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# The Syntax of Conditional Sentences

Without exception, logicians have given us to understand that ‘if... then’ is a syntactically unstructured binary sentence operator, and that antecedent and consequent are syntactically co-ordinate. The campaign began with  $\supset$  and  $\rightarrow$ , but it did not stop there. Though dissatisfaction with the truth-functional representation led to the intensional  $\multimap$ ,  $\triangleright$ , and  $\Box\rightarrow$ , these connectives are still syntactically unstructured binary sentence operators. And every logician awards any such operator its own distinctive base clause in the recursive truth definition for its containing language. In these ways, ‘if... then’ is assumed to resemble ‘and’ (&) and ‘or’ (v), however more complex its truth rule may be. Presumed equivalents of ‘If A, then B’, such as ‘B if A’ and ‘A only if B’, are treated just the same.

I think this is all very wrong. I nearly said ‘demonstrably wrong’, but, not myself being a syntactician, I cannot do the demonstrating beyond doubt. In this chapter I shall just marshal some syntactic considerations, those most accessible to non-linguists, that count heavily against the idea that ‘if... then’ is an unstructured operator and that strongly suggest an alternative syntactic analysis. The alternative analysis will guide the rest of this book.

## Conditional Sentences

What counts as a conditional sentence? The paradigm is a sentence whose main connective is ‘if’, such as:

- (1) *a.* If Sharon leaves, I will leave.  
*b.* I will leave if Sharon does.  
*c.* If Sharon leaves, then I will leave.
- (2) *a.* That vase will break if you drop it.  
*b.* If you drop that vase, it will break.

- (3) If Laura missed the meeting yesterday, there will be big trouble tomorrow.
- (4) If Hitler had known how good the Russian tanks were, he would never have invaded.
- (5) The vase would not have broken if you had dropped it on the sofa instead of right smack on the stone floor.

Understandably, philosophers have focused their attention on such 'if'-sentences, largely ignoring other conditional expressions such as 'unless', and the application to 'if' of such modifiers as 'only' and 'even'. Even more understandably, the philosophers have ignored more complex adverbial constructions that are conditional in meaning and are, as we shall see, syntactically very similar to 'if':

- (6) *a.* In case Sharon leaves, I will leave.
- b.* I will leave in the event that Sharon does.
- c.* I will leave only in the event that Sharon does.
- d.* I would leave only in the event that Sharon did.
- e.* I will leave on condition that Sharon does.
- f.* I would leave only on condition that Sharon did.
- g.* I will leave in any circumstance in which Sharon does.

The two main claims of this book are that conditionals containing 'if' share the semantic properties of sentences such as those in (6), and that once those similarities are brought out, a considerably wider field of data can be explained than has been by previous theories of conditionals, and some persistent errors corrected.

I used the phrase 'conditional in meaning', but it is not entirely innocent. It has been applied (e.g., by Fillmore, 1987) to a variety of constructions. Some of these, and more, are illustrated in (7).

- (7) *a.* Had Hitler known the strength of the Russian tanks, he would not have invaded.
- b.* Hitler would have invaded England but for the Luftwaffe's losing the Battle of Britain.
- c.* Assuming it's still showing, we'll go see *Saving Private Ryan*.
- d.* Leave or I'll call security.
- e.* Are you leaving through the door or through the wall?
- f.* Insult my sister again and  
       { you'll never be invited back }  
       { see what happens }.

- g. With your help, we can get this done by 5.00.
- h. For you to do that would be very generous.
- i. We go in there, we don't come out. [General George A. Custer's scout Boyer, a few minutes before Little Big Horn<sup>1</sup>]
- j. Go in there; you won't come out.
- k. Want to die in a searing agony of boredom? Listen to the Pachelbel Canon more than once.

