

## On Situation Adverbs

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In previous work, William Lycan (1984) and I (in Geis (1973, 1985, 1986a, 1986b)), have developed a syntactically and semantically motivated theory of conditional sentences in which it is claimed that pairs like (1a) and (1b) have essentially the same logical forms.

- (1) a. I will leave if you leave.  
b. I will leave in any circumstance in which you leave.

On the semantic side, we have argued that *if*-clauses involve restricted universal quantification over situations or circumstances (cf. Geis (1973) and Lycan (1984)). On the syntactic side, we have argued that *if*-clauses are a species of free relative clause and are syntactically quite like the adverbial relative *when*-clause of (2).

- (2) I will leave when you leave.

Documentation of the syntactic similarities between sentences like (1a) and (2) is provided in Geis (1985).

In Geis (1986a, 1986b), I suggested that conditional and certain other types of adverbials are instances of what I called "situation adverbs." Their function is to identify the situations or circumstances in which actions or states of affairs obtain. Thus, in (1a), the *if*-clause identifies a situation in which the speaker's leaving will obtain, this situation being that the hearer leave. In this paper, I would like to discuss some of the special features of situation adverbs and to discuss how situation and temporal adverbials interact.

### Situation Adverbials

The paradigm cases of situation adverbials are conditional adverbials such as those in (3), which are hypothetical situation adverbials, and concessive adverbials such as those in (4), which are factive situation adverbials.

- (3) a. I will leave if you leave.  
b. I will leave only if you leave.  
c. I will leave even if you leave.  
d. I will leave unless you leave.

- (4) a. I will leave although I don't want to.
- b. I will leave despite the fact that I don't want to.
- c. I will leave even though I don't want to.

I say that concessives are factive because sentences containing complex concessive adverbials entail the propositions expressed by the subordinate concessive clause. Thus, all of (4) entail

- (5) I don't want to leave.

The semantic similarity between (3c) and (4c) is especially close. One's intuition is that they are minimal pairs differing only with respect to the semantic property of factivity (or its opposite, hypotheticalness).

#### Multiple Situation Adverbials

One of the most interesting properties of conditional clauses is that more than one can occur in a given clause. Consider, for instance, such sentences as (6).

- (6) a. If John's car won't start, I will drive you home if my car doesn't break down.
- b. If John's car doesn't start, I will drive you home unless it snows.

Moreover, both conditional and concessive clauses can occur as members of a given clause. Consider (7).

- (7) a. Although I don't want to take you to work, I will do so if my car doesn't break down.
- b. If your car doesn't break down, mine probably will even though it is brand new.

And, multiple concessive clauses also occur together, as is shown by (8).

- (8) a. Although I didn't want to leave, John asked me to even though he knew that he shouldn't.
- b. Despite the fact that I was told not to, I applied for the job even though I didn't think I had a chance to get it.

Multiple occurrences of a given type of adverbial in a single clause are, in general, impossible unless they form

what I shall call a "semantically nested construction." Note that in a hovel refers to a location in Boston in (9).

(9) John lives in a hovel in Boston.

One can form paraphrases of in a hovel in Boston in which the nesting is made quite explicit: in a hovel which is in Boston. And, in general, if more than one locative adverbial occurs in a given clause, the result will be a nested locative construction.

Sentences containing multiple temporal phrases and clauses are tricky because temporal adverbials can be interpreted as situation adverbials in certain linguistic contexts. Let us begin by noting that two instantaneous time adverbials cannot occur together in a clause:

(10) \*John left at noon at five.

If two time adverbials occur in a given clause, one will normally refer to a time or interval within the interval referred to by the other, as in (11).

(11) John left at noon on Friday.

The sequence at noon on Friday is clearly a semantically nested temporal construction. Semantic nesting occurs even when the time adverbials are not contiguous. This is true of the temporal adverbials of (12).

- (12) a. On Friday, I will leave at noon.  
b. I will next week leave at noon.

There are apparent counter-examples to the claim that multiple occurrences of temporal adverbials in a single clause are nested. Consider (13).

(13) When will you leave at noon?

There are two logically possible ways in which one can take (13). One possibility is that when refers to an interval within which the noontime in question occurred, i. e., when...at noon is a semantically nested construction. The other possible interpretation of (13) is that when refers to some occasion or circumstance on which John left at noon. On this view, (13) has an interpretation something like (14).

