SQUIBS

Quantifier domain restriction as ellipsis

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In this paper I argue that in certain cases quantifier domain restriction is due to a process of syntactic ellipsis. I give evidence for this analysis from inverse scope phenomena. I respond to Stanley and Szabó's arguments against a syntactic ellipsis approach. Furthermore, I show how their own semantic proposal fails to capture the inverse scope facts.

1 Introduction

Stanley and Szabó (2000: 219) discuss sentences involving quantifiers like (1):

(1)   Every bottle is empty.

They put the issue as follows: "Suppose someone utters (1) in a conversation. It is unlikely that what she intends to convey is that every bottle in the universe is empty; she most likely intends to convey that every bottle of a restricted class of bottles (say, the bottles in the room where she is, the bottles purchased recently, etc.) is empty. And, if the context is right, she can succeed in communicating such a proposition."

Stanley and Szabó (2000) compare three different approaches to the context sensitivity of (1): a pragmatic approach, a syntactic approach, and a semantic approach. Since they reject the pragmatic approach, I will not discuss it any further. The particular syntactic approach that they consider is the syntactic ellipsis theory of domain restriction (Stanley and Szabó 2000: 233). On this theory "…context simply provides an unarticulated portion of the sentence uttered." (Stanley and Szabó 2000: 232).

Crucially, Stanley and Szabó (2000: 219) take a very strong exclusionist position that their arguments "…militate against all but our own proposal." They add: "We have argued that both the syntactic ellipsis approach and the pragmatic approach to quantifier domain restriction are incorrect. Thus, quantifier domain restriction must be, in our terminology, a semantic process." (Stanley and Szabó 2000: 245) If Stanley and Szabo had allowed that certain cases of quantifier domain restriction could be due to syntactic ellipsis, they would not have said that their arguments "…militate against all but our own proposal." So it is clear from Stanley and Szabo's exposition, including the quotes given, that they take a strong exclusionist position (their approach is correct, no other approaches are correct, not even for certain cases).

In this paper, I will give some evidence for the syntactic ellipsis theory (see also Sellars 1954 for an ellipsis analysis). Then I will rebut their criticisms of the syntactic ellipsis theory, and show that their semantic theory fails to capture the interpretation of one class of cases (involving inverse-linking).

To be clear, I am not arguing against the possibility that the mechanisms formulated by Stanley and Szabo are used in some cases of quantifier domain restriction, rather I am arguing that some cases of quantifier domain restriction are due to syntactic ellipsis. Therefore, I am arguing against Stanley and Szabo's strong position. Whether or not any cases of quantifier domain restriction need to appeal to the mechanisms postulated by Stanley and Szabo (instead of syntactic ellipsis) is a question for future research.

2 Inverse scope

Consider the following exchange (modelled on Collins 2015):

(2)   A: Does some boy from every school read comic books?
        B: No, but some girl does.

On one interpretation, (2B) is true if some girl in the universe (or some narrower domain of discourse) reads comic books. However, another natural interpretation is given by the paraphrase in (3):

(3)   For every school, there is some girl from that school who reads comic books.

The inverse linking interpretation in (3) would be the expected interpretation if (2B) had the following structure (see May 1977 on inverse linking).

(4)   No, but some girl < from every school > does < read comic books >

In this structure, there are two instances of ellipsis. The notation < … > indicates non-pronunciation of a string of words. The phrase 'from every school' in (2B) is deleted under identity with the phrase 'from every school' in (2A). The phrase 'read comic books' in (2B) is deleted under identity with the phrase 'read comic books' in (2A). If the structure of (2B) is that given in (4) the inverse scope interpretation in (3) is expected. I take no stand in this article how to define the relevant notion of identity (see also Stanley and Szabó 2000: fn. 9). See Merchant (2001; 2013); van Craenenbroek and Merchant (2013) for a discussion of the issue of identity (in particular, whether it should be formulated in syntactic terms or semantic terms).