I doubt that any of the sentences in (7) is strictly a conditional sentence, that is, has the very same truth condition as the corresponding 'if... then' sentence. Some sentences, such as many disjunctions, are logically equivalent to conditionals even though they are not themselves conditionals.<sup>2</sup> Even less strictly, other sentences may be conditional in their usual purport, by principles of speech-act theory or by conversational implicature perhaps, but are not even logically equivalent to conditionals. I will not try to adjudicate any of the examples in (7), but only remark that syntactically they are very diverse. The strict parallels we shall observe holding between 'if... then' conditionals and the sentences in (6) do not hold between conditionals and any of the sentences in (7).

I know of no crisply reliable syntactic mark of conditionality *per se*.<sup>3</sup> I will assume that the presence of 'if' (or 'unless') as a clause's main operator, when the consequent has the appropriate aspect,<sup>4</sup> suffices for that clause's being conditional. (I speak of clauses rather than sentences because obviously a sentence may contain a conditional clause without itself being a conditional sentence: 'I hate that and if you do it again I'll tell Edgar what you said about his moustache';

<sup>1</sup> Slightly paraphrased by Fraser (1982: 405, 453).

<sup>2</sup> There are several sharp syntactic differences between disjunctions and the conditionals to which they are equivalent. For example, they only dubiously admit backward pronominalization while their corresponding conditionals permit it freely: 'If you don't pay her, Melissa will sue your socks off'/??'Pay her or Melissa will sue your socks off. (Without further context, 'her' is hard to hear as referring to Melissa.) And as Arnold Zwicky has pointed out to me, disjunctions admit imperative left disjuncts while the corresponding conditionals' antecedents cannot be imperative: 'Be here by 7.00 a.m. or it's your job'/\*If (you) don't be here by 7.00 a.m., it's your job'. ('If you aren't here...' would not be an imperative clause.) 'Don't start singing again or I'll gnaw my foot off'/\*If: start singing again!, I'll gnaw my foot off.'

<sup>3</sup> Comrie (1986) looks for syntactic marks of conditional antecedents and consequents, but finds none. Taylor (1997) concurs.

<sup>4</sup> This qualification is needed to rule out 'if'-sentences that are really universal generalizations, such as 'If I hear someone playing the Pachelbel Canon more than once, I take the safety off my Browning.'

‘Tony believes that if he eats two more broccoli florets his left elbow will explode.’) And I will also count a clause as conditional if it is synonymous with—not merely logically equivalent to—one that does so contain ‘if’ (or ‘unless’). By the latter criterion, I would and will argue that the sentences in (6) are conditional sentences.

In this book I shall use the symbol ‘>’ as a superficial and theory-neutral generic representation of conditional form in English. This must not be taken to imply that I believe there is any binary conditional connective expressed by any English morpheme; I do not. But it also does not imply that there is not one; officially it leaves open the possibility, for example, that English conditionals are just material conditionals, reflections of the horseshoe.

### **Against the Unstructured Conjunction Theory**

Grammatically speaking, a syntactically unstructured binary sentence operator is a conjunction, either a co-ordinating conjunction or a subordinating conjunction. ‘And’ and ‘or’ are co-ordinating conjunctions. Accordingly, they exhibit the syntactic properties that distinguish co-ordinating conjunctions from subordinating conjunctions and from operators of other types (Haiman, 1986).

Co-ordinating conjunctions permit a process called Conjunction Reduction: (8*a*) can be shortened to (8*b*), and (9*a*) to (9*b*).

- (8) *a.* I closed the car windows and I turned up the radio.  
*b.* I closed the car windows and turned up the radio.
- (9) *a.* I will get through *Sein und Zeit* or I will die trying.  
*b.* I will get through *Sein und Zeit* or die trying.

Likewise what is called Gapping: constituents of a right conjunct can be omitted if the left conjunct contains a copy of them.

- (10) *a.* I washed the windows and Debra washed the curtains.  
*b.* I washed the windows and Debra the curtains.
- (11) *a.* (8*a*) can be shortened to (8*b*), and (9*a*) can be shortened to (9*b*).  
*b.* (8*a*) can be shortened to (8*b*), and (9*a*) to (9*b*).

