PRAGMATICS AND SEMANTICS OF

MIXED SENTENTIAL MOOD SENTENCES

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Abstract

Relative to assertorics, little progress has been made this century in understanding the semantics of nonassertorics, partly because they present special difficulties for truth-theoretic semantics. A notable exception is Kirk Ludwig's novel approach to integrating nonassertorics into a generalization of a truth-theoretic semantics for assertorics, which provides virtually the only fully satisfactory account of certain mixed-mood sentences. However, a difficulty for Ludwig's theory is that it does not provide an explanation for why certain complex sentences involving nonassertorics seem to be ungrammatical. Examples are 'If is Mary sick, leave' and 'It is not the case that eat'. This paper shows in part why these sentences, which on Ludwig's theory can be assigned a coherent semantics, should be expected to sound ungrammatical in the light of Ludwig's semantics and certain pragmatic considerations. In so doing, it both extends Ludwig's theory to handle these cases and defends it as a valuable contribution to natural language semantics.

PRAGMATICS AND SEMANTICS OF MIXED SENTENTIAL MOOD SENTENCES

Much progress has been made this century in understanding the semantics of assertorics.[1] Nonassertorics—imperatives[2] and interrogatives[3]—have received comparatively little attention and have presented special difficulties for truth-theoretic semantics, which has seemed most promising for understanding the compositional semantics of assertorics.[4] This paper is part of a much larger project[5] that builds on Kirk Ludwig's novel approach to integrating nonassertorics into a generalization of a truth-theoretic semantics for assertorics.[6] Ludwig's approach provides virtually the only fully satisfactory account of certain mixed-mood sentences, such as 'If you go to the store, buy a loaf of bread'. However, a difficulty for, or at least a significant gap in, Ludwig's theory is that it does not provide an explanation for why certain complex sentences involving interrogatives and imperatives seem to be ungrammatical or at least exceedingly unnatural. Examples are:

(1) Go to bed and what time is it?
(2) If buy a loaf of bread, you will go to the store
(3) It is not the case that is it time to go? [7]

The project shows why these sentences, which on Ludwig's theory can be assigned coherent semantics, should be expected to be unnatural and sound ungrammatical in the light of the semantics that Ludwig provides and certain pragmatic considerations. In so doing, it both extends Ludwig's theory to handle these cases and defends it against a potential objection based on them. This paper summarizes Ludwig's theory and discusses the pragmatics and semantics of only mixed-mood conditionals, an understanding of which is sufficient for understanding the design and feel of the larger project.

LUDWIG'S GENERALIZED FULFILLMENT APPROACH TO NONASSERTORIC SENTENCES

Ludwig's Generalized Fulfillment Approach (henceforth, 'GFA') for incorporating nonassertorics into a truth-theoretic semantic theory uses a relation that obtains between sentential mood and semantic force, namely, that sentential moods, "by virtue of having a certain sort of fulfillment condition, . . . are apt for the performance of speech acts with a similar sort of fulfillment condition."[8] Specifically, it models the fulfillment conditions for imperatives and interrogatives on those for directives.[9]

What is wanted for a general fulfillment approach is for a theory to issue in theorems of the form (F).[10]

(F) φ is fulfilled$_{[s, t]}$ in English if and only if p.

Specifying how φ is to be fulfilled relative to a speaker and time can be accomplished recursively by specifying the different fulfillment conditions for the different sentential moods. Thus, (4):

(4) φ is fulfilled$_{[s, t]}$ in English iff
if φ is assertoric, φ is true$_{[s, t]}$ in English
if φ is imperative, φ is obeyed$_{[s, t]}$ in English
if φ is interrogative, φ is answered$_{[s, t]}$ in English.

GFA is attractive, because, while it introduces and relies on the compliance conditions of nonassertorics, it explicates them in terms of truth conditions, and, hence, allows a theory of meaning to retain a theory of truth as its core.

In developing his approach, Ludwig assumes we have an adequate truth theory for English that issues in interpretive T-sentences.[11]

(T) φ is true$_{[s, t]}$ in English if and only if p.

