VP Ellipsis without Parallel Binding: Towards a QUD approach

Patrick D. Elliott[1], Andreea Nicolae[2] & Yasutada Sudo[1]

UCL[1] and Harvard University[2]

Summary: VP-Ellipsis (VPE) is a phenomenon involving a missing VP, which stands in an identity relation with some antecedent VP in the discourse. Over the past 40 years, scores of linguists have investigated the nature of this identity relation. Some claim that it is syntactic (Sag 1976, Williams 1977, Fiengo and May 1994, etc.), others that it is semantic (Dalrymple et al. 1991, Hardt 1999, etc.), and still others claim that certain pragmatic factors are also relevant (Rooth 1992, Hardt and Romero 2004, Kehler 2000, 2002, Kehler and Büring 2007, etc.). Central to the debate are the readings available with VPE when the antecedent contains pronouns, especially the so-called *strict* and *sloppy* readings. In this talk, we contribute to the debate by examining a third type of reading, which we dub the *sticky* reading. This reading has largely been ignored in the literature, despite its theoretical relevance. We claim that the sticky reading is indeed problematic for major theories of VPE. In order to account for the sticky reading, we propose that the identity condition should be formulated in terms of the question under discussion (QUD) in the sense of Roberts (1996/2012) (cf. Kehler and Büring 2007, Reich 2007, AnderBois 2010, Weir 2013).

Observation: We observe that (1) has three readings:

(1)   None of the boys revised his paper. So instead, the professor did Δ.

    a.   **Strict reading:** There's a particular man x. None of the boys revised x's paper, so the professor revised x's paper.

    b.   **Sloppy reading:** None of the boys revised his own paper, so the professor revised his own paper.

    c.   **Sticky reading:** None of the boys revised his own paper, so the professor revised the boys' papers.

While the strict and sloppy readings have garnered much attention in the literature, the sticky reading (1c) has scarcely been discussed. One exception is Dalrymple et al. (1991), who analyze it as resulting from a wide scope reading of the quantifier over the two sentences, which binds the overt pronoun *his*, as well as a corresponding variable in the denotation of the elided VP. There are several reasons to reject this analysis. Firstly, it is dubious that the scope of the quantifier can extend across a sentential boundary. Secondly, this analysis predicts demonstrably incorrect truth-conditions, paraphrasable as: "None of the boys x is such that x revised x's paper, so the professor revised x's paper instead". This does not entail that none of the boys revised his own paper.

    We propose instead that the elided VP under the sticky reading contains a plural definite, as illustrated in (2). We represent binding relations with superscripts and subscripts (the deletion analysis of VPE is adopted for expository purposes).

(2)   [None of the boys]^x revised his$_x$ paper. So instead, the professor did ~~revise their papers~~.

The question that immediately arises is in what sense the elided VP counts as *identical* to the antecedent VP. Most accounts in fact predict that it doesn't count as identical. It is important to notice that *his* in the first sentence is a bound pronoun, while *their* in the second sentence is free. Previous accounts are generally tailored to rule out such readings, due to the absence of 'mixed readings' like the following, where one of the pronouns is bound while the other is free.

(3)   a.   [None of the boys]^x revised his$_x$ paper. So the professor did ~~revise his$_y$ paper~~.

    b.   [None of the boys]^x revised his$_y$ paper. So [the professor]^z did ~~revise his$_z$ paper~~.

Syntactic identity rules out (3a) & (3b) by requiring the two VPs to be identical wrt binding relations. Similarly, under semantic identity, the two pronouns must either both be bound or both be free. The sticky reading in (1c) shows that such identity conditions are too strong.

    The same problem arises under Rooth's (1992) dual-account (and related accounts in Heim 1997, Fox 1999, 2000, and Sauerland 2004). He postulates two identity conditions on VPE: (i) the two VPs must be syntactically isomorphic, (ii) the elided VP must be reflexively dominated by some constituent XP whose focus semantic value contains the ordinary semantic value of a parallel constituent that reflexively dominates the antecedent VP (the so-called *parallelism* condition). This parallelism condition rules out VPE in (2), even if syntactic identity is satisfied. That is, assuming that *the professor* is in focus, the focus semantic

value of the second sentence is { x revised the boys' papers | $x \in D$ }, of which the ordinary semantic value of the first sentence is not a member.