   In fact, inverse scope is widely taken to be criterial of syntactic ellipsis. Merchant (2013) highlights four diagnostics for syntactic ellipsis, and inverse scope is one of them: "Quantificational elements inside ellipsis sites can take wide scope over elements outside the ellipsis; such inverse scope readings are missing from otherwise similar anaphoric devices." (Merchant 2013: 539).

   Merchant illustrates this claim with the following example:

(5)   a.   A doctor examined every patient, and then a nurse did.   ($\exists\forall$, $\forall\exists$)
        b.   A doctor examined every patient, and then a nurse did it.   ($\exists\forall$, *$\forall\exists$)

Example (5a) shows that either quantifier (the existential *a doctor* or the universal *every patient*) can take wide scope when there is VP deletion. However, if the VP is the anaphoric expression *did it,* then only the existential quantifier can take wide scope. The scope ambiguity of (5a) is identical to the scope ambiguity of non-elliptical sentences such as the following:

(6)   A doctor examined every patient and then a nurse examined every patient too.

                                                                        ($\exists\forall$, $\forall\exists$)

The fact that (5a) and (6) have the same two interpretations provides support for an analysis where (5a) is underlyingly identical to (6), but where the VP of the second conjunct is phonologically unrealized.

The deletion that I have postulated in (4) in order to account for the inverse scope interpretation is not one of the widely discussed cases of deletion (e.g., VP deletion, NP deletion, Sluicing, Gapping, Pseudo-Gapping, etc.). Rather, in (4) a PP adjunct to a NP is deleted. Some independent evidence that adjuncts to NPs can be deleted is given in the following section, where it is shown that a relative clause modifying an NP may also be deleted.

A reviewer points out a number of potential problems with a syntactic ellipsis account. Consider first (7):

(7)   A: Are those empty? (pointing at some bottles)
        B: Yes, every bottle is empty.

The reviewer notes that (7B) "…is interpreted as *every bottle ~~that is among those you pointed at~~*, but there is no linguistic antecedent *that you pointed at*." Under a syntactic ellipsis approach, there needs to be a linguistically present antecedent for the elided constituent. And further, the antecedent must be identical to the elided constituent. In (7), there does not seem to be a linguistically present antecedent.

Another puzzle the reviewer points out is the following:

(8)   A: These are the bottles John bought, and those are the bottles Mary bought.
        B: Every bottle is empty.

The reviewer notes that the most natural reading would be given by the structure in (9):

(9)   Every bottle < that John bought or that Mary bought > is empty.

The reviewer asks: "The relative clauses in the two disjuncts do each have a salient antecedent, so perhaps they could elide separately, but what would then license ellipsis of *or*? It seems that an antecedent for the entire disjunction is required, and no such antecedent is transparently present."

These are very interesting issues, but it is not the purpose of my paper to resolve them. I am only showing that syntactic ellipsis is needed in the specific case of inverse scope readings of quantifier phrases in elided PPs. It could very well be that the interpretation of (7B) and (8B) are due to mechanisms other than syntactic ellipsis, and the results of my paper would stand. I tend to think that both (7B) and (8B) do involve syntactic ellipsis, but this paper is not the place to argue for such a position.

3 Arguments against syntactic ellipsis

According to Stanley and Szabó "The main problem the syntactic ellipsis theory faces is that of undetermination. There are very few cases where there is a single plausible candidate for the role of domain restriction." (Stanley and Szabó 2000: 237) They continue (Stanley and Szabó 2000: 238): "Since the sole function of F [C.C., the unpronounced predicate] in communicating is to restrict the domain of the quantifier, it is hard to see how to select among predicates that apply to the same bottles."

The scenario of their main example is given as follows (Stanley and Szabó 2000: 231): "Suppose Lisa went to the store to buy some bottles to give to Max, who wanted to fill them with his home-made beer. Max asks whether the bottles Lisa bought need to be

emptied first. In response Lisa utters (1)…". On the syntactic ellipsis theory: "The words 'I just bought' are covertly present in the grammatical sentence uttered by her. The covert expression cannot be heard by anyone who listens to Lisa's utterance; it is a syntactic constituent that has no phonological manifestation." (Stanley and Szabó 2000: 233).