The task relative to this assumption is to show how to finitely specify the extensions of 'is obeyed$_{[s, t]}$ in English' and 'is answered$_{[s, t]}$ in English' in a way that (a) does not reduplicate work of the truth theory, and (b) ensures that the truth theory is the central component of the resulting meaning theory. Ludwig does so by "exhibit(ing) obedience conditions and response conditions as recursively specifiable in terms of truth conditions."[12] By adopting the following notation,[13]

'Core (φ)' = the assertoric core of φ[14]

'Neg(Core (φ))' = the negation of Core(φ)

'A(a, s, t)' = 'a is addressed by s at t'

'D(s, t, φ)' = 'the directive issued by s at t in which φ was used'

'Q(s, t, φ)' = 'the question asked by s at t in which φ was used'

Ludwig's account of obedience conditions can now be stated:

(OC) (∀φ) (if φ is imperative, then φ is obeyed$_{[s, t]}$ in English iff [the x: A(x, s, t)](x makes it the case that Core(φ) is true$_{[s, t]}$ in English with the intention of obeying D(s, t, φ)).

When applying (OC) to an imperative sentence, one instantiates to the speaker, sentence and time and then employs the recursive truth theory to unpack 'Core(φ) is true$_{[s, t]}$ in English'. Hence, Ludwig's obedience conditions are recursively specifiable in terms of truth conditions, thereby ensuring that the truth theory is the central component of the resulting meaning theory for imperatives.[15]

Ludwig's account of response conditions is more complicated because the different interrogatives call for different response types. Ludwig distinguishes five types

of interrogatives on the basis of their respective response types. Hence, the general form of response conditions is (RC):

(RC) $(\forall\varphi)$ (if φ is interrogative, then φ is answered$_{[s, t]}$ in English iff
if φ is a yes/no question, then . . .
if φ is a why-question, then . . .
if φ is a how-question, then . . .
if φ is a wh-question, then . . .
if φ is a how-x question, then . . .).

Ludwig then shows how to fill in the response conditions for each of the above types.[16] For example, (YN) represents the response conditions for yes/no questions.

(YN) $(\forall\varphi)$ (if φ is a yes-no question, then φ is answered$_{[s, t]}$ in English iff [the x: A(x, s, t)](x makes it the case that 'you will say that Core (φ)' is true$_{[s, t]}$ in English or that 'you will say that Neg(Core (φ))' is true$_{[s, t]}$ in English with the intention of answering Q(s, t, φ).[17]

Ludwig completes his project by providing the form of a semantic theory that (a) is based on fulfillment conditions, and (b) parallels a meaning theory that is based on truth conditions.[18]

GFA provides a terrific way of handling the semantics of mixed-mood molecular sentences such as (5).

(5) If Mary is sick then leave.

For example, GFA can be applied to (5) as follows.

(5a) 'If Mary is sick then leave' is fulfilled$_{[s, t]}$ in English iff if 'Mary is sick' is fulfilled$_{[s, t]}$ in English then 'leave' is fulfilled$_{[s, t]}$ in English. (axiom[19])
(5b) 'Mary is sick' is fulfilled$_{[s, t]}$ in English iff 'Mary is sick' is true$_{[s, t]}$ in English ((4))
(5c) 'Mary is sick' is true$_{[s, t]}$ in English iff Mary is sick. (a suitable truth theory)

(5d) 'Mary is sick' is fulfilled$_{[s, t]}$ in English iff Mary is sick. ((5b) and (5c))

(5e) 'leave' is fulfilled$_{[s, t]}$ in English iff 'leave' is obeyed$_{[s, t]}$ in English ((4))

(5f) 'leave' is obeyed$_{[s, t]}$ in English iff the person addressed by s at t leaves at some time t' > t with the intention of obeying the directive issued by s at t in which 'Leave' was used. (OC)

(5g) 'leave' is fulfilled$_{[s, t]}$ in English iff the person addressed by s at t leaves at some time t' > t with the intention of obeying the directive issued by s at t in which 'Leave' was used. ((5e) and (5f))

