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The Material Conditional: Grice

9. THE HORSESHOE ANALYSIS: \rightarrow IS \supset

We understand perfectly the truth-functional or 'material' conditional operator that is standardly expressed by the horseshoe symbol. We define this so as to make $P \supset Q$ equivalent to $\neg(P \& \neg Q)$, that is, to

It is not the case that: P and it is not the case that Q.

This operator is *truth-functional*, meaning that the truth value of $P \supset Q$ is determined solely by the values of P and Q; the horseshoe stands for a function to single truth values from pairs of them; feed in values for P and Q and out rolls the value of $P \supset Q$.

We know exactly what the material conditional is, or what operator \supset is; its truth-functional properties constitute its whole intrinsic nature. Its verbal role in plain English and everyday thought is another question, however. Some philosophers have held that it shows up in informal thought and speech in the indicative conditional, because \rightarrow is \supset . I shall call this 'the horseshoe analysis' of indicative conditionals.

According to the horseshoe analysis, 'If Booth didn't shoot Lincoln, someone else did' means the same as 'Either Booth shot Lincoln or someone else did'. This offers us a comfortingly secure hold on conditionals of that sort. We understand \supset as well as we do anything in our repertoire; if we found it at work in ordinary speech and thought, firmly linked to one major way of using 'If...', that would be a large step towards understanding our conceptual structures. So we have reason to want the horseshoe analysis to be right. There are also reasons to think it is.

The superficially most persuasive of them has occurred to many people and has been presented with helpful clarity by Jackson (1987: 4-6). It concerns something that I call 'the or-to-if inference', and it runs as follows.

You believed Vladimir when he told you 'Either they drew or it was a win for white'; which made it all right for you to tell Natalya 'If they didn't draw, it was

a win for white'. That was all right because what Vladimir told you entailed what you told Natalya. Quite generally:

$$(1) P \vee Q \text{ entails } \neg P \rightarrow Q.$$

If 1 is correct, then so is the horseshoe analysis, as the following shows. In 1 substitute $\neg A$ for P and C for Q, and you get:

$$(2) \neg A \vee C \text{ entails } \neg \neg A \rightarrow C,$$

which is equivalent by definition to:

$$(3) A \supset C \text{ entails } A \rightarrow C.$$

Furthermore, \rightarrow is at least as strong as \supset , that is,

$$(4) A \rightarrow C \text{ entails } A \supset C.$$

The conjunction of 3 with 4 is equivalent to:

$$(5) A \rightarrow C \text{ is logically equivalent to } A \supset C,$$

which is the horseshoe analysis.

Most of this argument is elementary formal logic, and unquestionable. One might challenge the second premiss (line 4) by suggesting that $A \rightarrow C$ could be true while $A \supset C$ is false; but this looks like a forlorn hope. With one exception (§61), nobody believes that $A \rightarrow C$ can be true when A is true and C false. All that remains is to challenge the first premiss (line 1). Your or-to-if inference, from what Vladimir told you to what you told Natalya, was clearly acceptable, and line 1 embodies a *theory* about that—a conjecture about why the inference was all right. In §18, when the time is ripe, I shall argue that the facts are better explained by something that does not imply the horseshoe analysis.

Famously, the latter is open to hosts of seeming counterexamples. They come from the fact that $P \supset Q$ is true for *every* false P and for *every* true Q, so that the horseshoe analysis implies that the likes of these:

If I ate an egg for breakfast this morning, you ate a million eggs, and

If there are no planets anywhere, the solar system has at least eight planets,

are true, though each would be a silly thing to say. Most writers in this area have declared them false, contending that the meaning of $A \supset C$ lacks, while the meaning of $A \rightarrow C$ includes, the notion of A's being suitably *connected* with C. But specifying the kind of connection has not been easy, and some friends of the horseshoe analysis have stood firm, arguing that the apparent counterexamples can be explained away, leaving their preferred analysis standing.

Let us look first at Grice's way of explaining them away, and then, in the next chapter, at Jackson's different one. Neither succeeds (I shall argue); but each leads through territory that is worth exploring on its own merits, apart from its relevance to our present concerns.

10. CONVERSATIONAL IMPLICATURE

H. P. Grice held that \rightarrow is \supset , so that $A \rightarrow C$ can be true even when A is not connected with C in any way. The two conditionals displayed above, he would say, are unsatisfactory but nonetheless true; and he sought to explain why they strike us as defective, through a powerful theory which everyone now sees to have much truth in it. (He began this work in his 1961, and developed it further in some 1967 lectures that were later published in his 1989. See his 1967*a* for the theory in general, and his 1967*b* for its application to indicative conditionals. Some of it seems to have been arrived at independently by James Thomson (1990: 67–8; written in about 1963).)

The theory concerns *conversational implicature*—a phrase in which the noun points to a certain linguistic phenomenon, the adjective to a way of explaining it. The phenomenon, implicature, occurs when a statement conveys, suggests, signals, or implies something without outright asserting it. I now confess: *In February 1952, in the faculty common room at Auckland University College, I disconcerted my colleagues by spilling hot tea into the lap of the newest assistant lecturer.* You picture me spilling tea on someone else, but you are wrong. Nervous and shaky in my first day in the job, I fumblingly dumped tea into my own lap. You thought otherwise because my report suggested (signalled, implied) that my victim was someone else, and Grice's theory explains how it did so—this being where the adjective 'conversational' comes into play. It is unusual—even a touch peculiar—to refer to oneself through a definite description rather than a pronoun; you assumed that I was not speaking in an off-beat fashion; so you took my phrase 'the newest assistant lecturer' to refer to someone other than myself. Still, I told you the truth. I planned to mislead you, and succeeded; but what I said was true.

So we do distinguish what a statement says from what it 'implicates' (as Grice put it), that is, what it more weakly implies or signals or conveys other than by outright assertion. Of the many sources of such implicatures, Grice focused on one cluster, namely some broad rules of conduct governing civilized discourse:

- Be appropriately informative (give enough news but not too much).
- Be truthful (say only what you believe, and try to have only true beliefs).

Be relevant.

Be orderly, brief, clear, etc.

These, Grice said, fall under the super-principle 'Be helpful'. They create implicatures because when someone asserts something, we can draw conclusions not only from what he outright asserts but also from other things that must be true if he is playing by the normal rules of civilized discourse. I now give four examples, three of them uncontroversial.

If I say to you 'IBM shares will go up' you will infer that I believe they will go up. Why? Not because 'IBM shares will go up' entails that the speaker thinks they will, for obviously it does not. Grice's ideas provide an explanation (though not the whole story). When I say 'IBM shares will go up', you are entitled to assume that I am playing by the rules, including the one enjoining us not to say what we do not believe; so you can reasonably infer that I believe IBM shares will go up, inferring this not from *the proposition I assert* but rather from *the fact that I assert it*. The proposition itself remains chaste, unsullied by any content about my beliefs.