Thirdly, an ‘Across-the-Board’ principle holds for co-ordinating conjunctions in regard to various properties. For example, mood: if one clause is interrogative/imperative, so must the other be.

- (12) a. Did you close the car windows and did you turn up the radio?  
 b. \*Did you close the car windows and you turned up the radio.
- (13) a. Will you get through *Sein und Zeit* or will you die trying?  
 b. \*Will you get through *Sein und Zeit* or you will die trying.
- (14) a. Go to the store and pick up some Dos Equis.  
 b. \*You are going to the store and pick up some Dos Equis.
- (15) a. Get through *Sein und Zeit* or get off the pot.  
 b. \*Get through *Sein und Zeit* or you will get off the pot.  
 (Grammatical in itself but only with a different, wholly declarative meaning.<sup>5</sup>)

'If' has none of these three features. Not Conjunction Reduction:

- (16) \*I closed the car windows if turned up the radio.

Not Gapping:

- (17) \*I washed the windows if Debra the curtains.

Not 'Across-the-Board'; (18) and (19) are fine.

- (18) If you're going to the store, are you going to pick up some Dos Equis?
- (19) If you're going to the store, pick up some Dos Equis.<sup>6</sup>

Finally, there is a phenomenon called Adverb Preposing that characterizes adverbial subordinate clauses but never co-ordinating conjunctions.<sup>7</sup> An adverbial phrase that occurs as a constituent of a

<sup>5</sup> Another property subject to 'Across the Board' is the permissibility of extracting a constituent to form a relative clause; the constituent must be extracted from each conjunct if from either: 'Sarah e-mailed Mike and Jerry called him' can be used to form 'The man whom Sarah e-mailed and Jerry called never replied to either of them', but not \*'The man whom Sarah e-mailed and Jerry called him never replied . . .' or \*'The man Sarah e-mailed Mike and whom Jerry called never replied . . .'

<sup>6</sup> There are further arguments. Co-ordinating conjunctions permit Right Node Raising, as in 'I shot the sheriff and Louise buried him'/'I shot and Louise buried the sheriff'. Also, backward pronominalization and quantifier binding are possible for 'if' (and for subordinating conjunctions) but not for co-ordinating conjunctions: 'If/when she arrives tomorrow, I'll ask Louise where she buried the deputy', but \*'She will arrive tomorrow and I'll ask Louise where she buried the deputy'. Also, there is evidence that conditional clauses are constituents of predicates, which co-ordinate clauses are not.

<sup>7</sup> Lakoff (1972) argued that there is a specific syntactic transformation appropriately called 'Adverb Preposing'. The existence of such a transformation considered as a real

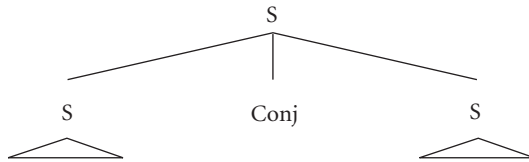
complex verb phrase can also appear at the front of their containing clause:

- (20) a. Aunt Sarah got heroically drunk last Sunday.  
 b. Last Sunday, Aunt Sarah got heroically drunk.
- (21) a. She took several codeine pills before she went to bed.  
 b. Before she went to bed, she took several codeine pills.
- (22) a. She slept heavily until Tuesday afternoon.  
 b. Until Tuesday afternoon, she slept heavily.

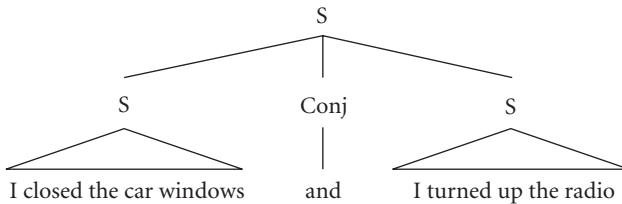
Co-ordinating conjunctions never afford such equivalences.

