes.

2 Ellipsis parallelism

Rooth (1992b) argues that ellipsis is subject to the same semantic redundancy relation as focus (Rooth 1992a). After introducing Rooth’s (1992a) theory of focus in the first subsection, the second follows the spirit of Rooth (1992b) in applying his theory of focus to ellipsis. The ungrammaticality of ellipsis in tautologous conditionals provides empirical motivation for a ‘proper’ contrast condition on ellipsis.

2.1 Rooth’s (1992a) theory of focus

Rooth (1992a: 90, 93) proposes (2) as a constraint on focus interpretation. F(E) =

As Horn (1981: 326) puts it with respect to tautologous free relatives (see sections 4.3 and 4.5, below): “These sentences may be used ... as a way of stonewalling an embarrassing line of questioning, a way of pleading Fifth.”
the focus semantic value of E, calculated by replacing F(ocus)-marked constituents with variables of the same type and collecting them into a set:

(2) Focus at the level of a phrase Φ requires an antecedent A such that either:

i. \([A] \in F(Φ)\) and \([A] \neq [Φ]\); or

ii. \([A] ⊆ F(Φ)\)

Clause (i) pertains to declarative antecedents. It requires first that the ordinary meaning of the antecedent A be a member of the focus semantic value of the constituent containing focus Φ — the focus membership condition. Clause (i) additionally requires that A and Φ have distinct ordinary meanings — the contrast condition.

By way of example, both of these conditions are met in (3). The proposition that John likes Mary is a member of the set of propositions of the form \(x \text{ likes Mary}\), where \(x\) ranges over individuals; so the focus membership condition is met. Further, the proposition that John likes Mary is distinct from the proposition that Bill likes Mary, satisfying the contrast condition:

(3) A: John likes Mary. B: BILL\(_F\) likes Mary, too.

\(\begin{align*}
[A] &= \text{like}'(m)(j) \\
[Φ] &= \text{like}'(m)(b) \\
F(Φ) &= \{\text{like}'(m)(x) \mid x \in D_e\}
\end{align*}\)

\([A] \in F(Φ)\) and \([A] \neq [Φ]\)

Clause (ii) of the constraint on focus interpretation in (2) pertains to question antecedents, whose ordinary meanings are sets of propositions (Hamblin 1973). It requires that the ordinary meaning of A be a subset of the focus semantic value of Φ — the subset condition.

The exchange in (4) meets this condition. The ordinary meaning of A and the focus value of Φ are both the set of propositions of the form \(x \text{ likes Mary}\):


\(\begin{align*}
[A] &= \{\text{like}'(m)(x) \mid x \in D_e\} \\
[Φ] &= \text{like}'(m)(j) \\
F(Φ) &= \{\text{like}'(m)(x) \mid x \in D_e\} \\
[A] &⊆ F(Φ)
\end{align*}\)

The next subsection applies (2) to ellipsis and shows that the contrast condition accounts for the ungrammaticality of ellipsis in tautologous conditionals.

4 Apostrophes indicate metalanguage expressions. The type of \(\text{like}'\) is \(\langle e, \langle e, \langle s, t \rangle \rangle \rangle\).

5 Clause (ii) of (2) requires \([A] ⊆ F(Φ)\) rather than \([A] = F(Φ)\) in view of domain restrictions on questions, as for who to humans; i.e. for (4): \(\{\text{like}'(m)(x) \mid x \in D_e \& \text{human}'(x)\}\). \([A]\) would then be a proper subset of — not equal to — \(F(E)\), which is calculated without restriction by definition.
2.2 Rooth 1992b: applying Rooth 1992a to ellipsis

Following Rooth (1992b), ellipsis has widely been hypothesised to be subject to similar constraints as focus. However, Rooth (1992a) does not provide any empirical motivation for including the contrast condition in his constraint on focus interpretation in (2). Rather, Rooth (1992a: 90) acts out of a methodological concern to constrain the theory as much as possible while retaining generality.

Perhaps for this reason, many researchers (for example, Heim 1997; Fox 1999; Fox 2000: 85, ex. 16; Takahashi & Fox 2005) have considered only the first half of (i) from (2). That is, they pursue the consequences of subjecting ellipsis to the focus membership condition, along the lines of (5):  

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

This condition, often termed the parallelism condition on ellipsis licensing, requires that a phrase E containing an elided constituent $\varepsilon$ have an antecedent A; and that the ordinary semantic value of A be a member of the focus semantic value of E.

Rooth (1992b: exx. 22, 23; 32) himself seems to set the contrast condition aside in showing that the focus membership condition makes a doubly correctly prediction that ellipsis is licensed in the simple case of (6):

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

For one, we can take A and E to be the main clauses of each conjunct. Assuming focus on $\text{BILL}_F$, focus membership is satisfied as in (7). Informally, John leaving is a member of the focus alternatives to Bill leaving — someone left:

(7) John left, and $\text{BILL}_F$ did leave, too. $\varepsilon = \text{leave}$

\[ E = \text{BILL}_F \text{left} \quad [E] = \text{leave}'(b) \quad F(E) = \{\text{leave}'(x) \mid x \in D_e\} \]

\[ A = \text{John left} \quad [A] = \text{leave}'(j) \quad [A] \in F(E) \]

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

In addition to taking A and E to be the main clauses, focus membership can be satisfied just as well by taking A and E to be the VP of each conjunct, as in (8). Informally, leaving is a member of the focus value of leaving — the singleton set containing leaving:

\[ Also omitting clause (ii) of (2) because they limit their discussion to declarative antecedents.\]
The elided constituent \( \varepsilon \) 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, focus membership is satisfied trivially.

Thus the focus membership condition in (5) makes a doubly correct prediction with respect to ellipsis in simple sentences like (6). Focus membership can be satisfied substantively, as in (7), where leave'\((j)\) is one among the many members of the set \( \{\text{leave}'(x) \mid x \in D_E\} \); or vacuously, as in (8), where leave' is a member — in fact, the only member — of the degenerate singleton set \( \{\text{leave}'\} \).

However, focus membership alone makes an incorrect prediction with respect to tautologous conditionals. Assuming F-marking on is introduces polar focus alternatives, the focus membership condition in (5) is satisfied for (1b) as in (9):
be satisfied vacuously on degenerate singletons, as in (8), due to contrast failure:

\( \text{leave}' \) means \( \text{leave}' \). The overall prediction that ellipsis is good in (6) still stands, since focus membership can be satisfied substantively, as in (7), while also passing contrast: John leaving is different from Bill leaving.

But for tautologous conditionals, the prediction turns from incorrect, as in (9), to correct in (11). Applying (10) to (1b), the sentence is correctly predicted to be bad, since it fails the contrast condition.\(^8\), \(^9\)

\[(11) \quad \* \text{If John}_1 \text{ is wrong, then he}_1 \text{ is}_{F} \text{wrong.} \quad \varepsilon = \text{wrong} \]

\( E = \text{he}_1 \text{ is}_{F} \text{wrong} \quad A = \text{John}_1 \text{ is wrong} \)

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

\( F(E) = \{\text{wrong}'(j), \text{not-wrong}'(j)\} \quad [A] \in F(E), \text{but } [A] = [E] \)

Ellipsis in (11) is subject to clause (i) of (10), since the antecedent \( \text{John is wrong} \) in the if-clause is declarative. The elided constituent \( \varepsilon \) is \( \text{wrong} \), which is contained in \( E \text{ he is}_{F} \text{wrong} \). Focus on \( \text{is}_{F} \) introduces polar focus alternatives for \( E \). As before, the antecedent \( A \) \( \text{John is wrong} \) is indeed a member of this set, satisfying focus membership. But the ordinary meanings of \( A \) and \( E \) are exactly the same. Thus (11) is ruled out as a failure of ellipsis licensing — in particular, it fails the contrast condition.