Stanley and Szabó do not give any further elaboration of the context of the utterance (1). A possible linguistic context, consistent with their description is given in (7) below:

(10)   a.   Max: Do the bottles you bought need to be emptied first?
       b.   Lisa: Every bottle <I bought> is empty.

In (10a) *bottles* is modified by the relative clause *you bought*. Therefore *you bought* is available to serve as the antecedent of a deleted relative clause in (10b). In fact, in this example, there is exactly one plausible linguistically overt antecedent for the deleted relative clause in (10b), and that one plausible antecedent in fact yields the correct interpretation of (10b). Therefore, I assume that in this case, and in the case in (2), there is no problem of underdetermination. It is easy to see that there are an unlimited number of similar contexts providing a linguistic antecedent for the elided material in (10b). In effect, the linguistic context helps to solve the problem of underdetermination.

(10b) represents a case of relative clause deletion, which is argued for on independent grounds in Collins (2015). For example, Collins (2015) notes that (11) is ambiguous between two interpretations, just as one would expect if relative clause deletion were possible:

(11)   At the party, I saw three boys who I know and one girl.
       a.   Interpretation 1:   I saw one girl.
       b.   Interpretation 2:   I saw one girl who I know.

Collins (2015) notes that (11) can be true in a situation where I see 10 boys and 10 girls, but only know three of the boys and one of the girls. If there were no relative clause deletion, (11) would be expected to be false in that situation. Collins gives various arguments for relative clause deletion, including interpretation, strict/sloppy ambiguities and reconstruction effects.

In my discussion of (10), I claimed that *you bought* is the antecedent of the deleted relative clause <I bought>, even though these two constituents are not syntactically identical. Rather, they differ in the pronoun used: second person singular in (10a) and first person singular in (10b). However, it is well known that standard cases of ellipsis also show these discrepancies in the person features of pronouns:

(12)   A: John saw you last night.
       B: No he didn't <see me>.
(13)   A: Somebody saw you last night.
       B: I wonder who <saw me>.

Example (12) illustrates VP deletion, and example (13) illustrates sluicing. In both cases, mismatches of the person features of pronouns are possible, just exactly as I have proposed for the example in (10). Therefore, however the identity condition on deletion is eventually formulated, it must allow such mismatches as found in (10) and (12–13).
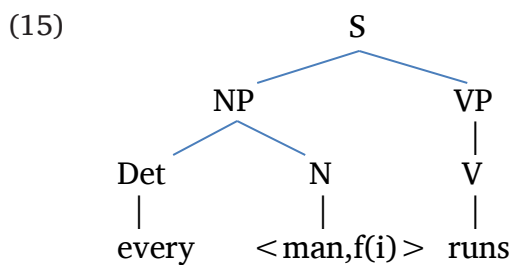
I chose the linguistic context in (10) to avoid the issue of underdetermination. The point being that some cases of quantifier domain restriction by syntactic ellipsis do not suffer from the undetermination problem. In other words, just because there are "very few cases where there is a single plausible candidate for the role of domain restriction" (Stanley and Szabó 2000: 237), it does not follow that syntactic ellipsis never plays a role in domain restriction.

I am not claiming that all cases of quantifier domain restriction are to be handled by syntactic ellipsis, although I do not exclude that possibility either. My argument is that in certain cases (such as (10)) there is no argument against a syntactic ellipsis approach based on underdetermination, and in other cases (such as (2)) there is an argument for a syntactic ellipsis approach based on inverse scope.

4 The semantic approach

Stanley and Szabó argue for a semantic approach where "…each common noun (e.g., 'bottle' and 'cat') co-habits a node with a contextual variable." (Stanley and Szabó 2000: 251) The representation of (14) is given in (15) (see Stanley 2002a for further discussion and justification of such representations):

(14)   Every man runs.