(14) On what occasion will you leave at noon?

Note that both of the questions (13) and (14) could be answered by either of the following sentences:

- (15) a. On Friday.  
b. When his father was in town.

In (15a), on Friday is an explicit temporal adverbial, but the when-clause of (15b) could as likely refer to a situation as a time. In my view, the more plausible interpretation of (13) is the latter one, in which when is construed as a situation adverbial. The question arises as to why some temporal adverbials can be used as situation adverbials.

As these data make clear, some temporal constructions, especially temporal pronouns like when (cf. (13) and then and when-clauses (cf. (15b)), can function as situation adverbials, albeit nonstandard ones. Such interpretations are forced when they occur with explicit temporal adverbials in circumstances in which semantic nesting is not possible.

Note that each of the when-clauses of (16c) is consistent with the main clause I will leave, but the result of combining them is very strange.

- (16) a. When you leave, I will leave.  
b. I will leave when Mary wakes up.  
c. \*When you leave, I will leave when Mary wakes up.

One might squeeze out an interpretation of (16c) by construing when you leave as a situation adverbial, i. e., one that refers to some occasion or situation. Nevertheless, it should be clear that having two when-clauses in a given clause leads to a much less acceptable sentence than does having more than one genuine situation adverbial. As a result, we must view temporal clauses as highly marked situation adverbials. How, exactly, we are to account for this is something of a mystery.

Though it must be conceded that the facts surrounding multiple occurrences of temporal constructions in a single clause are cloudy, one generalization holds true: whenever we have two explicit temporal constructions they comprise a semantically nested construction or one of them will be interpreted as a situation adverbial. We may conclude, then, that we do not get two or more non-nested, semantically independent, explicitly temporal adverbials in a given clause.

#### Multiple Occurrences of Situation and Temporal Clauses

It is possible to mix temporal and concessive clauses in the same clause. However, when such a situation does occur,

the temporal clause is clearly in the scope of the situational clause. I believe that if neither of the included clauses of the following pairs of sentences are read appositively, then the better sentence is one in which the conditional adverbial is outside the scope of the temporal adverbial:

- (17) a. I leave for work when my wife does unless it snows.
- b. \*I leave for work unless it snows when my wife does.
- (18) a. I will leave for work before you do if it snows.
- b. \*I will leave for work if it snows before you do.

The same seems to be true of mixes of temporal and concessive clauses:

- (19) a. I will leave for work when you do although I suspect it will rain.
- b. \*I will leave for work although I suspect it will rain when you leave for work.

Semantically, it is quite clear that the temporal clause is inside the scope of the concessive clause in an elliptical sentence such as (28).

- (20) I will leave for work when you do although I told Bill I wouldn't.

Sentences (20) clearly has the same meaning as (21).

- (21) I will leave for work when you do although I told Bill I wouldn't leave for work when you do.

Clearly, the phrase leave for work when you do is in the scope of the concessive clause in these sentences. Note further that the if-clause is outside the scope of the modal will in sentence (22).

- (22) John will leave tomorrow if we ask him to do so tonight.

This provides further evidence that situation adverbs are outside the scope of temporal constituents in main clauses.

It would appear, then, that we are justified in thinking that temporal constructions are in the scope of situation adverbials. The question arises as to how to account for

this. Suppose that we say that the function of time adverbials (and tense) is to date dateless state-descriptions, i. e., a dateless description of a state of affairs or action. We might formalize a sentence like (23a) as in (23b).

- (23) a. John died at noon.  
b.  $(\exists t)(\text{At}(\text{Die}(\text{John}), t) \ \& \ (t = \text{noon}) \ \& \ \text{EarlierThan}(t, \text{now}))$

It is important to recognize that the output of the temporal operator At is different from its input. The nonrecursiveness of temporal adverbials, including temporal clauses, we could say is the result of the fact that their input must be undated state-descriptions.

Why are multiple conditional clauses possible, when multiple temporal or locative clauses are not? Let us say that a situation is a state of affairs or action. Such sentences as (24) all describe situations.

- (24) a. John kissed Mary.  
b. John will marry Mary.  
c. John plans to divorce Mary.