- (23) \*And I turned up the radio, I closed the car windows.
- (24) \*Or I will die trying, I will get through *Sein und Zeit*.

Granted that 'if' is not grammatically a co-ordinating conjunction, it might still be a subordinating conjunction. Indeed, that is the traditional grammarians' view of 'if' (Sweet, 1891, Onions, 1932). While a co-ordinating conjunction occurs in roughly the structure:

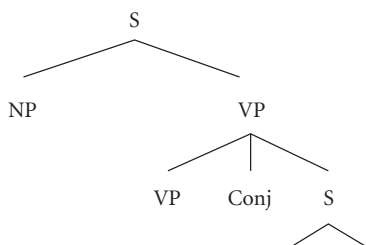


as in

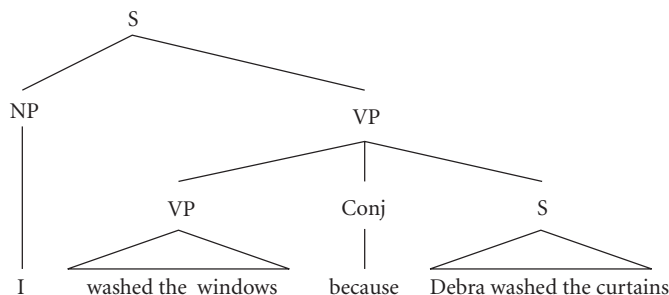


a subordinating conjunction (though also a binary connective) connects a clause with an inferior constituent such as a verb phrase:

syntactic process is highly disputable (Geis, 1986a, 1986b), but I do not rely on it here. I am merely calling attention to synonym pairs of the sort I shall now illustrate.



as in



If we suppose that ‘if’ is an unstructured subordinating conjunction, we avoid the foregoing four main objections to the Co-ordinating-Conjunction hypothesis. But the new supposition too runs into counterevidence.

First, notice that ‘if’ can be modified by ‘only’, ‘even’, and (in some dialects) ‘except’:

- (25) *a.* You will pass that course only if you wash the professor’s car every Sunday.  
*b.* I will stay till midnight even if they make us put on silly hats.  
*c.* I will stay except if Bruno does.

But if ‘if’ is an unstructured subordinate conjunction, so, presumably, is its fellow conditional connective ‘unless’. Yet ‘unless’ cannot be modified by ‘only’, ‘even’, and ‘except’. We do not get

- (26) *a.* \*You will fail that course only unless you wash the professor’s car every Sunday.  
*b.* \*I will stay till midnight even unless they make us put on silly hats.  
*c.* \*I will stay except unless Bruno does.

(This is also yet a further mark that distinguishes ‘if’ from ‘and’ and ‘or’; there are no \*‘I closed the car windows only and I turned up the radio’, etc.)

More importantly, ‘if’ pronominalizes in a way that unstructured subordinating conjunctions do not. Sentence (1a) (‘If Sharon leaves, I will leave’) is equivalent to (1c):

- (1) *c.* If Sharon leaves, then I will leave.<sup>8</sup>

(Though Davis (1983) points out that not every sentence of the form ‘If P, Q’ is equivalent to the corresponding ‘If P, then Q’. I shall take this up in the next chapter.) And ‘then’ in (1c) is not *flatus vocis* or pleonastic, but is a resumptive pronoun like those in (27*b*) and (28*b*):

- (27) *a.* When Sharon leaves, I will leave.  
*b.* When Sharon leaves, then I will leave.  
 (28) *a.* Where Sharon lives, I will live.  
*b.* Where Sharon lives, there I will live.

And (though they are redundant) we get

- (29) *a.* If Sharon leaves, I will leave then too. (‘Then’ here need not be temporal; the speaker need not mean that s/he will leave at the same time Sharon does.)  
*b.* When Sharon leaves, I will leave then too.  
*c.* Where Sharon lives, I will live there too.

