Chapter 14

Some Philosophy of Language

James Higginbotham

Syntactician, Semanticist, Logician, and Philosopher occasionally meet over coffee in the common room. They are disciplinary personae, only occasionally correlated with actual persons; so, even when they are all together it is not always clear how many of them there are. Their concerns may interact and then separate again, and they may be united in a single person. The significant point is that on these occasions they are all present and speak in their several voices.

The Cast: SYN, SEM, LOG, and PHIL

The First Day

PHIL: Well, Syn, is the project rolling along? Morphemes coming out in the right order?

SYN: Of course not, or else what would we be investigating? Besides, even if we could describe everything adequately (which we can't), there would remain problems of explanation and of understanding the new phenomena that come into view as we proceed. Just now I'm worried about a certain syntactic creature that doesn't fit comfortably with our scheme of classification, and it seems to raise semantic and logical problems as well.

SEM: Say on; Log and I have some time before our seminar.

SYN: Well, as you know, whole sentences can function as the objects of verbs. The simplest type in English is that of the finite or tensed complement, consisting of a complete clause preceded by the word "that" (which may be omitted). That gives Phil's favorite constructions, as in

John believes (that) [snow is white]

and generally, "believes that S," "wishes that S," and so forth. There is also the nonfinite complement or infinitive, as in

Mary wants [John to go to the store]

You and Phil keep telling me that there's only a grammatical difference between the two types, finite and nonfinite; that both finite and nonfinite

complements designate propositions; and so that the verbs "believe" and "want," among others, express what you call propositional attitudes.

SEM: Yes, and there are also the epistemic verbs, as in

John knows (that) [snow is white]

Knowledge is not just an attitude, since what one knows has to be true.

SYN: OK, but there's no immediate grammatical distinction between these and the attitude verbs. And if we really want to be complete, we have to add the gerundive complements as in

Mary regrets [their writing letters to the editor]

where the meaning is, as you would put it, that the proposition, or the truth of the proposition, that they wrote letters to the editor is something that Mary regrets.

LOG: The general syntactic form is then

NP — V — Sentence

where NP is the subject, and Sentence is the direct object, designating a proposition. The verb expresses a relation between these, so that the general logical form is

$R(a, b)$

The syntactic differences between the sentence types, as

Mary — believes — that they wrote letters to the editor

Mary — wants — them to write letters to the editor

Mary — resents — their writing letters to the editor

all wash out, logically speaking.

SYN: Shows you logic isn't everything, doesn't it? Actually, there are subtle differences among all the types, but right now I wanted to get on to another type of complement, where there is no "that" (in fact, there cannot be) and where the verb of the complement is neither gerundive nor infinitival. The type is exemplified by

Mary saw John leave

You can see that the complement "John leave" isn't tensed at all; for if it were present tense it would be "John leaves," and if it were past it would be "John left." But it isn't infinitival either, because there's no "to," and, of course, it isn't gerundive because the verb is "leave" and not "leaving."

PHIL: Hold on, though, isn't it just that "see" has an extended sense where it means "know by using one's eyes" or something of the sort? After all, you can say

Mary saw that John left

so your example is a stripped-down version of that. Oh, but that's wrong! You might see that John left by noticing that his chair is empty, but then you didn't see him leave. Conversely, you might see John leave while thinking you were seeing Fred leave, and then you wouldn't believe that John left, let alone know it.

LOG: Don't get ahead of yourself, Phil. Doesn't the truth of the complement follow in both cases? If Mary saw that John left, he left; and if Mary saw John leave, he left.

SEM: Yes, it follows, but for different reasons. Can't we say

Mary watched John leave?

But it would be nonsense to say

*Mary watched that John left

SYN: I was coming to that. The sentences in question have the structure

NP — V — NP — VP

as in

Mary — saw — John — leave

and it turns out that the verbs that fit are verbs of perception: so we have

Mary — saw/watched/heard — John — leave

PHIL: Don't you have the same thing in

Mary demanded John leave?

SYN: No, that's just a subjunctive (pretty rare in modern English).

PHIL: Well, I reserve the point. But what did you have in mind, Sem, by saying that the truth of the complement follows for different reasons in these cases?

Mary saw John leave
Mary saw that John left

SEM: My thought was that in the second case, where, as you put it, the verb "see" means "know by using one's eyes," the complement refers to a proposition. The proposition can be true or false; but, since seeing in this sense is a species of knowledge, and knowledge involves truth, the complement must be a true proposition if the sentence as a whole is to be true. In the first case, however, what Mary is said to have seen isn't a proposition at all, but a sort of perceptual object. So the fact that John left

if Mary saw him leave isn't the same sort of fact as the fact that John left if Mary saw that he left. Then if you choose instead of "see" a verb of perception that doesn't have an extended sense involving knowledge—say the word "watch"—then it would be all right to follow it with "John leave" because that gives a perceptual object, but not with "John left," which gives only a proposition.

PHIL: You'll have to tell me more about the "perceptual objects" of yours.

SEM: I knew you would be skeptical. But I think we're getting ahead of Syn's story.

