Sluicing with complement coercion: An argument for focus-based semantic identity

Hadas Kotek, June 2019

This short paper discusses ellipsis with a class of aspectual verbs such as *begin* and *finish*, which shed new light on theories of ellipsis licensing on the one hand, and on the modeling of complement coercion on the other. Such examples pose a challenge to Q-equivalence accounts of sluicing, but can be accommodated with a focus-based account. These examples also rule out silent V accounts of complement coercion which require the verb to be reconstructed syntactically and not just pragmatically, and suggest an account which relies on non-syntactic means to compute the meaning of such sentences.

1 Introduction

It is generally agreed that ellipsis must be licensed under identity with an antecedent. For example, in a sentence like *Sally called someone, but I forgot who*, the string "*called someone*" in the first clause, "*Sally called someone,*" licenses the omission of this same string in the second clause.

A growing consensus in the literature is that identity should be defined as a combination of syntactic and semantic constraints (Merchant 2005; Chung 2006; AnderBois 2011; Chung 2013; Weir 2014, a.m.o.). Earlier views of semantic identity formulate it based on the focus-semantic content of the antecedent and sluice (Rooth 1992; Romero 1998; Merchant 2001). Starting with Ginzburg and Sag (2000), the literature has increasingly adopted the view that the correct semantic condition is one where sluicing is anaphoric to some abstract *question* or *issue* that the antecedent raises in discourse (Ginzburg and Sag 2000; AnderBois 2011, 2014, 2016; Barros 2014; Weir 2014; Kotek and Barros 2018, henceforth "Question-equivalence" or "Q-equivalence").

In this paper I discuss a case of ellipsis which poses a challenge to Q-equivalence approaches, illustrated in (1). These are examples which involve the use of a certain class of aspectual predicates such as *start* and *finish*.

(1) **Ellipsis with an aspectual verb:**

I know which avid reader started a new book, but not which author.

Of particular interest is the interpretation of these sentences under which the event described in the antecedent involves *reading* a new book whereas the event described in the sluice involves *writing* one. Such a reading is available to the majority of native English speakers who I have consulted.

(2) **Mismatched interpretation of (1):**

I know which avid reader started ~~reading~~ a new book, but not which author ~~started writing a new book.~~

As I will show in more detail in section 3, the availability of this reading poses a challenge to Q-equivalence approaches to sluicing. Moreover, I will show that these data bear on the correct analysis of these aspectual verbs, a hotly debated topic in the psycholinguistics literature. I begin by briefly surveying current theories of coercion in the context of aspectual verbs, before returning to the issue of ellipsis licensing.

2   Complement coercion

A core assumption of formal semantics is the principle of compositionality:

(3)   **The principle of compositionality:**
      The meaning of a (syntactically complex) whole is a function of the meanings of its (syntactic) parts and the way in which these parts are combined.

Complement coercion presents a famous challenge to this strong view. This is a phenomenon whereby an entity-denoting complement receives an eventive interpretation when composed with certain verbs such as *begin, try* and *enjoy* (e.g. Pustejovsky 1995; Jackendoff 1997). Consider, for example, the contrast in (4a) and (4b). In (4a), the aspectual verb *begin* combines with a VP that denotes the event of *reading a book* and the resulting sentence refers to a time at which the girl began the event of reading the book. In (4b), *begin* combines with a DP that denotes *some particular book*, and the resulting sentence refers to a time at which the girl began engaging in some event involving this book.

(4)   **A simple example of complement coercion:**
      a.   The girl started reading the book.
      b.   The girl started the book.

