Ellipsis

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1 Introduction

Kempson, Cann, Gregoromichelaki, and Chatzikyriadis (henceforth **KCGC**) report on a theory of ellipsis in the idiom of *Dynamic Syntax*, and contrast it with other approaches.

Underlying this contrast is the assumption that other grammatical traditions either must, or at least choose to, treat all sentence fragments as instances of ellipsis. This assumption is discussed further in [Kobele, 2016]. We think that the question of whether to analyze a particular sentence fragment in terms of ellipsis should be influenced by empirical considerations. Accordingly, we outline diagnostics that researchers might use to help adjudicate between possible analyses in any given situation.

We then take a step back, and describe the basic idea on which KCGC's theory of ellipsis is based, which is in fact instantiated by recent analyses in multiple grammatical frameworks. We set out some basic parameters of this space, and describe how different theoretical choices influence possible descriptions of elliptical phenomena. Finally, we discuss what kinds of constructions pose difficulties for this approach to ellipsis, describe how the analysis of [Kobele, 2015] deals with them, and suggest that KCGC's particular implementation of this approach to ellipsis may flounder here.

2 Diagnosing Ellipsis

KCGC cover a lot of ground, and do not supply or point to many diagnostics for helping us determine whether the phenomena they look at are all of a piece. Standard diagnostics for the presence of ellipsis (as laid out for example

in [Merchant, 2013b]) would not suggest that most of what is discussed is in fact elliptical. Fragments themselves come in many stripes, and some may have sentential sources (and thus be thought of as elliptical, such as fragment answers, as analyzed in [Merchant, 2004]), and many others may not (such as names, titles, and clarificational phrases, among the many others listed in [Merchant, 2010]). Here we will not attempt to undertake this work, but rather restrict our attention to cases such as VP-ellipsis or predicate ellipsis that all approaches agree form central elliptical explicanda.

3 Theories of Ellipsis

In an architecture of grammar, 'syntax' is the pivot between form and meaning. In the ideal case, the structures of the grammar are closely related to aspects of the parsing process, which can be eloquently formulated thus:

> Syntactic structure is no more than the trace of the algorithm which delivers the interpretation. [Steedman, 2000]

In the last few years there has been an interesting convergence across traditions amongst linguistic theories of ellipsis [Chung et al., 2010, Frazier, 2012, Barker, 2013, Kobele, 2015, Kempson et al., 2015, Lichte and Kallmeyer, 2010]. (The idea itself seems to go back to [Lavelli and Stock, 1990], and precursors are found in [Lees, 1960].) This convergence sees ellipsis as *reuse* (as opposed to *recomputation*) of a syntactic process. The common idea is the following. Once our interlocutors have painstakingly constructed a meaning on the basis of something we say, if we want to communicate to them that same meaning again, we have a choice: we could either say that very same thing again, and demand of our interlocutor that they recompute this meaning, or we could save them time and energy by indicating (somewhat paradoxically, with silence) that they should just reuse the result of their earlier computation.

What sets this idea apart from the (very similar) semantic theories of [Dalrymple et al., 1991], [Hardt, 1999], [Merchant, 2001], and [Merchant, 2004] is that the present idea has it that what is reused is a bit of syntactic computation, whereas in these latter theories what is reused is some part of the meaning assembled thus far in the discourse.[1] In other words, in the present

[1] Crucially, these parts of meanings need not have any connection to the parts of syntax.

idea, the meanings which can be reused are limited to those which are the result of some previous syntactic computation.

A syntactic structure is an abstract representation of a computation (one which constructs a meaning from a string). As we can elide not only full sentences, but (in fact primarily) parts thereof, the question poses itself:

> what (sub)computations are reusable in ellipsis?

The answer to this is of necessity influenced not only by one's grammatical framework, but also by one's analyses of particular linguistic constructions. [Kobele, 2009] (followed by [Lichte and Kallmeyer, 2010] and [Barker, 2013]) assumes that only computations which correspond to syntactic constituents can be reused in ellipsis. He notes that this forces one to assume that simple passive sentences can be derived in multiple ways (with gross structure as shown in 1), given the elliptical possibilities in 2 and 3.

1. $[_S\ [_{VP}\ V\ NP]]$ vs $[_S\ NP\ [_{VP}\ V]]$[2]
2. Mary could have been praised, but we decided not to ~~praise Mary~~
3. Mary seems to have been praised, and Susan does ~~seem to have been praised~~ too.

