CONDITIONAL ASSERTION, DENIAL, AND SUPPOSITION AS ILLOCUTIONARY ACTS

1. INTRODUCTION In this paper, I will develop a logical system intended to capture (and explain) the use of conditional sentences to make conditional assertions, as well as their use to make conditional denials and suppositions. There is a large literature dealing with natural-language conditionals, but there is no entirely satisfactory treatment of conditionals. I think that *illocutionary logic* provides the resources needed for a successful account of an important class of these speech acts.

Daniel Vanderveken and John Searle have pioneered the study of illocutionary logic in *Vanderveken 1985* and *Vanderveken 1990*. However, their approach is quite different from mine. Theirs might be characterized as a “top down” approach, while mine is “bottom up.” They view illocutionary logic as a supplement, or appendix, to standard logic, and they focus on very general principles/laws which characterize illocutionary acts of all kinds. In contrast, I understand illocutionary logic to be a very comprehensive subject matter that includes standard logic as a proper part. I seek to develop systems which deal with specific kinds of illocutionary acts, and favor a multiplicity of different systems for “capturing” the different kinds of illocutionary acts.

The present treatment of conditional assertions is developed within the framework of a general system of logic that hasn’t been developed simply to deal with conditionals. This treatment is intended to accommodate or account for what are ordinarily understood to be indicative conditionals as opposed to counterfactual or subjunctive conditionals. An (ordinary) assertion is here taken to be an act of accepting a statement (as true) or of reaffirming one’s acceptance; when so understood, such an act may or may not have an addressee. Conditional assertions differ from ordinary assertions in not being true or false–they are not acts of accepting true or false statements. Ordinary assertions involve statements which have truth conditions, and the assertions also have *commitment conditions*: these determine what illocutionary acts commit a person to make an assertion, and what acts the assertion commits a person to perform. Conditional assertions have no truth conditions, but they do have commitment conditions. An account of the “meaning” of conditional assertions does not explain when it is correct or appropriate to make a conditional assertion, or what justifies a person in making a conditional assertion. Instead the meaning of conditional assertions is explained in terms of rational commitment.

2. LANGUAGE ACTS A *language act* or *speech act* is a meaningful act performed by using an expression. A person can perform a language act by speaking aloud, by writing, or by thinking with words. (Although I use the expressions ‘language act’ and ‘speech act’ interchangeably, the word ‘speech’ does carry the suggestion of speaking aloud.) The person who reads or who listens with understanding to someone who is speaking also performs language acts.

On my view, language acts are the primary bearers of semantic features, such as meaning and truth. Written and spoken expressions are the bearers of syntactic features, and can themselves be regarded as syntactic objects. Although it is language acts that are meaningful, various expressions are conventionally used to perform acts with particular meanings; the meanings commonly assigned to expressions are the meanings of acts they are conventionally used to perform. These conventions are not the source of the meanings of meaningful acts. The language user's intentions determine the meanings of his language acts. While it is normal to intend the meanings conventionally associated with the expressions one is using, a person can by misspeaking produce the wrong word to perform a language act. I might by mistake use the word 'Megan' to refer to my daughter Michelle. I still succeed in referring to Michelle, for I used the (wrong) name to direct my attention to Michelle, whom I intended. This may prove misleading to my addressee, and lead that person to think of Megan rather than Michelle.

Or consider someone who, due to whatever circumstances, uses the word 'magenta' for the color that most of us call chartreuse. This person mistakenly believes that her usage is in agreement with that of other English-speakers, but she is consistent and reliable in her use of 'magenta' for chartreuse. When she says that something is magenta, she has correctly characterized it if its color satisfies the criteria for being chartreuse. That is the color she (primarily) intends when she uses 'magenta.' (She also thinks she is speaking standard English, and intends to speak standard English, but this intention is secondary.)

The fundamental semantic feature of a linguistic act is its *semantic structure*. This is determined by the semantic characters of component acts, together with their organization. I will illustrate this with a simple example. If in considering the door of the room I am in, I say "That door is closed," I have made a statement which is an assertion. The statement has a syntactic character supplied by the expressions used. A semantic analysis can be given as follows:

(1) The speaker (myself) referred to the door;

(2) This referring act identified the door, and so provided a target for the act acknowledging the door to be closed.

The semantic structure is constituted by the referring act, the acknowledging (or characterizing) act, and the enabling relation linking the two component acts. The semantic structure can be described without mentioning the expressions used or the order in which they occurred. Such a description is language-independent.

This conception of language and language acts provides a sharp distinction between syntax and semantics, but blurs the distinction between semantics and pragmatics. Semantic structure will incorporate what are commonly regarded as pragmatic features. For example, illocutionary force will be an element of semantic structure. The syntactic structure of an expression places some constraints on the semantic structure of a language act performed with that expression, and so furnishes some "clues" to semantic structure. But a single complex expression, a sentence say, can often be used (on different occasions) to perform acts having different semantic structures.

Attention to language acts leads to an expanded conception of logic, for in addition to considering truth conditions, it proves necessary to consider semantic features due to illocutionary force. These features have an important bearing on whether an argument is satisfactory, and this has not previously been noted. Although there are an enormous variety of language acts, acts performed with sentences, or *sentential acts*, are of particular importance in logic. Historically, those sentential acts which can appropriately be evaluated in terms of truth and falsity have received the most attention–these are *propositional acts*. Since the phrase 'propositional act' is a little awkward to say repeatedly, I also call these acts *statements*. This is a stipulated use for the word 'statement,' and is different from its normal use to mean something like *assertion*.

Some sentential acts are performed with a certain illocutionary force, and constitute *illocutionary acts*. Examples are promises, warnings, assertions, declarations, and requests. Statements themselves can be used with a variety of illocutionary forces. An *argument* understood as a speech act has illocutionary acts as components. The arguer moves from premiss acts to a conclusion act which these are thought to support.

3. THE LOGIC OF SPEECH ACTS A standard system of logic, or logical theory, consists of three components: (i) An artificial language; (ii) A semantic account for the artificial language; (iii) A deductive system which codifies logically important items in the artificial language.

From a speech-act perspective, a logical system is a somewhat empirical theory of a class of speech acts. An artificial logical language is not a genuine language, because its sentences are not used to perform language acts. Instead the sentences of the artificial language *represent* language acts. The semantic account is for the language acts that are represented, and the deductive system codifies sentences or sequences of them that represent logically important language acts.

A system of illocutionary logic is obtained from a standard system of logic by making three changes:

(i) The artificial language is enriched with illocutionary-force indicating expressions, or *illocutionary operators*.

(ii) The semantic account of truth-conditions is supplemented with an account of the *rational commitments* generated by performing illocutionary acts. Asserting this or denying that will commit a person to make further assertions and denials; the same holds for supposing statements to be true or false.

(iii) The deductive system is amended to take account of illocutionary operators and illocutionary force.

4. A SIMPLE SYSTEM I will begin by presenting a simple system of propositional illocutionary logic. This will then be enlarged to accommodate conditionals. The language *L* contains atomic sentences and compound sentences obtained from them with these connectives: *~, v, &*. (The

horseshoe of material implication is a defined symbol.) The atomic and compound sentences are *plain sentences of L*. The plain sentences represent natural-language statements.

The illocutionary operators are the following:

$\vdash$ –the sign of assertion	$\dashv$ –the sign of denial
$\llcorner$ –the sign of supposing true	$\neg$ –the sign of supposing false

A plain sentence prefixed with an illocutionary operator is a *completed sentence of L*; there are no other completed sentences. Completed sentences represent illocutionary acts.

A statement can be accepted or rejected. A person performs an act when he comes to accept a statement. Once he has come to accept it, he continues to accept the statement until he changes his mind or he forgets that he has come to accept the statement. Continuing to accept a statement is not an act. A person who accepts a statement can perform an act of reaffirming the statement, or, as I prefer to say, an act *reflecting his continued acceptance of* the statement. An assertion is understood to be an act of producing and coming to accept a statement, or of producing and reflecting one's acceptance of the statement (an assertion of this sort doesn't need an audience). A denial is similarly an act of coming to reject a statement (for being false), or an act performed to reflect one's rejection of it.

A statement can be supposed true or supposed false. Once made, a supposition remains in force until it is discharged (canceled) or simply abandoned. An argument which begins with assertions and denials can reach a conclusion which is an assertion or denial. An argument which begins with at least one supposition cannot (correctly) conclude with an assertion or denial, so long as the supposition remains in force. The conclusion will have the force of a supposition, and will be called a supposition.

The semantic account for the language *L* is a two-tier account. The first tier applies to statements apart from illocutionary force. This semantic account gives truth conditions of plain sentences and of the statements that these represent. The first tier of the semantic account presents the *ontology* that the statements encode or represent. The account of truth conditions for plain sentences of *L* is entirely standard. An *interpreting function for L* is a function *f* which assigns truth and falsity to the atomic plain sentences, and determines a *truth-value valuation* of the plain sentences in which compound sentences have truth-table values.

The second tier of the semantic account applies to completed sentences and the illocutionary acts they represent. In the case of *L*, it applies to assertions, denials, and suppositions. The second tier of the semantics deals with *rational commitment*. It is somewhat unfortunate from my point of view that the word 'commitment' is used by philosophers and logicians in many different ways. For example, in *Walton 1995* and *Walton 1999*, we find a concept of commitment that has some features in common with my concept, but which is on the whole quite different from my concept. In *Vanderveken 2002*, three different concepts of commitment are discussed. I am convinced that my concept of commitment is the one that actually figures in our deductive inferential practice. Since everyone seems to have his own concept, I will explain the concept I have in mind without trying to appeal to some standard meaning of 'commitment.'