(15)

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                        S
                   ╱        ╲
               NP              VP
             ╱    ╲             │
         Det        N           V
          │         │           │
        every   <man,f(i)>    runs
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Stanley and Szabó explain this structure as follows: "The value of 'i' is an object provided by the context, and the value of 'f' is a function provided by the context that maps objects onto quantifier domains." (Stanley and Szabó 2000: 251).

Furthermore, Stanley and Szabó (Stanley and Szabó 2000: 253) provide a special semantic rule, specific to constructions of the form $<$man, f(i)$>$: "Since we are taking quantifier domains to be sets, relative to a context, what results from applying the value of 'f' to the value of 'i' is a set. Relative to a context, 'i' is assigned an object. The denotation of '$<$man, f(i)$>$' relative to a context c is then the result of intersecting the set of men with the set that results from applying the value given to 'f' by the context c to the value given to 'i' by c. That is (suppressing reference to a model to simplify exposition), where '$[\alpha]_c$' denotes the denotation of α with respect to the context c, and 'c(α)' denotes what the context c assigns to the expression α:

(39) $[<$man, f(i)$>]_c = [$man$] \cap \{x: x \in c(f)(c(i))\}$

In the case of (36) [C.C., the diagram in (15)], the resulting set is then the first argument of the generalized quantifier 'every'."

The problem arises when one tries to capture the interpretation given in (3) for (2B). Clearly, a universal quantifier is needed in the syntactic representation of (2B). But representations such as (15) represent quantifier domain restriction in terms of a syntactic variable, and it is not clear that a quantifier could be introduced in this way. It is not sufficient to come up with some set smaller than the set of all girls which is then the argument to the quantifier 'some' (as would be allowed by the set intersection rule of interpretation in (39) in the quote). Rather one needs to introduce a generalized quantifier denotation 'every school' that binds a variable in the restriction of 'some' to account for the inverse linking interpretation. So capturing the intended interpretation of (2B) in a theory with structures like (15) is a challenge (as it would be for the framework in von Fintel 1994: 31–33, and that of Stanley 2005: 245, fn. 15).

5 Conclusion

Stanley and Szabó (2000: 219) take the very strong position that their arguments "…militate against all but our own proposal." They add: "We have argued that both the syntactic ellipsis approach and the pragmatic approach to quantifier domain restriction are incorrect. Thus, quantifier domain restriction must be, in our terminology, a semantic process." (Stanley and Szabó 2000: 245). In particular, they do not say that they have shown that the syntactic ellipsis approach is incorrect except for a small number of cases, where a syntactic ellipsis approach might work.

I have proposed that in some cases quantifier domain restriction is analyzed as syntactic ellipsis (see also Sellars 1954 for an ellipsis approach; see Stanley 2002b for critical discussion of Sellars; see Neale 1990: 95; 2000: 287 for relevant comments on Sellar's approach). An important issue that remains is how to delineate those cases of quantifier domain restriction which are due to syntactic ellipsis, and those cases which are due to some other mechanism (if any).

This paper opens up the possibility that other cases of "implicit content" (see Elbourne forthcoming for a clear overview) and "context dependence" could be analyzed as syntactic ellipsis as well.

It remains to investigate the consequences of PP and relative clause deletion for the issue of licensing, summarized by van Craenenbroeck and Merchant (2013) as follows: "…on top of recoverability, there is a second well-formedness condition on syntactic ellipsis, one that commonly goes by the name of licensing, to the effect that not every phrase is elidable." Clearly, if the conclusions of this paper are on the right track, more contexts allow syntactic ellipsis than the syntax literature now recognizes. And these contexts will have to be accounted for in a theory of licensing.

The issue of licensing is related to the issue of cross-linguistic variation (see van Craenenbroek and Merchant 2013: 718). One question is what kinds of cross-linguistic variation with respect to PP and relative clause deletion are found. For example, do languages with prenominal relative clauses also allow relative clause deletion? Since only this paper and Collins (2015) have discussed the relevant phenomena, and only for English, the next stage in the research will be to look at these phenomena cross-linguistically.

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