Therefore,

(5') 'If Mary is sick then leave' is fulfilled$_{[s, t]}$ in English iff if Mary is sick then the person addressed by s at t leaves at some time t' > t with the intention of obeying the directive issued by s at t in which 'leave' was used. ((5a),(5d) and (5g))

This example shows how GFA enables us to provide recursive fulfillment conditions for combinations of sentences in any moods in using the traditional truth-functional connectives,[20] and indeed, recursive fulfillment conditions in principle for any truth-functional connective.[21]

If GFA is correct, all "truth-functions" of sentences in any mood are semantically coherent in the sense that the method Ludwig introduces can be used to assign their coherent fulfillment conditions. However, some such combinations do not appear to be coherent, as in (1)-(3). So, Ludwig's approach looks to be mistaken. I claim that the unnaturalness of (1)-(3) and similar apparently unnatural constructions is due to largely pragmatic factors.[22] What follows is an account of what the pragmatic factors are that are relevant to the unnacceptability of the problematic *conditional* forms, and how they generate the adverse reactions to imagined utterances of them. Since this account is

similar to those for other problematic mixed-mood combinations, grasping it will suffice to understand the design of the larger project of which this paper is a part.

PRAGMATICS AND SEMANTICS OF MIXED-MOOD CONDITIONALS

Adopt the following notation.

'A' = assertoric sentence

'I' = imperative sentence

'Q' = interrogative sentence

'M1' = a sentence in any mood which is the second sentence of a combination.

'M2' = a sentence in any mood which is the second sentence of a combination.

(6)-(8) are examples of the three ⌜If A then M2⌝ combinations, (9)-(11) are examples of the ⌜If Q then M2⌝ combinations and (12)-(14) are of the ⌜If I then M2⌝ combinations.

(6) If it's three o'clock then I'm late for my class.
(7) If Jim is going to North Carolina then go with him.
(8) If Jim's arm is hurting then should he be pitching tonight?

(9) If what time is it then I'm late for my class.
(10) If is Jim going to North Carolina then go with him.
(11) If how is Jim's arm then should he be pitching tonight?

(12) If tell the time then I'm late for class.
(13) If go to North Carolina then take me with you.
(14) If hurt Jim's arm then should he be pitching tonight?

Notice that only (6)-(8) are unproblematic. Hence, if this data were generalized, one would conclude that conditionals with assertoric antecedents are usually unproblematic and those with nonassertoric antecedents *are* usually problematic, a

conclusion that I presume most would accept. The data can be accounted for—even predicted by—GFA and pragmatic factors.

First, consider the relative utility of the various forms. Whether they are all grammatical in English, it is clear that we could provide a semantics for a language in which all of these appears. This is just what GFA does. However, if it turned out that the forms in (9)-(11) and (12)-(14) would serve no conversational purpose, that would suffice to explain why they do not appear in English.[23] I think in fact that if we consider what purpose these various forms could serve in conversation, we'll see that the suspect forms could serve no useful purpose whatsoever.

The acceptable forms can be exceedingly useful. As Grice points out, (6) is used when we anticipate the possible introduction of the antecedent of the conditional later in the discourse, or when it has already been introduced and we wish to draw some conclusion from it.[24] That is, the form of (6) is made for *modus ponens*. We can say that the introduction of a conditional in a conversation is generally appropriate when the antecedent is conversationally salient.[25] A sentence can be conversationally salient if it is relevant in the discourse and both participants are aware of this or can easily be brought to be aware of it. A sentence can be conversationally salient even if it is not known whether it is true or false. The introduction of a conditional, for example, where the consequent is of interest for the purpose of the talk exchange, may make the antecedent conversationally salient, and its truth value of interest because of the acceptance of the conditional and the relevance of the consequent. The question may then be whether the antecedent is true or false.