The commitment involved is *rational* commitment, as opposed to moral or ethical commitment. This is a commitment to do or not do something. It can also be a commitment to continue in a certain state, like the commitment to continue to accept or reject a given statement. Deciding to do *X* rationally commits a person to doing *X*. If, before going to work, I decide to buy gasoline on the drive to work, I am committed to doing this. But if I forget, or change my mind, and drive straight to work without buying gas, I haven't done anything that is morally wrong. I may kick myself for being stupid, or forgetful, but this isn't a moral failing. Decisions generate commitments, but performing one act can also commit a person to perform others. For example, accepting the statement that today is Wednesday will commit a person to accept (or continue to accept) the statement that tomorrow is Thursday. (The rational commitment that I am considering is quite similar to what Vanderveken calls *weak commitment* in *Vanderveken 1990* and *Vanderveken 2002*. He contrasts this with a *strong commitment* which I find to be of little interest.)

Some commitments are "come what may" commitments, like my commitment to buy gas on the way to work. Others are conditional, and only come up in certain situations, like the commitment to close the upstairs windows if it rains while I am at home. When I accept the statement that today is Wednesday, the commitment to accept the statement that tomorrow is Thursday is conditional. I am committed to do it only if the matter comes up and I choose to give it some thought. (And I can "lose" the commitment if I change my mind about my initial assertion.)

The rational commitment that is of concern here is a commitment to act or to refrain from acting, or to continue in a state like accepting or rejecting a statement. Some writers speak of being committed to the truth of some statement, but that is not the present sort of commitment. However, a person might in my sense be committed to acknowledge or admit the truth of a certain statement.

To actually accept or reject a statement, a person must consider the statement and "take a stand" about the statement. No one can actually accept all the statements she is committed to accept, or reject all those she is committed to reject. No one would want to. A deductively correct argument which begins with assertions and denials can lead a person to expand the class of statements she explicitly accepts or those she explicitly rejects. Such an argument begins with explicit beliefs and disbeliefs, and traces commitments to produce more explicit beliefs or disbeliefs.

Commitment provides the "motive power" which propels someone from the premisses to the conclusion of a deductive argument. The premisses and the conclusion are illocutionary acts.

The person who makes or who follows an argument needs to recognize (or think she does) a rational requirement to perform the conclusion act. If, for example, the conclusion is an assertion $\vdash A$, then if the argument commits a person to accept or continue to accept A, we shall understand that the arguer is committed to perform the act $\vdash A$ (to perform the act represented by the completed sentence). An argument may be such that the truth of its premisses "requires" the truth of the conclusion. But unless an arguer recognizes the connection between premisses and conclusion, accepting or supposing the premisses will not lead her to accept or suppose the conclusion. It is her recognition that her premiss acts commit her which moves her to perform the conclusion act.

A commitment to perform or not perform an act is always *someone's* commitment. We develop the commitment semantics for an idealized person called the *designated subject*. This subject has beliefs and disbeliefs which are *coherent* in the sense that the beliefs might all be true and the disbeliefs all false. The second tier of the semantics concerns *epistemology* rather than ontology, but the epistemology must accommodate the ontology. The commitments generated by performing certain illocutionary acts depend on the language user understanding the truth conditions of the statements she asserts, denies, or supposes. We consider the designated subject at some particular moment. There are certain statements which she has considered and accepted, which she remembers and continues to accept. There are similar statements that she has considered and rejected. These *explicit* beliefs and disbeliefs commit her, at that moment, to accept further statements and to reject further statements. We use '+' for the value of assertions and denials that she is committed, at that moment, to perform.

A *commitment valuation* is a function which assigns + to some of the assertions and denials in L. A commitment valuation $\mathscr{E}$ is *based on* an interpreting function f if, and only if (from now on: iff) (i) If $\mathscr{E}(\vdash A) = +$, then $f(A) = \mathrm{T}$, and (ii) If $\mathscr{E}(\dashv A) = +$, then $f(A) = \mathrm{F}$. A commitment valuation is *coherent* iff it is based on an interpreting function.

Let $\mathscr{E}_0$ be a coherent commitment valuation. This can be understood to register the designated subject's explicit beliefs and disbeliefs at a given time. The *commitment valuation determined by* $\mathscr{E}_0$ is the function $\mathscr{E}$ such that (i) $\mathscr{E}(\vdash A) = +$ iff A is true for every interpreting function on which $\mathscr{E}_0$ is based, and (ii) $\mathscr{E}(\dashv A) = +$ iff A is false for every interpreting function on which $\mathscr{E}_0$ is based. The valuation $\mathscr{E}$ indicates which assertions and denials the designated subject is committed to perform on the basis of her explicit beliefs and disbeliefs.

A commitment valuation is *acceptable* iff it is determined by a coherent commitment valuation. The following matrices show how acceptable commitment valuations "work": In the matrices, the letter '*b*' stands for *blank*–for those positions in which no value is assigned:

$\vdash A$	$\vdash B$	$\dashv A$	$\dashv B$	$\vdash \sim A$	$\dashv \sim A$	$\vdash [A \,\&\, B]$	$\dashv [A \,\&\, B]$	$\vdash [A \vee B]$	$\dashv [A \vee B]$
+	+	*b*	*b*	*b*	+	+	*b*	+	*b*
+	*b*	*b*	*b*	*b*	+	*b*	*b*	+	*b*
+	*b*	*b*	+	*b*	+	*b*	+	+	*b*
b	+	*b*	*b*	*b*	*b*	*b*	*b*	+	*b*
b	*b*	*b*	*b*	*b*	*b*	*b*	+,*b*	+,*b*	*b*
b	*b*	*b*	+	*b*	*b*	*b*	+	*b*	*b*
b	+	+	*b*	+	*b*	*b*	+	+	*b*
b	*b*	+	*b*	+	*b*	*b*	+	*b*	*b*
b	*b*	+	+	+	*b*	*b*	+	*b*	+

The designated subject can be committed to assert/accept both *A* and *B* (this combination is indicated in the first row). If she is, then she is further committed to reject the negation of *A* and the negation of *B*, and to accept both the conjunction and disjunction of *A, B*. She might be committed to accept just one of the statements; in which case she can be committed to reject the other, or committed neither to accept or reject the other. She can be committed to reject one or both statements. She can be committed in "neither direction" toward each statement. In some cases, the values (or non-values) of assertions and denials of simple sentences are not sufficient to determine the values of assertions and denials of compound sentences. For example, if $\dashv A$ and $\dashv B$ have no value, and *A, B* are irrelevant to one another, then '$\dashv [A \,\&\, B]$' should have no value. But if $\dashv A$, $\dashv \sim A$ have no value, the completed sentence '$\dashv [A \,\&\, \sim A]$' will have value +.

5. SOME SEMANTIC CONCEPTS The truth conditions of a statement determine what the world must be like for the statement to be true. Many statements can be made true in different ways. For example, the statement:

> Some man (or other) is a geologist.

can be made true by different men–for each man, his being a geologist would make the statement true. The truth conditions of a statement seem best regarded as an ontological or *ontic* feature of the statement, if the ontic is being contrasted with the epistemic. But commitment conditions are epistemic. It is individual people who are committed or not by the statements they accept and reject. The person who makes a meaningful statement must recognize the "commitment consequences" of his statement if he understands what he is saying. At least, he must recognize the *immediate* commitment consequences, for no one can survey all of the longer-range consequences.

The distinction between truth conditions and commitment conditions gives us occasion to recognize different classes of semantic concepts. Consider entailment and implication. I am using 'entail,' 'entailment,' etc. for a highly general relation based on the total meanings of the statements involved. In contrast, I will use ‘imply,’ ‘implication,’ etc. for the logical special case of this general relation. The logical special case is identified with respect to the logical forms of artificial-language sentences. The statement:

(1) Every duck is a bird.

both entails and implies: (2) No duck is a non-bird.

But: (3) Sara’s jacket is scarlet.

entails: (4) Sara’s jacket is red.

without implying (4), for the entailment from (3) to (4) is not based on features uncovered by logical analysis.

We can characterize *truth-conditional entailment* as follows: Statements $A_1,\ldots, A_n$ *(truth-conditionally) entail* statement *B* iff there is no way to satisfy the truth conditions of $A_1,\ldots, A_n$ without satisfying those of *B*. This characterization resists being turned into a formal definition. But *truth-conditional implication* can be defined formally: Plain sentences (of *L*) $A_1,\ldots, A_n$ *(truth-conditionally) imply B* iff there is no interpreting function *f* of *L* such that $f(A_1) = \cdots = f(A_n) = \mathrm{T}$, while $f(B) = \mathrm{F}$. (If there is implication linking plain sentences of *L*, then there is implication linking the statements which these sentences represent.)

Let *X* be a set of plain sentences of *L* and let *A* be a plain sentence of *L*. Then *X (truth-conditionally) implies A* iff there is no interpreting function of *L* which assigns T to every sentence in *X*, but fails to assign T to *A*.

Let $A_1,\ldots, A_n, B$ be plain sentences of *L*. Then ‘$A_1,\ldots, A_n / B$’ is a *plain argument sequence of L*. The sentences $A_1,\ldots, A_n$ are the *premisses* and *B* is the *conclusion*. (We also consider argument sequences whose components are statements. A plain argument sequence of *L* will represent a plain argument sequence whose components are natural-language statements.) A plain argument sequence of *L* is *truth-conditionally (logically) valid* iff its premisses truth-conditionally imply its conclusion.

Illocutionary entailment links illocutionary acts. If $A_1,\ldots, A_n, B$ are (each) assertions, denials, or suppositions, then $A_1,\ldots, A_n$ *deductively require (illocutionarily entail) B* iff a person who performs the acts $A_1,\ldots, A_n$ will be committed to performing *B*.