SYN: Yes, let me arrange some of the data for you. For certain verbs of perception, including "see," "watch," "hear," and "feel," we have a bare or—as it has been called—*naked infinitive* complement NP–VP, as in

We saw John leave
We heard everybody sing
We watched a student solve a problem
We felt the walls shake

My question as a syntactician is, first of all, what the syntactic structure of these complements is, and in particular whether the subject and predicate form a constituent or not; that is, whether the structure is the flat

see — NP — VP

or the more complex

see — [NP — VP]

with NP and VP together forming a constituent phrase. Suppose, for instance, that we replace the subject "John" above by a pronoun. Then we get

We saw him/*he leave

so we know that accusative case is assigned by the verb "see." The same phenomenon occurs with the infinitival complements, since we have

We expected John to leave
We expected him/*he to leave

On the other hand, at least if Phil and Sem are right, we want the infinitival complement to designate a proposition, so it ought to have the complex structure rather than the simple flat one. So the fact that the subject of the naked infinitive is accusative doesn't show anything conclusive by itself. We encounter a real difference between the infinitival and the naked infinitive, in that the first generally allows the passive, but the second does not. We have

John/He was expected to leave

but never

*John/He was seen/watched/heard/felt leave

LOG: In fact you can construct what you people call a minimal pair, can't you? You can have

Mary was seen to be qualified for the job

which would be the passive of

We saw Mary to be qualified for the job

but if you drop the infinitival "to" the result is

*Mary was seen be qualified for the job

and that's not on.

SYN: Very good, Log; that is a minimal pair. The fact that the passive is completely unavailable is evidence that the subject and predicate of a naked infinitive do form a constituent; for if they did not, then we would expect the passive. If you can say

Mary was seen

there would be no reason you can't say

*Mary was seen be qualified

PHIL: Suppose then that 'John leave' is a constituent of 'We saw John leave'. Then why doesn't it just indicate a proposition that we "saw", or saw to be true, or something like that?

SEM: I see that you're eager to get back to my perceptual objects. I have no answer to Syn's problem, but here is the thought. Suppose that besides seeing, watching, or hearing ordinary physical objects we can stand in the same perceptual relations to things that happen to them (in fact, "We saw John leave" might be a reasonable answer to the question "What did you see happen?"). These things are somehow indicated by subject-predicate complexes (but not when the predicate is tensed, or marked with an infinitive, as Syn has shown). Then, if I see one of these things—such as John leave or everybody sing—happen, of course it does happen, so the proposition—that John left or that everybody sang—has to be true. In fact, Fred Dretske pointed out some time ago that there were cases of perception whose objects were events, not things. He gave examples like

We saw John's departure

John's departure is an event: it takes place, it comes before and after other events, and so on. And if we did see John's departure, then he departed (how else could we have seen it?). So I'm conjecturing that there is no semantic difference between Dretske's examples and, say,

We saw John depart

LOG: Let me bring in another kind of consideration. You were worried, Syn, about whether the naked infinitive was a constituent, like an ordinary complement sentence. In complement sentences, as you know, it's possible for expressions to take narrow scope, being understood within the complement alone, or wide scope, understood with respect to the whole sentence ...

SYN: Stop! Give me something more intuitive than this scope-distinction stuff.

LOG: Right. Consider the sentence

Mary saw that one of the students left

We can understand it in such a way that we can ask "Who was it?" But it need not be so understood. Take a scenario similar to Phil's: Mary looks around the seminar room and notices that one of the chairs that used to have someone in it (she doesn't know who) is now unoccupied; and she concludes, correctly, that one of the students has left. Then my example is true, but it's not on to ask "Who was it that Mary saw left?" The ambiguity is explained if we say with Quine that the sentence can be understood either as

One of the students is an x such that Mary saw that x left

or as

Mary saw that one of the students is an x such that x left

In the first case there is some student x or other such that Mary saw that x left; so we can ask "Who was it?" In the second case there need be no student at all with this property. The first is the case where the expression "one of the students" has wide scope, the second where it has narrow scope. Clear enough?

SYN: I can see the ambiguity anyway. It becomes clearer with other examples. I know that I'll die from something or other, but there is no particular thing I expect to die from, so I understand the sentence

I know I'll die from something

with the word "something" having narrow scope in your sense.

LOG: That's right, and anyone who asked you "What is it?" when you said that would have misunderstood you. But now consider my example

with one of your "naked infinitives":

Mary saw one of the students leave

In this case it must be in order to ask "Who was it?" The implication is that there is no ambiguity, and narrow scope is impossible

PHIL: But there was no ambiguity in Syn's example, either.

LOG: Only because Syn meant it one way rather than another. The sentence

I know I'll die from something

is ambiguous, considered as a sentence. The different meanings are

(For some x) I know [I'll die from x]

—false, in Syn's case—and

I know that [(for some x) I'll die from x]

—unfortunately true for all of us. Or remember Quine's example:

Witold wishes someone were President

Quine says that we may understand this either as

(For some x) Witold wishes [x were President]

the interpretation according to which "Witold has his candidate" or as

Witold wishes that [(for some x) (x were President)]

where he merely wishes "that the appropriate form of government were in force." The sentence can have either meaning, the second one being that where the expression "someone" has narrow scope. What I'm suggesting is that this kind of meaning is missing from the naked infinitive complements.

PHIL: I see now. Your claim is that whereas

Mary saw that one of the students left

is ambiguous in the usual way, the trivially different sentence

Mary saw one of the students leave

is not. But doesn't that imply that we have full substitutivity of identity as well? But that's right! The inference

Mary saw that the man across the street waved to her
The man across the street was John; therefore,
Mary saw that John waved to her

doesn't go through, but the inference

Mary saw the man across the street wave to her
The man across the street was John; therefore,
Mary saw John wave to her

does, I believe.