If someone says 'He saw Lobatchewsky's proof of the theorem, and published his own', this conveys that he saw Lobatchewsky's proof first. How? Some philosophers used to attribute it to the sentence's meaning, contending that 'and' in this sentence means 'and then'. The sentence-joining 'and' sometimes conveys no thought of temporal sequence—'Nine is three squared and there are nine planets'—so these philosophers had to call 'and' ambiguous. It is usually bad in philosophy to postulate a multiplicity of senses of a word, and Grice offered an escape from this. He held that the sentence-joining 'and' is truth-functional: a sentence using it is true if each of the joined sentences is true, and otherwise false; so its meaning contains nothing temporal, and thus the Lobatchewsky sentence does not mean anything about temporal order. It suggests to us that the person saw the other proof before publishing his own because we assume that the speaker is presenting his narrative in an orderly manner, which usually involves making *its* order correspond to that of the reported events. Because this is a general rule of good conversational conduct, we are entitled to expect a speaker not to depart from it without signalling the departure ('Meanwhile, back at the ranch . . .', 'Before all this . . .'). In the absence of such a signal, we are inclined and entitled to infer that the narrative order matches the order of the narrated events, which explains the temporal suggestion of the Lobatchewsky sentence, and of 'They got married and they had a baby' and the like. (This kind of orderliness may be flouted for artistic purposes, as happens in unsignalled flashbacks in some of Vargis Llosa's novels.)

Some philosophers have thought that the sentence-joining 'or' is not \vee , because it is not strictly truth-functional in its meaning. If it is, then 'P or Q' is true just so long as P is true or Q is true, so that I am speaking truly when I say 'Either my father was F. O. Bennett or my father was Stafford Cripps'. Some would hold that this statement is not true, given that I know my father to be F. O. Bennett. It is part of the meaning of the sentence-joining 'or', they have said, that the speaker does not confidently believe, or confidently disbelieve, either disjunct.

This might explain why we wrinkle our noses at a disjunction that someone asserts just because she believes one disjunct. It has drawbacks, though, including a renewed threat of ambiguity. In playing games, giving tests, teasing, etc., it can be proper to assert a disjunction when you know which disjunct is true. For example, an acquaintance cannot remember when we first met, and I tease him with a hint: 'It was either at the Eastern Division meetings in 1956 or in Cambridge in 1963.' This is wholly proper; yet it involves asserting a (slightly compacted) disjunction when one knows which disjunct is true. So even if 'or' sometimes means that the speaker is not sure which disjunct is true, it plainly sometimes does not; so it must be ambiguous.

Grice explained the facts differently. The injunctions 'Be informative' and 'Be brief' tend to pull in opposite directions, and sometimes we have to compromise. But if someone asserts 'P or Q' when she is sure that P, she offends against both rules at once: she could be more informative *and* briefer; or, if she believes both disjuncts, she could say 'P and Q', thereby saying much more at no greater length. This entitles us to expect, normally, that someone who asserts a disjunction is not confident of either disjunct taken on its own; so we do in general expect this; so in asserting a disjunction one implies or signals that one is not confident of either disjunct. If the context provides a special reason to be less informative than one could be—e.g. because one is testing, teasing, playing, or the like—the implication of uncertainty drops out. So the sentence-joining 'or' has only one meaning, namely the truth-functional one, and we can explain all the intuitive evidence seeming to go against this.

Now, fourthly, we come to the thesis that \rightarrow is \supset . You can guess how a Gricean defence of that will go. We generally think it absurd to assert $A \rightarrow C$ purely on the grounds that one is sure that $\neg A$ or sure that C; but this is consistent with $(A \rightarrow C)$'s being true in such a case (and thus with \rightarrow 's being \supset), its unsatisfactoriness coming from a different source. Grice based this on the same points about brevity and informativeness that we saw at work in arguing that 'or' is \vee . That is to be expected, because according to the horseshoe analysis $A \rightarrow C$ really is a disjunction. On this account, it would be absurd but not untruthful to say 'If

the speed of light is finite, then bananas are usually yellow'. This conditional is true because its consequent is true; but it would ordinarily be a silly thing to say because one could say something stronger yet shorter: 'Bananas are usually yellow.'

I shall need §12 to set the scene for explaining in §13 why the theory of conversational implicature fails in the task of reconciling the horseshoe analysis with our intuitions. Before all that, I shall discuss an aspect of Grice's theory that is too important to neglect.

11. SEMANTIC OCCAMISM

In all but the first of my four examples, Grice's *general* theory of conversational implicature offers to explain facts that would otherwise have to be explained through the meanings of *individual* words. So if we have grounds for attributing thin meanings to those words—taking 'or' to mean \vee , and 'and' to mean $\&$ —Gricean theory enables us to defend those semantic views against seeming counter-evidence, thus keeping the meanings thin. In some of his work, Grice contended that if we *can* keep the meaning of a word thin then we *should*. His theory of conversational implicature, he held, can do more than merely defend something arrived at on other grounds; it provides a positive reason for holding that the meanings of 'or' and 'and' are purely truth-functional, and thus thin.

He based this on a variant on Occam's Razor: *Sensus non sunt multiplicandi nec magnificandi praeter necessitatem*; don't postulate more senses, or thicker ones, than you have to. The two constraints are connected: if you put too much into the meaning of a word in some of its uses, you will have to plead ambiguity—'multiplying senses'—to cope with other uses from which some of this meaning is absent (Grice 1987: 47–9). We have already seen this illustrated. If 'and' sometimes means 'and then', then it must be ambiguous because sometimes it plainly does not mean that. Similarly with 'or' and uncertainty. The unspoken premiss here is that ambiguity claims in philosophy and semantics are a source of danger, and should be avoided as far as possible.

When Grice urged us to assign thin meanings to words, this was not only so as to keep down attributions of ambiguity. *Sensus non sunt magnificandi* . . .—he meant this injunction to stand on its own feet. Suppose we have two rival accounts—call them Lean and Fat—of the meaning of some word W. Fat attributes to W all the meaning that Lean does, plus some more. Lean explains certain facts about W's role in discourse partly through the meaning it attributes to W and partly through general principles of language use. Fat, on the other hand, explains all those facts through the meaning it attributes to W. In Grice's view,

this difference counts in favour of Lean, because it makes less appeal to the highly specific—the idiosyncrasies of the individual word—and handles more of the data in terms of what is highly general; and that leads towards greater understanding and intellectual control. A full account of any language must, of course, include facts about individual words. How people might use or respond to 'There's a snake in that bush' depends in part on what 'snake' means, as distinct from 'steak' or 'rhinoceros'; you cannot get the whole story out of general principles. This need to come down to the level of specificity marked by individual words makes language study unlike physics, say. But the scientific spirit commands us to keep such specificity to a minimum; which encourages and perhaps justifies Grice's preference for thin single-word meanings, assigning much of the work to general rules governing civilized discourse.

(Why do you contrast the relatively *specific* facts about individual words with *more general* facts about language use, rather than contrasting *particular* facts about individual words with *general* facts about language use? Because the words in question are universals, not particulars. The facts about what 'snake' means are facts about what many tokens of the word—instances of that universal—mean. So the needed contrast is not of particular with general, but of less with more general.)