In connection with illocutionary entailment (and implication), we recognize both cases where performing an illocutionary act *generates* commitments to perform further acts, and cases where performing an act *reveals* commitments to perform further acts. For example a person who comes to accept statement *A* (she performs act $\vdash A$) is committed by this act to accept the statement “*[A v B]*.” But a person who uses a singular term to (attempt to) refer to an individual reveals by this act that she is committed to accept the statement that the referent exists. The referring act does not generate the commitment. She must already believe there is a referent before she refers to it. Whether performing an act $\vdash A$ generates a commitment to perform $\vdash B$, or reveals a commitment to perform $\vdash B$, we will say that $\vdash A$ is linked to $\vdash B$ by illocutionary entailment.

Illocutionary implication links completed sentences of L and the illocutionary acts that these represent. In order to define illocutionary implication, some preliminary definitions are required.

Let $\mathscr{E}_0$ be a coherent commitment valuation of L, let $\mathscr{E}$ be the commitment valuation determined by $\mathscr{E}_0$, and let A be a completed sentence of L that is either an assertion or denial. Then $\mathscr{E}_0$ *satisfies* A iff $\mathscr{E}(A) = +$.

Suppositions are not assigned values by commitment valuations. But supposing certain statements will commit a person to supposing others. In supposing a statement either true or false, we consider truth values to determine what further statements we are committed to suppose.

Let f be an interpreting function of L, and let A, B be plain sentences of L. Then (i) f *satisfies* $\llcorner A$ iff $f(A) = \mathrm{T}$, and (ii) f *satisfies* $\neg B$ iff $f(B) = \mathrm{F}$.

Let f be an interpreting function of L and $\mathscr{E}$ be a commitment valuation of L based on f. Then $< f, \mathscr{E} >$ is a *coherent pair for L*.

Let $< f, \mathscr{E} >$ be a coherent pair (for L), and let A be a completed sentence of L. Then $< f, \mathscr{E} >$ *satisfies* A iff either (i) A is an assertion or denial and $\mathscr{E}$ satisfies A, or (ii) A is a supposition and f satisfies A.

Let $A_1, \ldots, A_n, B$ be completed sentences of L. Then $A_1, \ldots, A_n$ *logically require (illocutionarily imply)* B iff (i) B is an assertion or denial and there is no coherent commitment valuation which satisfies the assertions and denials among $A_1, \ldots, A_n$ but does not satisfy B, or (ii) B is a supposition and there is no coherent pair for L which satisfies each of $A_1, \ldots, A_n$, but fails to satisfy B. (An equivalent formulation for (i) is this: B is an assertion or denial and there is no *acceptable* commitment valuation which etc. A coherent commitment valuation $\mathscr{E}_0$ satisfies a completed sentence just in case the acceptable commitment valuation which $\mathscr{E}_0$ determines satisfies the sentence.)

Let X be a set of completed sentences of L and let A be a completed sentence of L. Then X *logically requires* A iff (i) A is an assertion or denial and there is no coherent commitment valuation which satisfies the assertions and denials in X but does not satisfy B, or (ii) B is a supposition and there is no coherent pair for L which satisfies every sentence in X, but fails to satisfy A.

It is necessary to have two clauses in the definitions of illocutionary implication, because if B is an assertion or denial, its value is independent of the values assigned to suppositions. For example, consider these completed sentences:

$$\sqcup A,\ \neg A,\ \vdash B;\ \vdash [B \,\&\, A]$$

There is no coherent pair which satisfies $\sqcup A,\ \neg A,\ \vdash B$ and fails to satisfy '$\vdash [B \,\&\, A]$,' because there is no coherent pair which satisfies $\sqcup A,\ \neg A,\ \vdash B$. However, the first three sentences do not logically require '$\vdash [B \,\&\, A]$,' for suppositions make no "demands" on assertions and denials. Incoherent suppositions logically require that we suppose true and suppose false every plain sentence, but they do not require that we assert or deny anything.

Let $A_1, \ldots, A_n, B$ be completed sentences of L. Then '$A_1, \ldots, A_n \rightarrow B$' is an *illocutionary argument sequence*–for convenience I will simply say that it is an *illocutionary sequence*. We can define a concept of *illocutionary validity* that applies to illocutionary sequences. An illocutionary sequence '$A_1, \ldots, A_n \rightarrow B$' is *logically connected* (*illocutionarily logically valid*) iff $A_1, \ldots, A_n$ logically require B.

I will use the words 'consistent' and 'coherent' for semantic ideas rather than syntactic or proof-theoretic ones. Let X be a set of plain sentences of L. Then X is *consistent* iff there is an interpreting function f of L for which every sentence in X has value T. (The sentences have the value T for the *valuation determined by f*.)

Let X be a set of completed sentences of L. This set is *coherent* iff there is a coherent pair $\langle f, \mathscr{E} \rangle$ for L which satisfies every sentence in X.

6. THE DEDUCTIVE SYSTEM *S* This is a natural deduction system which employs tree proofs (tree deductions). Each step in one of these proofs/deductions is a completed sentence. An initial step in a tree proof is an assertion $\vdash A$, a denial $\dashv A$, a positive supposition $\sqcup A$, or a negative supposition $\neg A$. An initial assertion or denial is not a hypothesis of the proof. Instead, an initial assertion or denial should express knowledge or justified (dis)belief of the arguer. Not every sentence $\vdash A$ is eligible to be an initial assertion in a proof constructed by a given person. In contrast, any supposition can be an initial supposition. Initial suppositions are hypotheses of the proof.

The following rules of inference of S are *elementary:*

& Introduction

$$\frac{?A \qquad ?B}{?[A \,\&\, B]}$$

& Elimination

$$\frac{?[A \,\&\, B]}{?A} \qquad \frac{?[A \,\&\, B]}{?B}$$

v Introduction

$$\frac{?A}{?[A \vee B]} \qquad \frac{?B}{?[A \vee B]}$$

The derived rule: *Modus Ponens*

$$\frac{?A \qquad ?[A \supset B]}{?B}$$

is also elementary. In these *inference figures*, the ‘?’s are either ‘$\vdash$’ or ‘$\llcorner$.’ If at least one premiss is a supposition, so is the conclusion. Otherwise, the conclusion is an assertion.

The following arguments are correct:

$$\frac{\llcorner A \qquad \llcorner B}{\llcorner [A \,\&\, B]} \qquad\qquad \frac{\vdash A \qquad \llcorner B}{\llcorner [A \,\&\, B]} \qquad\qquad \frac{\vdash A \qquad \vdash B}{\vdash [A \,\&\, B]}$$

But even though they are truth preserving, these arguments are not correct:

$$\frac{\llcorner A \qquad \llcorner B}{\vdash [A \,\&\, B]} \qquad\qquad \frac{\llcorner A \qquad \vdash B}{\vdash [A \,\&\, B]}$$

Supposing the premisses commits us to supposing the conclusion, but the suppositions do not authorize us to assert the conclusion.

A deduction in *S* from initial (uncanceled) sentences $A_1,\ldots, A_n$ to conclusion B establishes that $A_1,\ldots, A_n$ logically require (illocutionarily imply) B. It also establishes that the illocutionary sequence ‘$A_1,\ldots, A_n \rightarrow B$’ is logically connected. We can regard the *theorems* of *S* as illocutionary sequences established by deductions in *S*.

The following proof:

$$\dfrac{\dfrac{\vdash A \qquad \vdash B}{\vdash [A \,\&\, B]}\,\&I \qquad\qquad \vdash [[A \,\&\, B] \supset C]}{\vdash C}\,MP$$

establishes that $\vdash A, \vdash B, \vdash [[A \,\&\, B] \supset C]$ logically require $\vdash C$. It also establishes that the illocutionary sequence ‘$\vdash A, \vdash B, \vdash [[A \,\&\, B] \supset C] \rightarrow \vdash C$’ is logically connected, and is a theorem of *S*.

The rule *Weakening* is another elementary rule of *S*; it has two forms:

$$\frac{\vdash A}{\llcorner A} \qquad\qquad \frac{\dashv A}{\neg A}$$

The person who accepts/asserts a statement or who denies one intends for this to be permanent. But supposing a statement true is like accepting it for a time, and supposing it false is like rejecting it for a time. The force of an assertion or denial "goes beyond" that of a supposition, but "includes" the suppositional force.

In a standard system of logic, we cannot mark the difference between assertions and suppositions. In a standard natural-deduction system, each step in a proof from hypotheses amounts to a supposition. A proof from initial sentences $A_1, \ldots, A_n$ to conclusion B will, in effect, establish an illocutionary sequence '$\llcorner A_1, \ldots, \llcorner A_n \rightarrow \llcorner B$' to be logically connected, although if '$\llcorner A_1, \ldots, \llcorner A_n \rightarrow \llcorner B$' is logically connected, so is '$\vdash A_1, \ldots, \vdash A_n \rightarrow \vdash B$.' To use a system of standard logic to explore proofs (deductions) which have both hypotheses and initial assertions, we must give some extralogical statements the status of axioms (these can function as initial assertions, and will not be subject to being discharged or canceled).