In sum, an ellipsis parallelism theory comprising focus membership strengthened by contrast correctly rules out ellipsis in (1b). It is worth emphasising that ellipsis is ruled out solely by the contrast condition; where Rooth (1992a: 90) was acting out of a methodological concern with (2) for focus, the contrast condition as part of (10) has empirical bite in ellipsis licensing with respect to tautologous conditionals. The next section introduces an alternative theory, before the two are compared against further data in section 4.

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8 F-marking is placed on \( \text{is} \) as the most natural way to try and pronounce (11). It means the focus membership condition is met, isolating the contrast failure as the reason for ungrammaticality. However, whatever F-marking is assigned in the apodosis of (11) — on any head, branching node, or nowhere at all — ellipsis will not be licensed, because contrast will fail regardless. The exception is F-marking on \( \text{he} \), which makes (11) good, but does so by making the pronoun disjoint from \( \text{John} \), changing the meaning of the sentence to be contingent, while also satisfying contrast. Contrastive focus on \( \text{he} \) referring to \( \text{John} \) is not supported when (1b) is uttered out of the blue. Any context that supports such contrastive focus will also supply an extra-sentential antecedent for the ellipsis that satisfies the contrast condition. See section 4.1 for more on extra-sentential antecedents.

9 To the extent that ellipsis is just the extreme case of phonological deaccenting (Tancredi 1992), it is reassuring that the deaccenting in (i) is just as bad as the ellipsis in (1b):

\[(i) \quad \* \text{If John is wrong, then he is}_{F} \text{wrong.} \]
3 L-triviality

The theory developed in the previous section attributed the ungrammaticality of ellipsis in tautologous conditionals to a problem with ellipsis. This section considers an alternative theory that attributes the problem to tautology.

Gajewski (2002, 2009) aims to reconcile explanations of ungrammaticality in terms of tautology and contradiction with the fact that we can say trivial things. He hypothesises that triviality is ungrammatical only at a more abstract, logical level. His theory can be extended to account for the ungrammaticality of ellipsis in tautologous conditionals if we assume that ellipsis identity is enforced at this abstract, logical level.

3.1 Triviality and ungrammaticality

Trivial truth conditions are regularly invoked to explain ungrammaticality (for extensive references see Gajewski 2009; Abrusan 2014). For example, Barwise & Cooper (1981) explain the definiteness effect in there-existentials in terms of tautology (12). Weak determiners like some (a) are acceptable in quantificational there-associates, whereas strong determiners like every (b) are not:

(12) a. There are some curious students.
    b. * There is every curious student.

Suppose that there denotes the domain of individuals $D_e$, and there-associates are predicates that apply to there. Then (13) results: there-existential sentences with weak quantifiers are contingent (a); whereas there-existential sentences with strong quantifiers are tautologous (b):

(13) a. (12a) is contingent on the existence of members of the set denoted by $P$:
    $$[[\textit{some}](P)(\text{there})] \text{ is true iff } P \cap D_e \neq \emptyset$$
    So when $P \neq \emptyset$, $[(12a)] = \text{True}$; but when $P = \emptyset$, $[(12a)] = \text{False}$

    b. (12b) is a tautology, true regardless of the set denoted by $P$:
    $$[[\textit{every}](P)(\text{there})] \text{ is true iff } P \subseteq D_e$$
    So for any $P$, $[(\textit{every})(P)(D_e)] = \text{True}$

Thus Barwise & Cooper (1981) rule out strong determiners in there-existentials as tautologous. Yet, to Gajewski’s (2009: ex. 27) great concern, we can say trivial things. The grammaticality of tautologous and contradictory sentences like those in (14) undermines direct appeals to tautology and contradiction as an explanation for ungrammaticality:

(14) a. It is raining and it isn’t raining.
b. If Fred is wrong, then he is wrong.
c. Figure A is hexagonal or Figure A is not hexagonal.
d. Every square is a square.

Gajewski’s (2009) theory of logical triviality provides a solution to this problem. He hypothesises that triviality is ungrammatical only at a more abstract, logical level. While the examples in (14) are perfectly acceptable, a formally identifiable subset of trivial sentences are logically trivial, hence ungrammatical. As laid out in (15), Gajewski (2009: exx. 41, 42, 30) defines L(ogical)-triviality as in (a) and relates it to ungrammaticality as in (b). The definition of L-triviality refers to a sentence’s logical skeleton (LS), defined in (c). The intuition behind LSs is that the grammar treats all occurrences of non-logical constants as independent:

\[(15) \quad \begin{align*}
a. & \text{ A sentence } S \text{ is } L\text{-trivial iff } S\text{'s logical skeleton receives the truth-value } 1 \text{ (or } 0) \text{ in all interpretations.} \\
b. & \text{ A sentence is ungrammatical if its Logical Form contains a } L\text{-trivial constituent sentence.} \\
c. & \text{ To obtain the logical skeleton (LS) of an LF } \alpha: \\
& \quad i. \text{Identify the maximal constituents of } \alpha \text{ containing no logical items;} \\
& \quad ii. \text{Replace each such constituent with a fresh constant of the same type.} 
\end{align*} \]

Take, for example, the conditional tautology in (16). In constructing the LS, the logical item \textit{if} is retained, while the independent occurrences of the non-logical constant \textit{rain} are replaced by independent arbitrary constants, \(P\) and \(Q\):

\[(16) \quad \text{If it rains, it rains.} \\
\quad \left[ \textit{if} \quad P \quad Q \quad \right] \]

The LS in (16) is not trivial. It is shared by other perfectly contingent sentences, e.g. \textit{If it rains, it pours}. Therefore (16) is grammatical: although trivial, it is not L-trivial.

Compare the \textit{there}-existential sentences from (12), which receive the LSs in (17). As detailed in (13), (17a) is contingent on the choice of \(P\), whereas (17b) is true for any \(P\). Since its LS in (17b) is trivial, (12b) is L-trivial, hence ungrammatical:10

\[(17) \quad \begin{align*}
a. & \text{ there are some } P \\
b. & \text{ } \quad \textit{X} \text{ there is every } P 
\end{align*} \]

The next subsection extends Gajewski’s (2009) theory in (15) to ellipsis.

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10 Reserving * for ungrammaticality, trivial LSs are marked \(\times\).
3.2 Extending Gajewski 2009 to ellipsis

Gajewski’s theory of L-triviality reconciles the fact that we can say tautologous and contradictory things with explanations of ungrammaticality in terms of trivial truth conditions. We can extend Gajewski’s theory to account the ungrammaticality of ellipsis in tautologous conditionals by checking ellipsis identity at the level of logical skeletons. We can implement this by making the additional assumptions about LSs in (18):

(18) 
   a. At LS, elided terms must have the same variable as their antecedents.
   b. Coindexed terms are replaced by the same variable at LS.