   Importantly, (4b) doesn't make explicit reference to an event whose beginning the sentence describes. Nonetheless, such an event must be inferred to have happened. Formally, aspectual verbs like *start* and *finish* involve some temporal modification, but the overt DP object in (4b), *the book*, cannot satisfy this lexical restriction. The fact that (4b)

receives an interpretation involving an eventive component whose temporal instantiation is modified suggests that such a component is supplied to *begin* at some point during the interpretation of the sentence, even if this is not overtly observed. The process of resolving this syntax/semantic mismatch is called Complement Coercion.
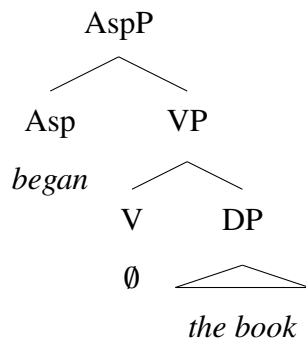
Processing correlates of Complement Coercion have been detected through a variety of real-time comprehension measures such as self-paced reading, eye-tracking, MEG and fMRI patterns, and speed-accuracy trade-off (McElree et al. 2001; Traxler et al. 2002; Lapata et al. 2003; Pickering et al. 2005; Traxler et al. 2005; McElree et al. 2006; Pylkkänen et al. 2008; Brennan and Pylkkänen 2008; de Almeida and Dwivedi 2008; Husband et al. 2011; de Almeida and Riven 2012; Katsika et al. 2012; de Almeida et al. 2016, among others). This body of work has systematically shown that it is harder for readers to process expressions that involve Complement Coercion than expressions that do not.

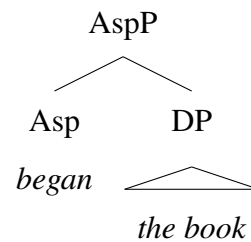There are two main approaches to complement coercion, illustrated in (5a–b).

(5) **Two potential structures of a sentence with an aspectual verb:**

The girl. . .

(a) <u>A silent V:</u>

```
        AspP
       /    \
     Asp     VP
    began    /\
           V    DP
           ∅   ___
            the book
```

(b) <u>No silent structure:</u>

```
        AspP
       /    \
     Asp     DP
    began    __
          the book
```

One approach to complement coercion assumes that classical compositionality is enforced, as in (5a). The interpretation of sentences like (4b) involves pragmatic inferences upon the conclusion of the sentence, triggered by a hypothesized empty V-head within the syntactic representation of the sentence (e.g. Fodor and Lepore 1998; de Almeida and Dwivedi 2008; Eilam 2009; de Almeida and Riven 2012).

Conversely, the dominant solution to complement coercion proposed in the literature

involves a type-shifting operation, which would allow the noun to directly satisfy the selectional requirements of the aspectual verb (e.g. Pustejovsky 1995; Jackendoff 1997; Pylkkänen and McElree 2006; Katsika et al. 2012). See in particular Pylkkänen and McElree 2006 for arguments against the silent V approach. The type-shifting proposal instead abandons the idea of strong compositionality, as well as the universal sequence of syntactic categories (e.g. Rizzi 1997; Cinque 1999; Wiltschko 2014), and assumes no silent syntactic structure in the derivation.

The availability of aspectual verbs and complement coercion in elliptical sentences bears on the possible analyses of complement coercion, as I will discuss below. It additionally informs our understanding of the possible theories of ellipsis licensing — being more easily accommodated within a focus-based semantic account, but being problematic for Q-equivalence accounts of sluicing. This will be my main focus in the remainder of this short paper.

3   Ellipsis and complement coercion

With this background I return to our discussion of ellipsis in the context of complement coercion. Recall that the effect we are interested in is a reading under which the activity reconstructed for the antecedent and sluice mismatch. Our basic example is repeated in (6a). I note, in addition, that — as we would expect — the order of the arguments in the sentence could be reversed without affecting the acceptability of the resulting sentence, in (6b). Additional examples are given in (6c–e).

(6) **Ellipsis with complement coercion:**

    a. I know which avid reader started a new book, but not which author.   (= 1)

    b. I know which author started a new book, but not which avid reader.

    c. I know which salesperson preferred the red convertible, but not which buyer.

    d. I know which composer finished a new symphony, but not which orchestra.

    e. I know which speed walker tried a new route, but not which cyclist.