The *non-elementary* rules of *S cancel*, or *discharge*, hypotheses (initial suppositions). In illustrating these rules, hypotheses that are canceled will be enclosed in braces. I will no longer make use of the question mark. Instead, I will use expressions like '$\vdash/\llcorner$' to indicate that the illustration applies both to assertions and to positive suppositions. Restrictions concerning illocutionary force will be stated on the side. The following are non-elementary rules (but $\supset$ *Introduction* isn't a rule of the system, for it can be derived from the other rules):

v Elimination

$$\frac{\vdash/\llcorner[A \vee B] \qquad \begin{matrix}\{\llcorner A\} \\ \\ \llcorner C\end{matrix} \qquad \begin{matrix}\{\llcorner B\} \\ \\ \llcorner C\end{matrix}}{\vdash/\llcorner C}$$

⊃ Introduction

$$\frac{\begin{matrix}\{\llcorner A\} \\ \\ \llcorner B\end{matrix}}{\vdash/\llcorner[A \supset B]}$$

For both rules, if the only uncanceled hypotheses in the subproof above the line are those in braces, the conclusion is an assertion, otherwise it is a supposition.

The hypotheses that are canceled by the rules function as hypotheses until they are canceled. They are hypotheses of the subproofs leading up to the application of the rule.

The following deduction:

$$\frac{\vdash[A \vee B] \qquad \dfrac{\overset{x}{\llcorner A} \qquad \llcorner[A \supset B]}{\llcorner B}\,MP \qquad \overset{x}{\llcorner B}}{\llcorner B}\ \textit{vE, cancel '}\llcorner A,\textit{' '}\llcorner B\textit{'}$$

establishes that ‘$\vdash[A \vee B], \llcorner[A \supset B] \rightarrow \llcorner B$’ is logically connected. An ‘x’ is placed above canceled hypotheses.

The rules for negative force operators are similar to rules that are normally provided for the negation sign. This reflects my view that denial (and negative supposition) are more fundamental than, and are logically prior to, negation.

Negative Force Introduction

$$\begin{array}{c} \{\llcorner A\} \qquad\qquad \\ \\ \llcorner B \qquad \dashv/\neg B \\ \hline \dashv/\neg A \end{array} \qquad \begin{array}{c} \qquad\qquad \{\llcorner A\} \\ \\ \vdash/\llcorner B \qquad \neg B \\ \hline \dashv/\neg A \end{array} \qquad \begin{array}{c} \{\llcorner A\} \quad \{\llcorner A\} \\ \\ \llcorner B \qquad \neg B \\ \hline \dashv/\neg A \end{array}$$

The conclusion is a denial if the only uncanceled hypothesis in the subproof above the line is the hypothesis in braces; otherwise, the conclusion is a supposition.

$\neg$ Elimination

$$\begin{array}{c} \{\neg A\} \qquad\qquad \\ \\ \llcorner B \qquad \dashv/\neg B \\ \hline \vdash/\llcorner A \end{array} \qquad \begin{array}{c} \qquad\qquad \{\neg A\} \\ \\ \vdash/\llcorner B \qquad \neg B \\ \hline \vdash/\llcorner A \end{array} \qquad \begin{array}{c} \{\neg A\} \quad \{\neg A\} \\ \\ \llcorner B \qquad \neg B \\ \hline \vdash/\llcorner A \end{array}$$

The conclusion is an assertion if the only uncanceled hypothesis above the line is the hypothesis in braces; otherwise, the conclusion is a supposition.

The rules linking the negation sign to the negative force operators have a definitional character, for these rules provide a complete inferential characterization of negation.

~ Elimination

$$\begin{array}{c} \vdash/\llcorner {\sim} A \\ \hline \dashv/\neg A \end{array}$$

The conclusion is a denial iff the premiss is an assertion

~ Introduction

$$\begin{array}{c} \dashv/\neg A \\ \hline \vdash/\llcorner {\sim} A \end{array}$$

The conclusion is an assertion iff the premiss is a denial

The following proof illustrates some of these rules:

x
⌞A
------------- *vI* *x*
⌞[A v ~A] *¬[A v ~A]*
---------------------------------- *Neg Force I, cancel '⌞A'*
¬A
------- *~I*
⌞~A
------------- *vI* *x*
⌞[A v ~A] *¬[A v ~A]*
----------------------------------- *¬E, cancel '¬[A v ~A]'*
⊢[A v ~A]

We can establish the following principles of double negation:

⊢/⌞ ~~A	*⊢/⌞ A*	*⊣/¬ ~~A*	*⊣/¬ A*
----------	-----------	-----------	-----------
⊢/⌞ A	*⊢/⌞ ~~A*	*⊣/¬ A*	*⊣/¬ ~~A*

Given the principles ¬ *Elimination, ~ Elimination,* and ~ *Introduction*, the principle *Negative Force Introduction* is a derived rule. Even though the principle *Negative Force Introduction* is redundant, it will be retained as a primitive rule. For we are considering the language without the sign of negation to be the predecessor and source of the language which contains negation. When there is no negation sign, the principle *Negative Force Introduction* is (still) a correct principle, and it is not at that point a derived rule.

It is a straightforward matter to establish that the system *S* is sound and complete in appropriate illocutionary senses. In every proof/deduction of *S*, the uncanceled initial sentences logically require the conclusion; every proof establishes a logically connected illocutionary sequence. And for every set *X* of completed sentences and sentence *A* such that *X* logically requires *A*, there is a proof of *A* in *S* from initial sentences in *X*. These results are proved by adapting standard soundness and completeness proofs. The argument for soundness is an induction on the *rank* (the number of steps) of a proof. For completeness we employ *deductively coherent sets* of completed sentences (sets for which there is no plain sentence *A* such that both *⌞A* and *¬A* can be deduced from premisses in the set) and *maximally* deductively coherent sets. (They are maximal with respect to suppositions.)

7. CONDITIONALS From the present perspective, language acts are intentional acts performed by people who know what they are doing. People learn to talk, write, and think with words by observing and interacting with other people who are already doing this. An account of conditionals should not appeal to principles that are completely unknown to people who successfully produce and understand conditionals. A theory of how conditionals work that makes

it seem a miracle that ordinary people are able to cope with conditionals is incompatible with our language-act framework.

There are many accounts which have been proposed for conditionals which do not reflect this understanding. The appeal to possible worlds and similarity relations between worlds may give some results that are intuitively acceptable, but the theoretical apparatus associated with these accounts goes well beyond what ordinary language users have in mind. (A helpful survey of many such accounts is found in *Sanford 1989*.) Even accounts that don't appeal to possible worlds, like that in *McLaughlin 1990*, are often so complicated that it is scarcely credible that ordinary people use expressions in ways governed by the principles that are presented.

Discussion of conditionals has usually been limited to conditionals that occur in descriptive contexts. But there are many kinds of conditional speech acts. There are conditional promises and conditional threats, conditional warnings, conditional requests and conditional commands, there are even conditional apologies ("If I stepped on your foot, I am sorry.") All of these are conditional illocutionary acts. In these cases, conditionality seems to involve an operation on illocutionary acts or illocutionary force. Our account of conditional assertions, denials, and suppositions can be seen as a special case of a more general account of conditional illocutionary acts.

8. CONDITIONAL ASSERTIONS We have considered only illocutionary acts performed with single sentences. In *L*, our completed sentences are constituted by applying an illocutionary operator to a single plain sentence. However, there do seem to be illocutionary acts which involve more than one sentential act or statement. If someone said the following:

> Mark was at the party.
> Jennifer was there too.

we would naturally construe the speaker as having made two assertions. Each statement is presented, and accepted, independently of the other. We would give a similar account of someone who said this:

> Mark was at the party.
> And Jennifer was there too.

The use of the word 'and' signals that the second assertion has some relevant connection to the first. The two assertions are concerned with the same party, and the second adds to the information in the first about who attended the party. There is only the slightest of differences, perhaps no difference at all, between the most recent pair of assertions and what we would understand by the following:

> Mark was at the party, and Jennifer was there too.

In transcribing a spoken discourse, it is to a large extent arbitrary whether we write two separate sentences or one compound sentence. A conjunctive sentence can more easily be used to unite two assertions than to make one conjunctive statement, which is also asserted. That seems to be the understanding, for example, behind John Stuart Mill's remark that a conjunction is no more a compound statement than a street is a compound house.

What is the perceived difference between conjoining two assertions and asserting a conjoined statement? If these are different language acts, and language acts are intentional acts, conjoined assertions should "feel" different from an asserted conjunction, even though conjoined assertions come to the same thing as an asserted conjunction. In conjoined *assertions*, each statement is made and accepted all at once. (Or: each statement is made and its continued acceptance is reflected all at once.) A conjunctive *statement* characterizes a pair of statements as being the case; accepting the conjunctive "package" is accepting that they are both the case. This is surely less common than simply making and accepting each statement.

In a simple assertion, a sentence is used to make a statement which is accepted. In a conjoined assertion, one sentence is used to make two separate assertions. A conjoined assertion is a distinctive form of illocutionary act. The conjoined assertion contains component statements, but there is no conjunctive statement. There are two acts of accepting/asserting the two component statements. To this point, we have considered single-statement illocutionary acts. In the language *L*, a completed sentence is formed by prefixing an illocutionary operator to one plain sentence. A conjoined assertion is a two-statement illocutionary act. To explore the logic of conjoined assertions, we could enlarge the language *L* with new illocutionary operators for conjoined supposition and conjoined assertion:

$$\vdash_{\wedge},\ \llcorner_{\wedge}$$

which would yield a new kind of completed sentence:

$$\vdash_{\wedge}[A, B],\ \llcorner_{\wedge}[A, B]$$

However, the logic of conjoined assertion and supposition is quite straightforward, and we will not explore it here.

