

CHAPTER 4

IN DEFENSE OF TRUTH-VALUE

NTV owes much of its popularity, as well as its birth, to E.W. Adams --somewhat ironically, since his paper kicked off the contemporary literature on the truth conditions of conditionals.¹ Dormant for some years, NTV was revived by Gibbard (1981) and further fomented by Appiah (1985), Edgington (1986) and Bennett (1988).

As I have said, I reject NTV. In this chapter I shall offer some arguments against it, and then rebut the arguments for it, so that I may move on to my further truth-conditional investigations with a clear conscience.

One qualification:² I have characterized “NTV” as the thesis that indicative conditionals have no truth-values. Against that, it may be that all indicative conditionals have truth-values, but it may also be that some indicatives have truth-values and some do not. Suppose, for example, that Emotivism is true and moral judgments lack truth-value. Then a conditional with a moral judgment for a consequent (“If he has lied to his mother, that is morally wrong”) would presumably lack truth-value also, even if NTV is generally false. We should understand NTV firmly as the claim that no indicative conditional has a truth-value. But even here there are subtleties, because still in the spirit of NTV, someone might grant that noncontingent conditionals, perhaps just those that are logical truths or their negations, have truth-values even though contingent conditionals do not. I shall take this up below, in the form of an objection.

Contra NTV

The arguments against NTV are as follows.

1. Philosophical peculiarity. Of course some philosophers question the truth-conditional view of meaning (some question even the health of the very notion of truth). But if one accepts the truth-conditional view generally, as I do, the suggestion that, alone among

English declarative sentences, indicative conditionals by their nature lack truth-values is peculiar to say the least. Why would just one type of sentence, though “assertible” under specifiable conditions, be barred from truth and falsity, especially when sentences of that type admittedly have probabilities, interact in truth-seeking discourse with uncontroversially truth-valued sentences, are agreed on or disagreed over, figure in valid argument, etc.? Moreover it is very odd to talk, as Adams and Gibbard do, of a sentence’s “probability” when that term does not mean probability of being true. Further, NTV denies indicative conditionals a home in possible-worlds semantics or in any other version of a propositional theory of meaning, since as Gibbard himself puts it, NTV holds that indicatives (alone among English sentences as I said) do not express propositions at all. Even if one rejects all propositional and truth-conditional theories and inclines toward pure assertibility semantics for all of natural language, one will be hard put to explain why the assertibility-not-truth view should be so much more obviously right for indicative conditionals than for any other sentence.

And consider again the matter of indicatives that are logically or otherwise necessarily true, or (not to beg the question) that would normally be regarded even by someone otherwise inclined toward NTV as being noncontingent and maximally assertible (assertible no matter what). I think NTV ought to make an exception here; if one is generally a truth-conditional semanticist and one’s usual logic is based on the idea of truth preservation, then a sentence derivable from no premises or ruled true by one’s semantics alone should be counted as true. But this would increase the philosophical peculiarity of the now thus restricted NTV: Why would just the class of contingent indicatives be so strongly set apart from other English sentences, including even necessary indicatives?

2. Linguistic bizarreness. The claim that ordinary conditional sentences lack truth-values is grossly implausible on linguistic grounds. If we maintain that a conditional like (1a) lacks truth-value even though the corresponding temporal sentence (1b) has one, we shall have to attribute that vast semantic difference solely to the lexical difference between “if” and

“when.”

- (1) a. I will leave if you leave.
 b. I will leave when you leave.

NTV advocates are going to have to explain how it is that those two words could have virtually the same syntax but differ so drastically in their semantic treatment.

Moreover and more to the point, Chapters 1 and 2 have argued that “if” and “when” exhibit dramatic semantic similarities as well, especially in regard to modification, pronominalization, and relativization (the second and third of these both requiring semantical coreference). It would be amazing if (1a) and (1b) were semantically as similar as they have been shown to be, and yet (1a) did not even have a truth condition at all.³ And consider the locution “if and when,” as in “If and when she submits a paper, we’ll read it within a month”; does NTV award that sentence a truth-value, or not? Further, NTV would have to be extended to “unless” sentences (cf. “unless and until”) and to all variants of the “in the event that” construction (“I’ll leave in the event that she does,” “In that case I’ll leave too,” etc.), as well as “on the condition that” and the like.

The crass unlinguisticness of NTV becomes all the more evident when one applies it to the numerous languages that employ the same word for our “if” and “when.”⁴ NTV would have it that a temporal/conditional sentence of such a language has a truth condition when understood temporally, but entirely lacks one when understood conditionally. Yet speakers of such languages usually do not trouble to notice the distinction, treating “when” as simply a factive variant of “if;” the distinction is virtually pragmatic, resolved automatically by context without anyone’s noticing. Suppose you tried to tell a linguist who is a native speaker of such a language that actually the ambiguity is very dramatic, not just semantic but hyper- or metasemantic in that one of the two readings has an entirely different kind of meaning from the other’s. The linguist would think you were crazy.

3. Conditional speech acts. Conditionals can be used to perform speech acts among whose felicity conditions are sincerity and truth. Promising and vowing are the obvious examples:

(2) MARSHA: And what if I leave? Can I count on you?