Analysis: We propose that the parallelism condition should be formulated in terms of Roberts' (1996/2012) Question under Discussion (QUD) model, where each discourse move is either an assertion or a question (Kehler and Büring 2007 pursue a similar idea to account for Dahl's puzzle). It is assumed that each assertion must be a partial answer to a congruent question, and each question must be related to some other question in the discourse (see below). Assuming this, we state our condition as follows.

(4)   Call the question that the clause containing the elided VP is congruent to, Q_E, and the question that the clause containing the antecedent VP is congruent to, Q_A. In order for the VPE to be licensed, both of the following must be true: (i) Q_E is part of Strat(Q_A); (ii) Q_E entails Q_A.

We borrow from Roberts (1996/2012) the notion of the strategy of inquiry, Strat(), which is defined for all accepted questions as follows.

(5)   Strat(q) := $\langle q, S \rangle$ such that (i) if there is no q' such that the last member of QUD(q') is q, $S = \emptyset$, (ii) otherwise S is the smallest set such that for each question q' such that the last member of QUD(q') is q, Strat(q') $\in S$.

QUD(m) here is the *QUD stack* for discourse move m. We extend Roberts' definition of QUD stacks using the notion of *follow-up questions* in order to cover various discourse relations besides subquestions, which Roberts exclusively focuses on.

(6)   QUD(m) for any discourse move m is the smallest set of questions totally ordered by the temporal precedence $<$ such that for each $q \in$ QUD(m), (i) $q < m$; and (ii) for each $q' \in$ QUD(m) such that $q' < q$, q is a follow-up question of q'.

(7) q is a follow-up question of q' if either of the following is the case.
       a. q has not been completely answered and q' contextually entails q (q is a subquestion of q').
       b. q' has been partially answered by p, and a true partial answer to q is explains p.
       c. q' has been partially answered by p, and a true partial answer to q is a consequence of p.

We assume that particles such as *too, because, so, although*, etc. signal what kind of follow-up question is intended (often implicitly). Also, (7) is arguably a non-exhaustive list of discourse relations, but one can easily add other relations, if necessary (see Kehler 2000, 2002, Hardt and Romero 2004).

Consider example (1) in light of (4). The strict and sloppy readings can be captured as cases where the two sentences answer the same question. More specifically, under the strict reading, the second sentence looks like *the professor ~~revised his_y paper~~*, which is congruent to the question *Who revised his_y paper?*. The first sentence is also congruent to the same question and is a partial answer to it. By definition, the strategy of inquiry for this question contains itself, and also the question trivially entails itself. Similarly for the sloppy reading.

Now let us turn to the sticky reading, represented as (2) where *their* refers to the boys. The second sentence is congruent to *Who revised the boys' papers?*. The first sentence is congruent to *Which of the boys revised his paper?*, and the particle *so* signals that these two questions stand in a consequence relation (7c). Thus, the strategy of inquiry for the latter includes the former. Furthermore, the former entails the latter. Therefore, we predict VPE to be possible, as desired.

Our analysis also correctly rules out the readings in (3). In these cases the relevant questions do not stand in an entailment relation.

Lastly, our analysis of VPE is similar in spirit to recent Question-based theories of clausal ellipses (such as *sluicing* and *fragment answers*) developed by AnderBois, Weir, a.o. We will consider possible ways to account for known differences between VPE and clausal ellipses within the QUD-based approach to ellipsis.

Selected References: Dalrymple, Shieber, and Pereira (1991) Ellipsis and Higher-Order Unification. *L&P*, 14. Hardt and Romero (2004) Ellipsis and the Structure of Discourse. *JoS*, 21. Kehler (2002) *Coherence, Reference, and the Theory of Grammar*. Kehler and Büring (2007) Be bound or be disjoint! In *NELS 38*. Roberts (1996/2012) Information structure in discourse. *S&P*, 5. Rooth (1992) Ellipsis redundancy and reduction redundancy. In *Proceedings of Stuttgart Ellipsis Workshop*.