Strawson (1986) has criticized Grice's treatment of indicative conditionals by attacking the Occamism it involves. The criticism, though wrong, is instructive. In its background is Strawson's conjecture that $A \rightarrow C$ means something like:

There is a connection between A and C which ensures that: $A \supset C$.

Because of what comes before the colon, this gives to \rightarrow a stronger meaning than Grice accorded it. Strawson calls his 'if' a first cousin to 'therefore'. At the end of the paper he offers two counter-arguments of which one—in the final paragraph—seems to relate wrongly to Grice's theory and to Strawson's other argument. The latter goes as follows. Whatever the actual truth about 'if', there *could* be a connective that means what Strawson thinks 'if' means, whereas Grice's line of thought implies that there *could not*. Grice should predict that if a language contained a Strawsonian conditional operator, all its extra strength would be drained off into the principles 'Be informative' and 'Be brief', leaving the operator itself with no need to carry (and therefore, according to semantic Occamism, *not* carrying) any more meaning than \supset . Grice's position is guilty of overkill, Strawson concludes, and so must be wrong.

Strawson does not remark that if his point is sound, it counts not just against Grice's account of \rightarrow but against his Occamism generally. It could equally well

have been brought against the Gricean cases for equating 'or' with \vee and 'and' with $\&$. It generates things like this:

There could be a connective 'uns' such that 'P uns Q' conventionally meant 'P and Q are not both false, but I am not sure about the truth value of either taken separately'. Grice's Occamism, however, implies that no connective could retain such a thick meaning. All the meaning of 'uns' beyond its truth-functional \vee component could be—and therefore according to Grice should be—explained in general conversational terms, and not assigned to 'uns' in particular.

This is disturbing, because Grice was plainly right about 'or', and yet 'uns' as described seems to be *possible*.

Fortunately, Strawson is wrong about Grice's commitments. Grice might have to say that we, with our actual practices and forms of life, could not have a Strawsonian 'if'; but he could comfortably allow that there could be societies that had it. Suppose a society where people often give disjunctive information—something meaning 'Either A is false or C is true'—although they knew which disjunct was true. They might do this, for example, in games, intelligence tests, initiation rites, or teasing. Given enough of this kind of disjoining, work could be done by a connective whose conventional meaning was that of 'It is not the case that A is true and C false, and this is not one of those deliberate withholdings of information'. That could be 'uns', or the Strawsonian 'if'.

Strawson may have meant his argument to have the premiss that we—in our actual language, with our actual ways of life—could have a conditional connective that is a first cousin to 'therefore'. But *that* premiss is far from self-evident, and Grice gave reasons for thinking it false.

Semantic Occamism, important and true as I think it is, turns out to have little direct bearing on the horseshoe analysis of indicative conditionals. The Occamism debate turns on this question:

If the facts about the use of expression E—including ones about what uses of it would be found peculiar or unsatisfactory—can be explained either by (1) attributing to E a fat meaning or by (2) attributing a thin meaning and bringing in Gricean conversational principles, are we intellectually obliged to adopt 2?

This question gets a bite on the horseshoe analysis of \rightarrow only if the facts about the latter *can* be explained by equating it with \supset and bringing in Gricean principles. They cannot. Grice thought otherwise because he had not considered enough of the data. A certain thesis about the propriety of indicative conditionals, now widely accepted, gives us a sounder idea than Grice had of what he

needed to explain; and in the light of this we shall see that his theory of conversational implicature falls short.

12. THE RAMSEY TEST

The thesis in question was first presented by Frank Ramsey in 1929. Ernest Adams has greatly developed it in the past twenty years, and Frank Jackson—one of many who accept it—has actually called it 'Adams'. What happens when one considers whether to accept an indicative conditional? In a famous footnote Ramsey said this:

If two people are arguing 'If A will C?' and are both in doubt as to A, they are adding A hypothetically to their stock of knowledge and arguing on that basis about C. . . . We can say they are fixing their degrees of belief in C given A. (Ramsey 1929: 143)

The core of what is going on here has been compactly stated by Gibbard, who attributes to Ramsey

the thesis that, in whatever ways the acceptability, assertability, and the like of a proposition depend on its subjective probability, the acceptability, assertability, and the like of an indicative conditional $A \rightarrow C$ depend upon the corresponding subjective conditional probability. . . . (Gibbard 1981a: 253)

. . . and then he uses a formula that I shall introduce later, meaning 'the amount of credence one gives to C on the supposition of A'. The phrase 'acceptability, assertability, and the like' is deliberately open and vague; we shall later pin it down.

So the core idea is that of conditional probability: the probability one assigns to C on the supposition of A. This is what Ramsey's phrase 'degrees of belief' points to, and we shall see that the concept of conditional probability has dominated most thinking about indicative conditionals since Grice.

Gibbard, like many others, calls the Ramseyan procedure for evaluating a conditional 'the Ramsey test'. Some of us have been encouraged in this usage by thinking that in Ramsey's procedure, as one writer has put it, 'we take our stock of beliefs, add the belief that A to the stock, and see whether our new stock of beliefs contains C'. This is a *test*, all right. Drop some of that liquid into this, stir, and see whether it turns blue; drop A into your belief system, stir, and see whether you turn C. However, it gives the wrong answer for some indicative conditionals, and it does not quite capture the spirit of Ramsey's remark.

This is shown by a certain class of examples that van Fraassen (1980: 503) says were first adduced by Richmond Thomason. I might accept 'If my business part-

ner is cheating me, I will never realize that he is'; but when I pretend to accept 'My partner is cheating me' and whatever flows from that in my belief system, I find myself also pretending to accept 'I am aware that my partner is cheating me'. So the conditional fails the quoted version of the Ramsey test, yet the conditional may be perfectly all right. What has gone wrong, obviously, is that in this case my pretended belief that I am aware that he cheats has been produced as a by-product of my thought-experimental method, and not as a result of inferring 'I believe he cheats' from 'He cheats'. So it has no bearing on the evaluation of the conditional, and we should state the Ramsey test in a way that allows for this.

The statement of it that I have criticized has been common in the literature, and I have been guilty of it myself. There have also been better versions, but I have not found any that with perfect clarity steer around the difficulty created by the Thomason examples, though Harper (1981: 5) comes close. Here is my attempt:

To evaluate $A \rightarrow C$, I should (1) take the set of probabilities that constitutes my present belief system, and add to it a probability = 1 for A; (2) allow this addition to influence the rest of the system in the most natural, conservative manner; and then (3) see whether what results from this includes a high probability for C.

This does not involve pretending to believe A. Rather, it is a matter of seeing what results when A is added to a certain system of assignments of probabilities to propositions. The word 'test' is not entirely inappropriate even now, and I shall retain it for old time's sake.