JOHN: I swear it: In that case, I'll leave with you.

A truth-valueless, indeed truth-conditionless, sentence, is not a good one with which to undertake profound obligations. Suppose Marsha leaves, but John breaks his promise and stays. How can the notion of breaking a promise be explained except in terms of the truth-value of the promise's complement? (The NTV defender is not without resources here. S/he could appeal to the idea of a conditional promise and maintain that for a conditional promise, to break it is only: not to make its consequent false when its antecedent is true. But some such extra apparatus is required, and it is a bit ad hoc.)

These first three considerations of prima facie plausibility are hardly decisive. They could be overridden by a convincing direct argument for NTV. But a convincing direct argument would be needed.

4. The many parallels between indicatives and subjunctives. On the assumption (granted by Gibbard and uncontested by Adams) that subjunctive conditionals have truth conditions of the usual sort, NTV entails that indicative conditionals and subjunctives differ from each other in as fundamental a semantical way as any types of sentence could possibly differ from each other. (Gibbard seems to acknowledge this: He maintains that the superficial similarities between indicatives and subjunctives "hide... a profound semantic difference" and are "little more than a coincidence" (p. 211). If Gibbard did not exist, I would have to invent him.) But that consequence of NTV makes nonsense of the glaring parallels and analogies between indicatives and subjunctives.⁵ Indicatives and subjunctives are expressed by the same

lexemes, not only in English but in most other languages. Indicatives and subjunctives have the same syntax but for their distinctive tense and aspect differences, including their modification by “only” and “even.” More importantly, they have virtually the same logic. And they admit almost all the same paraphrases. All this is surprising, to say the least, if the two kinds of sentences differ semantically as far as any kinds of sentences might possibly differ.

The matter is aggravated if we are persuaded by Dudman’s (1983, 1984a) argument that future indicatives and the corresponding future subjunctives are semantically identical (more on this in Chapter 7). The NTV defender would have to narrow her/his thesis, and maintain just that nonfuture indicatives lack truth-value. Thus, s/he would have to hold that “If you dropped that vase [at time t], your father found out” lacks truth-value, even though “If you drop that vase, your father will find out” said prior to t is true (or false). It is hard to believe that those two sentences bear “a profound semantic difference” from each other and that their similarities are “little more than a coincidence.”

5. Embedding phenomena. Indicative conditionals embed in longer sentences, both longer conditionals and complex sentences of other sorts--including, Kremer (1987) points out, propositional-attitude constructions other than belief contexts.⁶ That fact creates two problems for NTV: (i) When a conditional occurs embedded in that way, it is not asserted, and so we will need rules for projecting assertibility values through sentential compounding that do not presuppose that indicative conditionals ever are actually asserted. (ii) A three-valued logic would be needed to accommodate embedded constructions. NTV would have to confront such sentences as

- (3) Marsha believes that John will leave if she does, and Sharon dislikes John so much that if she concurs, she will try to persuade Marsha to leave.

6. Redundant equivalences. Many indicative conditionals are logically equivalent to

brief nonconditional sentences. Consider

- (4) a. John murdered Sandra if anyone did.
- b. No one other than John murdered Sandra.
- (5) a. If Reagan is a Russian spy, no one knows he is. (Appiah (1985), p. 164)
- b. No one knows that Reagan is a Russian spy.

I do not see how Adams can accommodate such equivalences, unless in some defensible three-valued logic a truth-valueless sentence can be strictly, logically equivalent to a truth (and such a logic is surely not what Adams has in mind). Further, many conditionals are equivalent to the corresponding disjunctions. Are the disjunctions truth-valueless, or must three-valued logic be mobilized again?

A similar point can be based on universal generalizations:

- (6) Every good boy deserves fudge.

An indicative universal generalization obviously has a truth-value. So does a generalization that is formulated using pronouns that express bound variables:

- (7) Take anything you like: if it's German, it's precise.
- (8) If you're a music department, you're a snake pit.

But if ordinary indicative conditionals had only assertibility values and no truth-values, then it is hard to see how truth-values could be imparted to open indicative conditionals by the application of a universal quantifier.

7. A problem with nomologicals. As we saw in our discussion of Gallimore's Problem, an NTV defender is forced to deny that indicative conditionals follow logically from the

corresponding nomologicals. Thus (9a), a nomological truth, cannot entail (9b).

- (9) a. Every piece of iron heated to 200°C turns red,
 b. If this piece of iron is heated to 200°C it will turn red.⁷

Indicative conditionals also cannot be regarded by NTV as logically stronger than material conditionals. This is not quite for the same reason, since a truth-valueless sentence could be held to entail a true one; but the falsity of the corresponding material conditional would strangely fail to make the indicative conditional false. Of course, this is just to say that a conditional can have a true antecedent and a false consequent without being itself false, and since I reject Modus Ponens I officially agree with that claim, but on different grounds; more conventionally minded logicians should find the idea repugnant.

The upshot is that NTV simply precludes the neat and attractive picture of indicative conditionals as intermediate in logical strength between strict conditionals and material conditionals.