SYN: Slow down, Phil.

PHIL: OK, from the top: in some linguistic contexts you can always put equals for equals. So it's trivial, for instance, that if

Mary saw *a*

and

a is *b*

then

Mary saw *b*

Mary herself might know that she saw *a*, but not that she saw *b*, even though *a* is *b*; but if she did see *a*, and *a* is *b*, then she saw *b*, whether she knows it or not. In the case at hand, if she saw the man across the street, and that man was John, then she saw John (even if she doesn't know it was John she saw). A context like that, namely

see ____

is said to admit substitutivity of identity. But it's notorious that substitutivity of identity doesn't work in contexts like

knows that ____ is so-and-so

and it doesn't work with

sees that ____ waved to her

That is why putting "John" for "the man across the street" can lead you from a truth

Mary saw that the man across the street waved to her

to a falsehood

Mary saw that John waved to her

even if in fact the man across the street is John. Now what is funny is that if we drop the "that" and the past tense—so we get one of your naked infinitives—it does go through: if

Mary saw the man across the street wave to her

and that man is John, then even if she doesn't recognize him it's true that

Mary saw John wave to her

SEM: Let me try to put this together. I see that Syn's original question is in danger of receding into the background, but I want to hold on to it as well as the other observations. Our sentences are, as Syn put it

$$NP_1 - V - NP_2 - VP$$

where V is a verb of perception, and the VP is "bare" or "naked." In these cases (i) NP_2 is accusative (and that shows up if it is a pronoun); but (ii) the construction may not undergo the passive. On the semantic side, we have (iii) the fact that if such a sentence is true (with V in the past tense), then so is

$$NP_2 - VP$$

with VP in the past tense, and (iv) that there appears to be substitutivity of identity, and no ambiguities of scope. Taken together, these properties contrast with those of the minimally different infinitival construction

$$NP_1 - V - NP_2 - \text{to} - VP$$

which has properties (i) and (iii), but neither (ii) nor (iv), and where V are not limited to verbs of perception.

SYN: Thank you, Sem; but there is more.

PHIL: Hold on, though. Can't we explain everything by supposing that with the V of perception the object is just NP_2? So in

Mary saw John leave

we just have the meaning that Mary saw John, and he was leaving at the time. I can paraphrase it by

For some time t in the past, Mary saw John at t & John left at t

So property (iii), the truth of NP_2–VP, follows trivially. You can put equals for equals in the subject position NP_2, and, of course, there won't be any ambiguities of scope. In

Mary saw one of the students leave

for instance, we get

For some time t in the past, one of the students is an x such that Mary saw x at t & x left at t

To use Log' s terminology it must be "in order" to ask "Who was it?" in response to "Mary saw one of the students leave," just as it is to ask "Who was it?" in response to "Mary saw one of the students."

SYN: Well, Phil, with your usual enthusiasm you have taken the contrary of what I was going to say right out of my mouth. Renaat DeClerk has observed that if what you say were true it would allow us to infer from

I felt the tank approach

that

I felt the tank

or from

I heard the door open

that

I heard the door

Both of these seem wrong. Also, how would your suggestion apply to this?

I saw it rain

You wouldn't paraphrase that as

For some time t in the past, I saw it at t and it rained at t

PHIL: Well, probably not....
SYN: Definitely not. And how about idioms like these?

We watched all hell break loose
We saw advantage taken of John

You're not going to say that you watched all hell when it broke loose, or you saw advantage when it was taken of John.

PHIL: So conjecture meets refutation. A mark of progress.

SYN: As you say. Anyway, the conclusion is that the NP–VP that follows a perception verb forms some kind of unit; otherwise, you wouldn't get pleonastic "it" for a subject, or idioms like "all hell," or "take advantage of." But it must be a peculiar sort of unit if it doesn't designate a proposition.

SEM: I think that Syn has given strong evidence that these naked infinitive complements designate perceptual objects. Take DeClerk's example

I felt the tank approach

Suppose this is just like

I felt the approach of the tank

that is, I perceived something happening. And similarly for the other cases: if I heard the door open, then I heard the opening of the door, and so forth. The naked infinitive is a kind of nominalization, I think, as I originally suggested.

SYN: But you wouldn't say that you saw

the raining of it
the breaking loose of all hell
the being taken of John of advantage

PHIL: You are ahead of me. Why is this relevant?

SYN: Well, there are systematic processes that convert sentences into NPs. One of these is the gerundive, where you add *-ing* to the verb, and what would have been the subject (and object, if there was one) show up with prepositions, or as possessives. So if you start from

the door — open

you get

the opening — of the door

(Sem's example), or

the door's — opening

or from

Mary — solve — the problem

you get

the solving — of the problem — by Mary

The other is the *derived* form, where you put some suffix on the verb (you have to know which one), as you get

Mary's departure/the departure of Mary

from

Mary — depart

or

the examination of the tooth by the dentist

from

the dentist — examine — the tooth

Sem is suggesting that the naked infinitives are nominalizations like these, and I was pointing out that, if so, then they are pretty peculiar, because they are around even when nominalizations of the gerundive or derived kinds don't exist. There is no nominalization of

all hell — break loose

because it is an idiom.

SEM: But that isn't an objection, is it? Why can't we have a nominalization where nothing happens syntactically?

LOG: Something has to happen. I mean, where does the nominalization get its meaning? And what meaning does it have anyway?