He introduces a device (a restricted form of late merger [Takahashi and Hulsey, 2009]) which allows for assigning multiple structures to sentences. This, however, has the disadvantage of introducing a great deal of spurious ambiguity (almost by definition). This sort of difficulty is inherent to the assumption that only computations which correspond to constituents can be reused, regardless of syntactic framework, and is presumably what KCGC intend when they describe these approaches as treating ellipsis as "ambiguity that needs to be resolved on a case-by-case basis."

[Kobele, 2015] rejects this assumption. He notes that the extra derivational flexibility is being used to reify contexts as constituents. A context is a tree with missing leaves. Where a constituent describes a complete computation, a context describes a *parameterized* computation: a function which,

[2] [Kobele, 2009] operates in a transformational framework, where standardly the passive subject is an underlying object (this is intended by the '[V NP]'). This allows for passives to antecede an elided active VP, as in 2. He also needs to allow the passive subject to be directly generated in the subject position (this is intended by the '[NP [V]]'), to allow for examples like 3.

given some value, computes a result from it. This allows him to uniformly treat the passive subject as an underlying object, and to treat the objectless VP antecedent of passive VPE (as in 3) as a parameterized computation, as in 4 (where the parameter is given the name x).

4. $[_{\text{VP}}$ V NP] vs $[_{\text{VP}}$ V $x]$

Although contexts are not often explicitly used by linguists (and are thus 'unorthodox'), they are already parts of any syntactic structure; they do not require generation "by an independent parser/generator." Indeed, they are formally *simpler* parts of trees than those which are manipulated in *Dynamic Syntax*; the structure (ii) on page 15 represents a tree which is missing a *context*, which we might call a higher-order context.

4 Analyses of Ellipsis

For approaches to ellipsis based on *identity* of some sort between antecedent and what is recovered in the ellipsis site, it is the deviations from identity in ellipsis which pose the ultimate challenge. The looser the relevant notion of identity becomes (e.g. mutual entailment), the more difficult are the cases where a stricter notion of identity seems to be required.

[Hardt, 1993] and [Merchant, 2013a] collect a number of robust types of deviations from identity in verb phrase ellipsis constructions. A particularly influential type is that of mismatch between antecedent and (hypothesized) ellipsis site along the dimension of voice. An example (from [Hardt, 1993]) is in 1.

1. This information could have been released but Gorbachov chose not to.

In sentence 1, the ellipsis site is interpreted as meaning that Gorbachov chose not to *release this information*, i.e. an active verb phrase, whereas the antecedent is in the passive voice. It appears to be the case that different types of ellipsis vary as per whether they allow this sort of voice mismatch [Merchant, 2013a, Tanaka, 2011].

One pecularity of transformational syntax is its attempt to relate different construction types by deriving them from a common source. So, both active and passive verb phrases are analysed as having been derived from a common underlying verb plus deep object structure. This derivational reification of constructional relatedness makes possible an approach to apparent deviations

from identity that treats them as exact identity rendered opaque via later operations. [Kobele, 2015] shows how the analysis of [**?**] in this regard can be recast in terms of reuse, apparently correctly deriving the voice insensitivity of verb phrase ellipsis, and simultaneously the voice sensitivity of sluicing.

Such deviations from identity seem likely to pose a problem for KCGC. Given the entangling of left-to-right processing order and the underlying syntactic dependencies inherent in their presentation of *Dynamic Syntax*, it is difficult to see how the passive antecedent should provide a sequence of derivational steps which can be re-run in the ellipisis site of 1.

5 Conclusion

KCGC present a theory of predicate ellipses that makes use of the notion of reusing a procedure. They tie the trigger to this reuse to the presence of a metavariable in particular lexical items, such as English auxiliaries. It is a point of great interest in the current literature whether ellipsis resolution requires that one recompute or reuse a derivation, compare a new derivation (or structure) to an old one, resolve a semantic pointer to a semantic object, employ some other kind of anaphoric device that fills in a meaning, satisfy some kind of parallelism constraint, or trigger a different kind search for an antecedent (syntactic, semantic, or some mix of the two). KCGC's new perspective on this debate provides a useful way of making progress on these questions.

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