8. Trouble with the notion of validity. Indicative conditionals figure in deductively valid arguments, and in invalid ones. Indeed one might hold that it is the very business of indicative conditionals to figure in arguments, and that if there were no arguments there would be no conditionals. NTV makes all that hard to understand, for deductive validity is defined in terms of truth-values (as the impossibility of true premises and false conclusion, or as the nonexistence of a model in which premises are true but conclusion false).

Anticipating the difficulty, Adams originally tried to formulate a definition of a validity surrogate, “reasonableness” of inference, in probabilistic terms. Appiah (1985, Chapter 10) has examined and criticized Adams’ attempt, but sympathetically develops his own conditional logic without appeal to truth. Possibly it succeeds; at any rate I shall not try to fault it here. (See also Beall (2000).) My present argument against NTV is only that when one abandons truth-value for indicative conditionals, the problem of reinventing validity is nontrivial.

9. Subjective vs. objective modal concepts. Stalnaker (1984) points out that

...the contrast between [indicative] and [subjunctive] conditionals can be seen as a special case of a wider contrast between subjective and objective modal concepts. Possibility can be compatibility with knowledge or compatibility with objective necessities. Probability can be subjective degree of belief or objective chance. Certainty begins as an attitude or epistemic state, but can also be some kind of objective necessity. ('From that point, it was certain that the Shah would be deposed, although no one recognized it at the time.')

The contrast between 'if he killed the Pope' and 'if he had killed the Pope' parallels the contrast between 'the Pope may have been killed' and 'the Pope might have been killed'. (p. 112)

Stalnaker goes on to observe that historically, the objective modal concepts have been felt to be more problematic than the subjective/epistemic ones, and that empiricists and pragmatists, at least, have tried to explicate the former in terms of the latter, regarding the objective concepts "either as illusory reflections or as legitimate extensions of their subjective analogues." (Of course, my Event theory itself is a metaphysical idealization of an originally epistemic notion.)

Whether or not one applauds that strategy, there seems to be a systematic if hardly transparent relation between the objective and the subjective concepts, and nowhere else in the modal family is that relation manifested by truth-valuelessness of the relevant subjective statements. On the contrary; the initially dubious objective partner is usually lashed to the subjective statement whose truth condition is better understood.

10. Deflationism.⁸ Deflationist and minimalist theories of truth itself—descendants of Ramsey's and Ayer's Redundancy theory, which had it that to call a sentence or utterance true is not to predicate a special property of that sentence or utterance, but merely to repeat it or to

endorse it—has made a strong comeback in recent years (see, e.g., Horwich (1990), Grover (1992), Brandom (1993)). And it has been widely pointed out that if such a view of truth is correct, then expressivisms and other anti-realisms about subject-matters which have traditionally attracted anti-realism, such as morality and aesthetics, should not be expressed as claims of truth-valuelessness. For example, the Emotivists held that moral judgments are not true or false, but merely express conative attitudes of those who utter them. But no one has ever doubted that a moral judgment can be repeated and endorsed. So, if to call an utterance “true” is merely to endorse or repeat that utterance, it follows that moral judgments can be true.⁹

So too with NTV. Conditionals can be repeated and endorsed; so anyone who holds a deflationary theory of truth must reject NTV. I do not myself accept any version of deflationism,¹⁰ but lots of people do.

Let us turn to the arguments for NTV.

Rebutting the case for NTV

1. In expounding NTV, Stalnaker (1984) poses a rhetorical question on Gibbard’s behalf (p. 108): If an indicative conditional expresses a proposition distinct from that expressed by the relevant material conditional, the proposition is stronger than the material conditional. But then what additional information is conveyed, over and above the material conditional? Stalnaker concedes to Gibbard that “it is difficult to see” what information that is. If there is no such determinate information, the indicative does not express a proposition stronger than the material conditional. But since (as Gibbard and Stalnaker agree) the indicative conditional is not the material conditional itself, it expresses no proposition at all; hence NTV.

Rhetorical or not, the question of what additional information the indicative conditional conveys is easily answered by our Event theory. For on that theory the material conditional is the special case in which a speaker’s domain of circumstances is restricted to the actual. Thus,

the extra information conveyed by an ordinary stronger indicative is that not only in every relevant actual antecedent circumstance, but also in every relevant nonactual circumstance that is a contextually real possibility, does the consequent hold.

2. Responding (pp. 234-236) to Lewis' mention of the embedding problem, Gibbard argues the very surprising thesis that if indicative conditionals express propositions and if they embed in the way(s) we would normally expect them to, then they are material conditionals. If Gibbard is right about this, and if we are right in continuing to deny that indicative conditionals are material conditionals, then either they do not express propositions at all or they do not have the embedding feature that is our current ground for holding that they do express propositions. (Gibbard himself does deny that indicatives are truth-functional, and holds that an apparently embedded indicative either makes no real sense at all or poorly expresses some grammatically nonconditional state of affairs such as a thing's having a disposition. A similar position is taken by Woods (1997).)

One reason Gibbard's thesis is so surprising is that we have a number of non-material conditionals truth-defined in the literature, such as Stalnaker's, that certainly express propositions and embed (whether or not any of them is in fact expressed by English "if"). So we need to look at Gibbard's ingenious argument for the thesis.