The Ramsey test, as well as not being a matter of pretending to believe anything, is also not a matter of considering what you *would* believe if. . . . It is easy to get this wrong, and to think that the Ramsey test amounts to this: to evaluate $A \rightarrow C$, consider what probability you would accord to C if you became certain of A. We were first warned against this by Ramsey himself (1926: 82). If it were right, according a high probability to C on the supposition of A would be—roughly speaking—being such that if one came to accept A one would also come to accept C. It is not hard to see the flaw in this. As an atheist I accord a low probability to the proposition that God exists; and my probability for *God exists* on the supposition that I have terminal cancer is equally low, of course. Yet if I came to be sure I had terminal cancer, perhaps my weakness and fear would seduce me into religious belief. If so, then what I would believe if I came to believe A is irrelevant to my probability for $A \rightarrow C$. I shall return to this in §49.

Most theorists of conditionals accept the Ramsey test thesis for indicatives. Two dissenting voices should be mentioned.

Peter Gärdenfors has argued against a version of the thesis: he conjoined it with some assumptions about belief revision generally, and derived a contradiction. Dorothy Edgington (1995a: 73–4) has challenged one of the assumptions, namely:

(P) If a proposition B is accepted in a given state of belief K, and A is consistent with the beliefs in K, then B is still accepted in the minimal [viz. rational] change of K needed to accept A. (Gärdenfors 1986: 82)

Gärdenfors accepts this, Edgington says, only because he is thinking only of all-or-nothing acceptance and rejection, without giving play to degrees of acceptance or subjective probability. When the latter comes in, thesis P loses its plausibility. It can easily happen that you learn something A that is consistent with your present belief state, and that this discovery brings your confidence in B from ≈ 1 to ≈ 0 . I shall not pursue this matter here, but for a certain light on it see my explanation of 'monotonic' in §32. For helpful discussion, and references to more of the Gärdenfors literature, see Hansson 1992, 1995.

Levi (1996: 8–15) contends that most of us have misunderstood what Ramsey meant. This is part of a larger concern of Levi's with different things that may be going on when one reasons from premisses that are supposed 'for the sake of argument'. His formidable work on this topic has defeated me. I hope my main conclusions in this book are not undercut by it.

The Ramsey test thesis does not hold for subjunctive conditionals. I think that if Yeltsin had been in control of Russia and of himself, Chechnya would have achieved independence peacefully; but for me this conditional does not pass the Ramsey test. When I take my present system of beliefs, add to it the proposition that Yeltsin was firmly in control of Russia and of himself at the time in question, and allow this to ramify through the rest of the system in the most natural and conservative manner, the result does *not* accord a high probability to 'Chechnya achieved independence peacefully'. The supposition about Yeltsin will make differences, but not that one. Rather, it will lead to changing my views about the unreliability of the media, the subtlety of the concept of control, and so on.

13. RAMSEY AND GRICE

The literature on indicative conditionals is a parade of attempts to explain why the Ramsey test is a valid criterion for their acceptability. This—the Ramsey test thesis—is not explained by the conjunction of the horseshoe analysis and Grice's theory of conversational implicature. Indeed, it conflicts with that conjunction, serving to refute it. Because the Ramsey test thesis is true, we cannot equate \rightarrow

with \supset and explain the apparent counterexamples through conversational implicature.

The failure of match between Grice and Ramsey is not total. Both condemn the asserting of $A \rightarrow C$ just on the grounds that one believes C, or disbelieves A, or both, without giving much credence to C on the supposition of A. My confidence that Polynesians didn't come from India convinces me that *Polynesians originally came from India* \supset *Most Maori speak Sanskrit*, and thus, according to the horseshoe analysis, that *If Polynesians originally came from India, then most Maori speak Sanskrit*. Grice would frown on my asserting this, because I could in fewer words say something stronger, namely: *Polynesians did not originally come from India*. The Ramsey test frowns also, because the supposition that Polynesians originally came from India, when added to the rest of my belief system with suitable adjustments made, does not generate a high probability for *Most Maori speak Sanskrit*. In this case, then, Grice and Ramsey pass the same judgement.

But they do not coincide across the board, and the discrepancies all suggest that Grice's theory of conversational implicature, though shiningly true, cannot defend the horseshoe analysis against apparent counterexamples. Perhaps the earliest solid attack on this project was that of Brian Ellis (1978: 114–19); it was followed up by Frank Jackson (1979: 112–19), Brian Skyrms (1980: 83–7), and Dorothy Edgington (1986: 181–3). I shall be guided by Jackson's attack, presenting five of its highlights in my own words.

(1) If I am sure that $\neg A$, Gricean principles automatically proceed to frown on my asserting $A \rightarrow C$, because I could say more in fewer words. In fact, however, it can be acceptable to assert an indicative conditional whose antecedent one is pretty sure is false. I am virtually certain that the Polynesians didn't originally come from India; but it is all right for me to think and say 'If the Polynesians did come from India, there have been inhabitants of India whose language was not Indo-European'. What makes this all right is its passing the Ramsey test: in my belief system, the consequent is highly probable on the supposition of the antecedent. Score one for the Ramsey test over the Gricean approach.

(2) Grice is also committed to saying that $A \rightarrow C$ is not very assertible by someone who is sure that C is true, because it would be more informative and less wordy for him to assert C outright; but no such thing results from the Ramsey test. Suppose I am sure that C is true, and am also sure of C given A; that means that for me $A \rightarrow C$ passes the Ramsey test. In at least some examples of this divergence Ramsey is clearly right and Grice wrong. 'I'm sure he means well by me.' 'Even if it was he who persuaded them not to promote you?' 'Even then.' This reply here means 'Even if he persuaded them not to promote me, he means well

by me'; the respondent (implicitly) says this so as to indicate that the consequent is, for him, highly probable even on the supposition of the antecedent. Ramsey takes account of this, while Grice does not, so once again Grice's approach does not do justice to the data.

If Grice's regulative principles failed to condemn something bad, a Gricean might be able to amplify them, making the theory more condemnatory. But when, as in these two objections, Gricean theory condemns something innocent, there is no rescue.

(3) Jackson's third argument against the Gricean defence of the Ramsey test amounts to the point that every logical truth is entirely uninformative, telling us nothing about the actual world, and yet some logical truths are assertible while others are not. This point has no special relevance to conditionals, and draws little blood from Gricean theory, which does not offer 'Be informative' as the whole truth about how discourse should be conducted. In my opinion, *any* theory of speech and communication must handle the assertibility of logical truths with cautious delicacy—this challenges all of us.

(4) Jackson usefully compresses some of Grice's principles into this: 'Assert the stronger instead of the weaker (when probabilities are close).' He remarks that this does not distinguish among logically equivalent sentences so far as assertibility is concerned, since they are all equally weak; yet they can differ in assertibility. He instances a pair of statements related as $\neg A \ \& \ (A \rightarrow C)$ is to $\neg A \ \& \ (A \rightarrow B)$, which are logically equivalent according to the horseshoe analysis—because each is equivalent to the shared antecedent $\neg A$ —but which differ in how assertible they are. Jackson cites the examples 'The sun will come up tomorrow, but if it doesn't it won't matter' and 'The sun will come up tomorrow, but if it doesn't that will be the end of the world'. This point of Jackson's seems to be sound.