The assumption in (18a) requires the non-logical constants of an elided constituent to be identical at LS to the non-logical constants of its antecedent. The further assumption in (18b) resolves a point left open by Gajewski.\(^{11}\)

Gajewski’s theory of L-triviality in (15) extended by the assumptions in (18) applies to the elliptical tautologous conditional from (1b) as in (19). Since it has a trivial LS, (1b) is L-trivial, hence correctly predicted to be ungrammatical:

(19) *
   If John\(_1\) is wrong, then he\(_1\) is wrong.
   \[ \text{if } \alpha \text{ is } P \text{ then } \alpha \text{ is } P \]

In detail, in constructing the LS for (19) the logical items *if* … *then* and the copulas are retained. The non-logical items *John* and *wrong* in the protasis of the conditional, and *he* and *wrong* in the apodosis, are subject to replacement by arbitrary constants. However, by assumption (18a) the elided *wrong* must be identical to its antecedent at LS; so both occurrences of *wrong* are replaced by the same constant *P*. Similarly by assumption (18b) the coreferential terms *John* and *he* are dependent; so both are replaced by the same constant *\(\alpha\)*. The resulting LS is trivial. Hence the sentence is L-trivial, and ungrammatical.

Compare (20), which shows that the fully pronounced tautologous conditional from (1a) is not L-trivial. With no ellipsis, no identity is enforced between the two occurrences of *wrong*, so each is replaced by an independent arbitrary constant. As in (16) above, the resulting LS is contingent. Therefore, (20) is correctly predicted to be grammatical; it is trivial, but not L-trivial:

(20)   If John\(_1\) is wrong, then he\(_1\) is wrong.
   \[ \text{if } \alpha \text{ is } P \text{ then } \alpha \text{ is } Q \]

In sum, extending Gajewski’s (2009) theory to enforce ellipsis identity over LSs rules out (1b) as L-trivial. The next section introduces further data to adjudicate

\(^{11}\) Assumption (18b) would reduce to (18a) on a theory that treats anaphora and ellipsis in the same way, e.g. Elbourne (2001), Hardt (1993).
between this extended theory of L-triviality and the competing ellipsis parallelism theory from section 2.

4 Further data

The two theories developed in the previous sections are equally capable of accounting for the ungrammaticality of ellipsis in tautologous conditionals, overcoming the surprising fact that complete identity fails to license ellipsis. On the first, ellipsis fails the contrast condition of ellipsis parallelism. On the second, identity at the level of logical skeletons renders the elliptical examples logically trivial, hence ungrammatical.

This section compares the two theories against further data. The discussion begins with discourse antecedents for ellipsis in tautologous conditionals in section 4.1. Both theories can account for the grammaticality of ellipsis when the antecedent is sourced from a preceding question; but ellipsis parallelism faces a challenge from ellipsis continuing to be grammatical with extra-sentential declarative antecedents. Discourse antecedents aside, ellipsis parallelism tends to fare better than extended L-triviality. This is most especially the case for double ellipsis, the topic of section 4.2. Ellipsis parallelism can also more naturally handle: the goodness of ellipsis in trivial sentences with negation, in terms of polarity focus, which extended L-triviality would predict ungrammatical (section 4.3); non-trivial sentences (section 4.4), which are beyond the purview of L-triviality; and intensionality contrasts, where verum focus delimits the relevant natural class of licensing predicates, which would have to be stipulated separately from L-triviality (section 4.5).

4.1 Discourse antecedents

The foregoing has considered the grammaticality of ellipsis in tautologous conditionals in isolation, with (1b) uttered out of the blue. This subsection considers elliptical tautologous conditionals as embedded in a discourse, where the antecedent for ellipsis can be sourced from a preceding sentence rather than the if-clause. When the antecedent is located in a preceding question, both ellipsis parallelism and extended L-triviality make good predictions; but when the antecedent is in a preceding declarative clause, ellipsis parallelism makes an errant, if potentially fixable, prediction.

Both theories correctly predict the exchange in (21) to be good, despite speaker B’s response in (21) being the same as (1b):

(21) A: Is John₁ wrong? B: If John₁ is wrong, then he₁ is \textit{wrong}.

On both theories, the problem with ellipsis inside the tautologous conditional in B is
circumvented by sourcing the antecedent from the polar question in A rather than the if-clause. We can be sure that the antecedent is indeed the question in (21) based on the minimally different exchange in (22). The only possible interpretation for the ellipsis site in B is silly, sourced from the question in A; a tautologous interpretation with wrong sourced from the if-clause is not available:

(22) A: Is Fred2 silly? B: If Fred2 is wrong, then he2 is silly / *wrong.

Ellipsis parallelism treats (21) as in (23), where the question antecedent invokes clause (i) of the parallelism condition from (10), circumventing the contrast condition:

(23) E = he1 isF wrong
[A] = {wrong′(j), not-wrong′(j)}
F(E) = {wrong′(j), not-wrong′(j)}

A = Is John1 wrong?

E and its focus value are unchanged from the treatment of the tautologous conditional. The ellipsis cannot take the if-clause as its antecedent, since this would result in a contrast failure, as for (1b) in (11). Instead, the ellipsis sources its antecedent from the polar question. With a question as antecedent, ellipsis is subject to clause (ii) of (10) – the subset condition. Following Hamblin (1973), the polar question denotes the set of its possible answers: John is wrong, John is not wrong. This set is the same as the focus value of E; so the subset condition is met and ellipsis is licensed without the issue of contrast arising.

Extended L-triviality also predicts the exchange in (21) to be good. Sourcing the antecedent for ellipsis from outside the sentence circumvents L-triviality as in (24):

(24) A: Is John1 wrong? B: If John1 is wrong, then he1 is wrong.

Extended L-triviality enforces ellipsis identity at the level of logical skeletons. To meet this restriction, the ellipsis in B and its antecedent in A are replaced with the same constant P in the LSs in (24). The occurrence of wrong in the if-clause is not involved in the ellipsis relationship, so is replaced with the independent Q. The LS for B is then not trivial, but shared by perfectly contingent sentences, e.g. If John is lucky, then he is happy. Thus (24) is not L-trivial, and so it is grammatical.

Both theories continue to make good predictions on questions beyond matrix polar questions. When the discourse antecedent is an embedded polar question, ellipsis is good in (25); while ellipsis is bad in (26) when the antecedent is a wh-question:

(25) A: I wonder whether John1 is wrong.
B: If John1 is wrong, then he1 is wrong.

(26) A: What is John1 (like)? B: *If John1 is wrong, then he1 is wrong.
According to ellipsis parallelism, ellipsis is licensed for (25) in exactly the same way as for (21) in (23), on the assumption that embedded polar questions, like matrix questions, denote the set of their possible answers (Hamblin 1973). In (26), on the other hand, ellipsis is not licensed, since the subset condition is not met: the antecedent wh-question denotes the set of propositions where a property is applied to John, i.e. \( \{ P(j) \mid P \in D_{(e,st)} \} \), which is not a subset of \( F(E) = \{ \text{wrong}'(j), \text{not-wrong}'(j) \} \).

Extended L-triviality also makes the right cut between (25) and (26). In order to circumvent L-triviality, ellipsis identity needs to be established with an occurrence of wrong outside the tautologous conditional. Such an extra-sentential occurrence of wrong is provided by A in (25), but not in (26).

In sum, both theories correctly predict that tautologous conditionals can contain ellipsis when the antecedent comes from a polar question, but not a wh-question. Polar questions circumvent the problem with sourcing the antecedent from the if-clause — failure to contrast and L-triviality, respectively — whereas wh-questions do not provide the necessary antecedent material.

However, predictions diverge when the discourse antecedent for ellipsis in a tautologous conditional is a declarative clause, as in (27):

(27) A: John_1 is wrong.  B: ? If John_1 is wrong, then he_1 is \text{wrong}.