It begins with the equivalence schema $A > (B > C) = (A \& B) > C$, which Gibbard says "seems...to be a logical truth" for indicatives (p. 234). He assumes, further, that (i) $A > B$ entails $A \supset B$ and that (ii) if A entails B then the conditional $A > B$ is necessarily true. Now, consider the formula $(G) (A \supset B) > (A > B)$. By the equivalence schema, (G) is equivalent to $((A \supset B) \& A) > B$. By (ii) (since $((A \supset B) \& A)$ entails B), that formula is necessarily true; so (G) is necessarily true as well. By (i), (G) entails $(G^*) (A \supset B) \supset (A > B)$, and so (G^*) must be necessarily true. But the necessitation of (G^*) is tantamount to the thesis that, assuming $A > B$ expresses any proposition at all and is embeddable, it is no stronger than $A \supset B$; **QED**.

Of course, I reject (i), since I reject Modus Ponens; but it would not be a good political

tactic to attack NTV by attacking Modus Ponens--a bit like discouraging teenage pregnancy by attacking motherhood--so I shall not make an issue of (i). Rather, why should we accept the equivalence schema itself? Stalnaker's conditional does not sustain it; nor (far more importantly) does mine. So neither of us is going to grant Gibbard's suggestion that the equivalence is a logical truth for indicatives. Gibbard himself concedes in a footnote that his equivalence principle commits him to the logical truth of $A > (B > A)$ (since $(A \& B) > A$ is surely a logical truth); he does not mind that consequence, despite its having instances like "If Harry runs fifteen miles this afternoon, then if he is killed in a swimming accident this morning, he will run fifteen miles this afternoon." So Gibbard's opponents have independent reason to deny him the equivalence principle.¹¹

3. Gibbard offers a fascinating example, which I shall call the Riverboat Puzzle, designed to show conclusively that one must accept NTV if one is to preserve Conditional Noncontradiction ($\sim((A > B) \& (A > \sim B))$). I have an alternative exegesis of the example, but I shall defer that discussion until Chapter 8, after I have surveyed several theories of the "indicative"/"subjunctive" distinction.

4. Appiah makes a gradual, cumulative case for NTV, the gist of which is that (pace Grice, Lewis and Jackson) truth conditions do no work in explaining the assertibility of indicatives as described by Adams and indeed a complete and adequate conditional logic can be formulated entirely in terms of assertibility without reference to truth. I shall briefly address this claim in the next section, after setting out Adams' famous generalization regarding the assertibility of indicatives.

Appiah adds (sec. 9.7) that indicatives behave abnormally within the scope of the truth-functional connectives "not" and "or," as would not be expected of sentences with characteristic truth conditions. Certainly there are some interesting problems in this area. But the problems concern either syntax (especially disambiguation), or assertibility itself rather than

truth-value, or claims Appiah makes as to the nonsensicalness of certain embedded constructions, which claims I reject; so I see in them no support for NTV.

6. Dorothy Edgington (1986) offers an ingenious and complex argument. In outline, it is that (a) indicatives are not truth-functional but (b) they do not have non-material truth conditions either; it follows that they do not have truth conditions at all. Since (a) is plausible (again pace Grice, Lewis and Jackson), Edgington's defense of (b) is the crux.

Attacking the hypothesis of non-material truth conditions, Edgington in effect elaborates Stalnaker's rhetorical question: If an indicative conditional expresses a proposition distinct from that expressed by the relevant material conditional, what additional information is conveyed, over and above the material conditional? She divides the hypothesis into four subcases, corresponding to the four lines of the horseshoe's truth-table definition. The first subcase (p. 22) is that in which antecedent and consequent are both true; she considers the hypothesis ("Assumption 1") that "[a] conditional ['If A, B'] has truth conditions which are not truth-functional when 'A' and 'B' are both true."

Assumption 1, Edgington says, has the "consequence" C_1 : "Someone may be sure that A is true and sure that B is true, yet not have enough information to decide whether 'If A, B' is true; one may consistently be agnostic about the conditional while being sure that its components are true (as for 'A before B')." I put quotation marks around "consequence" because Edgington herself hedges the logical relation: C_1

does not quite follow merely from the assumption of non-truth-functionality.

There are exceptions to claims of the same form. But the exceptions are special cases, which do not cast doubt on the case of conditionals. (p. 22, italics original)

(She reviews two such exceptions and argues convincingly that conditionals are analogous to neither.)

Now she insists that C_1 is false:

Admittedly, the conditional ‘If A, B’ is not of much interest to someone who is sure that both ‘A’ and ‘B’ are true. But he can hardly doubt or deny that if A, B, in this epistemic state.

Establishing that the antecedent and consequent are true is surely one incontrovertible way of verifying a conditional. (p. 24)

(She backs up this appeal to intuition by endorsing a version of Adams’ generalization aforementioned, about indicatives, assertibility and probability, on which see below.) If C_1 is false and is also a consequence or near-consequence of Assumption 1, then Assumption 1 is false; hence the conditional is truth-functional for the case of true antecedent and consequent, if it has a truth condition at all.