SEM: I wanted it to designate the perceptual object.

LOG: Right; but how does it do that? Take Syn's example

the examination of the tooth by the dentist

This nominalization, one is told, comes from the sentence

the dentist examine(s) the tooth

but the logical form of that sentence is just

$R(a,b)$

with R the examining relation, a the dentist, and b the tooth. How do you get a perceptual object out of that? I see two ways, and only two. The first is to take the perceptual object as coming somehow from the proposition $R(a,b)$, and the second is to nominalize over some structure that the $R(a,b)$ form doesn't reveal.

PHIL: But what are these perceptual objects?

LOG: Let's worry about that when the time comes. Perhaps they are like what Jon Barwise calls situations, complexes of objects and relations. If we said that, then the proposal for the meaning of, say,

We watched the dentist examine the tooth

would be

We watched a situation s, and s bears relation F to the proposition that the dentist examined the tooth

Our problem would be to fill in F.

SEM: And to fill it in so that you get the right consequences: you can put equals for equals; there's no ambiguity of scope; and the truth of the complement "the dentist examined the tooth" is guaranteed.

LOG: Yes, those would be constraints on F. But there is also the method of hidden structure....

SYN: Of what sort? We know the syntax, except for the question whether the naked infinitive NP–VP is a constituent.

LOG: The structure would lie in the words, not the syntax. You might put these situations inside the verbs themselves. So, suppose we said that we don't simply have the form $R(a,b)$ but rather

$R(a,b,s)$

where s is the situation. The nominalization then picks out s.

PHIL: Donald Davidson has suggested something like this for ordinary sentences. On his view, if you take any ordinary action sentence, say,

the boy threw the ball

then it really has a logical form

For some situation *s*, throw(the boy,the ball,*s*)

He supports this with a number of arguments.

LOG: Very well, adopting this view let us suppose that in

I saw the boy throw the ball

you get this

I saw the situation *s* such that throw(the boy,the ball,*s*)

But it's a trivial consequence of this that the boy did throw the ball. Also, you can put equals for equals because the context of the subject "the boy" is just as it is in the simple sentence "the boy threw the ball." And if we take our earlier example

Mary saw one of the students leave

we won't have any possibility of ambiguity such as we find in

Mary saw that one of the students left

Thus, we deduce all three of the semantic points that Syn and Sem have raised.

PHIL: Then the nominalization is that business of constructing a term "the situation *s* such that ..." out of the sentence?

SEM: Exactly. It is just like some other nominalizations in that respect. English has the affix *-er*, for example, which attaches to a verb and nominalizes it in such a way that what would normally be the subject is referred to. So

the drinker of coffee

for example comes from

drink(*x*,coffee)

or "*x* drinks coffee", and putting on *-er* gives the meaning

the *x* such that *x* drinks coffee

We even have the suffix *-ee*, which picks out the object, so that

the employee of the chocolate factory

comes from

employ(the chocolate factory,x)

and yields

the x such that the chocolate factory employs x

what we have in these nominalizations is just a way of picking out the position for situations. Log's suggestion even fits with the fact that we get idioms and such. There is no difficulty in having

We saw it rain

for that is just

We saw the situation s such that rain(s)

The situation is a perceptual object, even if there is no real subject of the sentence.

PHIL: I have several objections.

SYN: Remember, Phil, this is an empirical inquiry.

SYN: And mine are empirical objections. First of all, why do you say that in

Mary saw John leave

what she saw was the situation in which John left? Couldn't there have been several? Davidson argued that in

John left

the meaning was

There is *some* s such that leave(John,s)

One of his reasons was that you couldn't otherwise make sense of

John left twice

because that requires that there be two "leavings" by John, not just one. But can't you say

Mary saw John leave twice

meaning that she saw two different departures?

LOG: I take the point. I was hasty. For "I saw the boy throw the ball" we should have

There is a situation s such that throw(the boy,the ball,s) and I saw s

SEM: Good, Phil. We now get a difference between

Mary saw John leave (or: depart)

and

Mary saw John's departure

The first one is general: she saw some departure or another. But the second is specific, and to get something general we would say instead

Mary saw one of John's departures

But this is a minor modification.

PHIL: Second objection: what do you do with negation? Can't you say this?

Mary saw John not leave

On Log's proposal this comes out

There is a situation *s* such that not(leave(John,*s*)) & Mary saw *s*

but then it follows that if she saw John smile she saw him not leave; for smiling isn't leaving. But that's absurd.

LOG: That is a problem.

SYN: But think of when you would say that Mary saw John not leave. You would say that, for instance, if she saw him pointedly refrain from leaving the boring meeting he was itching to get out of. It's as if you were to say

Mary saw John stay

PHIL: Very well, maybe you have something. Can you hear the audience not clap? When you do, do you hear their silence?

SEM: Enough with the metaphysics. You had another objection?

PHIL: Yes. The scope problem resurfaces, I think. Suppose I'm at the ball game and I am the last to leave. Then I might say

I saw everybody else leave

But it wouldn't be right to say that everybody else is a person I saw leave: I just saw the crowd.

LOG: We have room for that, if we recognize that we can have situations with plural subjects. You must have looked at this, Sem. Isn't it recognized that you can say

Everybody carried the piano upstairs

where you mean they all did it as a group?