Ellipsis parallelism predicts the exchange in (27) to be bad. With a declarative antecedent, a contrast failure is predicted to arise just as for (1b) in (11), regardless of whether the antecedent is sourced from inside or outside the tautologous conditional. For extended L-triviality, on the other hand, taking the extra-sentential occurrence of wrong as antecedent should be enough to circumvent L-triviality, just as for (21) in (24), predicting the exchange in (27) to be good.

Stepping beyond tautologous conditionals, while B’s response in (27) is perhaps mildly degraded, the exchange in (28) is perfectly good:

(28) A: John is wrong.  B: Yes, he IS \text{wrong}.

The grammaticality of ellipsis in utterances of agreement, such as B’s in (28), presents a major problem for incorporating Rooth’s (1992a) contrast condition in ellipsis parallelism, since \( [A] = [E] \).

However, the problem with (28) only stands if we subject the ellipsis to clause (i) of the parallelism condition from (10), taking as antecedent declarative sentence uttered by speaker A. If instead we can shift to clause (ii) of (10), ellipsis will be licensed successfully, as it was in (23). One way to effect this would be to take speaker A’s discourse move to be proffering alternatives, establishing a Question-Under-Discussion (QUD) (Roberts 1996) as to whether John is wrong. Taking this QUD as antecedent would move the licensing calculations to clause (ii) of
the parallelism condition, thereby defusing the contrast condition for speaker B’s response as in (29):

(29) \[ \begin{align*}
E &= \text{he}_1 \text{ is}_F \text{ wrong} \\
A &= \text{John}_1 \text{ is wrong} \\
[E] &= \text{wrong}'(j) \\
\text{QUD}(A) &= \{\text{wrong}'(j), \text{not-wrong}'(j)\} \\
\text{F}(E) &= \{\text{wrong}'(j), \text{not-wrong}'(j)\} \\
\text{QUD}(A) &\subseteq \text{F}(E)
\end{align*} \]

However, principled constraints, motivated independently of ellipsis licensing, would be necessary, outlining when a declarative clause can and cannot proffer a QUD.

Along similar lines, another way to invoke clause (ii) of (10) would be to take speaker A’s utterance as itself being relative to a previously established QUD as to whether John is wrong. This QUD, established prior to rather than by A’s utterance, could then serve as the antecedent for ellipsis, along similar lines to (29). However, it would remain to account for why such a QUD can be conjured for the exchange in (28) or (27), but not an out of the blue utterance of a tautologous conditional, as (1b).

Overall, both ellipsis parallelism and extended L-triviality make good predictions when the antecedent for ellipsis in a tautologous conditional is located in a preceding question: circumventing contrast and L-triviality with polar questions, and failing on wh-questions. Ellipsis parallelism — but not L-triviality — makes a suspect prediction when the antecedent is found in a preceding declarative clause. This prediction becomes clearly incorrect beyond tautologous conditionals in light of utterances of agreement. Still, granting that declaratives can proffer or conjure QUD antecedents, ellipsis parallelism has a potential fix. And besides, the challenges faced by extended L-triviality are more serious, beginning with double ellipsis in the next subsection.

4.2 Double ellipsis

Ellipsis parallelism and extended L-triviality come apart in relation to the sentence in (30) with ellipsis in both clauses of the conditional at once:

(30) If he\(_1\) is \(<\), he\(_1\) is \(<\).

Though it need not, (30) can have a trivial interpretation when both ellipses are resolved via the same antecedent, as in (31):

(31) A: Is John\(_1\) wrong? B: If he\(_1\) is wrong, he\(_1\) is wrong.

Ellipsis parallelism correctly predicts the exchange in (31) to be good. Each ellipsis in B is separately and successfully licensed by the subset condition in just the same way as for (21) in (23) in the previous subsection.

Extended L-triviality, on the other hand, incorrectly predicts the exchange in (31) to be bad, as in (32):
(32)  A: Is John₁ wrong?  B: If he₁ is wrong, then he₁ is wrong.
      [ is α P ]  X [ if α is P then α is P ]

Both ellipses are dependent on the same antecedent, so both will be replaced by
the same arbitrary constant at LS, here P. This results in a trivial LS, rendering B
L-trivial and incorrectly predicting it to be ungrammatical.

There does not seem to be a principled way to correct the prediction L-triviality
makes for (31). As such, the goodness of double ellipsis in tautologous conditionals
strongly favours ellipsis parallelism.¹²

4.3 Other trivial sentences

This subsection steps further beyond tautologous conditionals to consider other
trivial sentences. Both ellipsis parallelism and extended L-triviality correctly rule out
ellipsis in some other tautologies, but ellipsis parallelism fares better on sentences
involving negation.

Both theories successfully extend to the tautologies in (33) and (34). As with the
tautologous conditional from (1), the (a) examples are trivial but perfectly grammat-
cal, whereas the (b) examples with ellipsis are ungrammatical. According to ellipsis
parallelism, there is no available properly contrasting antecedent to license the ellip-

¹² Still, there is more to say about the status of double ellipsis in (30) as opposed to single ellipsis in
(1b). While (30) needs to be provided with an antecedent before it can be interpreted, as in (31),
it can also be judged acceptable in isolation. The acceptability of (30) out of the blue suggests a
willingness to assume that a discourse could readily be provided to resolve the ellipses. We do not
seem to be willing to make the same allowances for (1b), however. (1b) is judged unacceptable in
isolation, despite that fact that there are discourses where it is good — as the previous subsection
showed with (21), (25) and, perhaps (27). Thus whereas we tolerate (30) without an antecedent being
available, it seems that the presence of a potential but unlicensed antecedent in the if-clause in (1b)
precludes such deference to discourse.

The data in (i) replicate the pattern among (30), (21) and (1b) for focus:

(i)  a. Bill is AMERICAN₁.
    b. John is Canadian. Bill is AMERICAN₁.
    c. ?? John is American. Bill is AMERICAN₁.

(a) behaves like double ellipsis in (30): there is no discourse to resolve the antecedent of the
focus/ellipsis, but we are willing to assume that one could readily be provided, and judge the
sentence acceptable. (b) is like single ellipsis in the exchange in (21): the first sentence provides
a legitimate antecedent for the focus/ellipsis in the second. Finally, (c) is like (1b): there is a
potential but unlicensed, non-contrasting antecedent for the focus/ellipsis, and the sentence is judged
unacceptable. Why potential but unlicensed antecedents should derail deference to discourse to the
point of unacceptability will have to remain a question for future research. Still, the similar pattern
observed for focus and ellipsis in this regard provides support for the ellipsis parallelism theory’s
application of the condition on focus interpretation (Rooth 1992a) to ellipsis (Rooth 1992b).
sis. According to extended L-triviality, meanwhile, the elliptical (b) examples are L-trivial, having the trivial LSs in the (c) examples:

(33) a. Every square is square.
    b. * Every square is square.
    c. $\not\exists$ [every P is a P]

(34) a. Boys will be boys.
    b. * Boys will be boys.
    c. $\not\exists$ [P will be P]

Likewise in (35), the perfectly grammatical tautologous free relative in (a) does not admit ellipsis in (b) (cf. Horn 1981: 326):^{13, 14}

(35) a. John$_1$ eats what he$_1$ eats.
    b. * John$_1$ eats what he$_1$ does eat.