I will borrow some ideas from this discussion of conjoined assertions to understand and analyze conditional assertions (as well as conditional denials and suppositions). On the analysis I am proposing, if we have a conditional assertion, say one made with this sentence:

If Frank got paid yesterday, then he went out to dinner last night.

there are two statements, the antecedent statement and the consequent statement. But there is no conditional statement. Instead, *the consequent is asserted on the condition of the antecedent*. It is primarily statements which are true or false. The assertion of a true statement can be called true in a derivative sense. Since there is no conditional statement, a conditional assertion isn't true or false, even in a derivative sense. I will say that a conditional assertion is *objectively incorrect* if the antecedent is true and the consequent false. It is *objectively admissible* otherwise.

Conditional assertions are not the only conditional speech acts which occur in descriptive contexts. Another important conditional speech act is the modal conditional statement. The difference between conditional assertions and conditional statements which have a modal significance is often understood to be a difference between indicative conditionals and subjunctive conditionals. But 'indicative' and 'subjunctive' are expressions used to mark grammatical or syntactic features, while the relevant distinction is semantic. Indicative conditional sentences are frequently used to make conditional assertions, but it is possible to use an indicative conditional sentence to make a modal claim. And a subjunctive conditional sentence might be used to make a conditional assertion. Conditional assertions are a kind of illocutionary act–they are speech acts, not expressions. Modal conditionals are a semantically-characterized statement kind, though subjunctive conditional sentences are typically used to make modal statements. The focus of this paper is conditional assertions (and denials and suppositions). My remarks about modal conditionals are primarily intended to contrast them with the assertions.

It is important to distinguish the question of what constitutes a conditional assertion from questions about when it is correct or appropriate to make a conditional assertion, either privately or publically, and from questions about the grounds for making a conditional assertion. A conditional assertion is an act whose point is either to establish a commitment or to reflect a commitment already "in force," and not to report on what the world is like. There are accounts of conditionals which focus on the probabilities and conditional probabilities that an agent assigns to statements. Such an account might have it that a conditional assertion 'If *A*, then *B*' is appropriate or correct if the probability of *B* given *A* is high. In *Jackson 1998*, the author suggests that the conditional 'If *A*, then *B*' is equivalent to 'Either not *A* or *B*,' but that the *point* of making a conditional claim is to indicate that the probability of this disjunction is not significantly affected if we learn that *A* is true. (The disjunction is *robust* with respect to the information that the antecedent is true.) If a conditional assertion were the assertion of a conditional statement, then we would try to understand the statement as describing or representing some characteristic situation in the world. But the conditional assertion does not assert a conditional statement, and does not represent the world as being one way or another. Although there are a variety of circumstances which, if they are recognized, make a conditional assertion appropriate, the assertion itself doesn't indicate to which kind of situation it is a response.

A conditional assertion involves two statements: *B is asserted on the condition (that) A*. One thing that the person who makes a conditional assertion might be doing is *establishing* a commitment (for herself) from accepting or positively supposing the antecedent to accepting or positively supposing the consequent. In this case, establishing a commitment is *accepting an inference principle from the antecedent to the consequent*. A person can only establish a commitment once (unless she establishes it, changes her mind and gives it up, and subsequently re-establishes it). The person who makes a conditional assertion when she has previously established the commitment is *reflecting* her commitment. Reflecting is different from reporting, for a report is true or false, while a conditional assertion that reflects the speaker's commitment is not.

A conditional assertion is different from ordinary assertions in certain fundamental ways. A person may be committed to accept a statement that she has never considered. We would not in such a case say that she has accepted the statement. The person can also be committed by accepting or supposing *A* to accepting or supposing *B* without realizing that she is so committed. In such a case, we *will* say that the commitment is *in force* for her. If she comes to realize that she is committed, and then articulates (or even thinks) the conditional assertion, this does not establish the commitment from *A* to *B*, it merely reflects this commitment–even though it was a discovery on her part to learn that she was so committed. All that there is to an act of asserting *B* on the condition that *A* is either establishing or reflecting a commitment from supposing/accepting *A* to supposing/accepting *B*. There is no claim about what the world is like.

In ordinary speech and writing, there *are* some conditional statements. In much technical writing, conditional sentences are used with the sense of a material conditional. In those cases, we have genuine material conditional statements. Modal conditional statements also occur in ordinary speech. These are true or false statements which rule out the possibility, in one or another sense of 'possible,' and often with respect to specialized circumstances envisaged by the speaker, of the antecedent being true and the consequent false. But the most common, conversational conditionals are conditional assertions.

The present account of conditional assertions holds that the "essence" of conditionality is commitment. This allows us to understand how conditional assertions are only one among many kinds of conditional illocutionary act. There are conditional assertions and conditional promises, as well as conditional requests, warnings, and threats. The central idea, the "essence," of conditionality is *to establish or reflect a commitment*. Because commitment has an epistemic character (unlike truth conditions, which are impersonal and objective), this is always a commitment for some person or persons. With assertions, the commitment is from accepting or supposing-true the antecedent to accepting or supposing-true the consequent, and this is the language user's (the speaker's) commitment. A conditional promise, "I promise that if *A*, then I will do *X*," establishes for the language user a commitment from accepting *A* or recognizing that *A* is true to performing *X*–a promise actually establishes an obligation as well as the commitment. Some commissives may be less than promises, so that their point is to establish a non-obligatory commitment. With a conditional assertion, the commitment is an inference principle, for it takes a person from one language act to another. A conditional promise does not establish what would ordinarily be called an inference principle, for its commitment links the awareness that the antecedent is true to the performance of what is ordinarily a non-speech action.

Mark's request to Leonard, "If I call you this afternoon, please pick me up at the auto repair shop," is conditional. But in this case Mark is not establishing a commitment for himself.

He is trying to get Leonard to establish a commitment from receiving a call and realizing that this has occurred to picking up Mark. If Leonard does accept this commitment, we wouldn't describe him as accepting an inference principle either. The key feature of conditional illocutionary acts is commitment, a commitment to do or not do something. Only some commitments are commitments to perform speech acts. There can even be a conditional apology: "If I stepped on your foot, I am sorry." The apology is an interesting case, for while it is the speaker who establishes a commitment to apologize, it is the addressee who determines whether this commitment "cashes out" as an apology. (The speaker establishes a commitment to construe his speech act as an apology–so construing it is all it takes to make the act *be* an apology.)

Many treatments of conditional "statements" occurring in descriptive contexts, for example treatments involving possible worlds or conditional probabilities, cannot easily be adapted to accommodate conditional requests or conditional promises. What is wanted is not an account of true or false conditional statements, an account spelling out the truth conditions of such statements. We have recognized a conditionality which is an operation on illocutionary acts/illocutionary force. In the artificial language, conditionality is an operation on illocutionary operators. This is the only way to get an account of conditionals and conditionality that covers the whole array of conditional illocutionary acts.

9. CONDITIONAL DENIALS? Ordinary assertions have negative counterparts which are denials. Do conditional assertions have counterpart denials? There are two ways in which we might understand conditional denial. Just as a conditional assertion is the assertion of the consequent on the condition of the antecedent, so a conditional denial could be the denial of the consequent on the condition of the antecedent. Such conditional denials clearly occur in English. A sentence:

> If Rachel was at home last night, then she didn't kill the headmistress.

could easily be used to deny that Rachel killed the headmistress, on the condition of being at home last night.

The second understanding of 'conditional denial' would give us an act which blocks or bars a conditional assertion. We shall distinguish the two understandings by using slightly different terminology. A *conditional denial* denies the consequent on the condition of the antecedent. A *denied conditional* would be the "opposite" of a conditional assertion. However, English appears to provide no resources for making denied conditionals. If someone were to say one of the following to us:

> I deny that Frank went out to dinner last night if he got paid yesterday.
> It is false that if Frank got paid yesterday, then he went out to dinner last night.

I think we would be quite unsure of what the speaker had in mind. These sentences are not idiomatic–we don't talk that way. But we can understand a conversation that runs as follows:

Speaker #1: Frank went out to dinner last night if he got paid yesterday.

Speaker #2: You're wrong. Frank did get paid, but he didn't go out to dinner.

A conditional assertion is objectively incorrect if the antecedent is true and the consequent false. In the exchange above, speaker #2 is claiming that #1's conditional assertion is objectively incorrect. A conditional assertion which is not objectively incorrect is objectively admissible. That a conditional assertion would be objectively admissible doesn't automatically make it correct for a person to make the assertion. The language user needs grounds to be justified in making a conditional assertion.

Although conditional assertions don't have counterpart denied conditionals, it is possible, intelligible, and common for one person to object to a conditional assertion made by somebody else. She might object because she believes the antecedent to be true and the consequent false. It is more common to object without thinking this. Instead, the objector thinks that the person who made the conditional assertion wasn't entitled to do so. There are many things which, if known, would authorize a conditional assertion. A decision to bring about *B* should *A* occur would make it reasonable to assert *B* on the condition that *A*. Knowledge of a causal relation leading from *A*-type events to *B*-type events would support the conditional assertion. And a person who recognizes that *A* truth-conditionally entails *B* is entitled to make the conditional assertion. Without some appropriate knowledge, and a situation to have knowledge of, there is no justification for making a conditional assertion.

Consider this scenario. Our two conversationalists are considering an approaching election. Speaker #1 says that if Baker is elected, there will be a disastrous inflation. Speaker #2 objects: "That is simply false." How are we to understand #2's objection? On the present analysis, conditional assertions are neither true nor false in the primary, corresponds-to-reality sense of 'true.' But both 'true' and 'false' have correct conversational uses which don't involve a philosophically correct statement of the correspondence view of truth. If we understand speaker #1 to have made a conditional assertion, then #2 probably doesn't mean that Baker will be elected, and that there won't be a disastrous inflation. What #2 intends is that there is nothing about Baker, his policies, and the economy that would make the conditional assertion appropriate.