SEM: Sure. Phil's example would be like that. You're saying

There is a situation *s* such that everybody else left in *s* & I saw *s*

and you're not saying

Everybody else is an *x* such that there is a situation *s* such that *x* left in *s* & I saw *s*

The second way of putting it gives a different situation for each person; the first gives just one situation in which everybody was involved.

SYN: Can I get back to the syntax? Why should naked infinitives behave in this strange way? And why can't you get the passive? Actually, your discussion reminds me of what I now realize is a prescient remark that James Gee made in 1977. He wrote that the semantics may correlate with the absence of tense from the naked infinitive. Put it this way: if the tense is there, as in

Mary heard John left

the subject and predicate form a proposition (she might have heard a rumor to the effect that John left); if it isn't there, as in

Mary heard John leave

we can't get a proposition, but one of these nominalizations. Tense is a member of the inflectional elements of syntax, like the infinitival "to." So I have a new problem: why the correlation between the presence of an inflectional element and a propositional interpretation, or the absence of such an element and the—what shall I call it—situational interpretation?

SEM: Log and I would love to sort this out for you, but it's time for our seminar.

SYN: There are other parts of the syntactic story I haven't explained yet. You got some time tomorrow?

SEM: OK.

[*Sem* and *Log* dash off; *Syn* takes notes; *Phil* stares at the ceiling.]

The Second Day

PHIL: More coffee, Syn? Got a fresh pot.

SYN: Thanks. Over there please, not on my notes.

SEM: Can I sum up? The theory so far says that sentences

$$NP_1 - V - NP_2 - VP$$

where V is a perception verb, express relations, signaled by V, between NP_1 and a situation designated by the complex NP_2–VP. These contrast with superficially similar sentences

$$NP_1 - V - NP_2 - \text{tense/to} - VP$$

which express relations between NP_1 and the proposition given by NP_2–VP. The difference is correlated somehow with the presence of the infinitive in the latter and its absence in the former; but we don't know how, and we don't know whether NP_2 VP always forms a phrase. But we do have a hypothesis for the semantic difference. In the second, infinitival

case, assuming with Davidson that sentences have a special place for situations, the object of the verb is

the proposition that (for some situation s) $VP(NP_2,s)$

Call this proposition p. Then the whole sentence expresses

$V(NP_1,p)$

So, for example

Mary saw that John left

is

Saw(Mary,the proposition that (for some s) leave(John,s))

But in the first case the object of the verb is a situation itself so that the whole sentence expresses

(For some situation s) $V(NP_2,s)$ & $VP(NP_1,s)$

So that

Mary saw John leave

is

(For some situation s) (leave(John,s) & saw(Mary,s))

SYN: Thanks, Sem. Let me put some more of the syntax before you. Adrian Akmajian [1977] discussed, besides the naked infinitive cases, also the case where the VP is gerundive. An example would be

Mary saw John leaving

He noticed also that there was very good evidence that the complement "John leaving" really is a phrase. You can get it, for example, as a whole subject, as in

[John leaving] — is a distressing sight

but not

*[John leave] — is a distressing sight

He also noticed that the gerundive complement is much more productive than the naked infinitive. For example, there is a contrast between

Mary observed John leaving

and

*Mary observed John leave

PHIL: I thought gerundive complements with *-ing* designated propositions. Didn't you give this example?

Mary resents their writing letters to the editor

SYN: There's a difference, Phil: in this case the subject is possessive "their," not accusative "them."

PHIL: You mean that matters?

SYN: Sure. Notice that you get

Mary saw him/*his leaving
Mary resents *him/his leaving

PHIL: I see. So the case of the element really is important to you.

SYN: More than that, it's a diagnostic, so we know what we're dealing with.

LOG: This latter type of example does not appear to affect the hypothesis just outlined by Sem, however. Could we not say that for

Mary saw John leaving

we have this?

(For some situation *s*) (leaving(John,*s*) & saw(Mary,*s*))

I should think that we could.

SEM: Yes, why not? There is a contrast in meaning between

Mary saw John leave
Mary saw John leaving

in that in the first case John must have really left, and the action is completed, whereas in the second it is incomplete. But that is the same as the contrast between

John left
John was leaving

But before you go farther, Syn, assuming this is all right, a problem did occur to me. I considered sentences

Mary saw John VP

and tried to see what VP would comfortably go there. Let me show you some of the examples:

Mary saw John:	buy a house
	pray for rain
	own a house
	hope for rain

I also looked at cases that aren't naked infinitives in your sense, but where in place of VP you just have an adjective, like "Mary saw John unhappy." Consider this list:

Mary saw John:	happy
	drunk
	stupid
	six feet tall

What do you think?

SYN: The first two examples in each list are fine; the others are strange.

SEM: That's what I think. And the result reminded me of Gregory Carlson's and Angelika Kratzer's work on stage-level and individual-level predicates.

LOG: What is the distinction?

SEM: An individual-level predicate is one expressing a state that applies to its subject for a long period or essentially; a stage-level predicate applies only temporarily. We know that sentences beginning "there is ..." are sensitive to this distinction. So, for instance, contrast

There's a man drunk in the next room (stage-level)

with

*There's a man stupid in the next room (individual-level)

Also, simple present-tense sentences in English are acceptable with individual-level VPs, but not stage-level. So

John owns a house (individual-level)

just means: that's the way things are right now. But

John buys a house (stage-level)

doesn't mean that, at least not taken all by itself. Now, this same distinction seems to be at work in the case of naked infinitives. You can say

Mary saw John buy a house (stage-level)

but not

Mary saw John own a house (individual-level)

PHIL: What if John were playing Monopoly? Couldn't you say

Mary saw John own a house on Park Place?