Ellipsis parallelism rules out ellipsis in (35b) via the contrast condition, as in (36). Regardless of how the free relative DP takes scope to resolve antecedent containment,^{15} and regardless of the placement of F-marking, ellipsis is ruled out as a contrast failure, since A and E have the same meaning:

(36) * John$_1$ eats what he$_1$ does eat.
    $\{\text{DP what}_1 \text{ he$_1$ does eat}_1 t_1\};$ John$_1$ eats $t_i.$
    A = 2 John$_1$ eats $t_2$ E = 3 he$_1$ does eat $t_3$
    $[A] = [E] = \lambda x.\text{eat's'}(x)\langle j \rangle$

Equally, extended L-triviality makes the right cut in (35) between the fully pronounced (a), with its non-trivial LS in (37); and the elliptical (b), which is ruled out for its trivial LS in (38):

(37) John$_1$ eats what he$_1$ eats.
    $\{\text{DP what}_1 \text{ he$_1$ eats}_1 t_1\};$ John$_1$ eats $t_i.$
    $\{\text{what} \quad \text{Q} \quad \text{P} \quad \text{Ps}\}$

(38) * John$_1$ eats what he$_1$ does eat.
    $\{\text{DP what}_1 \text{ he$_1$ does eat}_1 t_1\};$ John$_1$ eats $t_i.$
    $\not\exists \{\text{what} \quad \text{does} \quad \text{P} \quad \text{Ps}\}$

^{13} Recalling note 2, the best available but bizarre parse for (52b) takes does to be ‘main verb’ do.
^{14} We return to tautologous free relatives like (35) in view of intensionality in section 4.5.
^{15} To avoid antecedent containment, A needs to exclude the elliptical free relative DP. For parallelism with A, E needs to exclude what. And to avoid syntactic overlap between A and E (Rooth 1992a), the free relative DP needs to move over John.
However, the predictions of the two theories diverge for ellipsis in other trivial sentences involving negation; for example, the contradictory conjunction in (39) and the tautologous disjunction in (40):

(39) John is wrong and he isn’t \textit{wrong}.
(40) Either John is wrong, or he isn’t \textit{wrong}.

Ellipsis parallelism correctly predicts both (39) and (40) to be grammatical as in (41). The opposition of a positive antecedent and a negative clause containing ellipsis satisfies the contrast condition:

\begin{align*}
E &= \text{he is not wrong} \\
A &= \text{John is wrong} \\
F(E) &= \{\text{wrong'}(j), \text{not-wrong'}(j)\} \\
F(A) &= \text{wrong'}(j) \\
\end{align*}

The ellipses in (39) and (40) are subject to clause (i) of (10), since the antecedent John is wrong in the first conjunct is declarative. The elided constituent wrong is contained in the clause E he is not wrong. Focus on not introduces polar focus alternatives for E: John is wrong, John is not wrong. The antecedent John is wrong is indeed a member of this set, so the focus membership condition is satisfied, similar to (1b) in (11). But, unlike with (1b), the ordinary meanings of A and E are distinct: A is positive, whereas E contains sentential negation. So the contrast condition is satisfied, and (39) and (40) are correctly predicted to be grammatical.

Extended L-triviality, on the other hand, incorrectly predicts ellipsis to be ungrammatical in all trivialities. It assigns (39) and (40) the trivial LSs in (42), predicting them to be L-trivial and ungrammatical:

\begin{align*}
\text{(42)} & \quad \text{a. } [\alpha \text{ is P and } \alpha \text{ is not P]} \\
& \quad \text{b. } [\text{Either } \alpha \text{ is P or } \alpha \text{ is not P}]
\end{align*}

One way for extended L-triviality to remedy this bad prediction would be to claim that (39) and (40) are not really trivialities. In both cases, the discourse move of uttering (39) and (40) is a constructive one that progresses the conversation. Intuitively, (39) says that John is wrong in one sense but not in another. Formally, Alxatib, Pagin & Sauerland (2013) treat borderline contradictions like John is and isn’t tall using fuzzy logic to allow for each conjunct to be half true, hence the whole sentence to be true. Meanwhile (40) partitions possible ways the world could be, raising the issue of which is the case: is John wrong or isn’t he? If (39) and (40) were rendered non-trivial along these lines, then they would not be L-trivial, and ellipsis would be predicted to be fine. That said, this treatment of apparent trivialities as non-trivial would have to be prevented from extending to (1) for the theory to make the right cut regarding ellipsis between (1b) on the one hand and (39) and (40)
on the other. This might be possible in light of the comments on the meaning of (1) in the introduction. Uttering a tautologous conditional is a negative discourse move, shutting down a topic of conversation and ruling out further discussion; the message being that John is wrong — deal with it!

In sum, while ellipsis parallelism handles the status of ellipsis in other trivialities very straightforwardly, extended L-triviality runs into difficulties on trivialities involving negation. In order to make the right cut regarding the status of ellipsis in trivialities, it would need to divide them into those that are truly trivial — tautologous conditionals — versus those that are only apparently so — tautologous disjunctions and contradictory conjunctions. The next subsection considers contrast effects in non-trivial sentences, where ellipsis parallelism has broader potential than extended L-triviality.

4.4 Non-trivial sentences

The previous subsection showed how extended L-triviality struggles on trivial sentences involving negation. This subsection considers two kinds of non-trivial sentences, where we might reasonably expect extended L-triviality’s purview to be further reduced. If extended L-triviality can be made sensitive to redundancy in addition to triviality, it could account for the ungrammaticality of ellipsis in self-conjoined sentences expressing iteration; but MaxElide effects (Schuyler 2001; Merchant 2008) are more surely beyond its scope. Ellipsis parallelism, on the other hand, naturally rules out ellipsis in self-conjunction as contrast failure, and has the potential to extend to so-called (Griffiths 2019) MaxElide effects.

First, ellipsis is impossible in self-conjoined sentences expressing iteration (43). Repetition must be whole, whether of sentences (a) or verb phrases (c). Ellipsis in the corresponding (b) and (d) is ungrammatical:

(43) a. They talked and they talked and they talked.
   b. * They talked and they did talk and they did talk.
   c. They talked and talked and talked.
   d. * They talked and did talk and did talk.

Ellipsis parallelism naturally handles the pattern in (43): ellipsis is ruled out by the contrast condition, since there is no available antecedent with a meaning distinct from the clause containing ellipsis.

Extended L-triviality, on the other hand, cannot immediately handle (43). Illustrating on (b), its LS in (44) is contingent:

(44) [α P and α P and α P]
This LS is not trivial, since it has a different truth value depending on whether \( \alpha P \). Still, while not trivial, (44) is certainly redundant: there are multiple conjuncts where truth-conditionally only one would do.