If speaker #2 agreed with #1's conditional assertion instead of objecting to it, #2 might say "That's true." This doesn't mean that the conditional assertion corresponds to a conditional fact. #2 is saying that the conditional assertion is appropriate, and that he is either willing to establish the commitment from antecedent to consequent for himself, or that it is in force for him.

Someone might wonder why ordinary assertions have counterpart denials, but there are no denied conditionals. I think the reason is that a conditional assertion is primarily intended to establish an inference principle. The appropriate "opposite" move to establishing an inference principle is to not establish one. No speech act is required for this. Not establishing a commitment from accepting or supposing one statement to accepting or supposing another is nothing like rejecting a statement for being false.

Conditional assertions are not true or false, and do not consist in asserting a true or false conditional component. For a conditional assertion to be objectively admissible is not analogous to a statement's being true. The important value for a conditional assertion is agent-relative. Such an assertion is in force for those persons for whom there is a commitment from accepting or supposing-true the antecedent to accepting or supposing-true the consequent. For a conditional assertion to be in force for a person is not like a statement's being true. A conditional assertion will be in force for one person but not another, while if a statement is true, it is true for everyone. Truth is not an agent-relative concept.

10. THE LANGUAGE $L_/$ We obtain this language by adding illocutionary operators to L. Let A be a plain sentence of $L_/$. Then we have:

$\vdash[A]/$ – the conditional assertion operator
$\llcorner[A]/$ – the operator for conditionally supposing true

(It is easy enough to accommodate conditional denial, but this is left to the reader.)

If A, B are plain sentences of $L_/$, we get these completed sentences by using the new operators:

$\vdash[A]/B$	A is the *antecedent*,
$\llcorner[A]/B$	and B is the *consequent*

With a conditional assertion, the language user *asserts the consequent, on the condition of the antecedent*. Similarly, with a conditional supposition, she *supposes(-true) the consequent, on the condition of the antecedent*.

In $L_/$ we do not allow conditional assertions to occur as antecedents or consequents of conditional illocutionary acts. This is at odds with ordinary usage, for we do say such things as this:

If Sunday is a nice day, then if Mary would like it, we will go on a picnic.

However, the embedded conditional is not an assertion or supposition, nor is it a statement. The overall conditional act establishes a commitment from asserting or supposing that Sunday is a nice day to making a conditional assertion: to asserting that we will go on a picnic, on the condition of Mary liking to go on a picnic.

In fact, in ordinary English we can use conditional acts to establish commitments from denials as well as from assertions, and to denials as well as to assertions. The sentence:

If Mary didn't take the money, it must have been Michèle.

could be used to establish a commitment from performing one of these acts:

$\dashv$Mary took the money.
$\neg$Mary took the money.

to performing one of these:

$\vdash$Michèle took the money.
$\llcorner$Michèle took the money.

The antecedent of the conditional act need not be construed as a negated statement. Inference principles link illocutionary acts, and the antecedent and consequent of a conditional illocutionary act can signal either a positive or a negative illocutionary act. We have not allowed this in $L_{/}$, because this would complicate our account by requiring additional notation. Our primary aim is to achieve an understanding of conditional assertions, and the simpler language is sufficient for this purpose.

To determine the proper account of commitment for conditional assertions, we must insure that *Modus Ponens* holds: If '$\vdash A$' and '$\vdash [A]/ B$' both have value +, then so must '$\vdash B$.' Similarly, performing the acts $\llcorner A$ and $\llcorner [A]/ B$ must commit a person to performing the act $\llcorner B$. Ordinarily, a supposition $\llcorner A$ is an act of supposing A to be true. But $\llcorner [A]/ B$ is an act of supposing B to be true on the condition A. In performing this act, a person (temporarily) endorses the inference principle from '$\llcorner A$' to '$\llcorner B$.'

If performing the act $\vdash A$ commits a person to performing $\vdash B$, then '$\vdash [A]/ B$' should receive value +. And someone for whom performing the act $\llcorner A$ commits him to performing $\llcorner B$ is also committed to perform $\llcorner [A]/ B$.

The commitment conditions for conditional assertions must also accommodate two essential features of our ordinary practice. The first is that it is conversationally understood, and quite acceptable, to deny a statement A by forming a conditional with A as antecedent and an outrageously or obviously false statement as consequent:

If Leonard deserves an A in logic, then I'm a monkey's uncle
If Leonard deserves an A in anything, then I'm the Queen of Sheba.

These are *indirect* denials, for directly what we have are conditional assertions. The speaker conditionally asserts if A then B in order to (*colorfully*) deny A. For such a statement to be appropriate, and understood, the consequent must not only be false, it must be known (or widely believed) to be false. Frank Jackson, in *Jackson 1998*, argues that the use of these conditional sentences to make assertions are not standard, or normal, uses, but he is bending the facts to fit his theory.

The second essential feature of conditional assertions is closely related to the first. To describe this feature, it is most convenient to consider a dialogue between A and B:

> A: You seem to have a very good opinion of Laura. Do you think that she deserves an A in Logic?
>
> B: Is the Pope Catholic?

B's rhetorical question amounts to a conditional assertion that if the Pope is Catholic, then Laura deserves an A in Logic. (B's questioning act is indirectly a conditional assertion which, in turn, is indirectly a colorful assertion of the consequent.) It is conversationally understood, and quite acceptable, to affirm or endorse statement *B* by making a conditional assertion with an obvious or well-known antecedent and *B* as consequent.

The semantic definitions and results given above for L can be carried over to $L_/$, with these additional definitions:

The definition/explanation of what it is for a commitment valuation $\mathscr{E}$ to be *based on* an interpreting function f requires this additional clause:

If $\mathscr{E}(\vdash[A]/B) = +$, then $f(A) = \mathrm{F}$ or $f(B) = \mathrm{T}$.

The definition of what is the *commitment valuation $\mathscr{E}$ determined by* a coherent commitment valuation $\mathscr{E}_0$ needs this additional clause:

$\mathscr{E}(\vdash[A]/B) = +$ iff $f(A) = \mathrm{F}$ or $f(B) = \mathrm{T}$ for every interpreting function f on which $\mathscr{E}_0$ is based.

Let $\mathscr{E}_0$ be a coherent commitment valuation of $L_/$, and let $\mathscr{E}$ be the commitment valuation determined by $\mathscr{E}_0$. Let A be an assertion, denial, or conditional assertion of $L_/$. Then $\mathscr{E}_0$ *satisfies* A iff $\mathscr{E}(A) = +$.

Let f be an interpreting function of $L_/$, and let A, B be plain sentences of $L_/$. Then (i) f *satisfies* $\llcorner A$ iff $f(A) = \mathrm{T}$; (ii) f *satisfies* $\neg A$ iff $f(A) = \mathrm{F}$; (iii) f *satisfies* $\llcorner[A]/B$ iff either $f(A) = \mathrm{F}$ or $f(B) = \mathrm{T}$.

Let f be an interpreting function of $L_/$ and let $\mathscr{E}_0$ be a commitment valuation based on f. Let A be a completed sentence of $L_/$. Then the coherent pair $< f, \mathscr{E}_0 >$ *satisfies* A iff either A is an assertion, denial, or conditional assertion and $\mathscr{E}_0$ satisfies A, or A is a supposition and f satisfies A.

We can simply repeat the earlier definition of logical requirement.

Let X be a set of completed sentences and A be a completed sentence of $L_/$. Then X *logically requires* A iff either (i) A is one or another kind of assertion or denial, and every coherent commitment valuation of $L_/$ that satisfies all the assertions and denials in X also satisfies A, or (ii) A is one or another kind of supposition, and every coherent pair $< f, \mathscr{E}_0 >$ for $L_/$ that satisfies every sentence in X also satisfies A.

The matrices for the connectives for acceptable commitment valuations are the same as those presented above, in dealing with the language L. The matrix for a conditional assertion is this:

$\vdash A$	$\vdash B$	$\dashv A$	$\dashv B$	$\vdash [A]/B$
+	+	*b*	*b*	+
+	*b*	*b*	*b*	*b*
+	*b*	*b*	+	*b*
b	+	*b*	*b*	+
b	*b*	*b*	*b*	+,*b*
b	*b*	*b*	+	*b*
b	+	+	*b*	+
b	*b*	+	*b*	+
b	*b*	+	+	+

The conditional assertion may have value + when the antecedent and the consequent lack values. The matrix for a conditional assertion is the same as the matrix for an asserted material conditional: $\vdash [A \supset B]$. But the denial of a material conditional has a separate column, while there is no denied conditional.

Clearly, there is a close connection between a conditional assertion '$\vdash [A]/B$' and the assertion of a material conditional '$\vdash [A \supset B]$': The conditional assertion (or its unit set) logically requires the assertion of the material conditional, and conversely. Someone who makes or is committed to make the conditional assertion is also committed to accept/assert the material conditional statement. This does not show that making a conditional assertion "amounts" to the same thing as asserting a material conditional statement. Accepting some statements and rejecting others, as well as acts of conditional assertion and denial, commit us to accept many statements in which we have no interest. A conditional assertion establishes/reflects an inference principle; that is what concerns us, not the fact that either the antecedent is false or the consequent true.

11. THE DEDUCTIVE SYSTEM $S_/$ This system is obtained from *S* by adding rules to accommodate conditional assertions. The rules for conditional assertions and positive suppositions are entirely familiar.

Conditional Elimination

$$\frac{\vdash/\llcorner A \qquad \vdash/\llcorner [A]/B}{\vdash/\llcorner B}$$

The conclusion is an assertion if the premisses are assertions; otherwise the conclusion is a supposition.