Turn to (7) and (8). Of course, these will not be used in arguments, since a nonassertoric is not the conclusion of an argument. To take (7) first, the point of an utterance of (7) is to issue a conditional directive. One does this in the standard case when one wants someone to do something only on condition that something obtains. In standard uses, we would use the conditional form only if there were some question about whether the antecedent is true. Otherwise, we'd just use the consequent.[26] Thus, we don't intend that someone should do something unless conditions are "favorable" and it is clear that it is very useful to have this device available. Since interrogatives are used to issue specialized directives, while imperatives are used to issue directives generally, the same remarks apply *mutatis mutandis* to (8).

When we turn to (9)-(11) and (12)-(14), however, it is much more difficult to see how there could be a conversational point to their use. Focus on (12)-(14). The key to seeing why a conditional with an imperative in the antecedent is a pointless linguistic device is to consider what its fulfillment conditions are. Consider (12)'s fulfillment conditions:

(12') 'if tell me the time, then I'm late for class' is fulfilled$_{[s, t]}$ in English iff if the person addressed by s at t tells s the time with the intention of obeying the directive issued by s at t in which 'tell me the time' was used, then s is late for class at t.

Now the question is, what would one do with an utterance with these fulfillment conditions? What would an appropriate conversational response be? What could be the point of its utterance? First, it is not useful for the purposes of reaching a conclusion on the basis of any assertions made or to be anticipated in the talk exchange. This is true of all conditionals in mixed moods. Second, it is not useful for getting someone to do

something only if certain conditions not known to obtain do in fact obtain. That would require an assertoric in the antecedent. Third, it would not be appropriate to assert it either because one knew the antecedent was not going to be fulfilled or because the consequent was true, for that would violate the maxim of quantity to no purpose. Furthermore, with regard to the fulfillment conditions of the antecedent, there is nothing that the speaker's hearer would be called upon to do in order to ensure that they failed so that the conditional was fulfilled, since not attending to it would suffice. Thus, there is no intelligible conversational point that (12) could serve.

Now (13). Many of the remarks just made apply here as well. If (13) has anything more to be said for it than (12), it would have to be because its having an imperative as a consequent gives it a point that (12) could not have. But this would seem to give some point only if we could imagine the fulfillment of the antecedent being an intelligible condition someone would want to place on wanting someone to fulfill the consequent (that was not more easily obtained by some other means). So consider this question in the light of (13)'s fulfillment conditions:

> (13') 'If go to North Carolina, then take me with you' is fulfilled$_{[s, t]}$ in English iff if the person addressed by s at t goes to North Carolina with the intention of obeying the directive issued by s at t in which 'go to North Carolina' was used, then the person addressed by s at t takes s with him [to North Carolina].

Now, we can imagine a point to saying to someone, if you are going to North Carolina, then take me with you, and a point to saying take me to North Carolina. But what about (13), given (13')? Note that (13)'s fulfillment is left up to the hearer. The hearer can fulfill it either by taking the speaker to North Carolina with him or by doing nothing as a result of the utterance. Clearly, if the speaker wanted the hearer to take him to North

Carolina, he could just have uttered the consequent. There seems to be no standard point that such a construction could have. It is difficult to see why the speaker could want to condition getting the hearer to take him to North Carolina on getting him to go to North Carolina as the result of a directive.[27] It might be said that (13) could be used to issue a polite request to be taken to North Carolina, but there are more appropriate forms for that, such as, 'If you wouldn't mind, please take me to North Carolina'. And in the absence of a standard use, uses for special purposes such as politeness are unlikely to arise if there are easier ways of achieving such purposes already available in the language. Thus, there seems to be no conceivable conversational point to having such forms available in the language, so that even if they are intelligible in the sense that we can give a systematic semantics for them, there would be no point to such forms having any currency in the language. These remarks apply straightforwardly to (14).