To make the correct prediction for (43b), we can adopt a revision to L-triviality independently motivated by Gajewski (2009: exx. 56-58) for (45). Conjoining a problematic quantifier (every) with an unproblematic one (no) is ungrammatical in a definiteness effect sentence like (a); this despite it having the LS in (b), which is contingent on the existence of members of the set denoted by Q (cf. 13):

\[(45) \quad \text{a. } \ast \text{ There is } [\text{every curious student and no boring professor}].
\text{b. } [\text{there is } [\text{every } P \text{ and no } Q]]\]

The ungrammaticality of (45a) motivates a stronger ban than the one in (15b) above, which declared that a sentence is ungrammatical if its Logical Form contains a L-trivial constituent sentence. Gajewski’s (2009) natural strengthening of (15b) that covers (45a) is (46):

\[(46) \quad \text{A sentence } S \text{ is ungrammatical if its Logical Skeleton contains a nonlogical terminal element that is irrelevant to determining the semantic value of } S.\]

For (45a), \( P \) in (45b) never plays any role in determining the truth-value of the sentence as a whole. Hence (45a) is correctly ruled ungrammatical by the new principle in (46). Similarly for (43b): two of the three occurrences of \( P \) in its LS in (44) are nonlogical terminal elements that make no difference to the semantic value of the sentence, whose truth value is determined by just one of its conjuncts. Thus a further extension of L-triviality along independently motivated lines results in the theory ruling out ellipsis in self-conjoined sentences, on a par with ellipsis parallelism.\(^{16}\)

As a second case of ellipsis in non-trivial sentences, the rest of this subsection considers so-called (Griffiths 2019) MaxElide effects (Schuyler 2001; Merchant

\(^{16}\) The ungrammaticality in (43) extends to nominal coordination in (i), perhaps lending support to a sentential conjunct reduction analysis of the nominal conjunction in (a) along the lines of (b) (see Hirsch 2017 for references):

\[(i) \quad \text{a. } \ast \text{ The boys and the boys left.}
\text{b. } \ast \text{ [ The boys left ] and [ the boys left ]}\]

In this vein, notice that in motivating (46) Gajewski (2009: exx. 56-58) implicitly sets aside an alternative conjunction reduction analysis of (45) as in (ii):

\[(ii) \quad \text{a. } \ast \text{ [ There is every curious student ] and [ there is no boring professor ]}
\text{b. } \ast \text{ [ There is every } P \text{ ] and [ there is no } Q\text{ ]}\]

The original (15b) declared a sentence ungrammatical if its Logical Form contains a L-trivial constituent sentence. Since, the first conjunct of (b) is L-trivial, (15b) correctly rules (a) ungrammatical.
2008), exemplified in (47). From a base sentence like (a), sluicing is possible in (b), but verb phrase ellipsis is not in (c):

(47)  
   a. John will kiss someone, but I don’t know who he will kiss t.  
   b. John will kiss someone, but I don’t know who he will kiss t.  
   c. *John will kiss someone, but I don’t know who he will kiss t.

The paradigm in (47c) is so far from being trivial or redundant that extended L-triviality seems to have no chance of accounting for it.

The prospects for ellipsis parallelism, on the other hand, are much brighter — as long as the contrast condition is incorporated. Previous analyses of (47), for example Takahashi & Fox (2005), have been framed in terms of ellipsis parallelism, but omit the contrast condition. With only the focus membership condition, (47c) is incorrectly predicted to be grammatical, as in (48):

(48)  
   \[E = 6 \, \text{he}_1 \text{ will kiss } t_6 \quad \quad A = 8 \, \text{John}_1 \text{ will kiss } t_8\]  
   \[[E] = \lambda x.\text{kiss}'(x)(j)\]  
   \[[A] = \lambda y.\text{kiss}'(y)(j)\]  
   \(F(E) = \{\lambda x.\text{kiss}'(x)(j)\}\)  
   \(A \in F(E)\)

Accepting that ellipsis licensing is successful in (47c), its ungrammaticality is instead attributed to the workings of the constraint in (49) (Merchant 2008):

(49) MaxElide: maximal elision must occur in parallelism domains.

On this view, ellipsis is successfully licensed in both (47b) and (47c) with respect to the same A and E; but since there is more ellipsis in (47b), (47c) is ungrammatical by (49).

Griffiths (2019) criticises MaxElide as an ad hoc solution to (47): transderivative comparison ranges over very conveniently chosen competitors, conspicuously omitting the perfectly good option of eliding nothing at all in (47a). In its place, Griffiths (2019) mounts an explanation for (47) by incorporating the contrast condition in ellipsis parallelism.\(^\text{17}\) (47c) is ungrammatical due to there being a contrast failure in (48), where \([A] = [E]\).

Treating (47c) as a contrast failure is a conceptual improvement on MaxElide, ruling it out on its own terms rather than as the loser of a competition with (47b). Further, Griffiths (2019) correctly predicts that when there is contrast, as between John and Mary in (50), ellipsis is successfully licensed:

\(^{17}\) Griffiths (2019) attributes the version of ellipsis parallelism in (10) that includes the contrast condition to Rooth (1992b); but recall the discussion in section 2.2. Griffiths (2019) assumes that sluicing (47b), as opposed to verb phrase ellipsis (47c), is subject to a separate Question-Under-Discussion based licensing condition requiring semantic identity between questions (Barros 2014); cf. clause (ii) of (10).
I know who JOHN will kiss $t$ and who MARY will kiss $t$.

$$E = 9 \text{MARY}_F \text{will kiss } t_9$$

$$A = 5 \text{JOHN}_F \text{will kiss } t_5$$

$$[E] = \lambda x.\text{kiss}'(x)(m)$$

$$[A] = \lambda y.\text{kiss}'(y)(j)$$

$$F(E) = \{ \lambda x.\text{kiss}'(x)(z) \mid z \in D_v \}$$

However, Charlow (2019) shows that Griffiths’s (2019) analysis falters when further members of the paradigm from Schuyler (2001) are taken into account. Ellipsis is ungrammatical when the contrastively focused expressions are beyond the c-command domain of the extracted wh-phrase, as between the matrix clause subjects Sue and Bill in (51):

(51) * SUE knows who John$_1$ will kiss $t$, and BILL knows who he$_1$ will kiss $t$, too.

Based on our theory of ellipsis parallelism so far, contrast between Sue and Bill should be enough for both focus membership and the contrast condition to be satisfied in (51). To rule it out, Griffiths (2019) makes use of the technical incompatibility between alternative semantics and A’ $\lambda$-binding (Shan 2004). He follows Kotek (2016) in embracing this incompatibility by turning it into a constraint with empirical effect. With $\lambda$-binders as interveners to focus semantic composition, A and E cannot stretch to include the main clause subjects Sue and Bill in (51). A and E are instead limited to the embedded TP, whereby the contrast failure from (48) persists to rule the sentence ungrammatical.

However, variables (in particular here the wh-traces) still need to be bound by something, if not by their $\lambda$s. If they were left free, focus membership failures would result. To address this, Griffiths uses existential closure to bind free variables in A and E when calculating ellipsis licensing. But, as Charlow (2019) explains, existential closure does not undo the compositional problem for alternative semantics that $\lambda$-binders introduce. Any binding, whether by $\lambda$ or $\exists$, is incompatible with standard alternative semantics for the same reason; and a fix, proceeding from the assumption meanings are functions from assignments to values (Rooth 1985 et seq.), applies equally to $\lambda$ and $\exists$ (Charlow 2019).

These technical considerations leave Griffiths’s (2019) analysis reliant on the bald stipulation that existential closure is compatible with alternative semantics while predicate abstraction is not. Still, to the extent that an account of the full MaxElide paradigm is forthcoming in the vein of ellipsis parallelism and contrast, it would be significant that the contrast condition is crucial to ellipsis licensing in having empirical bite beyond trivial sentences.

In sum, where we had so far considered only trivialities, this subsection compared L-triviality and ellipsis parallelism against two kinds of non-trivial sentences: self-conjunction expressing iteration, and so-called MaxElide effects. While extended L-triviality can be further extended to rule out the redundancy of the former, the
latter surely lie well outside its purview. Ellipsis parallelism, on the other hand, naturally accounts for the former, and Griffiths (2019) has demonstrated its potential for the latter. The next subsection considers sentences that are non-trivial by virtue of intensionality.