Some of the best evidence for it has to do with contraposition, that is, the relation that holds between $A \rightarrow C$ and $\neg C \rightarrow \neg A$. According to the horseshoe analysis these are strictly equivalent, because $A \supset C$ and $\neg C \supset \neg A$ are so. But it often happens that $A \rightarrow C$ is acceptable or assertible for someone for whom its contrapositive is not. I accept that *even if the Bible is divinely inspired, it is not literally true*; but I do not accept that if it is literally true, it is not divinely inspired (§59).

Grice's 'Assert the stronger' cannot explain the difference between the members of a contrapositive pair; and, although his account of conversational implicature contains other elements, none of them do—none *could*—explain how a conditional can be preferable to its contrapositive. This explanatory job, it seems clear, requires us to credit 'if' with more meaning of its own than \supset has; general principles could not do it.

(5) Jackson also has an argument from classroom experience. Gricean theory offers parallel explanations for two supposed facts: that 'if' as used in indicative conditionals seems not to be truth-functional though really it is, and that the sentence-joining 'or' seems . . . etc. Students easily accept the story about 'or', Jackson remarks, whereas most of them strenuously resist the story about 'if'. This does indeed suggest that Gricean theory is less than the whole story, and that a convincing answer to 'Why does \rightarrow seem not to be truth-functional?' cannot be expected from general principles, and must owe something to the meaning of \rightarrow in particular.

Jackson's attack on Grice's attempt to defend the horseshoe analysis wholly succeeds, I think. Among those it converted was David Lewis. He offered a partial explanation of the validity of the Ramsey test through Gricean principles, but later said that for the test's basis he no longer looked to Grice but rather to a theory of Jackson's to which we now turn. (Lewis 1976: 142–3; 1986e: 152–4. Like Appiah (1985: 178–9), I have had to struggle to grasp how Lewis meant his explanation to work.)

3

The Material Conditional: Jackson

14. SETTING THE SCENE

Jackson also accepts the horseshoe analysis according to which \rightarrow is \supset . Or, more carefully now, he holds that the truth conditions of $A \rightarrow C$ are those of $A \supset C$, and what is outright asserted by someone who says one is the same as what is asserted by someone who says the other. Grice said this too, but Jackson handles the apparent counterexamples differently, giving primacy to the Ramsey test thesis (1987: 22–32).

In presenting these materials, I shall follow Jackson's use of the technical term *robust*. This word stands for a concept that is present in the Ramsey test: to say that for me Q is fairly (very) robust with respect to P is to say that I accord Q a fairly (very) high probability on the supposition that P is true. In these terms, the Ramsey test thesis says that $A \rightarrow C$ is acceptable or assertible by me to the extent that for me C is robust with respect to A .

When Jackson first launched this concept he had in mind cases where someone assigns a high probability to C as well as to C -given- A ; this person's fairly confident belief in C is 'robust' because the confidence can survive his also coming to believe A (Jackson 1979: 115). In later work Jackson expressed respect for 'a more general account' in which the robustness of C with respect to A requires only a high probability for C -given- A (Jackson 1987: 22). That is what we need; the restricted version does not belong in any general account of indicative conditionals. Although 'robust' does not carry well the meaning the more general account gives it, I shall continue to use it; but I shall always be working with the more general account.

Jackson helps us to get the Ramsey test in focus by exhibiting the role of robustness in our linguistic lives generally, and not only in relation to conditionals. For example, he remarks that usually a disjunction is assertible only if it is robust with respect to the falsity of each disjunct, because disjunctions are

commonly used in inferences of the form 'P or Q; not P; so Q', which are useless if one accepts the first premiss only because one rejects the second. Through an elegant example on p. 23 he shows how his approach—emphasizing the need for robustness so that certain inferences will go through—can explain facts which Gricean principles about brevity and informativeness cannot.

We mainly want indicative conditionals, Jackson says, for use in Modus Ponens—that is, arguments of the form:

$$A \rightarrow C, A \therefore C$$

—but a given instance of $A \rightarrow C$ fails for this purpose if one accepts it mainly because one rejects A or accepts C . Think of $A \rightarrow C$ as serving in Modus Ponens like a ticket for a particular rail journey: while you reject A , you are not at the place where the journey starts; while you accept C , you are already where it ends. Either way, the ticket gets you nowhere. So it suits our purposes to frown on indicative conditionals, even true ones, if their consequents are not robust with respect to their antecedents.

Robustness is needed for an indicative conditional to be acceptable, but, Jackson points out, it is not in itself sufficient (pp. 15–16). Some assertings of conditionals that pass the Ramsey test are nevertheless unsatisfactory for Gricean reasons; so the Ramsey test thesis does not make the Gricean approach irrelevant to indicative conditionals—it merely blocks it from reconciling the horseshoe analysis with all the data. Up to here, I entirely agree with Jackson.

15. CONVENTIONAL IMPLICATURE

Why does the Ramsey test hold good for indicative conditionals? Having shown that this cannot be answered through purely general principles of discourse, Jackson concludes that the test's validity must come from the meaning of 'if' as used in those conditionals. The semantic truth about the 'if' of indicatives, he holds, is not exhausted by the thesis that \rightarrow is \supset ; there is more to its meaning than this. That will be warmly endorsed by those who reject the horseshoe analysis, but Jackson *accepts* that analysis: according to him, someone who asserts $A \rightarrow C$ *asserts* only $A \supset C$, so that if the latter is true he has spoken truly. But, he adds, the speaker also conveys to his hearers something further that he does not assert but merely implicates—suggests or signals or implies. Grice said that much; but the two disagree about the source of this further implicature or suggestion. Grice traces it to the hearers' expecting the speaker to abide by certain general rules; Jackson traces it to the conventional meaning of the indicative 'if' in particular. It is, he says, borrowing a term from Grice, a matter of 'conventional implicature'.

This phrase names a real phenomenon. For an uncontroversial instance of it, compare these two sentences:

- (1) Noam Chomsky would be a good Commencement speaker, and he is the country's most famous radical left-winger.
- (2) Noam Chomsky would be a good Commencement speaker, but he is the country's most famous radical left-winger.

Each conjunction is true so long as both its conjuncts are true. They differ, however, because 2 suggests, as 1 does not, that the two conjuncts stand in some kind of contrast. (One might have to work out what contrast it is. Many of us followed Frege in thinking that '... but ...' always suggests that the first conjunct makes the second surprising, but Dummett (1973: 86) has shown this to be wrong. Someone who utters 2 may mean to contrast a good feature of a Chomsky visit with a bad one; or—thinking that Chomsky's fame would prevent his acceptance—to contrast the visit's being desirable with its being unachievable.)