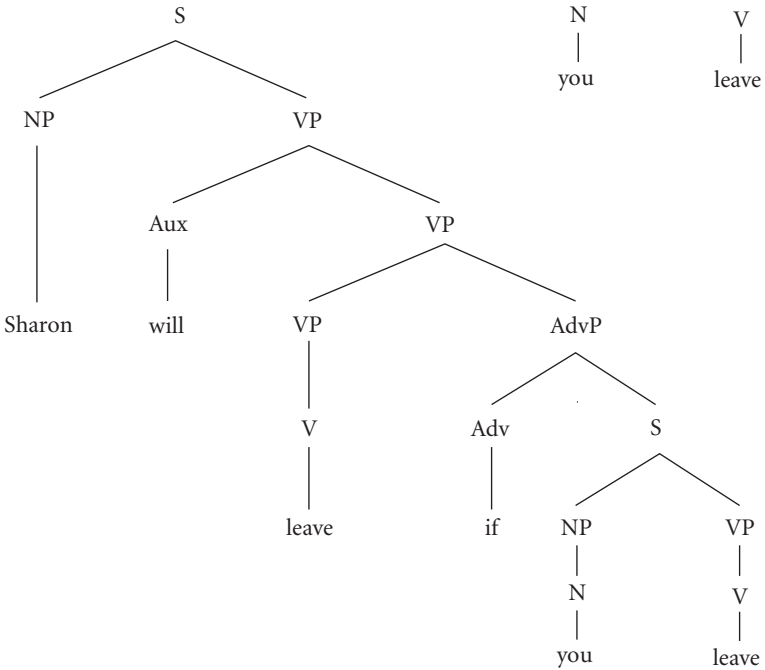
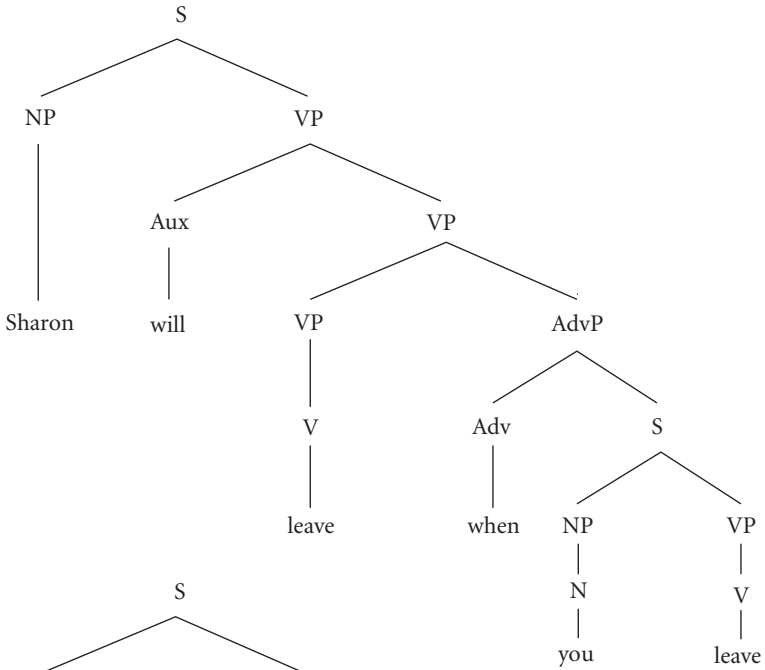
There is no parallel with an unstructured subordinating conjunction like ‘because’, ‘after’, ‘whereas’, or ‘although’:

- (30) *a.* \*Because Sharon left, I will leave then too.  
*b.* \*After Sharon left, I left then too.  
*c.* \*Whereas Sharon left, I will leave then too.  
*d.* \*Although Sharon left, I stayed then too.