4.5 Intensionality and contrast

This section considers how the status of ellipsis changes when tautologous free relatives and conditionals are embedded. Recall tautologous free relatives from section 4.3, with (35) repeated here as (52). While (a) is perfectly grammatical, ellipsis parallelism rules out ellipsis in (b) as a contrast failure:

(52) a. John eats what he eats.
    b. * John eats what he does eat.

However, the difference observed in (52) does not persist in (53), where embedding under Mary believes renders ellipsis grammatical in (b):

(53) a. Mary believes that John eats what he eats.
    b. Mary believes that John eats what he does eat.

On our ellipsis parallelism theory so far, (53b) would receive the same treatment as (52b), namely (54). (In (54) et seq., w is any possible world.) Thus we incorrectly predict (53b) to be ungrammatical as a contrast failure:

(54) Mary believes that John \[1\] eats what \[1\] does eat.
    Mary believes \[ [DP what \[3\] he \[1\] does eat \[t3\] ] 2 John \[1\] eats \[t2\] \].
    \[A\] = 2 John \[1\] eats \[t2\]  \[E\] = 3 he \[1\] does eat \[t3\]
    \[A\]^w = \[E\]^w = λx.eat′(x)(j)

The observation that ellipsis is ungrammatical in (52b), but fine in environments like (53b), is due to Horn (1981: 326). He further notices that whereas intensional predicates usually introduce *de re-de dicto* ambiguities, the free relative DP in sentences like (53b) cannot be read *de dicto*. That is, (53b) cannot mean that Mary believes the tautology that what John eats is what he eats. Rather, the free relative can only be read *de re*: (53b) asserts that Mary is correct, equating what John actually eats with what Mary believes him to eat.

We can already explain why (53b) is bad on a *de dicto* interpretation. For the sentence to be read *de dicto*, both A and E will be in the scope of believe. Contrast failure will result, as in (54).

We can explain the rest of Horn’s observations in terms of ellipsis parallelism by making the licensing calculations sensitive to intensionality. In addition to being unambiguous — having only a *de re* and not a *de dicto* reading — the second thing
to notice about (53b) is that it has to be pronounced with stress on does. Stress on an auxiliary like does can signal polar focus, where the alternatives are the truth or falsity of the proposition. Polar focus on is was assumed in the ellipsis parallelism calculations for tautologous conditionals above in (11) et seq. (see also note 8). But stress on an auxiliary can also signal focus not on polarity, but intensionality. Intuitively, contrast holds in (53b) between what Mary believes and the actual state of affairs.

This intuition can be implemented in terms of verum focus (Höhle 1992). Formally, Romero & Han (2004) introduce VERUM (55), which means roughly ‘it is for sure that’: 18

\[(55) \quad [\text{VERUM } p]^w \approx \text{FOR-SURE}_w p\]

Focus on VERUM contributes alternatives to the proposition being true. The proposition is instead merely possible, or someone expects or wants or hopes it to be true or not true, etc., as sketched in (56) (Hardt & Romero 2004: 405, ex. 97):

\[(56) \quad F(\text{VERUM}_F p) = \{\text{it is for sure true that } p, \text{ it is possible that } p, \text{ it is hoped that } p, \text{ it is doubted that } p, \text{ it is wanted that } p, \text{ it is expected that } p, ..., \text{John expects that } p, \text{ John hopes that } p, \text{ Sam expects that } p, ..., \text{it is for sure true that } \neg p, \text{ it is possible that } \neg p, \text{ it is hoped that } \neg p, \text{ it is doubted that } \neg p, \text{ it is wanted that } \neg p, \text{ it is expected that } \neg p, ..., \text{John expects that } \neg p, \text{ John hopes that } \neg p, \text{ Sam expects that } \neg p, ... \} \]

To illustrate in (57), focus membership is satisfied via VERUM as in (58) (Hardt & Romero 2004: 406, ex. 98). Informally, Sue expecting John to win is an alternative to John actually winning. Thus contrast is also satisfied — Sue expecting John to win is different from it actually happening:

18 More precisely, VERUM is a conversational epistemic operator that 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 \( \text{CG}_{w''} \) is the Common Ground, or set of propositions that the speakers assume in \( w'' \) to be true (Stalnaker 1978):

\[(i) \quad [\text{VERUM}_f]^\text{ex/i} = [\text{really}]^\text{ex/i} = \lambda p, \lambda w, \forall w' \in \text{Epi}_x(w) \forall w'' \in \text{Conv}_x(w') [p \in \text{CG}_{w''}] = \text{FOR-SURE-CG}_x \]
(57) Sue expected John to win, and he did win.

(58) Sue expected John to win, and VERUM he did win.

\[ \varepsilon = \text{win} \]

\[ A = \text{Sue expected John to win} \]

\[ [A]^w = \text{expect}'_w(\lambda w'. \text{win}'_w(j))(s) \]

\[ E = \text{VERUM}_F \text{ John win} \]

\[ [E]^w = \text{FOR-SURE}_w(\lambda w'. \text{win}'_w(j)) \]

\[ F(E) = \{ \text{it is for sure true that John won, it is possible that John won, ...} \} \]

\[ \text{Mary wants that John won, Sue expects that John won, ...} \}

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

Armed with VERUM, we can now account for the grammaticality of ellipsis in (53b) on its \textit{de re} interpretation. The sentence, repeated with the obligatory stress on \textit{does} indicated in (59), passes ellipsis parallelism as in (60). Focus membership holds by virtue of Mary’s beliefs about what John eats being an alternative to what John actually eats. At the same time, contrast holds between Mary’s beliefs and actuality:19

(59) Mary believes that John eats what he \textit{does eat}.

(60) [what 4 VERUM he\textsubscript{1} does \textit{eat} \textsubscript{1} t\textsubscript{3}] Mary believes that John\textsubscript{1} eats t\textsubscript{3}

\[ \varepsilon = \text{eat t} \]

\[ A = 3 \text{ Mary believes that John eats t}_3 \]

\[ [A]^w = \lambda x. \text{believe}'_w(\lambda w'. \text{eat}'_w(x))(j)(m) \]

\[ E = 4 \text{ VERUM}_F \text{ John eat t}_4 \]

\[ [E]^w = \lambda x. \text{FOR-SURE}_w(\lambda w'. \text{eat}'_w(x))(j) \]

\[ F(E) = \{ \lambda x. \text{it is for sure true that John ate x, } \lambda x. \text{it is possible that John ate x, ...} \} \]

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

19 The paradigm of (52) and (53) recalls Russell’s (1905) ambiguity, the main topic of Horn (1981). In (i), whereas (a) is at best infelicitous, it is perfectly acceptable when embedded under an intensional verb like believe in (b):

(i) a. ?? Mary is as tall as she is.
   b. Mary believes she is as tall as she is.

On a \textit{de re} reading of (b), Mary is correct — she is a certain height, and she thinks she is that height. On a \textit{de dicto} reading, Mary subscribes to a tautology — that her height is her height. If (b) involves ellipsis, ellipsis parallelism predicts the contradictory \textit{de dicto} reading to be ungrammatical in (b) just as in (53b), for the reason in (54); yet it is reported to be available.