SEM: I like that, Phil! What you've done is come up with a context where the predicate "own a house" has been made stage-level, because we know that in Monopoly houses get owned for possibly short periods.

PHIL: And the same would go for the other examples. Suppose that John is stupid on the afternoons he takes stupid pills, but not on other afternoons. Then you could say

Mary saw John stupid (on Wednesday afternoon)

Or suppose you could vary your height at will, as you can vary your hair color. Then you could say

Mary saw John six feet tall

SYN: Your thought experiments are as outrageous as ever, Phil; but I think you have a point in this case.

LOG: Before we go further with the science fiction, may I observe that we have no way to express the distinction Sem has noticed? There is, one assumes, a situation of John's being six feet tall, and so the sentence

John is six feet tall

has the logical form

for some situation s (six feet tall(John,s)

and then nothing precludes the nominalization that will assign to "Mary saw John six feet tall" the meaning

for some situation s (six feet tall(John,s) & saw(Mary,s)

SYN: Perhaps John's being six feet tall is a situation you can't see?

PHIL: But you can say

Mary saw John unhappy

What makes John's being unhappy a situation you *can* see?

SYN: I think I have an explanation.... But I have to begin farther back.

PHIL: I see Syn caffeineless. I'll get the coffee.

SYN: Yesterday Phil brought up Davidson's views about action sentences, which are very interesting and all that but leave me puzzled how this position for situations ever gets noticed in the syntax. I mean, if you say that

John left

is

(For some situation s) (left(John,s))

where does that "for some situation s" come from? You certainly don't hear it. But if some current views of syntax are correct, then besides the core NP "John" and VP "leave" we have the tense (in this case Past), and it belongs to its own inflectional category INFL. So really the structure is

NP — INFL — VP

where the INFL contains the feature for tense that surfaces as an affix on the verb. Now what if this category INFL was what gave us the "for some situation *s*" bit? If it did, then the category could give us something else, too; namely, a way of distinguishing the individual-level from the stage-level predicates. The reason is that besides the neutral "for some situation *s*" we might have in INFL something that, in the present tense anyway, requires an individual-level predicate, call it *I*. Then in

John owns a house

we have

(For some *I*-situation *s*) owns(John,a house,*s*)

But this kind of INFL would be incompatible with a stage-level predicate. Inversely, for cases where you get stage-level predicates but not individual-level ones, like

There is a man drunk/*stupid in the next room

we might suppose that you have an INFL that requires a stage-level predicate, call it *S*. Now Sem has observed that individual-level predicates aren't acceptable in naked infinitives. But maybe they do have a kind of INFL (which you never hear) of the same sort as in the simple present tense in English. If that were so, then you would get exactly Sem's distinction. You could say

Mary saw John buy a house

because that would be

For some *S*-situation *s* . . .

but not

Mary saw John own a house

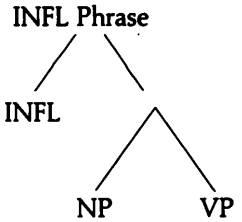
because owning a house isn't normally an *S*-situation.

LOG: That would mean recognizing some further structure in your naked infinitives.

SYN: Yes, but it correlates with a real distinction. It also answers, in a roundabout way, my question about whether naked infinitives are constituents; if they have a kind of INFL, then they must be.

PHIL: That went by me.

SYN: OK, here's the reasoning. There's a lot of support for the hypothesis that a simple sentence consisting of a subject NP, a VP, and a tense actually starts out as a structure like this:



where the NP moves to the left past INFL, and INFL moves down to become an affix on the VP (the tense). The NP couldn't fail to be there, because the VP would then lack a subject. And the INFL gets together with NP–VP under a higher point INFL Phrase; so, if INFL is there, then NP–VP must be a phrase.

PHIL: Very well. Suppose that the complements to perception verbs do generalize over *S*-situations, and for some reason only over these. Yesterday I was skeptical about Sem's perceptual objects, but on thinking it over I've become less so. Even though I stand ready to be corrected at any moment by Syn, I think there's another class of naked infinitives that haven't been considered yet. What about the example

Mary made John leave?

I can repeat Syn's diagnostics, I think: the verb "leave" has no tense, and there's no infinitival "to." And if Mary made John leave, then surely he left; so the consequences are the same as for "Mary saw John leave."

SYN: I agree: in fact Akmajian gives this case. But he adds examples like

Mary had John bring the car

and you can also include

Mary helped John pack
Mary let John bring the car

PHIL: Just what I wanted to see. All these verbs—"help," "make," "have" (in this sense), and "let"—have this in common, that they all involve causation. They fit perfectly Sem's remarks about "happenings" because you can make, or let, or have, or help something happen. So suppose the objects are situations, things that happen, and that we analyze them the same way as the perception verbs. For "Mary helped John pack" that would give

(For some situation *s*) (pack(John,*s*) & helped(Mary,*s*))

You can translate back from the formal notation into (rather stilted but intelligible) English as Davidson does; and that would give

There was a packing by John and it was helped by Mary

LOG: May we check the matter out with respect to the phenomena that we brought to bear on perception verbs? There was the problem of negation, for instance . . . .