The same evidence points towards an alternative thesis: that conditional clauses are adverbial. Indeed, it positively confirms that thesis. ‘When’ and ‘where’ are sentence operators that yield adverbial clauses, and there is evidence that they remain constituents of those clauses;<sup>9</sup> the same is true of ‘if’. Thus:

<sup>8</sup> It is not only in English that a pronoun such as ‘then’ can begin a conditional consequent. Comrie (1986) reports that all cases known to him of overt marking in consequent clauses involve particles of pronominal origin.

<sup>9</sup> Further pronominalization data show that otherwise temporal prepositions ‘before’, ‘after’, ‘since’, and ‘until’ are constituents of main clauses rather than of the clauses they introduce (Geis, 1985).



This does not yet show that ‘if’ is not an unstructured subordinating conjunction. Indeed, the tree diagrams portray ‘when’ and ‘if’ as unstructured subordinating conjunctions, though of a distinctive kind, not the same as ‘because’ *et al.* Additional argument is needed.

### The Relative Clause Analysis

The kind of resumptive pronominalization illustrated by (27*b*) and (28*b*) indicates two further things: that adverbial ‘when’- and ‘where’-clauses are a type of relative clause (Geis, 1970*a*, 1985; Larson, 1983), and that tacit reference is made to a domain of entities or at least abstract items of a sort. To begin, notice that (27*b*) and (28*b*) are respectively paraphrased by (27*t*) and (28*p*):

(27) *t*. I will leave at the time  $\left\{ \begin{array}{c} \text{that} \\ \text{at which} \end{array} \right\}$  Sharon leaves.

(28) *f*. I will live at the place  $\left\{ \begin{array}{c} \text{that} \\ \text{at which} \end{array} \right\}$  Sharon lives.

There is evidence that the relation is not merely that of informal paraphrase. First, the pronouns in (27*b*) and (28*b*) seem referential, and in particular they seem to refer back to tacitly mentioned *times* and *places*. They seem logically equivalent to, respectively, (27*t+*) and (28*p+*):

(27) *t+*. When Sharon leaves, I will leave at that same time.

(28) *p+*. Where Sharon lives, I will live in that same place.

‘Times’ and ‘places’ are considered as individual items.

Second, (27*t+*) and (28*p+*) themselves seem to show that the ‘when’- and ‘where’-clauses make tacit reference to times and places; else what are the referents of ‘that same time’ and ‘that same place’? Thus, ‘When Sharon leaves’ and ‘Where Sharon lives’ seem to abbreviate (or at least to be semantically equivalent to) ‘At the time at which Sharon leaves’ and ‘At the place at which Sharon lives’.

For that matter, (27*a*) and (28*a*) themselves seem equivalent to (27*t+*) and (28*p+*). So the explicit occurrence of ‘then’/‘there’ is not needed to make the argument about ‘when’- and ‘where’-clauses generally.

'If' behaves in a parallel fashion. We saw that (1a) is equivalent to

(1) c. If Sharon leaves, then I will leave.

Here too, Geis (1970a, 1973, 1985) argues, the resumptive pronominalization indicates both that adverbial 'if'-clauses are relative clauses, and that tacit reference is made to a domain of abstract items—not times or places, but 'events' or circumstances. (1c) is paraphrased by (1e):

(1) e. I will leave in the  $\left\{ \begin{array}{c} \text{event} \\ \text{circumstance} \end{array} \right\} \left\{ \begin{array}{c} \text{that} \\ \text{in which} \end{array} \right\}$  Sharon leaves.

And (1c) seems logically equivalent to (1e+):

(1e+) If Sharon leaves, I will leave in that same  $\left\{ \begin{array}{c} \text{event.} \\ \text{circumstance.} \end{array} \right\}$ .

As before, (1e+) itself seems to show that the 'if'-clause makes tacit reference to events or circumstances (or what is the referent of 'that same event/circumstance?').<sup>10</sup> Ditto (1e+t):

(1e+t) a. If Sharon leaves, I will leave in that  $\left\{ \begin{array}{c} \text{event} \\ \text{circumstance} \end{array} \right\}$  too.  
 b. Peter will leave if Sharon leaves, and I will leave in that  $\left\{ \begin{array}{c} \text{event} \\ \text{circumstance} \end{array} \right\}$  too.

