

SIMPLE 'MIGHT'S', INDICATIVE POSSIBILITIES AND THE OPEN FUTURE

BY K. DEROSE

- (i) *A general epistemic thesis (GET): the invariably epistemic character of some modal sentences*

'Might have' sentences, like

1. Michael might have led the league in scoring last season

are ambiguous. In the mouth of someone who cannot remember whether it was Michael, or rather someone else, who was top scorer, (1) can express the epistemic possibility that Michael led the league in scoring. But from someone who knows that Michael did not even play last season, but is wondering what would have happened if he had, (1) means something quite different. Now where it has this quite different meaning, (1) *may* still turn out to be the expression of some epistemic possibility. Perhaps where (1) does not express the epistemic possibility of 'Michael led the league in scoring', it expresses the epistemic possibility of 'Michael would have led the league in scoring'. Analysis of this 'would have' statement, together with an exploration of the suspicion that the 'might have' statement is ambiguous between these two epistemic possibilities, will have to await another occasion. (Although a first stab at the 'would have' statement's analysis is this: for some contextually relevant p , if p were true, then Michael would have led the league in scoring.) The important point for present purposes is that (1) is ambiguous between an expression of the epistemic possibility of 'Michael led the league in scoring' and *some* quite different reading.

By contrast with 'might have' statements like (1), simple 'might' sentences like

2. Michael might lead the league in scoring next season
3. Michael might now lead the league in scoring

are, I claim, not ambiguous. They invariably express the epistemic possibility that Michael will lead, in the case of (2), or does lead, in the case of (3),

the league in scoring. Likewise invariably epistemic, I claim, are sentences of the form ‘It is possible that p_{ind} ’ (the subscript ‘ind’ indicates that the embedded p is in the indicative mood), like

4. It is possible that Michael will lead the league in scoring next season
5. It is possible that Michael leads the league in scoring
6. It is possible that Michael led the league in scoring last season.

That these two forms of sentences invariably express epistemic possibilities is the general epistemic thesis (GET) I shall here defend. By calling these expressions of the ‘epistemic’ possibility of the relevant p , I mean that (2)–(6) each means *roughly* – we shall get more exact later as the need arises – that the speaker (and perhaps the audience) *does not know* that Michael will not lead, in the case of (2) and (4), does not lead, in the case of (3) and (5), or did not lead, in the case of (6), the league in scoring.

I here follow Ian Hacking in contending for the epistemic nature of sentences like (4)–(6) – he has little to say about sentences like (2) and (3).¹ However, Hacking’s analysis of epistemic possibility leaves him with no good escape from the first type of difficulty for our epistemic view which is laid out in section (ii) below. (My way of dealing with the second type of apparent problem, raised in section (iii) below, seems open to him.) I have elsewhere argued² that my account of epistemic possibilities is superior to Hacking’s because it handles some cases that his account cannot. The present paper, in showing how my account can handle the first type of difficulty, adds new evidence for this conclusion. Moral: if one wants to hold that indicative possibilities are invariably epistemic, one needs a suitably flexible analysis of epistemic possibility.

The main difficulties which appear to threaten GET divide into two broad categories. In what follows, I shall address both types of problems, cite positive reasons which support GET, and, in the final section, apply my results to arguments regarding the open future.

(ii) *The first problem: future-directed statements with apparently metaphysical meaning*

The first, more serious, problem for GET involves future-directed statements of the types in question that seem to mean the non-epistemic, in fact the downright metaphysical, ‘not causally determined not to be’.

Suppose, for instance, that two physicists correctly believe that when a certain ball, which is at present rolling slowly along their lab floor, hits the

¹ See his ‘All Kinds of Possibility’, *Philosophical Review*, 84 (1975), pp. 321–37, and especially his ‘Possibility’, *Philosophical Review*, 76 (1967), pp. 143–68, for further considerations supportive of GET.

² In my ‘Epistemic Possibilities’, *Philosophical Review*, 100 (1991), pp. 581–605, at pp. 588–96.

'zone of indeterminism' they have set up, it will either veer left or veer right, but that it is not causally determined which way it will veer. It seems that they can mean something pretty non-epistemic by

7. It is possible that the ball will veer left.

In particular, they can seem to mean something like that it is not causally determined that the ball will not veer left. And they can seem to mean roughly the same non-epistemic thing by

8. The ball might veer left.

The screws can be further tightened if we grant – as I am willing to, since I believe it is true – that 'It is certain that p ' is the dual of 'It is possible that p_{ind} ' ('It is certain that p ' is true if and only if 'It is possible that not- p_{ind} ' is false), and if we let the story progress a bit further. Suppose that at a certain point, as the ball advances, our scientists believe that it now *is* causally determined which way the ball will veer, but they still do not know which way. If they then say 'Now it is either certain that it will veer left or certain that it will veer right', 'certain that' certainly seems to mean something like 'causally determined to', which we would expect, given the duality of 'certain that' and 'possible that', together with the thesis that 'possible that' here means something like 'not causally determined not to be'. And 'certain that' seems *not* to mean anything epistemic here, since our physicists can with perfect consistency add to the end of their utterance 'But we still don't know which'.