Other words in our language also serve to suggest things without their being outright asserted. One such is the word 'even', according to the majority view about it. If someone says 'Bertrand Russell was an even more boldly athletic thinker than G. E. Moore', this is defective because it falsely suggests that Moore was a boldly athletic thinker (Russell was 'even more' so), but what it actually says is true, for Russell was a more boldly athletic thinker than Moore. (Not all students of 'even' take that view of it: for reasoned dissent, see Lycan 1991 and 2001. I shall return to 'even' in Chapter 17.)

So we can distinguish what is said from what is more weakly implied; and if a speaker implies something false, we characterize his statement not as false but as infelicitous, potentially misleading, or the like. Grice has called our attention to things that an assertion may weakly imply because of general principles of discourse—these are *conversational* implicatures. Now we encounter weak implications arising from special facts about the conventional meanings of individual words such as 'but', 'even', 'although' and so on—these are *conventional* implicatures.

How do we decide that the two Chomsky sentences have the same assertive force? If in 2 you do not see any significant contrast between the conjuncts, you will find 2 inappropriate or misleading, but you should not call it false unless you reject one of the conjuncts. Or so I say, but on what evidence? What *shows* that the contrastive element in the meaning of 'but' is a matter of implication rather than outright assertion? When a Gricean theorist declares a given utterance to

be false in what it *con conversationally* implicates but not in what it outright says, he sometimes has a firm, structural answer to the question: 'On what basis do you decide that the communicated falsehood is only implied and not said?' He can reply:

If you assert something false, the falsehood comes from a relation between reality and the sentence you have uttered; it depends strictly on what *that one sentence* means. But when I say that the utterance of an indicative conditional involves falsehood by way of conversational implicature rather than assertion, that is because there falsehood enters the picture only through certain *general principles* to which the speaker is taken to be subject.

This is clear-cut and objective. Now return to my question about 'but'. The obvious basis for maintaining that 'She was poor but honest' is defective only in what it implies, not in what it says, is the fact that the most natural dissent would not be 'That is not true' but rather 'You may be right that she was poor and honest, but I wouldn't put it the way you did'. Similarly with sentences that do not have truth values—questions, for example. I might ask 'Did John make a donation?' or 'Even John made a donation, did he?'; each asks the same question though the latter insinuates something that the former does not.

These intuitive responses, which Jackson acknowledges to be the only evidence for judgements about conventional implicature (1981: 133; 1987: 40–1), are a fragile basis for theoretically distinguishing assertion from conventional implicature (§106). That the distinction is a matter of theory is shown by the fact that one theorist has questioned it (Appiah 1985: 190–1). But Jackson puts it beyond serious question, in my opinion, in the convincing fifth chapter of his 1987 book, where he explains why we should have conventional implicature at all—what role it plays in our linguistic lives. This chapter establishes that conventional implicature does exist and that the standard account of it describes it correctly.

In discourse, says Jackson, we primarily aim to affect one another's beliefs; the asserted content of what someone utters fixes the belief she wants to communicate, and conventional implications can help her to achieve this by removing obstacles:

If I say 'Hugo is bad at mathematics; nevertheless, he is a fine chess player', what I want you to believe is that Hugo is a fine chess player, not something else. The role of 'nevertheless' is to guard against your refusing to accept my word because you think I am ignorant of the general, but not universal, connection between ability at mathematics and at chess, or even perhaps your thinking that I am in the process of revamping my system of beliefs. (Jackson 1987: 94)

What belief I want to communicate determines what I outright say or assert, according to Jackson; and what my statement conventionally implies or signals helps me to get this belief across smoothly and without needless fuss. This is in the spirit of Locke, who wrote that two of the three 'ends of language in our discourse with others' are: 'First, to make known one man's thoughts or ideas to another. Secondly, to do it with as much ease and quickness as is possible' (*Essay Concerning Human Understanding* III.x.23).

These ideas of Jackson's help to round out and solidify our notion of conventional implicature. Let us now see whether it helps Jackson in his use of that concept to explain why the Ramsey test holds for indicative conditionals.

(Jackson says that 'but' is governed by a special rule of *assertibility*, against which Woods (1997: 61 n) made the point that there is more to it than that. The special flavour of 'but' is at work in 'If she was born in Turin, but left when she was three, she doesn't know Italy well', though the clause containing it is not asserted. Apparently unlike Woods and Edgington (1997a: 103–4), I do not see this as greatly harming Jackson's basic position, but a related point by Read (1992: 11–12) has power. Kent Bach (1999) emphasizes the behaviour of 'but' and its kin in indirect quotation ('He said that she was poor but honest') in an attack on the entire category of conventional implicature. The attack, though considerable, does not convince me that my dissent from Jackson should start earlier than it does.)

16. THE CASE AGAINST JACKSON'S THEORY

When someone asserts $A \rightarrow C$, Jackson maintains, he *says* only that $A \supset C$ but he *implies* that for him C is robust with respect to A . This is a conventional implicature, he contends, belonging to the class of phenomena he describes so well in his fifth chapter. Speaking of the parallel between how $A \rightarrow C$ relates to $A \supset C$ and how 'but' relates to 'and', Jackson says that 'the parallel . . . is intended to be exact' (1987: 9, 37).

He needs it to be exact. We have asked what connects indicative conditionals with the Ramsey test. What fact *about* them makes it the case that $A \rightarrow C$ is satisfactory only for someone for whom the probability of C given A is high? Jackson answers that the two are linked by the meanings of the conditionals. The Ramsey test need not be deduced from general principles: it sits there, in a lump, in the meanings of the conditionals for whose assertibility it is a valid test. Jackson's explanation of *how* it sits there brings in a concept of conventional implicature for which he offers a general theory. Without the latter, his account of how indicative conditionals come to have the Ramseyan property would be

empty, or at least ad hoc and unexplanatory. So he really needs there to be an 'exact' or at least a close parallel between his treatments of 'if' and of the likes of 'but' and 'even'.

Jackson does acknowledge one awkwardness of fit, though he does not describe it as such (pp. 38–9). With each of his other examples of conventional implicature, he acknowledges, what a speaker conventionally implies may be true even if what she asserts is improbable: 'Even my cousin could easily beat Jimmy Connors at tennis'; 'Wittgenstein was not a deep thinker; however, he had a strong influence on thinkers who knew him well'. These are unassertible by me, because I regard each as false; but they satisfy the special 'conventional implicature' requirements that they involve: my cousin is a duffer at tennis, so that 'even my cousin' is apt; those who influence other thinkers tend to be deep thinkers themselves, so 'however . . .' is apt. In contrast with this, Jackson acknowledges, the Ramsey test gives 'the whole story' about the assertibility of $A \rightarrow C$: such a conditional cannot pass the test but be unassertible on grounds of improbability or falsehood. Jackson calls this 'an unusual property' of the Ramsey test, an 'exception' to what 'usually' happens with conventional implicature.

I shall now describe four other ways in which Jackson's account of conventional implicature as the source of the Ramsey test's validity fails to fit his account of conventional implicature generally. The resulting quintet—his one and my four—undermines his theory of indicative conditionals.