Edgington then proceeds to the second subcase, that of true antecedent and false consequent. A parallel Assumption 2 is made and parallel C_2 derived. Not surprisingly Edgington rejects C_2 on the grounds that if one is certain that A and certain that $\sim B$, one can hardly be less certain that “If A, B” is false. So if the conditional has a truth-value, that truth-value is determined (to be F) in the case of A true and B false. (Here as before, I could contest this immediately as a telltale manifestation of Modus Ponens credulousness, but I shall mind my manners.)

Going through the remaining two subcases, Edgington makes arguments similar to her first one (the C_1 -and-anti- C_1 argument), though more complicated. I shall not expound them, because I think the criticism I shall make of Edgington’s first argument adapts to blunt them as well.

My criticism is that, contrary to appearances, C_1 is not at all a consequence of Assumption 1. Assumption 1 is simply the claim of non-material truth conditions. As such, it may entail something nonspecific about people’s epistemic attitudes, e.g., that someone could believe that A and B are true while failing to believe their conditional. (Which certainly someone

could, because people often do.) But it does not entail C_1 ; for C_1 is specifically about certainty or being sure, and for all Edgington has shown, certainty may be a special case. That is, there may be something about the epistemic attitude of certainty in particular that makes C_1 false despite the truth of Assumption 1. The inference from Assumption 1 to C_1 is not valid-though-subject-to-hedges; it is simply not formally valid.

And more trenchantly, if the Event theory is correct, there is indeed something special about certainty: certainty directly and dramatically restricts the parameter \underline{R} , by making some possibilities non-real. Suppose I am certain that A and I am certain that B. Now consider the conditional $A > B$, explicated as “In every A-event that is a real and relevant possibility, B.” If I am certain that B, $\sim B$ is not a real possibility for me; so there is no $\sim B$ event $\varepsilon \underline{R}$. Thus, no A event that is a real possibility is one in which $\sim B$, and if it is a relevant possibility it will be one in which B. That is why the conditional will be accepted when enunciated by someone who is certain of both antecedent and consequent.¹² But again, this is a special case, because it is only the certainty that entirely rids the conditional’s reference-class of $\sim B$ -events. That is a concrete—and highly pertinent—example of why we cannot infer the falsity of Assumption 1.

7. Edgington gives a further though thematically related argument against NTV (pp. 27-28), the idea again being that although the truth-functional theory is false considered as an account of truth conditions, it is true of people’s epistemic states. Suppose you and I do not know the truth-value either of A or of B. Along comes someone who does know both truth-values. This person secretly withholds them from us, but does vouchsafe that $\sim(A \ \& \ \sim B)$.

This is enough for me to conclude that if A, B. Now, $\sim(A \ \& \ \sim B)$ does not entail ‘If A, B’. That is [would be] the truth-functional account, with all its difficulties. But belief that $\sim(A \ \& \ \sim B)$ in the absence of belief that $\sim A$ is sufficient for belief that if A, B... No non-truth-functional account [of the conditionals’ truth condition] can accommodate that fact. (italics original)

So once again, indicative conditionals have neither truth-functional truth-conditions nor non-truth-functional truth-conditions.

But is Edgington right about what we should conclude? If we are told that $\sim(A \ \& \ \sim B)$ and nothing more, especially if we know that our informant knows the specific truth-values of A and B but is refusing to reveal them to us, we must wonder about the informant's grounds. Suppose s/he knows that $\sim(A \ \& \ \sim B)$ only because s/he knows that $\sim A$. Then $A > B$ does not follow, and since we do not know that knowledge that $\sim A$ is not the informant's ground, we should not ourselves conclude, at least not in one step, that if A, B.

The New Horseshoe Theory

Impressed by some of Adams' ideas about indicative conditionals and probability, Lewis (1976) and Frank Jackson (1979,1987) have urged a compromise between NTV and truth-conditional semantics; Bennett (1988) presents it as an attractive option, though he does not officially adopt it; Thomson (1990) seems to have come upon it independently. The compromise is to concede that indicatives have truth conditions, but also (a) to maintain that despite all appearances, indicatives are after all material conditionals rather than anything stronger and/or intensional, and (b) to insist that indicatives are still very special, in that their inferential and conversational roles go by the Ramsey Test or something like it and bear only distant relations to their horseshoe truth conditions. Thus this New Horseshoe Theory agrees with NTV that for indicative conditionals assertibility is sui generis or at least does not go by likelihood of truth, and that what is important about indicative conditionals is assertibility rather than truth.

The NTV literature was inspired by Adams' Generalization:

Normal speakers' tendency to assert or assent to an indicative conditional $A > C$ varies directly with the conditional probability $\Pr(C/A)$.

Adams (1965, 1975) provides a few bits of evidence in support of the Generalization, and as

yet, no one has seriously contested it. The Generalization needs explaining, because normally we would expect a speaker's tendency to assent to a sentence S to vary with S 's own subjective probability for that speaker. The first, obvious explanation was voiced by Richard Jeffrey (1964), Brian Ellis (1969), and most trenchantly Robert Stalnaker (1970):

(Jeffrey's Hypothesis) An indicative conditional's own subjective probability is the conditional probability of its consequent upon its antecedent; $\Pr(A \supset C) = \Pr(C/A)$.

