

Temporal Binding in the Event Analysis

In this paper I investigate and criticize a certain answer to an argument that has figured prominently in the contemporary debate about semantic content: the so-called “argument from binding”. My particular focus in the paper will be locations. The argument from binding in the case of locations starts from the observation that there are bound readings of certain complex sentences and concludes, via certain syntactic and semantic assumptions, that simple sentences have a variable for locations in their logical form. Thus, Stanley (2000) has observed that sentence

- (1) Every time John lights a cigarette, it rains,

has a reading according to which the location of rain varies with the location of John’s lightning of a cigarette. Using this reading of (1), the following instance of the argument (directed here against truth-conditional pragmatists) could be constructed:

1. Truth-conditional pragmatists claim that in the simple statement “It is raining”, the location of rain is not part of its logical form.
2. In (1), binding occurs: the location of rain varies with the values introduced by the quantifier “every time John lights a cigarette”.
3. There is no binding without a bindable variable.
4. Therefore, in “It is raining” there is a variable for the location of rain.
5. Truth-conditional pragmatists are mistaken: in the simple statement “It is raining”, the location of rain is part of its logical form.

There have been several answers to this instance of the argument from binding. Here I will be concerned with the answer given in Cappelen and Hawthorne (2007), pertaining to a view dubbed by its proponents “the event analysis”. The Event Analysis brings together two main ideas: the idea that verbs are predicates of events and the idea that domain restrictions attach to certain expressions. The first idea comes from Davidson (1967) and has led to the developing of “event semantics”; the second is familiar from the work of von Stechow (1994) and Stanley and Szabo (2000) on domain restrictions for noun phrases. Cappelen and Hawthorne’s novel claim is that domain restrictions are attached to verbs. Their specific claim is that binding by higher temporal quantifiers (such as in (1)) can be accounted for by suitably restricting the set of events that verbs stand for via a restriction function f . In addition, the claim they make is that for cases like (1) function f is a function from times to the sets of events that take place at those times (plus other constraints). This, the problematic sentence (1) will be represented as

- (2) For every time t , if there is an event e_1 that is a lightning of a cigarette by John at t , then there is an event e_2 that is a raining $_{f(t)}$,

where t is the time of the event e_1 (quantified over), $f(t)$ is a function from times t to the set of events that take place at t in the location where John lights a cigarette and raining $_{f(t)}$ is the set of rainings that take place at t in the location where John lights a cigarette. The instance of the argument from binding above is blocked by rejecting premise 3: although there is a bound variable in (2), it’s not one for locations, and thus we have a case of binding without there being a variable.

The answer given by the Event Analysis to the instance of the argument from binding above might work, but for that the account of temporal quantification proposed needs to be

correct. Suspicions to the contrary come from cases in which there is binding, but the time of the second event and the time quantified over by the quantifier are not identical. More precisely, there are cases in which the restrictor function f cannot be a function from times to sets of events that take place at those times. For example, in sentences

- (3) Every time there is a major solar eruption, Earth's artificial satellites break down,
- (4) Every time John hosts a family dinner, he cooks,
- (5) Every time the serial killer is released, he kills again,

the times of the second event are different from the times quantified over by the quantifier. But, in the Event Analysis the representation of (5), for example, will be

- (6) For all times t , if there is an event e_1 that is a release of the serial killer at t , then there is an event e_2 that is another killing $_{f(t)}$ by the serial killer,

where t is the time of the event e_1 (quantified over), $f(t)$ is a function from times t to the set of events that take place at t and killing $_{f(t)}$ is the set of killings that take place at t . However, in a context in which the killings are irregular (in one case, the killing takes place the day after the serial killer's release, in another case in several years, etc.) this is not the desired result.

In the last part of the paper I consider several attempts to dispose of the examples as unproblematic and argue that none of them covers all the examples given. Then I investigate one obvious way to modify the account so that to accommodate all the examples: namely, to claim that the restriction on the set of events is contextually determined. There are several ways to do that. In the paper I present three of them:

- claim that f is a function from times to sets of events suitably restricted by context;
- claim that f is a function from times to sets of events but introduce another function g from times to times which is determined by context;
- claim that f is a function from times to sets of events but specify the relation between e_1 and e_2 or between e_2 and t .

All these claims seem to give us the desired results. I close with a short discussion of their relative merits and of what views about semantic content are compatible with the modified Event Analysis.