(I shall say a great deal more about the ontology of 'events' in Chapter 2.) Thus, 'If Sharon leaves' seems to be semantically equivalent to 'In the event that/in which Sharon leaves'. And as before, (1) itself seems equivalent to (1e+).<sup>11</sup>

<sup>10</sup> The demonstratives in anaphoric phrases like 'in that event' and 'in that place' do not make their antecedents definite. 'I will live where Sharon lives' means first and foremost, 'I will live in any place/whatever place Sharon lives'. And as we shall see in Chapter 2, 'I will go if Sharon does and Bruno will go in that event too' means first and foremost, 'I will go in any event in which Sharon does and Bruno will go in any such event too (whichever one it turns out to be)'.

<sup>11</sup> I know of just two syntactic/semantic differences between 'if' adverbials and time and place adverbials. The first is pointed out by Rivero (1972): 'If'-clauses cleft in a way that 'when'- and 'where'-clauses do not. From 'If Juan comes, we'll leave' we get 'If it is that Juan comes, we'll leave' (though this is perhaps better in Spanish, 'Si es que Juan viene, nos iremos'). But there are no \*'When it is that Juan comes...' or \*'Where it is that Juan

**'Unless'**

Traditional grammarians (e.g. Sweet, 1891; Onions, 1932) have called 'unless' the 'negative counterpart' of 'if', maintaining that 'unless' is semantically equivalent to 'if not'. Contemporary logic textbooks have followed them in this; I believe most logic students are told to translate sentences containing 'unless' by first rewriting 'unless' as 'if not'. But syntactically this equation is untenable.

First, as we have already seen, 'unless' cannot be modified by 'only', 'even', or 'except'. This would not be so if 'unless' were syntactically equivalent to 'if not', which is so modifiable. Second, negative polarity items (expressions which can occur grammatically only if the clause or phrase in which they do so is derived from a structure that is semantically negative) cannot occur in 'unless'-clauses:

- (31) *a.* If you don't care *a whit* for Dudley, you shouldn't marry him.  
*b.* \*You shouldn't marry Dudley unless you care a whit for him.
- (32) *a.* If you don't see *any* large mice, then the cat has come back.  
*b.* \*The cat has come back unless you see any large mice.
- (33) *a.* If Lavinia doesn't *even* eat some sauerkraut, she'll get scurvy.  
*b.* \*Lavinia will get scurvy unless she even eats some sauerkraut.

Third, some subjunctive conditionals will not tolerate substitution of 'unless' for 'if not':

- (34) *a.* If Dudley weren't so innocent he would see what Lavinia has in store for him.  
*b.* \*Dudley would see what Lavinia has in store for him unless he were so innocent.

Fourth, 'either' and 'too' distinguish 'unless' from 'if not'. We generally get 'either' when the two clauses that make up a compound

comes...'. The second difference, noted in Geis (1985), is that 'I will leave when you say you'll leave' and 'I will leave where you say you'll leave' are ambiguous, as between my leaving at the time/place specified by your saying and my leaving at the time/place at which you actually did the saying. 'I will leave if you say you'll leave' has only the latter reading. I know of no good explanation for either of these disparities.

sentence are both semantically negative, as in ‘Dudley isn’t too bright and Lavinia isn’t smart either’. But this feature does not carry over from ‘if not’ to ‘unless’:

- (35) *a.* I won’t go if you won’t go either.  
*b.* \*I won’t go unless you go either.

We get ‘too’ when both clauses are positive, as in ‘Dudley is going and Lavinia is going too’, but this criterion marks ‘unless’-clauses as positive rather than negative:

- (36) *a.* I will go unless you go too.  
*b.* \*I will go if you don’t go too.