This is a neat, clean and attractive explanation of Adams' Generalization. But by a series of trivialization proofs Lewis (1976) has shown it to be false: A small set of innocuous assumptions entails that no language of which the Hypothesis is true could assign nonzero probability to more than two mutually incompatible propositions, i.e., could be more than four-valued.¹³

Lewis goes on to consider the alternative explanation suggested by Adams' own discussion:

(E) NTV is true, and indicative conditionals have merely assertibility-conditions that line up with Adams' conditional probabilities.

As I said before, anyone who wants to sustain (E) has to reinterpret talk of "probability" in such a way as to split it off from probability of truth, since on Adams' view a sentence can be "probable" or assertible even though it can be neither true nor false. Lewis agrees that such a reinterpretation could be done fairly cheaply, but he points out that to do it would neither help to explain Adams' Generalization nor lend even oblique aid or comfort to Jeffrey's Hypothesis. In view of the latter point, we cannot suppose that the "assertibility" of a conditional matches its own subjective probability. So it turns out that Adams' notion of "assertibility" is sui generis—"assertibility" for Adams is just whatever property indicative conditionals have that makes us

assert or assent to them. Thus, even if we were to reinterpret Jeffrey's Hypothesis as a thesis about assertibility rather than about probability of truth, it would be no explanation, but would merely repeat the Generalization.

Following Grice (1967/1989), Lewis now suggests a version of the New Horseshoe Theory:

(L) Indicative conditionals are in fact material conditionals, but Grice's Maxim of Quantity makes some true conditionals conversationally unacceptable [and some false conditionals conversationally mandatory--WGL]; the subjective probability of a conditional $A > C$ minus the conversational "assertibility diminution" calculated by Lewis equals a conversational "assertibility" that is also equal to $\Pr(C/A)$.

Any New Horseshoe theorist must explain the alleged divergence of assertibility from material truth condition. According to (L), what is wrong with asserting $A > C$ on the basis of $\sim A$ (despite its automatic truth given $\sim A$) is that the speaker would mislead by saying something significantly weaker than is warranted.

But Lewis raises an objection of his own to (L) (pp. 138-39): that parallel considerations ought to hold for conditionals with true consequents, but they do not. The argument Lewis directs at false antecedents does not apply to true consequents. If C is highly assertible on probabilistic grounds, then so of course is $A > C$, but Lewis' own calculation procedure does not predict assertibility diminution here. At this point Lewis moves on, saying only that he "think[s] it reasonable to hope that the discrepancies are not so many, or so difficult to explain, that they destroy the explanatory power of the hypothesis that the indicative conditional is truth-functional" (p. 139).

Jackson (1987) makes a similar appeal to probabilistic "robustness," but without relying on conversational maxims. His idea is that indicative "if" functions conventionally to signal the

robustness of the (material) conditional with respect to its antecedent--crudely, that the speaker would go on accepting the conditional if he or she came to believe its antecedent. Jackson argues on this ground that natural-language speakers would have use for a binary sentence connective “*” such that $A * C$ is assertible just in case $\Pr(C/A)$ is high.

As Appiah (1985) points out, Jackson’s conventional-implicature strategy forsakes Lewis’ irenic idea that the assertibility of an indicative conditional depends on the conditional’s (material) truth condition; the truth condition plays no obvious explanatory role at all. Thus Jackson fails to explain Adams’ Generalization if the Generalization is understood in terms of probability of truth, and (like Stalnaker) he fails to explain it nontrivially if “probability” means just assertibility. Thus the Generalization remains unaccounted for.¹⁴ Perhaps we should now ask whether it is true, for that matter; though plausible on its face, it is by no means obvious.

In fact, Edgington’s epistemic arguments for NTV suggest a criticism of the Generalization itself. Suppose I believe each of two propositions that are not only probabilistically independent of each other but mutually irrelevant in topic; but I believe the first not at all strongly. For example, at the moment I am inclined to think that there is a piece of Monterey Jack cheese in the refrigerator, though I may well be wrong about that because someone may have eaten it, and I believe that Al Gore will win the next U.S. Presidential election. I would not want to put money on the first proposition, but if forced to choose, it would be my choice. So the subjective probability I attach to the first is greater than .5 but not by much. Let us suppose that I am confident to degree .505 that there is a piece of Monterey Jack cheese. But I am considerably more so, say .85, that Gore will win. Since the two propositions are probabilistically independent, the conditional probability of the second given the first is equal to its own probability, .85. According to Adams’ Generalization, then, I should believe to degree .85 that if there is a piece of Monterey Jack cheese in the refrigerator, then Gore will win the next U.S. Presidential election.

I do not think any ordinary speaker of English, uninfected by truth-functional logic and by discussions of conditionals couched from the beginning in probability theory, would give

much credence to the sentence, “If there is a piece of Monterey Jack cheese in the refrigerator, then Gore will win the next U.S. Presidential election,” even if that speaker shared my weak beliefs in its antecedent and consequent individually.