Thus, (24a) refers to a situation in which John kissed Mary, (24b) to a future situation in which John marries Mary, and (24c) to a (more or less continuous) situation in which John plans to divorce Mary. Notice that the sentences of (24) all entail the corresponding sentences of (25).

- (25) a. John kissed Mary in some situation.  
b. John will marry Mary in some situation.  
c. John plans to divorce Mary in some situation.

Thus, there is good reason to believe that ordinary dated state-descriptions refer to situations. It would appear from this than (24), no less than (25), refer to situations.

Following Lycan (1985), we might formalize (26a) as in (26b).

- (26) a. I will leave in some situation.  
b.  $(\forall s)(\text{In}((\exists t)(\text{At}(\text{I leave}, t) \ \& \ \text{EarlierThan}(t, \text{now}))), s)$

In this sentence the function of the conditional adverbial in some situation is to situate a dated state-description, i. e., relativize it to a situation. In a sentence like (27) we

are being told that John's marrying Mary will obtain in a situation in which Mary asks him to marry her.

(27) John will marry Mary if she asks him to.

We might say, then, that this sentence will be true in any future circumstance in which Mary asks John to marry her and he does marry her. Let us notate this as in (28).

(28)  $(\forall s)(\text{In}(\text{Mary asks John to marry her, } s) \rightarrow \text{In}(\text{John will marry Mary, } s))$

This sentence in turn refers to a class of situations in which John's marrying Mary is linked to her asking him to. Since this is itself a state-description, it can serve as the input to the operator if, as in (29).

(29) If his parents will permit, John will marry Mary if she asks him to.

We may notate this as in (30).

(30)  $(\forall s_1)(\text{In}(\text{John's parents permit him to marry Mary, } s_1) \rightarrow \text{In}((\forall s_2)(\text{In}(\text{John will marry Mary, } s_2) \rightarrow \text{In}(\text{John will marry Mary, } s_2), s_1))$

Since  $s_1$  itself refers to a situation, we could in principle relativize it to some additional situation, say, the situation in which John has enough money to buy a house, as in (31).

(31) If John comes up with the money to buy a new house, he will marry Mary if she asks him to if his parents will permit him to do so.

Though (31) is not the most natural sentence, it strikes me as grammatical. Certainly it is quite clear in meaning.

Abstractly, we can represent cases of multiple occurrences of conditional clauses as follows:

(32) a.  $(\forall s_1)(\text{In}(S, s_1) \rightarrow \text{In}(P, s_1))$   
b.  $(\forall s_2)(\text{In}(S, s_2) \rightarrow \text{In}((\forall s_1)(\text{In}(Q, s_1) \rightarrow \text{In}(P, s_1)), s_2))$   
c.  $(\forall s_3)(\text{In}(S, s_3) \rightarrow ((\forall s_2)(\text{In}(R, s_2) \rightarrow \text{In}((\forall s_1)(\text{In}(Q, s_1) \rightarrow \text{In}(P, s_1))), s_2), s_3))$

Clearly, this process is recursive, allowing indefinitely

many conditional constructions to occur in a given clause. On this view, then, temporal constructions do not iterate because the output of the temporal operator at is different in type from its input. On the other hand, conditional constructions do iterate because the output of the operator in is the same in type as its input.

We are now in a position to explain how it is that when-clauses can be construed as conditional clauses. Dated state-descriptions cannot serve as the input to the temporal operator. A sentence like (33) is dated and cannot be re-dated.

(33) John left at noon.

Thus, if a temporal adverb like when is added to this sentence, as in (34), it must be construed as performing other than a dating function.

(34) When did John leave at noon?

In such a case, it functions as a situation adverb. When this is not possible for pragmatic or semantic reasons, as is true of (35), which suggests that John may have died more than once, the sentence is pragmatically unacceptable.

(35) When did John die at noon?

Why, though, is when construed as a situation adverb in a sentence like (39), as opposed to something else? I would suggest that the reason is that times are crucial individuators of situations. Thus, John's leaving at noon is a different event from his leaving at midnight. I would suggest that the use of a time adverb to refer to a situation is metonymic in character, for as noted, the time at which a situation obtains is a crucial part of the make-up of a situation.

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