Fifth, there is evidence from the relativization of ‘unless’-clauses. For example,

- (37) I’ll leave unless Sharon leaves, in which case of course I won’t leave.

In (37), ‘which’ pronominalizes ‘Sharon leaves’, a positive clause. If ‘unless’ were equivalent to ‘if not’, (38) should be equivalent to (37):

- (38) I’ll leave if Sharon does not leave, in which case of course I won’t leave.

But (38), far from being equivalent to (37), is anomalous; (38) sounds nearly self-contradictory, being intuitively equivalent to (39). (The data are the same when ‘event’ or ‘circumstance’ is substituted for ‘case’.)

- (39) I’ll leave if Sharon does not leave, and of course I won’t leave if Sharon does not leave.

Sixth, ‘unless’-clauses cannot easily occur inside the scope of ‘and’. (40*a*) and (40*b*) are fine, but (40*c*) is very bad.

- (40) *a.* I will leave unless Sharon leaves and Bruno sings ‘Melancholy Baby’.  
*b.* I will leave if Sharon does not leave and if Bruno does not sing ‘Melancholy Baby’/If Sharon does not leave I will leave, and if Bruno does not sing ‘Melancholy Baby’ I will leave.  
*c.* \*I will leave unless Sharon leaves and unless Bruno sings ‘Melancholy Baby’.

I am not sure whether (40c) is ungrammatical, but certainly it is anomalous, belying its alleged equivalence to (40b).

The relativization data suggest a Relative-Clause treatment of ‘unless’ that will square with the Relative-Clause theory of ‘if’. Notice, first, that like the relativization in (37), our other sorts of pronominalization work for ‘unless’ as well as for ‘if’.

- (41) a. I’ll leave unless Sharon leaves, and Bruno will not leave  
 except in that  $\left\{ \begin{array}{c} \text{event} \\ \text{circumstance} \end{array} \right\}$  either.
- b. I’ll leave unless Sharon leaves, and Bruno will not leave  
 except in that same  $\left\{ \begin{array}{c} \text{event.} \\ \text{circumstance.} \end{array} \right\}$

As before, Geis (1973, 1985) argues that tacit reference is made to ‘events’ or circumstances. But what distinguishes ‘unless’ from ‘if’ is an underlying distinctness clause. Geis paraphrased ‘If A, B’ as ‘B in the event that A’; he now paraphrases ‘A unless B’ as ‘A in any event other than that B’. (Thus, traditional logic and grammar are correct in holding that ‘unless’ expresses an element of negation. But they have mislocated the negation; as we have seen, the element is not in the ‘unless’-clause itself, that is, not in the scope of ‘unless’; rather, it is in the tacit negative quantification of ‘unless’ over events or circumstances.)

This hypothesis explains why (37) is not contradictory as (38) seems to be. (37) says, in effect, that the speaker will leave except in the event that Sharon leaves, in which event of course he will not leave or, in the language of the paraphrase just given, that the speaker will leave in any event other than that Sharon leaves, in which event... (Contrastingly, (38) and (39) say that the speaker will leave in the event that Sharon does not leave, and the speaker will not leave in that event—hence the air of contradiction.)

Geis’s hypothesis also explains what is wrong with (40c). (40c) would be paraphrased as saying: ‘I will leave in any event other than that Sharon leaves, and in any event other than that Bruno sings “Melancholy Baby”’. Each conjunct implies the falsity of the other.

Turning to modification by ‘only’ and ‘even’, Geis (1973, 1985) also argued syntactically for the following equivalences.

- A only if B = A in no other event than that B  
 A even if B = A in any event including that B

I believe these too are convincing as paraphrases. Bare appeals to paraphrase not being considered weighty by linguists, Geis also supplied detailed technical argumentation, especially for the negative element underlying 'only if'.<sup>12</sup> But rather than sloshing on through it, I shall get on with the semantic theory directly inspired by the facts here marshalled.

<sup>12</sup> See also McCawley (1974, 1986).