We can now deal with (9)-(11) summarily. Since interrogatives are used to issue specialized directives, our remarks about (12)-(14) carry over to them. Note, however, that they present a special puzzle of their own. For the interrogatives are fulfilled if they are answered, period, whether or not they are answered correctly. And it is exceedingly difficult to imagine why anyone would want to condition, as in (10) or (11), getting someone to do something simply on the person's answering a question some way or other. We can see that the answers to the questions might be relevant in these cases to whether one wanted someone to, in the case of (10), go to North Carolina, or in the case of (11), answer the question whether Jim should be pitching, but these conditionals do not condition the consequents on what the correct answers to the questions are, but only on their being answered. There is then no intelligible standard use of such conditionals.

To conclude, this shows that the explanation of the absence of the puzzling conditional forms from the language is due to their not having a point, even given an intelligible semantics. That is, no sentence of the form ⌜if I then M⌝ or ⌜if Q then M⌝ could have a standard conversational point, and, hence, we should not expect to find such forms used in the language, even if a general semantics for the language allows them. The data then do not conflict with Ludwig's semantics, but rather can be seen to be predictable from it. To the extent that these remarks apply to all problematic mixed-mood combinations, I take this paper to have extended Ludwig's theory and to have defended it as a valuable contribution to natural language semantics.

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[1] E.g., 'The sky is blue', 'Kathy is hungy', 'Tom has a 102-degree temperature', and 'You failed to return my call last night'.

[2] E.g., 'Shut the door', 'Eat', 'Take Tom's temperature', and 'Call me back tonight'.

[3] E.g., 'What time is it?', 'Is Kathy hungy?', 'Have you taken Tom's temperature?', 'Why didn't you return my call last night?'.

[4] Showing that a theory of truth can serve as the core of a theory of meaning for a natural language has been difficult, in part because natural languages contain imperative and interrogative sentences, utterances of which do not admit of truth or falsity. Hence, if a theory says that φ's meaning depends on φ's truth conditions, then the meaning of a large part of a natural language would seem to remain unnaccounted for—an obvious blemish for any theory of meaning.

[5] Citation deleted for blind reviewing.

[6] K. Ludwig, 1997, "The Truth About Moods," *Protozoziologie, Cognitive Semantics I: Conceptions of Meaning*, 10, 19-66.

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[7] Other examples include 'Is the trash empty and take it out now', 'If what time is it then I'm late for class', and 'It is not the case that go to your room'.

[8] *op cit*., 27.

[9] There are two kinds of fulfillment conditions, truth conditions and compliance conditions. Notice that bivalent evaluations for assertorics have a different "direction of fit" than those for interrogatives and imperatives. Assertorics have word to world fit; that is, their use aims to accurately represent the world, and, hence, are true or false. Interrogatives and imperatives have world to word fit; their use aims to make the world match their words in an appropriate way, and, thus, are complied with or not. Compliance conditions can be divided further into (following Ludwig) response conditions for interrogatives and obedience conditions for imperatives.

[10] (F) abbreviates (F'):

(F') For all speakers, s, and times, t, φ, taken as if actually spoken by s at t, is fulfilled in English if and only if p, where 'p' translates φ.

[11] (T) abbreviates (T'):

(T') For all speakers, s, and times, t, φ, taken as if actually spoken by s at t, is true in English if and only if p, where 'p' translates φ.

[12] *op cit*., 41. The extensions to be introduced would now be slightly modified by Ludwig (see E. Lepore and K. Ludwig, 1998, "Outline of a Truth Conditional Semantics for Tense," in Q. Smith (ed.) *Tense, Time and Reference* (New York: Oxford UP)). For simplicity, I do not incorporate all the modifications here, since (i) the modifications are more technical, and (ii) they make no difference to the import of the extensions.

[13] I follow Ludwig's notation, as well as some general logical notation.

[14] The assertoric core of φ may be an open or closed sentence depending on what φ is. For example, Core('Go to bed') = 'you will go to bed', Core('Is that your jacket?') = 'That is your jacket', Core('What time is it?') = 'The time is x'.

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[15] For example, applying (OC) to 'Eat' leads to (E1).

(E1) 'Eat' is obeyed$_{[s, t]}$ in English iff the person addressed by s at t makes it the case that 'you will eat' is true$_{[s, t]}$ in English with the intention of obeying the directive issued by s at t in which 'Eat' was used.