Notice that the use of a higher embedding verb in the absence of an explicit lower verb is crucial: the effect disappears with an explicit verb:[1]

(7) **Mismatched reading is impossible if the verb is made explicit:**

    a.   * I know which avid reader started reading a new book, but not which author ~~started writing a new book~~.

    b.   * I know which salesperson preferred selling the red convertible, but not which buyer ~~preferred buying the red convertible~~.

3.1   On the theory of complement coercion

The availability of ellipsis with complement coercion argues against any account of complement coercion which would have the "understood" but missing verb (*reading* in the antecedent and *writing* in the elided material) reconstructed into the LF in the course of the derivation of the sentence or its meaning. Such an account would run afoul of Chung's 2006/2013 "no new words" constraint, which allows the ellipsis site to contain only those lexical items that are already present in the antecedent. This explains the ungrammaticality of (8a), for example, where *of* is stranded in the ellipsis site without a corresponding correlate in the antecedent, violating the condition.[2]

(8) **No new words:**

    Jack is jealous, but I don't know *(of) who.

    a.   * . . . but I don't know who ~~Jack is jealous of~~.

    b.   . . . but I don't know of who ~~Jack is jealous~~.

This rule furnishes an argument against a theoretical conception of the silent V account in (5a) in which the antecedent and elided verbs are lexically distinct, but phonologically

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[1] A "matched" reading is, of course, still available.

[2] This also holds for silent words and morphemes, as exemplified in Chung's discussion of Chamorro silent case markers.

unpronounced, verbs. This would be a violation of No New Words, predicting examples like (6a–e) to be ungrammatical, contrary to fact.[3]

On the other hand, a silent V account which never requires this full computation fares better — as long as the pragmatic inferences triggered by the silent V happen at the very end of the sentence. However, such an account would require significantly delayed computation of the verbal material — which must only be calculated *after* the ellipsis site has been encountered. Such delayed computation is likely inconsistent with speakers' tendencies to resolve real-time processing ambiguities as quickly as possible, as well as with well established economy tenets of syntax, which would likewise prefer a resolution of the missing verb at the end of the CP containing it, if not sooner. The need to wait until after the ellipsis site has been encountered could also be seen to raise a lookahead problem — this delayed computation would only occur if and when there is a downstream ellipsis site, but how could the parser know that at the point of encountering the missing verb?

Against these objections , the more common view of complement coercion, where no silent material is present but rather a more complex semantic machinery is adopted, would be able to predict ellipsis to be licensed. However, as I have pointed out above, this comes at the expense of dispensing with strong compositionality, a key ingredient of most current mainstream theories of syntax and semantics. In the next two sections I discuss how such a view would be accommodated within theories of ellipsis licensing.

3.2   Against a Q-equivalence account

How should data like (6) be analyzed? I propose that two factors argue against a Q-equivalence account, and for a focus-based account of ellipsis licensing. These are procedural and conceptual issues with Q-equivalence.

First, under Q-equivalence accounts, sluicing is possible when the question denoted by the sluice is equivalent to an implicit Question under Discussion or *issue* (in the Inquisitive

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[3]A view under which the null verb is a sort of pronoun may fare better, in allowing us to treat ellipsis with complement coercion as reminiscent of strict vs. sloppy anaphora with respect to the events being started, assuming that there is an appropriate way to bind event variables. I thank Sakshi Bhatia for this observation.

Semantics sense) raised by the antecedent. The goal, then, is to determine precisely what question is raised by the antecedent. I do not see a way in which a "starting to read a book" antecedent would raise a QuD about the identity of who *started to write a(nother) book*. I take this to be not only a conceptual problem, but a problem with any attempt to implement a procedure by which a QuD or issue are identified in a systematic way.