SYN: I was just wondering about that. It checks out, doesn't it, because you can say

Mary had John not bring the car

and the meaning is that she had him stay put, or something like that. Also, you do get idioms, and pleonastic "it":

They made it rain/all hell break loose

So I'm ready to accept that these cases go along with the perception verbs syntactically as well as semantically. But why does all this make you happier about perceptual objects, Phil?

PHIL: Because situations in the sense in which we are now speaking of them aren't *intrinsically* perceptual at all. They are just things, some of which can be perceived, and different ones by different sensory modalities. As Sem put it yesterday, citing Dretske, they are things that happen, and so things that are or can be the causes and effects of other things. From this, it's true, we don't know very much about their nature; but at least we know that they show up in other contexts than just perception.

SYN: Actually, Phil, I found myself beginning to think that your skepticism had a point (I know I pick up bad habits from you). According to the view we're now taking, when you see a situation you don't have to know what you're seeing, or know what the things are that you're seeing. I remember I once told my mother

I see a star moving through the sky

and she said

What you see is an airplane landing

I did see something; I was just wrong in describing what I saw.

PHIL: This is a point in favor of the analysis in terms of situations. They can be misdescribed, just like anything else.

SYN: But I already had the concepts to see what I did. Could I see those things without the concepts? I mean, I paid my taxes this morning by writing a check, and my dog was watching me the whole time. Did the dog see me pay my taxes?

PHIL: If I were where the dog was, I would have seen you pay your taxes?

SYN: Yes. But if I made a list of "things my dog saw me do" I don't know if I would put "paying my taxes" on the list.

PHIL: What a thing for you to be worried about, Syn! I don't really know the answer to your question, but I can make a distinction. It may be that you have to have concepts of certain kinds to be able to see certain situations. But to the extent that's true it's not true only of seeing situations. Suppose you took your dog driving around Oxford. Would you put on your list of "things my dog saw today" all the things that you yourself saw? Even if the dog is exposed to the same images as you, there may be limits on what it can take in. Would you feel happy saying it saw a three-way intersection, for example?

SYN: I'm not yet satisfied, but I get the idea.

LOG: I think I see a problem with the causal verbs you've been discussing. Perception verbs admitted both

Mary V John leave
Mary V John leaving

but these causal verbs do not. You cannot have

*Mary made John leaving
*Mary let John bringing the car

SYN: You're right. But we can have

Mary had John bringing the car

I don't know why there should be a difference.

SEM: There's another thing, too. For the perception verbs you had to have stage-level predicates, what Syn calls *S*-situations. But for these later cases you don't. You can say, for example

Vitamins made John six feet tall

SYN: Right again.

PHIL: What do you do when these odd things pop up, Syn? It always seems that when you have nice generalizations you also have exceptions.

SYN: Sometimes you just have to put up with that. But I can say anyway how these differences among the verbs can be stated in the theory. Verbs are said to *select* for the nature of their objects or complements. Going back to the case of ordinary propositional complements, we have to say that "believe" selects for *that*-clauses and infinitives, but not gerunds, because we have

Mary believes — that they wrote letters to the editor
Mary believes — them to have written letters to the editor
*Mary believes — their writing letters to the editor

and we have to say that "regret" selects for *that*-clauses and gerunds, but not infinitives:

Mary regrets — that they wrote letters to the editor
*Mary regrets — them to have written letters to the editor
Mary regrets — their writing letters to the editor

and, finally, that "want" selects infinitives only:

*Mary wants — that they write letters to the editor
Mary wants — them to have written letters to the editor
*Mary wants — their writing letters to the editor

In the cases at hand we have to say:

"make" and "let," but not "have," do not select for gerunds
"see" selects for S-situations, "make" does not

and so forth. There may be deep reasons for these facts, but they are not easy to find.

SEM: In the same vein, I wondered if you were going to bring up the fact that the causal verbs can't take for their objects ordinary nominalizations that refer to situations, like "John's departure." Although you can have

Mary saw John depart/John's departure

you can't have

*Mary made John's departure

in the sense that she made him depart (but only in the irrelevant sense that she made it go well). The resistance of the causal verbs to NP objects for situations extends to pronouns and again contrasts with the perception verbs. So you can say

Mary saw John depart, but Bill didn't see it

where the "it" refers back to the thing that Mary saw, but not

Mary made John depart, but Bill didn't make it

In fact the sentence

Bill made it

besides the idiomatic meaning "Bill succeeded," only means something like "Bill made the cake" and never means that he made some situation.

LOG: Such are the vagaries of ordinary language.

SEM: You're right, Log, and you're wrong, too. In these cases, I was going to say, there is a way of getting around the requirements of the formal syntax. You can say

Mary made John depart, but Bill didn't make it happen

It's just that, to use Syn's terminology, the causal verb selects for an NP–VP complement when situations are to be referred to. But before you lament the vagaries of language, consider this. We have examined lots of sentences of our (no doubt slightly different) varieties of English, and we've substantially agreed about what they mean and whether they are grammatical. The facts that we've been trying to systematize were already known to us before the subject ever came up. How did we know these facts? Mother (or whoever) never told you, "Now, Log, when you want to refer to a situation with a pronominal object to 'make' or 'let,' you must always remember that formal syntax requires you to put in the verb 'happen'." The facts you know constitute your linguistic competence, which takes in syntactic and semantic elements in complex ways. The clean lines of your suggestion for the logic of perception verbs (and now for these causal verbs as well) were immensely helpful, just because they abstracted away from many details of linguistic organization. Likewise for Phil's thought-experiments and metaphysical remarks. But the details of language aren't exhausted in the logic and philosophy.