Incidentally, I have a general reason for deploring the custom of approaching the semantics of conditionals from the direction of probability theory. It is an historical accident that the early philosophical work on conditionals was done by logicians who were interested in probability theory and to some extent in philosophy of science. However useful probability-defined conditional operators may be in technical contexts to which probability theory is already appropriate—say in quantum mechanics or in formal decision theory or in computer modelling of one kind or another—it is well known that, for good or ill, almost nothing in the human mind works by representation of probability theory in the formal sense. Unless we happen to have been supplied by nature or by artifice with a partition of possibilities, as when shooting craps or playing poker, we do not draw inferences according to the probability calculus (Nisbett and Ross (1980)), and arguably we should not (Cohen (1981), Harman (1986)); and even when we should, this is a matter of technical epistemology, not (or not at all obviously) of the semantics of our native language. So it would be very surprising if the semantics of natural-language conditionals reflected the probability calculus in any simple way.

I shall not either pursue the Lewis-Jackson-Appiah dialectic¹⁵ or further dispute Adams’ Generalization, for I have three criticisms of my own to make against the New Horseshoe Theory.

The first is that as I have argued in Chapter 1, English incorporates no binary sentential connective expressed by “if.” The horseshoe is a binary sentential connective; therefore English “if” is not the horseshoe. The Horseshoe idea is syntactically just untenable.

Yet a reply is available to the Horseshoe theorist: The theory can be understood weakly, as saying only that indicative conditionals are material in their truth conditions, not anything about syntax. The Horseshoe theorist can simply accept our syntax, if the truth

conditions can be made to come out material. And they can. For as we saw in Chapter 2, our conditionals collapse into the horseshoe if we restrict our “event” quantifier to the actual.

Indeed, this weak way of formulating the Horseshoe theory has the advantage of unifying the syntax and semantics of indicatives and subjunctives while explaining the well-known semantic differences (cf. Chapter 8): Indicatives and subjunctives are just alike, the Horseshoe theorist may say, except that indicatives’ quantifiers are restricted to the actual while subjunctives’ quantifiers roam fairly freely.

I rejoin only that indicatives are plainly not so restricted in English.

- (10) a. What if the TAs boycott the meeting?
 b. In that case we’ll adjourn for lack of a quorum.

The antecedent of such a conditional can be demonstrably nonactual, and the speaker clearly has in mind a range of possibilities which may or may not materialize.

My second criticism of the Horseshoe theory is fairly obvious, but to date I have not seen it raised in the literature against Lewis or Jackson:¹⁶ The Lewis/Jackson method cannot handle the worst material-implication paradox of all, $\sim (A > C) / \therefore A \& \sim C$. At least, I see neither conversational nor conventional reason why one might assert an instance of the premise while denying either or both of the conclusions.¹⁷ No indicative semantics can be right that does not explain the outrageously evident invalidity of that inference pattern—the most obvious explanation being, of course, that it is as invalid as it looks.

Thirdly, consider an example adapted by Sanford (1989, p. 61) from Cohen (1971):

- (11) If it is true both that if the Dean doesn’t approve your raise, then I will resign the departmental chairmanship, and that the Dean does approve your raise, then as a chairman I am both idealistic and effective.

On a truth-functional interpretation, the conditional embedded in (11)’s antecedent is redundant

on the ensuing conjunct. Thus, assuming that $A > (B \& C)$ entails $A > B$, (11) should entail

(12) If the Dean does approve your raise, then as a chairman I am idealistic.

It is unobvious to say the least how the New Horseshoe Theory might explain away our clear intuitive rejection of that entailment, or (as Sanford argues) how it might explain the relevance of the embedded conditional to my alleged idealism.

The Event theory can claim a number of further achievements and advantages that it has over other current theories of conditionals.¹⁸ But it is time to turn to a more detailed discussion of the particularly tricky “even if,” and then to the “indicative”/“subjunctive” distinction.

FOOTNOTES TO CHAPTER 4

¹ Appiah (1985) notes that the view was anticipated by Finch (1957-58).

² Here I am indebted to David Sanford.

³ Again, I am assuming that linguistic semantics is truth-conditional overall. The present point obviously would not impress someone who favored an assertibility semantics across the board. My complaint is against the idea that indicative conditionals are a surd in truth-conditional semantics.

⁴ Traugott (1985) reports that those languages include Hittite, Swahili and Tagalog. Comrie (1986) adds Mandarin; he further maintains that even German wenn has a temporal as well as a conditional sense, though surely wann is more common.

⁵ This point is emphasized to effect by Stalnaker (1984), pp. 111-112.

⁶ The significance of Kremer’s point is that although the NTV defender can plausibly construe the belief that if A, B as a subjective probability in the sense of a cognitive disposition, rather than as belief in a true or false proposition, the same treatment will not work for hoping that if A, B, wondering whether if A, B, being embarrassed that if A, B, etc.

⁷ Though for a different reason—he does not accept NTV--McDermott (1996) also denies the validity of Universal Instantiation here. He does adopt a three-valued logic.

⁸ This point was suggested to me by JC Beall and Greg Restall.

⁹ So far as I am aware, the first meta-ethicist to make this point was Smart (1984).