This is simply *modus ponens.*

Conditional Introduction

$$\begin{array}{c} \{\llcorner A\} \\ \\ \llcorner B \\ \hline \vdash/\llcorner [A]/B \end{array}$$

The conclusion is an assertion if the only uncancelled hypothesis above the line is the one in braces. Otherwise the conclusion is a supposition.

We also need this additional form of *Weakening*:

$$\frac{\vdash [A]/B}{\llcorner [A]/B}$$

Conditional assertions and suppositions are related to asserted and positively supposed material conditionals as one would expect. The following illocutionary sequences:

$$\vdash [A \supset B] \rightarrow \vdash [A]/B \qquad \llcorner [A \supset B] \rightarrow \llcorner [A]/B$$
$$\vdash [A]/B \rightarrow \vdash [A \supset B] \qquad \llcorner [A]/B \rightarrow \llcorner [A \supset B]$$

are logically connected.

Denying the antecedent or asserting the consequent will commit us to a conditional assertion. These illocutionary sequences:

$$\dashv A \rightarrow \vdash [A]/B \qquad \vdash B \rightarrow \vdash [A]/B$$

are logically connected.

It is a straightforward matter to show that S_I is sound and complete in the appropriate senses.

12. A ROAD BLOCK TO THE PRESENT ACCOUNT In developing an account of conditional assertions, we are trying to capture ordinary English usage. The logical theory is simplified and idealized. We are using the sentence '$\vdash[A]/B$' of L_I to represent a basic kind of conditional assertion. In ordinary English, we often perform more complicated conditional acts than are represented by sentences of L_I. But these sentences are intended to capture the "basic idea" of the conditional assertions that people actually make.

We are not trying to develop an idealized, logically perfect language, whatever that might be. The use of language, the activity of performing language acts, is normative. There are correct and incorrect ways to speak. There are correct and incorrect ways to argue. We intend to present norms for deductively correct reasoning. But these norms are not news to ordinary language users. The norms for correct arguing, like the norms for correct speaking, are implicit in our linguistic practice.

People do not always reason, or argue, correctly. People do not always recognize deductively correct arguments. Psychologists tell us, for example, that *modus tollens* is difficult for many people. People often don't recognize that instances of *modus tollens* are deductively correct. People often fail to infer a conclusion from premisses when the principle involved is *modus tollens*. (According to *Johnson-Laird 1999*, the Chernobyl disaster can be traced to the failure of authorities to make an inference exemplifying *modus tollens.)* Simple deductively correct inference principles, the most elementary commitments, are recognized by all language users. More complex principles, and their deductive correctness, may sometimes be overlooked. But language users can ordinarily be convinced of the correctness of complex principles by reducing these complex principles to elementary ones. (Arguments by mathematical induction are especially difficult to "sell" to ordinary language users–even to ordinary college students and graduate students.)

In determining whether a logical theory captures our ordinary linguistic practice, it is important that our account sanction the simple inferences that people commonly make, and also that the simple inferences endorsed by the theory be inferences that language users actually make. However, it can easily be seen that most English speakers will not grant the legitimacy of all the inferences that the present account seems to require. Many different sorts of example have been presented to show that an account like ours cannot be correct. I will consider only two of these, but what I say about these examples will probably suffice to show how to deal with other examples.

The present account of conditional assertions sanctions inferences which are analogous to so-called paradoxes of material implication. One of these principles is the following:

$$\frac{\vdash/\llcorner A}{\vdash/\llcorner [B]/\ A}$$

For material implication, the paradoxical principle is sometimes articulated as “Every statement (materially) implies a true statement.” This formulation is inappropriate in the present case. Here the principle amounts to something like “A statement which is asserted/positively supposed can be asserted/supposed on any condition whatever.”

The other “paradoxical” principle that holds for conditional assertion/supposition is this:

$$\frac{\dashv/\neg A}{\vdash/\llcorner [A]/\ B}$$

Instead of reading this as “a false statement (materially) implies every statement,” we have “when a statement is denied/supposed-false, any statement can be asserted/supposed-true on the condition of that statement.”

It is easy to manufacture examples which seem to call the “paradoxical” principles into question. Virtually everyone in a position to assert “I will go skiing [or walking, shopping, etc.] tomorrow” would be reluctant to seriously make the following argument:

$$\frac{\vdash \textit{I will go skiing tomorrow}}{\vdash \textit{[I will die tonight]/ I will go skiing tomorrow}}$$

It will be instructive to take a close look at this argument, and to articulate just why the conclusion would give pause to a person who accepted the premiss statement. Everyone realizes that there are statements which she is prepared to accept which are none-the-less false. Everyone has beliefs that she would abandon should evidence to the contrary turn up. With the present example, all of us realize that our plans can be disrupted or rendered futile by illness or accident, most certainly by our deaths. When I announce what I will do tomorrow, I am presuming that I will live that long. My death tonight would keep me from carrying out tomorrow’s activities. If I make plans for tomorrow, and then come to know or believe that I will die in the interim, I will abandon my plans and give up my beliefs about tomorrow’s activities.

Our treatment of assertion, denial, and supposition is for assertions and denials in contexts where they are not subject to challenge, and for suppositions which are intended to supplement the assertions and denials. In these contexts, arguments having the forms shown above are uncontroversially correct.

On certain occasions, or in certain contexts, we are willing to entertain the possibility that we are wrong in this or that belief. In the example above, the antecedent of the conclusion is designed to call the consequent (and the premiss) into question. If a person believes *A*, but entertains the possibility that she is mistaken, then she is for the time being "demoting" *A* to the status of a supposition. In reasoning with suppositions, a supposition can be dropped in the interest of achieving coherence among our other suppositions, together with our assertions and denials. A person who intends to ski tomorrow, but takes seriously the possibility of dying before tomorrow, is not, in those circumstances, committed to assert that she will ski tomorrow on the condition of her dying tonight.

In a given context, which might be "governed" by a certain goal–for example the goal of planning tomorrow's activities, or by certain presumptions shared by parties to a conversation, there will be some beliefs and disbeliefs which a language user is not prepared to call into question. These beliefs and disbeliefs are not regarded as infallible, but on that occasion their truth or falsity will not be challenged. In such a context, there may be other beliefs and disbeliefs which can be called into question. And the presumptions which govern one context may be challenged in a different context.

When a person supposes that certain of her beliefs are false, her supposition does not supplement those beliefs, it puts them (temporarily) "out of play." The beliefs that are challenged no longer count as beliefs–they have the status of positive suppositions which have been abandoned in favor of the corresponding negative suppositions. The resulting suppositions supplement the beliefs and disbeliefs, assertions and denials, that on the given occasion the language user is not prepared to challenge. Whether, on some occasion, a belief or disbelief is subject to challenge is not determined by the way the world is independently of the language user, or by the incorrectness of the belief or disbelief. It is the language user's intentions and the project in which she is engaged that determine this.

A person can demote a belief *A* to the status of a supposition by supposing that *A* is false. She can also demote *A* by considering or being prepared to consider suppositions that may tell against *A*, so long as she regards *A*, in that contest, as subject to challenge.

Even if the designated subject plans to ski tomorrow, and believes that she will ski tomorrow, her considering the statement "I will die tonight" is likely to lead her into a context where the statement "I will go skiing tomorrow" is demoted to the status of an abandoned positive supposition. If it does, then she will no longer be committed to assert that she will ski tomorrow on the condition of her dying. However, she is committed to this conditional assertion:

⊢*[I will die tonight]/ ~I will go skiing tomorrow.*

whether or not she believes that she will ski tomorrow. Accepting or supposing that she will ski tomorrow commits her to accept or suppose that she will live that long. And if she supposes that she will ski tomorrow on the condition of her dying tonight, this will commit her to supposing that she won’t die tonight:

x *x*

⌞*[die tonight]/ ski tomorrow* ⌞*die tonight* ⊢*[die tonight]/ ~ski tomorrow* ⌞*die tonight*

-- --

⌞*ski tomorrow* ⌞*~ski tomorrow*

¬*die tonight*

If the designated subject makes both of these suppositions:

⌞*I will go skiing tomorrow.*
⌞*I will die tonight.*

her suppositions are incoherent. There is a permanent, come-what-may commitment to achieve coherence. This can be done either by abandoning the supposition that she will ski or abandoning the supposition that she will die.

The designated subject might respond to her reflections about mortality by weakening her assertion about tomorrow:

⊢*[~I will die tonight]/ I will go skiing tomorrow.*

Or she might make these assertions:

⊢*I will go skiing tomorrow.*
⊢*~I will die tonight.*

She might also drop the matter and move on to some other topic or activity.

It doesn’t seem promising to develop a logical system to accommodate the practice of challenging assertions and denials and demoting them to suppositions. Our current system is sufficient. We simply need to keep track of the status of our acts. If we are prepared to challenge an assertion, demoting it to a supposition, we need to treat it like a supposition and not an assertion.

13. A SECOND PROBLEM The next example, which is found in *Sanford 1989*, will help us understand how the distinction between beliefs and disbeliefs that are subject to challenge and those that aren’t will shift in different contexts. This example raises problems for the transitivity principle:

$$\frac{\vdash [A]/B \qquad \vdash [B]/C}{\vdash [A]/C}$$

and the corresponding principle for supposition, which are correct principles for $S_{1'}$. Imagine that Smith and Jones are candidates for a certain elected office. Someone might be willing to accept both:

> If Jones wins the election, then Smith will retire [after the election].
> If Smith dies before the election, then Jones will win the election.

but he most certainly would not accept:

> If Smith dies before the election, then Smith will retire.