LOG: I was being ironic, Sem. But I take the point. Let me think some more about the logic of perception (and causation).

PHIL: The nature of situations still puzzles me. Syn's problem about the dog, for instance . . . .

SYN: Oh, there are plenty of problems outstanding. I haven't even given you some of the facts from languages other than English. And I still don't know why you can't say

*John was seen/made leave

SEM: Still, we've made progress. The distinction between situational reference and propositional reference is worth exploring further. Let me again sum up. What is peculiar about naked infinitives is that they refer to situations rather than to propositions. They do this by a kind of hidden nominalization, which picks out the position for situations already found in the verb. Following Syn's suggestion the structure for a naked infinitive sentence is

$$NP - V - [_{\text{INFL Phrase}}\text{INFL } [NP - VP]]$$

where the INFL acts so as to generalize over situations, giving

(For some (*S*- or *I*-) situation *s*) (VP(NP,*s*) & V(NP,*s*))

where perception V always pick *S*-situations, and the causal V are neutral. From this proposal the semantics, and some of the syntax, follows.

[*Phil* rises to prepare the coffee.]

Suggestions for Further Reading

Phil's discussion of situations relies on Davidson 1967, who spoke more narrowly of events. This work is reprinted with further remarks in Davidson 1980. Davidson's work forms the background of the study by Parsons 1990, which considers perception verbs in passing and causal constructions rather extensively. Different ways of thinking about reference to events are surveyed in Bennett 1988, especially chapters 1 and 2.

Syn draws on the discussion of the syntax of perception verb complements in Akmajian 1977, with comments in Gee 1977. Gee, in turn, builds on the seminal discussion in Dretske 1969, reprinted 1988.

Dretske's account of the sort of seeing that is involved in naked infinitive complements was extended by the logical and semantic study by Barwise 1981, reprinted in Barwise 1989. Barwise took the view that Log alludes to but then does not pursue, that situational reference is mediated by some relation to the proposition; but his account of propositions is one that is itself based on situations in his sense (see at length Barwise and Perry 1983). The semantic peculiarities of naked infinitives in allowing substitutivity of identity and not permitting (under ordinary circumstances) scope ambiguity of quantifiers are due to Barwise, who provides other logical points and puzzles for reflection. The *locus classicus* of problems of scopal ambiguity and substitutivity of identity is Quine 1956, reprinted in Linsky 1971 and in several other collections on the philosophy of language. Further development is due among others to Hintikka 1969, also reprinted in Linsky. Hintikka's discussion in terms of possible-worlds semantics is the chief critical target of Barwise 1981; for a further development of Hintikka's point of view, see Niiniluoto 1982.

Higginbotham 1983 and Vlach 1983 respond to Barwise, Higginbotham taking the view that Log ultimately suggests. Articles critical of this view include Asher and Bonevac 1985a and 1985b, and Neale 1988. Recent syntactic discussion of both perception verbs and causatives includes Mittwoch 1990 and Ritter and Rosen 1993. Both these papers consider the problems of selection that Syn discusses in the text.

The distinction between stage-level and individual-level predicates is explored in Kratzer 1994, who demonstrates its grammatical and semantic significance; the question of the exact nature of the distinction remains largely open at this time. Nominalizations have been discussed from several points of view; a good source for the types in English is Grimshaw 1990.

Problems

14.1 In response to Phil's question about the example

Mary demanded John leave

Syn replied that the complement "John leave" was in this case a subjunctive rather than a naked infinitive. How do the following data support Syn's response?

Mary demanded that John leave
*Mary saw that John leave
Mary demanded he/*him leave
Mary saw *he/him leave

14.2 Sem argues that the reason you can say

I saw everybody else leave

where you wouldn't be prepared to say that there is any particular person you saw leave is that the subject is plural, as in the interpretation of

Everybody carried the piano upstairs

where they all worked together to lift the piano. Characterize, and then use Sem's distinction to explain, the difference between these:

I saw everybody walk down the street
I saw every single person walk down the street

14.3 The fact that seeing as reported by a naked infinitive complement is independent of knowledge is exemplified by the difference between these two sentences (noted by Barwise):

Ralph saw that a spy was hiding a letter under a rock, but thought she was tying her shoe
Ralph saw a spy hiding a letter under a rock, but thought she was tying her shoe

Explain why.

14.4 Log concedes that in order to allow a sentence like

Mary saw John leave twice

we have to allow that the complement "John leave" doesn't refer to a unique situation. Fill in the reasoning. How would we give a logical form to this sentence?

14.5 Determine, using the tests above, which of these predicates are stage-level and which are individual-level. Do they all fit neatly as judged by all the tests?

have blue eyes
unconscious
know the answer
wear glasses
witty

14.6 The discussants are quick to agree that the causal verbs and the perception verbs fit the same semantic pattern. Check the cases

Mary had the man across the street wave to her
Mary helped a boy read a book

to see that the first satisfies substitutivity of identity, and the second shows no scope ambiguity. Do you find an ambiguity in

Mary made a boy read a book?

If so, what problem does this create for the account given in the text?

14.7 When Phil raised the question what to say about negation inside naked infinitive complements as in

John saw Mary not leave

Syn suggested that the function of negation in these cases was to give, not the contradictory of the predicate, but a contrary one, such as

John saw Mary refrain from leaving

Is Syn right? Think of some examples to test the hypothesis.

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