(1) Jackson explains conventional implicature as helping a speaker to get truths to glide smoothly into people's souls, but the supposed Ramseyan conventional implicature of $A \rightarrow C$ cannot be doing that. If it were, the following would be right:

When I tell you 'If (A) Nixon's top aides were not blackmailing him into defending them, then (C) he gave them more loyalty than they deserved', I signal to you that my probability for C on the supposition of A is high. I signal this to you, choosing words that conventionally imply it, because this may help me to get across the belief I am primarily trying to communicate, namely that *either Nixon's top aides were blackmailing him into defending them or he gave them more loyalty than they deserved*. The conventionally implied robustness will improve your chances of acquiring precisely this belief rather than being distracted by irrelevant side-issues.

What irrelevant side-issues? What are the threatening distractions, and how does the implication of robustness remove them? I can find no answer to this. The above story is wholly incredible; yet it needs to be true if $A \rightarrow C$ is to relate to

$A \supset C$ as 'but' does to 'and'. Jackson illustrates his thesis about the transfer of belief with examples using 'even' and 'nevertheless' but not with any using 'if'.

David Lewis, aiming to present Jackson's ideas on this topic, offered a more complex and believable story about the point of implying that for the speaker C is robust with respect to A . It does not, however, concern the removal of obstacles to getting the hearer to believe $A \supset C$. In his account, the speaker disbelieves A , believes C , and asserts $A \rightarrow C$ because he wants the hearer to accept C even if he, unlike the speaker, believes A :

Maybe you (or I in future) know something that now seems to me improbable. I would like to say . . . something that will not need to be given up, that will remain useful, even if a certain hypothesis that I now take to be improbable should turn out to be the case. If I say something that I would continue to believe even if I should learn that the improbable hypothesis is true, then that will be something that I think you can take my word for even if you already believe the hypothesis. (Lewis 1986e: 153)

In confining himself to cases where the person who asserts $A \rightarrow C$ believes C and disbelieves A , Lewis doubly narrowed the range. Also, his account does not concern getting the hearer to acquire the belief one supposedly wants him to acquire, namely that $A \supset C$. Lewis's account bears little resemblance to Jackson's comparison of \supset/\rightarrow with 'and'/'but', being concerned rather with the durability of the belief in various vicissitudes. It is a good story; but it leads away from Jackson and towards the theory of Adams that I shall come to in Chapters 6–7.

Something like this also occurs in Jackson 1981: 135. Having recounted how 'but', 'even', and the rest help the hearer to absorb the speaker's message, Jackson moves on to a Lewis-like story about the point of the implication of robustness of an indicative conditional. He does not note how greatly it differs from what has gone before, and merely introduces it as 'a second example of the problems attendant on an apparently simple speaker-hearer exchange'.

(2) The misfit shows up also in a formal way. In his fifth chapter Jackson mentions these vehicles of conventional implicatures: 'but', 'nevertheless', 'yet', 'anyhow', 'however'. In the relevant senses of these, the following holds for each:

When W links two sentences, it can be replaced by 'and' without affecting the truth conditions of what is asserted; when used as an operator on a single sentence, it can be deleted without affecting the truth conditions of what is asserted.

Because a sentence-joining 'and' can always be deleted in favour of a full-stop, without affecting the truth conditions, it follows that each of those five words can be dropped without altering the asserted content. Jackson's only other example in his fifth chapter is 'even'. When used in the relevant sense, that too can be

deleted, as can his two earlier examples (p. 49), namely 'anyway' and 'at least' as used in 'He is a communist, or at least left-wing'. All of Jackson's examples are deletable: each can be simply omitted (perhaps with a little repunctuation) without affecting what is asserted. Nothing like that holds for 'if'. In indicative conditionals, as everywhere else, 'if' is structural: delete it at your peril! 'If' is not alone in this, Jackson has written to me, because it holds also for 'unless'. I am not persuaded by this defence, which relies on Jackson's associating 'unless' with conventional implicature in the same kind of way that he associates 'if' with it. 'P unless Q' conventionally means the same as 'not- $Q \supset P$ ', he holds, and conventionally implicates that for the speaker P is robust with respect to not- Q . (Thus, I am not to say 'I'll be miserable unless she kisses me' purely because I am sure she will kiss me.) I reply that the awkwardness of fit between Jackson's account of 'if' and his chapter 5 account of conventional implicature applies equally to 'unless' on this view of the latter.

(3) In his general account of conventional implicature, but before offering to apply it to indicative conditionals, Jackson asks '... why tone, why conventional implicature?' (p. 91), and speaks of '... the words that are responsible for conventional implicatures, that carry tone ...' (p. 93). Dummett brought the word 'tone' into this, replacing words of Frege's that mean 'colouring' and 'illumination' (1973: 2, 83–8). It fits some of his examples—'dead' and 'deceased', 'sweat' and 'perspiration'—and countless others, such as 'defecate' and 'shit', 'intellectually challenged' and 'mentally retarded', and so on. These do perhaps involve a difference in what is implied or suggested, but that is not the heart of them; and Jackson was right to ignore them in his account of conventional implicature. As for 'but', 'although', 'even', and the others that he does mention, 'tone' is a less apt label for what they add to the asserted content, but it is still a possible one. If someone said 'Even teaching assistants don't get paid a million dollars a year', it would not be absurd to remark that he had said something true with a wrong tone (because of its implication that TAs are notably well paid). In contrast with this, when a materially true conditional fails the Ramsey test, as when someone says 'If snow did not fall on Mount Rainier last year, the US national debt was halved', the diagnosis 'True assertion, wrong tone' misses the mark.

(4) When a true assertion conventionally implies something false, how should we characterize this? In the context of his theory of indicative conditionals, Jackson repeatedly implies that in such a case the assertion is not 'justified or warranted', explaining that he means epistemic rather than pragmatic justification (pp. 8–10). An assertion may be pragmatically unjustified because pointlessly hurtful or in breach of a promise, or the like, to all of which the Ramsey test is irrelevant. The test does involve something like epistemic justification, as

Jackson says, but what does the latter have to do with 'but', 'even', 'although', and the rest, and with Jackson's general theory of conventional implicature? Nothing, so far as I can see, though Jackson evidently thinks otherwise. In claiming to be employing a single concept of implicature or signalling, he implies that 'He wasn't educated at Eton but he is a civilized human being' is defective because not epistemically justified. This strikes me as untenable. When Jackson uses the phrase 'epistemic and semantic considerations, *widely construed*' (p. 19, my emphasis), he may be countering this difficulty by backing off from linking 'but' and 'even' etc. with epistemic justification ordinarily construed. But he does not tell us *how* he means to widen the construal. This point connects with an objection that Edgington (1986: 186) brings against both Jackson's theory and Grice's, namely that they purport to explain the *assertibility* of something when their topic ought to be its *acceptability* or *believability*. She writes elsewhere: 'There simply is no evidence that one *believes* a conditional whenever one believes the corresponding material implication, and then is prepared to *assert* it only if some further condition is satisfied' (see also 1995b: 287 n. 50). Actually, Jackson knew that 'assertibility' is wrong quite early in the piece: 'It is, indeed, better labelled "assentability"—but it is too late to change now' (Jackson 1984: 72).