(E1) would be unpacked as (E1').

(E1') 'Eat' is obeyed$_{[s, t]}$ in English iff the person addressed by s at t makes it the case that she eats at some time t' > t with the intention of obeying the directive issued by s at t in which 'Eat' was used.

[16] Keeping in mind, of course, that (a) a question is answered provided that the person to whom it is addressed tells the speaker something that consitutes an answer to it, (b) what must be said that constitutes an answer will differ according to each question-type, and (c) the response conditions must be recursively specifiable in terms of truth conditions, thereby ensuring that the truth theory is the central component of the resulting meaning theory for interrogatives.

[17] Assuming a suitable truth theory and using 'Is Mary sick' as our example leads to (E2).

(E2) 'Is Mary sick' is answered$_{[s, t]}$ in English iff the person addressed by s at t makes it the case that the person addressed by s at t says at some time t' > t that Mary is sick or that Mary is not sick, with the intention of answering the question asked by s at t in which 'Is Mary sick' was used.

The response conditions for why- questions are represented in (WY).

(WY) $(\forall\varphi)$ (if φ is a why-question, then φ is answered$_{[s, t]}$ in English iff [the x: A(x, s, t)](x makes it the case that 'you will explain why Core (φ)' is true$_{[s, t]}$ in English with the intention of answering Q(s, t, φ)).

Again assuming a suitable truth theory and using 'Why is Mary sick' as our example, leads to (E3).

(E3) 'Why is Mary sick' is answered$_{[s, t]}$ in English iff the person

addressed by s at t makes it the case that the person addressed by s at t explains at some t' > t why Mary is sick with the intention of answering the question asked by s at t in which 'Why is Mary sick' was used.

The response conditions for how-questions are represented by (H), which is followed by (E5), which is the result of applying (H) to 'How did Mary get sick' and a suitable truth theory.

(H) (∀φ) (if φ is a how-question, then φ is answered$_{[s, t]}$ in English iff [the x: A(x, s, t)]: (x makes it the case that 'you will explain how Core (φ)' is true$_{[s, t]}$ in English with the intention of answering Q(s, t, φ).

(E5) 'How did Mary get sick' is answered$_{[s, t]}$ in English iff the person addressed by s at t makes it the case that the person addressed by s at t explains at some t' > t how Mary got sick at some t'' < t with the intention of answering the question asked by s at t in which 'How did Mary get sick?' was used.

In representing the response conditions for wh-questions, (WH), Ludwig introduces the notion of a completion of the core of an interrogative: "I will say that ψ is a completion of Core (φ), where φ is a wh-question, iff ψ is the result of replacing the free variables in Core (φ) introduced by that operation with singular referring terms. For example, 'the time is 3 o'clock' is a completion of Core ('What time is it?')" (1997, 55). (E6) is the result of applying (WH) to 'What time is it' and assuming a suitable truth theory.

(WH) (∀φ) (if φ is a wh-question, then φ is answered$_{[s, t]}$ in English iff [the x: A(x, s, t)](x makes it the case that (∃ψ) (ψ is a completion of Core (φ) and 'you will say that ψ' is true$_{[s, t]}$ in English) with the intention of answering Q(s, t, φ).

(E6) 'What time is it' is answered$_{[s, t]}$ in English iff the person addressed by s at t makes it the case that there is a completion ψ of 'the time is x' such that 'you will say that ψ' is true$_{[s, t]}$ in English with the intention of answering the question asked by s at t in which 'What time is it' was used.

Ludwig's representation of how-x questions, (HX), is similar to (WH). (E7) is the result of applying (HX) to 'How many medications is Mary taking', and assuming a suitable truth theory.

(HX) $(\forall\varphi)$ (if φ is a how-x question, then φ is answered$_{[s, t]}$ in English iff [the x: A(x, s, t)](x makes it the case that $(\exists\psi)$ (ψ is a completion of Core (φ) and 'you will say that ψ' is true$_{[s, t]}$ in English) with the intention of answering Q(s, t, φ).