In the next two sections, the second objection to GET will be raised and answered, and positive grounds for accepting GET will be adduced. We shall then be in a position to answer this first problem finally in sections (v)–(viii).

(iii) *The second problem, the context-sensitivity of knowledge and the methodology of flat-footed, 'all in one breath' conjunctions*

Some would reject GET on the grounds of the following type of objection. It seems that

9. I know that my car is in the Main Street Lot.

After all, I myself parked it there just about an hour ago. Yet, if someone argued that it is possible that my car has been stolen, and so it is *possible* that it is not in the Main Street Lot at all, I might agree. Similarly, I might agree that my car might be at a chop shop right now, having been stolen from the lot, and so *might* not be in the Main Street Lot after all. And in agreeing with these thoughts, it will seem to many that I am speaking a truth when I say

10. My car might not be in the Main Street Lot

or

11. It is possible that my car is not in the Main Street Lot.

Yet, as I mentioned, it can seem that (9) is true. So GET must be false.

The first thing to notice about this objection is that, in the same contexts in which I would agree to (10) and (11), I would also be just as inclined to admit that (9) is false. These are contexts in which the (mildly) sceptical hypothesis that my car has been stolen in the last hour has been injected into the conversation, and has raised the standards for knowledge to such a level that I do not count as knowing that my car is in the Main Street Lot.³ It is in other, more ordinary, contexts, where no such remote possibilities have been raised and the standards for knowledge are lower, that most will quickly agree that I do know where my car is parked.

Given that the standards for knowledge vary from context to context,⁴ GET should be understood as being relativized to the standards for knowledge that are in place when the relevant modal statements are uttered. For instance, according to GET, my assertion of (10) or (11) means (still very roughly) that, *according to the standards for knowledge that govern my conversational context at the time of utterance*, I (and perhaps my audience) do not know that my car is in the Main Street Lot. According to GET, then, the exact content of an assertion of (9), (10) or (11) is sensitive to the standards for knowledge which are in place when such an assertion is made. But despite this shiftiness of content, the statement (9) is incompatible with (10) and with (11), in the sense that, for any given standard for knowledge, if (9) is true when evaluated at that standard, (10) and (11) will be false when evaluated at that same standard, and if (10) and (11) are true according to some higher standard, (9) will then be false. So long as we avoid shifting epistemic standards and committing, to use Gail Stine's words (p. 256), 'some logical sin akin to equivocation', (9) will express a thought incompatible with (10) and with (11).

Or so I claim. We can use the methodology of 'all in one breath' conjunctions to test this claim. The idea behind this methodology is that there is

³ In 'Solving the Skeptical Problem', *Philosophical Review*, 104 (1995), pp. 1–52, especially at pp. 33–8, I show how injecting a sceptical hypothesis into a conversation raises the standards for knowledge via what I there call the 'rule of sensitivity'.

⁴ See S. Cohen, 'How to be a Fallibilist', *Philosophical Perspectives*, 2 (1988), pp. 91–123; K. DeRose, 'Contextualism and Knowledge Attributions', *Philosophy and Phenomenological Research*, 52 (1992), pp. 913–29, and 'Solving the Skeptical Problem'; D. Lewis, 'Scorekeeping in a Language Game', *Journal of Philosophical Logic*, 8 (1979), pp. 339–59, especially pp. 354–5, and 'Elusive Knowledge', *Australasian Journal of Philosophy*, 74 (1996), pp. 549–67; G. Stine, 'Skepticism, Relevant Alternatives, and Deductive Closure', *Philosophical Studies*, 29 (1976), pp. 249–61; P. Unger, 'The Cone Model of Knowledge', *Philosophical Topics*, 14 (1986), pp. 125–78.

a general presumption that, where context-sensitive terms are involved, the parameters along which the meanings of such terms vary will be held constant throughout the assertion of a conjunction said 'all in one breath'. This presumption can be defeated. Unusual or strong stress, intonation or emphasis is often used to signal that the 'conversational score' with respect to some such parameter is being changed in mid-breath. An example might be how one would say the two 'here's, when saying, while pointing first to one and then to another spot on a roadmap, 'The exit we want is not *here*, it is *here*'. This same sentence sounds like a contradiction if it is said in a quick, 'flat-footed' way, without unusual or strong stress, intonation or emphasis, because if, as the general presumption would have it, the content of 'here' is kept constant throughout, the sentence does express a contradiction. Terms whose content varies according to the standards for knowledge that are in place are especially sensitive to stress and emphasis, because such devices are often used to indicate that such terms are to be interpreted according to unusually high epistemic standards. I think here of one of my introductory philosophy students, who, when presented with a sceptical argument involving the possibility of his being a brain in a vat, and then asked whether he knew after all that he was sitting in a philosophy class, responded, 'Well, I know it, even though I don't *KNOW* it'. To test semantic ties among potentially context-sensitive terms, then, we should avoid such heavy emphasis, and stick to flat-footed assertions of the conjunctions in question.