A.J. Ayer (1946) notoriously defended Emotivism. But as noted above, he also held a Redundancy theory of truth, in another chapter of the very same work. This is either a flat self-contradiction or as near to one as matters. I know of no one else who has noticed this.

¹⁰ See Bar-On, Horisk and Lycan (2000).

¹¹ For fuller discussion, see Kremer (1987).

A simpler version of Gibbard's argument, attributed to Geoffrey Hunter, is presented by Clark (1971): If A and B jointly entail C, then A alone entails $B > C$; therefore, since D and $D \supset E$ jointly entail E, $D \supset E$ alone entails $D > E$ for any relevant use of " $>$." Naturally, I reject the Hunter-Clark principle. Suppose my friend Bob is in fact going to retire next year. Let A be "My friend Bob will retire next year \vee In 2004 the planet Ynool will spontaneously explode, showering Europe with radioactive digital watches," which is true only because its left disjunct is. Let B be "My friend Bob will not retire next year." Those two sentences together entail "In 2004 the planet Ynool will spontaneously explode, showering Europe with radioactive digital watches." But it certainly is not true that "My friend Bob will retire next year \vee In 2004 the planet Ynool will spontaneously explode, showering Europe with radioactive digital watches" entails "If my friend Bob does not retire next year, then in 2004 the planet Ynool will spontaneously explode, showering Europe with radioactive digital watches," because the former is true and the latter is false.

¹² Actually this might be taken as an objection to the Event theory itself, because some theorists have refused to grant that certainty of A and B suffices for acceptance of $A > B$. E.g., see Pendlebury (1989), Mellor (1993) and Read (1995). I have mixed feelings about this, even though my own theory has predicted Edgington's result. Suppose I am entirely sure, á la Moore, that I now have hands at the ends of my arms. I am also entirely sure that the United States won the Battle of Midway [by a fluke, actually, on June 4, 1942]. Is Edgington right in proclaiming that I "can hardly doubt or deny" that if I now have hands at the ends of my arms, the United States won the Battle of Midway? Admittedly I am a philosopher and there is much that I can doubt, but I do not think the foregoing conditional should be obvious to anyone.

¹³ Appiah (1985) contests one premise of Lewis' argument, but allows that a revised version formulated by Carlstrom and Hill (1978) circumvents his objection by not relying on that premise.

¹⁴ Lewis' and Jackson's attempts to explain away the appearances of non-truth-functionality by predicting a divergence between assertibility-conditions and truth conditions are further criticized, to good effect, by Edgington (1986, 1995) and by Woods (1997, Chapter 4).

We might try a final suggestion:

The assertibility of a conditional is in fact controlled by perceived nearness of worlds. Now, probability is also a matter of nearness of worlds: The farther away from our world one has to go in order to find a world in which $\sim P$, the more probable P is for us here. If so, and if (say) Stalnaker's semantics for conditionals is correct, then given a true conditional $A > C$, the subjective probability of $A \& C$ will exceed that of $A \& \sim C$ by some amount, and it follows trivially that $\Pr(C/A)$ will exceed $\Pr(\sim C/A)$ by a corresponding amount. Thus, I will find a conditional to be assertible just when I perceive a Stalnaker truth condition to be satisfied, and it is in just such cases that the relevant conditional probability will exceed .5 for us; that is why Adams' Generalization holds.

This argument would need a lot more spelling out; in particular, one would have to explicate and defend its two major premises. However these things might be done, two problems would remain. First, the argument would have to avoid vindicating Jeffrey's Hypothesis (since the latter is already known to be false), and I cannot offhand see how it would do that. Second, the argument assimilates assertibility (in whatever sense) and probability both to nearness or perceived nearness of worlds, and such assimilations are impugned by the kinds of cases considered by Gibbard and Harper in their landmark article (1981) on the difference between causally and epistemically expected utilities. Epistemic "nearness" and causal similarity are just not the same, even though they have the same superficial logic. So I doubt that the foregoing suggestion would do the trick even if it were clear.

¹⁵ Except to note that Appiah has the last word, a further argument for NTV: If Jeffrey's Hypothesis is false, then we must demand a special exception to ASS, the principle that assertibility follows probability when a sentence has a truth condition. But the only two attempts to motivate such an exception (Lewis and Jackson) fail. Thus probably there is no exception; indicatives do not have truth conditions.

¹⁶ Sanford (1989, p. 62) makes it against Grice.

¹⁷ The linguist Doug Fuller has suggested to me that in fact this inference is valid and that the reason we find no instances of it in nature is that English for some reason affords no means of lexicalizing any instance of its premise. As I recall, his evidence for this suggestion was that it is hard to find any external-sounding negation of an English indicative conditional that is not heard equally well as the internal negation of that conditional. I am inclined to grant this, but notice that all it would actually prove is Conditional Excluded Middle for indicatives, not the (mysterious) inexpressibility of external negations of indicatives; the latter would need to be defended further in its own right.

¹⁸ For example, the theory affords a precise and illuminating statement of the account of “conditional perfection” sketched in Boër and Lycan (1973), as well as a particularly useful way of formulating different Reliabilist theories in epistemology; see Lycan (1984b), nn. 12, 21).