In five ways, then, Jackson's general account of conventional implicature misfits his application of that concept to indicative conditionals. The last two failures may not matter much; but the first three—Jackson's own and my 1 and 2—are structural, serious, and in my view fatal. A sixth will be presented in §39.

17. THE UNITY POINT

At one place Jackson hedges his claims for his account of conventional implicature. Having asked 'Why tone, why conventional implicature?', he writes: 'Perhaps it is wrong to expect the answer to be the same for each example, but, in many cases at least, it seems that the reason . . . —which launches him into his general theory of conventional implicature (p. 91). This is cautious; it creates wiggle room. Perhaps Jackson means to allow that indicative conditionals may not be among the 'many cases', and may thus not fall under his general theory. If so, one wonders why a book entitled *Conditionals* should devote a chapter to an account of conventional implicature that applies to some parts of language but not to conditionals.

A little later, Jackson seems poised to confront the problem. Right after completing his (general?) account of conventional implicature, he writes: 'We now have answers to why conventional implicature exists in natural languages . . .

and to why it affects meaning without affecting content . . . But why did we need to turn to conventional implicature . . . in our . . . theory?' (1987: 95–6). Put like that, it is a good question, but Jackson does not put it just like that. More fully, he asks: 'Why did we need to turn to conventional implicature, *rather than conversational*, in our . . . theory?' (my emphasis). Instead of considering for the first time how conventional implicature succeeds in explaining how indicatives work, he considers for the second time why conversational implicature fails in this. The earlier point that the Gricean approach must accept Contraposition for indicative conditionals, that is, must regard $\neg C \rightarrow \neg A$ as being no less assertible than $A \rightarrow C$ (§10, argument 4), now becomes the point that the Gricean approach must endorse not only Modus Ponens:

$$A \rightarrow C, A \therefore C$$

but also Modus Tollens:

$$A \rightarrow C, \neg C \therefore \neg A.$$

It is a sharp point against Grice; perhaps it deserves to be presented twice in these two guises. But it serves here merely to displace the question Jackson should be asking: 'Did we really "turn to conventional implicature" as this has just been described?' I answer, No, we did not.

Why did Jackson come at things in this way? Given the story as I have told it, one might think:

Jackson rightly says that the Ramsey test is valid because of the meaning of 'if' as used in indicative conditionals. He ran into trouble because of *where* in the meaning of 'if' he located the Ramseyan element. If he had put it into the core of asserted content, rather than the conventionally implied penumbra, he would have escaped the troubles exhibited here.

I agree with this, but the matter is tricky. As we shall see in chapter 6, the two most obvious ways of building the Ramseyan property of indicative conditionals into their conventional meaning are demonstrably wrong. The right way to do it is somewhat elusive, and still a matter of controversy. So Jackson had reason to want conventional implicature to provide him with a solution.

18. THE OR-TO-IF INFERENCE

The horseshoe analysis of \rightarrow should be rejected, because of the failure of the only two attempts (it seems) that can be made to reconcile it with the intuitive data. Before finally turning away from it, we should revisit the or-to-if inference (§9)

in order to see how feebly it supports the analysis. The attempt to get support from it went like this:

You believed Vladimir when he told you 'Either they drew or it was a win for white'; which made it all right for you to tell Natalya 'If they didn't draw, it was a win for white'. Why was this all right? The explanation is that what Vladimir told you entailed what you told Natalya, because quite generally $P \vee Q$ entails $\neg P \rightarrow Q$.

If this is right, then $A \supset C$ entails $A \rightarrow C$, which secures the horseshoe analysis.

Considered as support for the horseshoe analysis, this fails twice: the analysis is not needed, and does not suffice, to explain why it was all right for you to say what you did to Natalya.

Here is why it is not needed. Vladimir was behaving badly unless he was more confident of the disjunction than of either disjunct; and Grice's theory about conversational implicature explains why (§9). If he was not misbehaving, therefore, he accepted the disjunction independently of whether one disjunct (either one) turned out to be false; so for him Q is robust with respect to $\neg P$. That would make it all right by the Ramsey test for him to assert $\neg P \rightarrow Q$; and your trust in him makes it all right for you to assert this also. This explanation has nothing to do with the horseshoe analysis. It is given by Stalnaker (1975), who calls the transaction a 'reasonable inference' of one assertion from another, not the entailment of one proposition by another. In §58 we shall see that the or-to-if inference can also be explained in another way.

Anyway, whether or not some rival to the horseshoe analysis *does* explain the acceptability of the or-to-if inference, the analysis itself *does not*. It contributes only the thesis that $P \vee Q$ entails $\neg P \rightarrow Q$, and thus that the *truth* of what Vladimir told you guarantees the *truth* of what you told Natalya. But it is a famous fact that a true material conditional may be an absurd thing to say; so this entailment thesis does not imply or explain the fact that if you *accepted* what Vladimir told you, then it was *all right for you to say* what you did to Natalya.

The or-to-if inference haunts the literature on indicative conditionals. In §41 we shall see a valid special case of it being used in a powerful argument for a significant conclusion.

4

The Equation

19. OTHER APPROACHES

The horseshoe analysis having failed, we must look further. Four other avenues of approach to indicative conditionals have been proposed.

One is indicated by the view, attributed to Strawson in §11, that $A \rightarrow C$ means something like:

Because of a connection between A and C : $A \supset C$.

This arises from the natural thought that the horseshoe analysis fails because it does not provide for a link between A and C . It certainly *is* defective; $A \rightarrow C$ may entail $A \supset C$ but is not entailed by it. However, although it is plausible to suppose that the missing ingredient is the idea of A 's being connected with C , there are obstacles in the way of developing this into something solid. For one thing, many respectable indicative conditionals involve no such link. Not just jokes like 'If he repays that debt, I'm a monkey's uncle', but sober conditionals like 'If she apologized to him, then he lied to me', which would not ordinarily be based on a view about a direct link between her apology and his lie (§133); and ones like '(Even) if he apologizes, I shall (still) be angry', which rests on the *lack* of connection between his apology and my anger. Unsurprisingly, nobody has worked hard on trying to turn this 'connection' idea into a semantic analysis of indicative conditionals.

A second avenue of approach is lined with possible worlds. These have enjoyed much success in analyses of subjunctive conditionals (Chapters 10–13); so it is natural to hope that they can also cope with indicatives, through the idea that $A \rightarrow C$ means that C obtains at a certain possible world at which A obtains. This hope is encouraged not only by a desire for theoretical economy, but also by the hope for a Y-shaped analysis of conditionals—one that first sets out what the two kinds of conditional have in common and then goes on to say what differentiates them (§4). Wayne Davis and Robert Stalnaker have both approached indicative conditionals in this second way; this might be a natural place to discuss those