Second, the effect we observe here in (6) is not limited to sluicing. It is also observed with VP-ellipsis and with *one*-pronominalization.[4] But Q-equivalence is a theory of clausal ellipsis, which by its very nature does not extend to other forms of ellipsis (AnderBois 2011; Barros 2014; Weir 2014; Griffiths 2018). As a consequence, we require a separate account of the exact same phenomenon using different means for the cases in (9). I argue that one uniform account — the focus-based one — is to be preferred.

(9) **VP-ellipsis and one-pronominalization with aspectual verbs:**

Context: Sally is an avid reader, and Mary is an author.

a. Sally started a new book, and Mary did, too.

b. Sally started a new book and Mary started one, too.

3.3 Complement coercion in a focus-based account

Finally, returning to ellipsis licensing more generally, recall that the literature offers three views on the nature of the licensing condition: it may be stated in terms of *syntactic equivalence*, where the elided structure must match that of its antecedent (Ross 1969; Chung et al. 1995; Chung 2006; Merchant 2013, a.o.); or in terms of *semantic equivalence*, where the interpretations of the antecedent and the elided clause must be synonymous in some sense (Hardt 1993; Ginzburg and Sag 2000; Merchant 2001; Barros 2014, a.o.); or as a *hybrid condition*, involving some degree of syntactic identity alongside a semantic

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[4]However, "VP-that" doesn't seem to have this property for some reason (Matt Barros, p.c.). I currently have no explanation to offer for this fact:

(i) #Sally is starting a new book, and Mary is doing that too.

identity condition (e.g. Rooth 1992; Romero 1998, Chung 2006, 2013, Chung et al. 2010, AnderBois 2011, 2014, 2016; Merchant 2013; Weir 2014). More recently, semantic and hybrid accounts have been the most favored.

Following this trend toward semantic/hybrid accounts, notice that the availability of aspectual verbs in examples like (6) serves to limit the way in which our theories of ellipsis licensing can be constructed. In particular, it must be the case that the antecedent structure used to compute identity does not supply us with pragmatic inferences about the nature of the missing/understood event before the elided structure is recovered and computed. Instead, we first "reconstruct" an aspectual verb in the elided clause in a parallel procedure to the one postulated for the antecedent. Once this is accomplished, we then check for syntactic and semantic identity between the antecedent and elided material. Finally, we compute pragmatic inferences inside the antecedent and elided clause individually. This order of operations is crucial in order to allow different inferences about the events postulated in the antecedent and elided clause.

(10) **An analysis of ellipsis with complement coercion:**

I know which avid reader started a new book, but not which author.   (= 1)

  a. I know which avid reader started a new book, but not which author ~~started a new book~~.   ← identity computed here

  b. I know which avid reader started ~~reading~~ a new book, but not which author writing ~~started a new book~~.   ← pragmatic inferences computed here

If so, I claim that focus approaches such as Merchant (2001) et seq and the more recent variant in Kotek and Barros (2019) are able to account for such cases. On the other hand, Q-equivalence struggles with this data, as I showed above.

4 Conclusion

This paper considered ellipsis with a class of aspectual verbs such as *begin* and *finish*. I showed that these cases shed new light on theories of ellipsis licensing on the one hand, and on the modeling of complement coercion on the other. The class of examples I present here pose a challenge to Q-equivalence accounts of sluicing, both because such accounts struggle on technical grounds to identify and use the correct issue/QuD to predict such cases, and because ellipsis with complement coercion is not limited to clausal ellipsis, but instead is possible with VP ellipsis, as well, providing a new argument for a return to focus-based accounts of sluicing and against Q-equivalence.

I additionally showed that ellipsis with complement coercion provides an argument against silent V accounts of complement coercion which require the verb to be reconstructed syntactically and not just pragmatically into the tree. Such cases suggest instead an account which relies on non-syntactic means to compute the meaning of these sentences.

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