The status of (i) raises issues about the structure of comparatives and comparative subdeletion that are beyond the scope of this paper. In particular, the obligatoriness of ellipsis in comparatives, as in (ii), could be complicating matters here:

(ii) Mary is as tall as Sam is (*tall).
Further to embedding under an intensional verb like believe in (53b), ellipsis is grammatical in the tautologous free relatives in (61) under an intensional noun like fact (Moulton 2009) in (a) and with the intensional operator because (Kratzer 1998) in (b) (again, cf. Horn 1981: 326, ex. 6’):

(61)  
   a. The fact that John eats what he does eat is disappointing.
   b. John eats what he does eat because he’s training for a marathon.

The same considerations apply equally to tautologous conditionals, as shown in (62). Intensional embedding renders ellipsis grammatical in (d), based on the alternation between what John thinks about his silliness, and his correctness in fact:

(62)  
   a. If John \(j\) is silly, then he \(j\) is silly.
   b. * If John \(j\) is silly, then he \(j\) is silly.
   c. If John \(j\) thinks he is silly, then he \(j\) is silly.
   d. If John \(j\) thinks he is silly, then he \(j\) is silly.

While intensionality and VERUM explain why ellipsis is ameliorated in (62d), we should reassure ourselves that our prediction has not changed for (62b). Regarding the continued prediction that ellipsis is ungrammatical in a plain tautologous conditional, there are two points to consider.

The first is that, unlike intensional embedding, conditionals are not an environment we expect to make ellipsis good. This is straightforwardly so if we model if as material implication, without reference to possible worlds. 20 It remains so if we model conditional statements along the lines of the abstract LF in (63). This LF takes a conditional statement without an overt modal to contain a covert universal modal whose modal base is restricted by the if-clause (Kratzer 1986):

(63)  
\[
\left[ \left[ \text{universal-modal} \left[ R \ (\text{if}) \ p \right] \right] \left[ q \right] \right]
\]

According to the semantics of the covert modal, a conditional statement is true in a world \(w\) iff at each world \(w'\) accessible from \(w\) where \(p\) is true, \(q\) is also true. Where \(p = q\), as in a trivial case like (62b), there is no room for contrast to arise.

The second point to consider regarding the continuing ungrammaticality of (62b) is that VERUM can be used to satisfy contrast. Taking stress on is to realise VERUM focus rather than polar focus in E, the contrast condition is satisfied in (64):

(64)  
* If John \(1\) is silly, then he \(1\) is silly.
\[ E = \text{VERUM}_F \text{ he } 1 \text{ is silly} \]
\[ A = \text{John}\_1 \text{ is silly} \]
\[ [E]^w = \text{FOR-SURE}_w(\lambda w'. \text{silly}'_w(j)) \]
\[ [A]^w = \text{silly}'_w(j) \]
\[ [A]^w \neq [E]^w, \text{ but } [A]^w \notin F(E) \]

20 See Mandelkern (2019) for defence of the logical truth of If \(p\), then \(p\).
Since E contains VERUM, but A does not, (64) passes the contrast condition: \([\text{VERUM } p]_w \neq [p]_w\). However, (64) continues to predict (62b) to be ungrammatical due to a focus membership failure: plain \(p\) is not a member of the alternative set \(F(\text{VERUM}_F \ p)\) in (56).

In this vein, ellipsis parallelism in concert with VERUM can explain why only intensional embedding rescues ellipsis in tautologous free relatives and conditionals. Embedding under an aspectual verb like \(\text{start}\) leaves ellipsis ungrammatical in (65):

\[
(65) \quad \ast \text{John is starting to eat what he is starting to eat.}
\]

While a detailed analysis of aspectual verbs is beyond the scope of this paper, it is reasonable to suppose that they are not intensional. For example, \(\text{start}\) is about the extent to which something actually happened, not whether it happened, or the likelihood or desirability of it happening. Alternatives to VERUM on the other hand, are inherently intensional, encompassing desires or possibilities of something happening. Non-intensional predicates, therefore, are not in the set of alternatives to VERUM. Since \((\text{John}) \ \text{start}\) is not a member of \(F(\text{VERUM})\), ellipsis in (65) is ruled out as a focus membership failure, if we take A to be the main clause. Taking A to be the embedded clause, meanwhile, will result in contrast failure. This much is so quite apart from tautologous free relatives and other trivial sentences; (66) would be ruled out along similar lines:

\[
(66) \quad \ast \text{John started to work, and he did work.}
\]

In sum, contrast failures are found with ellipsis in tautologous free relatives and tautologous conditionals, but can be rescued by contrasts involving intensionality.

Whereas focus alternatives to VERUM identifies intensional predicates as a natural class as a straightforward consequence of ellipsis parallelism, extended L-triviality would have to be supplemented with the definition of such a class by stipulation. We saw in section 4.3 that extended L-triviality makes the right cut in tautologous free relatives (35/52) between the fully pronounced (a) and elliptical (b), which have contingent and trivial LSs, respectively. Calculations along similar lines rule out a \(\text{de dicto}\) reading of (59). The LS in (67) contains an L-trivial constituent sentence, namely the embedded clause:

\[
(67) \quad \beta \text{Mary believes John}_1 \text{ eats what he}_1 \text{ does eat.}
\]

Meanwhile, extended L-triviality applied to (59) on its \(\text{de re}\) reading gives (68):

\[
(68) \quad \beta \text{Mary believes John}_1 \text{ eats what he}_1 \text{ does eat.}
\]

\[
\begin{array}{l}
[\text{DP what}_k \text{ he}_1 \text{ does eat}_k]_i; \text{ John}_1 \text{ eats } t_i.
\end{array}
\]

\[
\begin{array}{l}
[\text{what } \alpha \text{ does } P \alpha \text{ Ps }]
\end{array}
\]

\[
\begin{array}{l}
\beta \text{ Qs } [\times [\text{what } \alpha \text{ does } P \alpha \text{ Ps }]]
\end{array}
\]
The LS in (68) is contingent. Hence extended L-triviality correctly predicts (59) to be grammatical.

However, extended L-triviality fails to capture the consequences for ellipsis licensing of the distinction between intensional and non-intensional embedding. Whereas embedding under intensional believe in (59) is grammatical, embedding under start in (65) is not. The non-/intensional difference survives at LS: per (15c), to obtain an LS, constituents are replaced with constants of the same type, and intensional and non-intensional embedders have different types. However, the LS for (65) would have basically the same format as the one for (68), contingent and incorrectly predicting the sentence to be grammatical.

In sum extended L-triviality would have to be supplemented with an explanation for why only intensional embedding rescues ellipsis; unlike ellipsis parallelism, where this distinction falls out naturally from VERUM focus.

5 Conclusion

This paper started from the observation that ellipsis is ungrammatical in tautologous conditionals. This observation was surprising from the perspective of ‘identity’ as the central notion in ellipsis licensing, but we developed and evaluated two theories to account for it. According to one, ellipsis fails a ‘proper’ contrast condition (Rooth 1992a), which is a crucial component of ellipsis parallelism. According to an extended version of Gajewski’s (2009) L-triviality, ellipsis causes triviality to persist at the abstract level of logical skeletons, causing ungrammaticality. Both theories were equally able to account for the ungrammaticality of ellipsis in tautologous conditionals, and for the fact that ellipsis becomes good when the antecedent is sourced from a preceding question in the discourse rather than the if-clause. On declarative discourse antecedents, extended L-triviality applied more naturally than ellipsis parallelism, which needs recourse to a QUD. But ellipsis parallelism fares better overall, generalising more naturally to double ellipsis, other trivial sentences involving negation, and non-trivial sentences. Finally, ellipsis parallelism more naturally captures the sensitivity of contrast to intensionality.

References


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