Relatives and There-Insertion

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1 Introduction

This paper offers a solution to why certain relative clauses place restrictions on their determiners. The solution is purely semantic and crucially depends on operations of *control*.

While an ordinary relative like (1) places no constraint on determiner choice, Carlson (1977) notes that in (2a) *some* and *three* can't relativise the logical subject of a *there*-insertion context. But if the determiner is changed to either *every* or *the* as in (2b), the resulting sentence is grammatical.

(1) {Some man | Three men | Every man | The men} who {was | were} on the life-raft died.

(2) a. *{Some man | Three men} there {was | were} on the life-raft died.
b. {Every man | The men} there {was | were} on the life-raft died.

Milsark's (1974) *definiteness restriction* tells us that certain DPs can't occur as the postcopular subjects of *there*-insertion sentences, so the facts of (2) should be expected. However, the determiners prohibited (Milsark's *strong* class) are the definites and universals (e.g. (3a))--determiners that are acceptable in (2), and the acceptable determiners (Milsark's *weak* class) are the indefinites and cardinals (e.g. (3b))--determiners that are unacceptable in (2). Thus, Milsark's findings are the opposite of what we expect on the basis of (2).

(3) a. *There is every man on the life-raft.
b. There is a man on the life-raft.

In order to account for this data we suggest that relatives and *there*-insertion sentences employ *control operators*. In a nutshell, a control operator is placed into the linguistic code to direct the interpretation of something else in the linguistic code. The propositional connectives are classical examples. With a dynamic view of interpretation, as found for example in Dynamic Predicate Logic (Groenendijk and Stokhof, 1991), new options for control are possible (cf. Visser, 1998). Under this view, words are typically actions that read some input, perform a simple transformation, and write some output. E.g., the existential quantifier adds a new object--a next topic of conversation--to its input. Here, control operators work by placing restrictions on the input and output of the formulas over which they scope.

2 Relatives

Free relatives have the property of always requiring exhaustive (either maximum or minimum) readings (see e.g. Jacobson, 1995)--e.g. if Jim gave Sam a ring and brooch and nothing else, (4) can't be used to say that only the ring was beautiful, rather the ring and brooch have to be jointly beautiful.

(4) What Jim gave Sam was beautiful.

To account for this, we suggest that every relative clause (hereafter RC) introduces an exhaustification operator (hereafter *E*). *E* requires that the formula in its scope, upon taking an input, gives an output that necessarily entails all other possible outputs. If a head is RC internal as in (5a), it will fall under the influence of *E* and take on an exhaustive reading. This is because newly introduced objects result in a change to the input that is required by *E* to necessarily entail all alternative changes. In contrast, if a head is RC external as in (5b), it will be unaffected by *E*.

(5) a. *E*(... __..)
b. __.. & *E*(...)

Free relatives have the property of being unable to stack as shown by (6), providing evidence that their heads are (as expected) RC internal.

(6) *Whoever was on the life-raft {whoever} had been on the island died.

In contrast, an ordinary RC like (1) can form part of a stack as in (7):

(7) {Some | Every} man who was on the life-raft who had been on the island died.

This is only possible if the head is outside its RC, leaving it free to join with other RCs via set-intersection (see e.g. Partee, 1973). This results in the head being outside the scope of *E* as in (5b), and so unaffected by *E*, from which the lack of constraints on determiner choice, as seen in (1) and (7), follows.

3 There-insertion

To capture the semantics of *there*-insertion sentences, we suggest that there is an operator *T*, that requires its output to differ from its input. If, for example, the formula over which *T* scopes contains an existential quantifier as in (8a) (= (3b)), *T* will be licensed, since the quantifier will add a new item to *T*'s input. But, if the only quantifier in the scope of *T*happens to be universal as in (8b) (= (3a)), or if there is only a definite or proper name as in (8c), *T* will fail to see any change in its input, making the sentence infelicitous.

(8) a. *T*(... __..) (*There is a man on the life-raft*)
b. # *T*(... __..) (**There is every man on the life-raft*)
c. # *T*(... *mary* ...) (**There is Mary on the life-raft*)

4 The Analysis

We have an analysis for relatives and an analysis for *there*-insertion contexts. We now have to consider what happens when we relativise into a *there*-insertion context. Since the head, when relativising into a *there*-insertion context, provides the only way the context can change, *T* will rule out structures (9b,c) where the head is outside its scope.

(9) a. *E*(... *T*(... __..) ...)
b. # *E*(... __.. & *T*(...) ...)
c. # __.. & *E*(... *T*(...) ...)

Additional evidence that the head is RC internal, is provided by the fact that relatives with *there*-insertion contexts can't stack as seen by (10):

(10) *Every man there was on the life-raft there was on the island died.

In addition to requiring the structure (9a), *T* will require that the head makes the change it needs. Since the change *T* needs is the type of change *E* directs, the head will necessarily receive an exhaustive interpretation. It is this fact that buys us a solution to the puzzle of the restriction on determiners in (2). We will suppose that such determiners are RC external. Since the item that's introduced is determined by the RC internal head, that is controlled by *T* and *E*, an external determiner can only take on the role of supporting the chosen item. Since this item is exhaustive, the only external determiners acceptable will be those that continue to guarantee an exhaustive interpretation, namely the definites and universals. Significantly, this rules out indefinites and cardinals.

This solution for the contrast in (2) has the advantage of coming as a direct consequence of a general analysis of ordinary and free relatives and from an account of sentences with *there*-insertion, giving credibility to the use of operations of semantic control in the analysis of natural language.

References

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