Our intentional acts and activities can commit us to perform further acts and activities, or they can presuppose commitments to perform further acts and activities. Speech acts commit us or reveal commitments to perform further speech acts based on the meanings of the speech acts involved. Intentional acts can also presume, or presuppose, a commitment to perform speech acts. For example, someone who walks across a room is presuming that the floor will support him as he walks. He is committed to accept this presumption, but he will not normally have articulated the presumption, and his explicit beliefs and disbeliefs may not deductively require the presumption.

In the story under consideration, the person who conditionally asserts that if Jones wins the election, then Smith will retire is presupposing that Smith will live until after the election. The conditional asserter is committed to accept this presupposition. The statement that Smith will die before the election challenges a presupposition of the assertion that Smith will retire on the condition of Jones winning the election. So the language user who considers what would happen if Smith dies before the election will not in that context accept the inference principle established by the conditional assertion that Smith will retire. We are willing to abandon beliefs if evidence to the contrary turns up. We can demote beliefs to the status of suppositions when we suppose that conditions obtain that conflict with what is believed. We can also demote inference principles that we accept.

The person who makes the conditional assertion:

> If Jones wins the election, then Smith will retire.

does not expect Smith to die before the election. However, this language user can change the context in which he is operating by seriously entertaining the possibility that Smith will die before the election. In these changed circumstances, he may be willing to conditionally assert that

Jones will win if Smith dies first. In these circumstances, he will not accept that Smith will retire on the condition of Jones winning.

In a given context, where a certain issue is under consideration, or a certain conversational goal is being pursued, there are certain beliefs, certain statements, which a language user accepts or presupposes, about which she is unwilling to entertain the possibility of their being false. In a different context, she may call these beliefs/statements into question. The two conditional assertions we have considered above are appropriate in different contexts, and inappropriate in a single context. They do not pose a problem for the transitivity of conditional assertions in a single context.

14. MODAL CONDITIONALS The inference principles sanctioned by $S_{/}$ are for contexts in which the designated subject is not prepared to revise her assertions and denials, and in which her suppositions supplement her assertions and denials rather than calling them into question. We have also given some attention to contexts in which some assertions and denials can be challenged by suppositions which don't simply supplement them. Someone might object to this concern with contexts, and insist that we should come up with a context-free system that identifies those principles that are correct no matter what. The objection is misguided, for conditional assertions are a kind of illocutionary act rather than a kind of statement. Statements have truth conditions, which are satisfied or not independently of the contexts in which the statements are made. But context plays an especially important role in determining whether a conditional assertion is felicitous or not.

In $L_{/}$, there are conditional assertions and conditional supposings true, but there are no denied conditionals or conditional supposings false. We could invent a denied conditional and introduce it to $L_{/}$, but I am trying to capture the use of conditionals in English, not to invent some ideal or logically perfect language, whatever that would be. I have already indicated what I think is the explanation for the absence of denied conditionals in conversational English: the natural opposite to making a conditional assertion is not to make one. When establishing a commitment from A to B is out of the question because we know A to be true and B to be false, we can simply say this (we can say: $\vdash A, \dashv B$). A denied conditional to indicate that the assertion would be objectively incorrect is conversationally pointless, and would obscure the more important contrast between (conditionally) asserting and not asserting.

A conditional assertion does not contain (is not the assertion of) a conditional statement. But we could introduce a symbol for making (for representing) conditional statements into $L_{/}$. This would allow us to represent conditional statements that we could make even though we don't (often) make them. However, since we can express material implication in $L_{/}$, we already have the resources for making conditional statements. Even though we are not regarding the horseshoe as a primitive symbol of $L_{/}$, any of the following sentences represent a statement which has a conditional significance:

$$[A \supset B],\ [\sim A \vee B],\ \sim[A \,\&\, \sim B]$$

We have seen that the assertion and positive supposition of material conditionals are inferentially equivalent to conditional assertions and suppositions. Material conditionals (expressed with 'If..., then..." or 'If..., ...') even occur in ordinary language, though mostly in technical writing.

Apart from occasionally making material conditional statements in ordinary English, we also more frequently make modal conditional statements. The conditional form indicates that these statements also serve to establish commitments. Although modal conditionals sanction inferences (sometimes in rather specialized contexts or with respect to rather specialized situations), that is not the "total point" of asserting a modal conditional statement. In contrast to conditional assertions, modal conditional statements are true or false; they rule something out, and are false if what they rule out is actually possible. With a simple, straightforward modal conditional, to say that if A were the case, so would be B is to rule out the very possibility that A might be true when B is false. It is this claim in addition to the inference principle which constitutes the modal statement.

A simple modal conditional statement has the sense of '$\Box[A \supset B]$.' But even simple modal conditionals display great variety, for there are different concepts of necessity and possibility. (In ordinary English, we speak more readily of what is possible or not, than we speak of what is necessary.) Many situations which, if known, make a conditional assertion appropriate are described by modal conditional statements. If the necessity is *metaphysical*, a statement "$\Box[A \supset B]$" may represent a causal connection linking A to B, the knowledge of which would authorize the assertion: $\vdash[A]/B$. If the speaker recognizes that the consequent's being true is "part" of the antecedent's being true, as Chuck's being unmarried is part of his being a bachelor, the speaker's understanding of *semantic necessity* will justify a conditional assertion. And if '$\Box$' expresses *epistemic necessity*, so that '$\Box C$' means that C follows from the speaker's current knowledge, then if she knows that it isn't the case that A is true and B is false, she is entitled to perform the act $\vdash[A]/B$. Even a situation represented by a probability statement might support a conditional assertion. (Probability statements share some features with modal statements.) Someone who knows that it is highly improbable that the antecedent is true and the consequent false may respond to this situation by making a conditional assertion.

Sentences used for making modal conditional statements are often in the subjunctive mood, as in these examples:

(1) If Leonard had phoned before he drove to Mark's house, he would have saved himself a lot of trouble.
(2) If you were to ask David for a ride home, he would turn you down.

However, the subjunctive mood is not essential. We could make essentially the same statement with either sentence (2) or this sentence:

(3) If you ask David for a ride home, he will turn you down.

Sentence (3) might be used on one occasion to make a modal conditional statement, and on a different occasion to make a conditional assertion. What is essential to a modal conditional statement is not its syntactic character; but its meaning. A simple modal conditional rules out the possibility that the antecedent is true and the consequent false. A straightforward statement "If *A* were the case, then *B* would be the case" is false if it *is* possible for *A* to be true and *B* false: $\Diamond[A \& \sim B]$.

Not all modal conditional statements are simple and straightforward. For example, there are various kinds of counterfactual conditional. Some of these involve what I call *relative metaphysical necessity and possibility*–these are relative to a given time. One sort of counterfactual '*If A had been the case, so would have been B*' has the sense *there was a time when A was possible, and with respect to that time it was determined that* $A \supset B$. (Being determined at a time is being relatively metaphysically necessary at that time.) Other counterfactuals are considerably more complicated.

We have also seen that a conditional assertion can be appropriate in one context but not another. The conditional assertion "If Jones wins the election, then Smith will retire" presumes that Smith will live until after the election in question. When we seriously consider what would happen if Smith dies before the election, then the presumption is discounted or demoted, and the conditional assertion is no longer in force. In a similar way, a modal conditional statement can be true in one context but not another, for the presumptions governing one context may determine just what situation the modal conditional statement describes. (This is how I would try to cope with variably strict conditionals.) But I am not attempting to provide an account of all conditionals in this paper, only of conditional assertions, denials, and suppositions. My remarks about modal conditionals don't constitute a theory of these conditionals, they are intended only to distinguish this class of true or false conditional statements from the conditional illocutionary acts for which I *have* proposed a theory. There isn't room here for an account of all conditionals, and, anyway, I am not in a position to give one.

15. SUMMING UP Because conditional assertions are not statements, and don't assert conditional statements, we can understand why attempts to use standard logic to analyze these conditionals are unsuccessful. We can't give truth conditions for speech acts that don't have truth conditions. However, the close connection between conditional assertion and the assertion of a material conditional statement explains why many theorists have found it attractive to understand ordinary-language conditionals as material conditional statements. Material conditionals provide the best fit available using the resources of standard logic.

In order to provide a successful treatment of ordinary-language conditionals, it has proved necessary to reconceive the problem. Instead of giving truth conditions for conditional sentences or statements, we need to understand the commitments of conditional assertions that have no counterpart statements. This provides an account of conditional assertions that is continuous with the treatment of other conditional illocutionary acts.

The present account of conditional assertions has a number of features in common with the theory presented in *Mackie 1973*. His is a speech-act account, and he speaks of explaining conditionals "in terms of what would probably be classified as a complex illocutionary speech act." (p. 100) However, Mackie's treatment differs in many respects from the present account. His understanding of supposition isn't adequate–he fails to appreciate the actual status of suppositions, and regards a conditional assertion as an assertion within the scope of a supposition. But it isn't that one supposes the antecedent, and then "commits" to the consequent. The conditional assertions establishes a commitment from asserting or supposing the antecedent to asserting or supposing the consequent.

Mackie rejects the claim that conditional assertions are primarily used to establish (or to report) inference principles. And although Mackie thinks that typical conditionals are not either true or false (they aren't in the true-false line of work), he doesn't recognize that a conditional can be in force for one person but not another. He attempts to provide a unified (and uniform) account of conditional assertions and modal conditional statements, as well as 'even if' statements, failing to see that modal conditionals are true or false statements in contrast to conditional assertions. However, there is a clear resemblance between his theory and the present theory—they share a fundamental approach, situating an account of conditionals within a speech-act framework. What I have done corrects and supplements Mackie's account by providing the logical "machinery" needed to capture and express the distinctive character of conditional assertions.

John T Kearns
Department of Philosophy and Center for Cognitive Science
University at Buffalo, SUNY
Buffalo, NY 14260
kearns@buffalo.edu

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