(E7) 'How many medications is Mary taking' is answered$_{[s, t]}$ in English iff the person addressed by s at t makes it the case that there is a completion ψ of 'x times' such that 'you will say that ψ' is true$_{[s, t]}$ in English with the intention of answering the question asked by s at t in which 'How many medications is Mary taking' was used.

[18] Letting 'commands that' and 'requests that' parallel 'means that', the theory is as follows.

(i) T is an interpretive fulfillment theory for L;
(ii) The axioms of T are (A1) . . . , (A2). . . , . . . ;
(iii) Axiom (A1) of T means that . . . , axiom (A2) of T means that . . . ;
(iv) The following proof procedure is a canonical proof procedure for T for L: . . . ;
(v) For all sentences φ of L, all instances of the following schema in the place of 'p' are true:

if ⌜φ is fulfilled$_{[s, t]}$ in L iff p⌝ is canonically provable from an interpretive fulfillment theory for L,
then if φ is assertoric, then
φ means$_{[s, t]}$ in L that p,
if φ is imperative, then
φ commands$_{[s, t]}$ in L that p,
if φ is interrogative, then
φ requests in$_{[s, t]}$ L that p.

[19] (5a) would come from an axiom of the fulfillment theory analogous to that for the conditionals in the truth theory, namely,

Axiom: $(\forall\varphi)(\forall\psi)$ (⌜if φ then ψ⌝ is fulfilled$_{[s, t]}$ in L iff if φ is fulfilled$_{[s, t]}$ in L then ψ is fulfilled$_{[s, t]}$ in L).

Similarly for other connectives that can grammatically take mixed-mood sentences.

[20] I.e., 'and', 'or', 'not', 'if ... then ___', 'iff".

[21] Henceforth, for brevity, I will use 'combination' to mean 'combination using truth-functional connectives'.

[22] Ludwig himself raises this objection, and responds to it as follows. The reasons for the restriction on natural mixed mood combinations is either pragmatic or semantic. But,

> in neither case is there a difficulty for (my) account. On the one hand, if the restriction (on natural mixed mood combinations) is pragmatic, not semantic, then (my semantic) account is not in trouble. On the other, if the forms we find absurd are meaningless, then they will be treated as ungrammatical. (My) account will operate over all grammatical sentences, and the formation rules of the language will exclude those that do not fit the patterns above. Obviously, the logic of nonassertorics would then be significantly different from that of assertorics. (*op cit*, 59)

Ludwig's response is correct, I think, as far as it goes. However, it does not attempt to actually explain why sentences like (1)-(3) seem unacceptable. There is, then, clearly an important gap in the account of the semantics of nonassertorics. While the theory may not be refuted no matter what conclusion we reach about the problematic constructions, we will not have a complete account of nonassertorics until we know what to say about them.

In my view, the first option Ludwig entertains is an attractive one. There does not seem to be any good reason to think, particularly in the light of Ludwig's semantics, that the logic of nonassertorics should differ from that of assertorics. My intuition is that the unnaturalness of (1)-(3) and similar constructions that seem unnatural is due to largely pragmatic factors, and, in what follows, I develop an account of what the pragmatic factors are.

[23] While this may be to say that they are ungrammatical, this is to give a pragmatic explanation for that judgment. In other words, the explanation shows that the judgment of ungrammaticality or unacceptability is driven not by the impossiblity of a coherent semantic interpretation, but the unavailability of a serious use for these constructions.

[24] P. Grice, "Indicative Conditionals," in *Studies in the Way of Words* (Cambridge, MA: Harvard UP, 1989).

[25] A conditional may also be introduced when we anticipate employing *modus tollens*, so a conditional may be appropriately introduced also when the negation of its consequent is conversationally salient as well.

[26] Of course, we may use a conditional form to signal politeness, or for other somewhat fancy purposes, but we can ignore these uses in an inquiry about the basic function of such devices in the language.

[27] In the broad sense covering conditional directives.