Here is an example of a blatant violation of the restriction to flat-footed assertions: simple 'might's and sentences of the form 'It is possible that p_{ind} ' are sometimes conjoined with claims to know that not- p when the modal comes first, and is said in an impatient, 'Yes, yes, of course' tone of voice, with an emphasis on the word 'possible' or 'might', and the claim to know is said in a strong, stubborn, yet pleading, 'Ah, come on' tone, as in: 'Yes, yes, it's *possible* (of course) that Russell's 5-minute-old Earth hypothesis is true, but (come on!) you know and I know that it isn't'.

Those with 'golden ears' will sense the 'clash' of apparent inconsistency in flat-footed assertions of

9+10. I know that my car is in the Main Street Lot, though it might not be there

9+11. I know that my car is in the Main Street Lot, though it is possible that it is not there

if actually said out loud in a quick and flat-footed manner.

Given the context-sensitivity of knowledge, we should expect, even given GET, that there will be 'low standards contexts' in which (9) is true, while

there are *other* contexts, governed by higher standards, in which (10) and (11) express truths. What *would* spell trouble for GET would be flat-footed conjunctions of (9) with (10) or with (11) which seem clearly consistent. But when we test such conjunctions, so far from finding any such trouble for GET, we instead encounter conjunctions which give fairly strong appearances of *inconsistency*.

(iv) *Some ear-bruising conjunctions: positive grounds for GET*

All of this suggests that it is time to go on the offensive and use the above-explained methodology to supply positive support for GET. My main reason for accepting GET is that it invariably seems wrong to conjoin flat-footedly claims like (2)–(6) with certain other assertions.

12. I know that Michael doesn't lead the league in scoring, though it's possible that he does
13. Michael doesn't lead the league in scoring, though it's possible that he does

both sound wrong, as does *any* attempt to conjoin (flat-footedly) a sentence of the form 'It is possible that p_{ind} ' with a claim to know that not- p or with an outright assertion of not- p .

Why? As I have argued elsewhere, it is because 'It is possible that p_{ind} ' expresses an epistemic possibility of p whose content is *inconsistent* with the speaker's knowing that not- p . That explains the problem with sentences like (12). And the problem with (13) and other conjunctions of the form 'Not- p , but it's possible that p_{ind} ' is that, although one does not in the first conjunct *say* that one knows that not- p , one does *represent oneself* as so knowing by flat-out asserting that not- p . Thus, since the second conjunct's content is inconsistent with one's knowing that not- p , it is inconsistent with what one represents as being the case when one asserts the first conjunct. This explanation supports our sense that *some* inconsistency is responsible for the clash involved in asserting 'Not- p , but it's possible that p_{ind} ', while at the same time happily removing that inconsistency from the realm of what is asserted; the conjunction itself is perfectly consistent, but in trying to assert it, one gets involved in a contradiction between one thing that one asserts, and another thing that one represents as being the case.⁵

If anything, conjunctions involving simple 'might's, like

14. I know that Michael won't lead the league in scoring, but he might
15. Michael won't lead the league in scoring, but he might

⁵ See my 'Epistemic Possibilities', pp. 596–601.

sound even worse than do their counterparts involving 'it is possible that'. Supposing simple 'might's to express epistemic possibilities allows us to explain these conjunctions' problems along the same lines as we explain their counterparts' troubles.

It is of course possible to maintain that modal sentences of the types in question are ambiguous between an epistemic and a non-epistemic meaning, and that the trouble in the conjunctions is due to the fact that on one interpretation of their modal conjuncts these second conjuncts are inconsistent with the knowledge claimed (or represented) in (asserting) the first conjunct. But if there were one reading of the modal sentences on which the conjunctions could be consistently asserted, one would expect that interpretation to come to the fore in the context of such a conjunction. Would we not naturally interpret an ambiguity so as to make a conjunction come out consistent?

(1), for instance, which really is ambiguous between two interpretations, only one of which is inconsistent with the speaker's knowing that Michael did not lead the league in scoring, is a 'might have' statement which is quite comfortably combined with a claim to know that Michael did not lead the scoring or with a flat-out assertion that he did not. What about 'Michael might have led the league in scoring last season, but I know that he didn't'? We can easily think of circumstances in which this conjunction could be properly said. (We shall consider a context which invites such a reading of another 'might have' statement at the end of section (v) below.) By contrast, (12)–(15) seem always out of place. That conjunctions like (12)–(15) seem invariably wrong makes me suspect that simple 'might' statements and statements of the form 'It is possible that p_{ind} ' are invariably epistemic.

(v) *Some ear-bruising conjunctions: trouble for the non-epistemic interpretation*

Let us now return to our two physicists of section (ii) and expand on that story. First, let us go back to the time when, as our scientists know, it is not yet causally determined which way the ball will veer. Now for the expansion. Suppose that Newton, one of our characters, thinks that, even though it is not yet causally determined which way the ball will veer, there is now a fact of the matter as to which way it will veer. And, Newton thinks, God, being omniscient, knows what that fact of the matter is. What is more, Newton thinks that God is reliably revealing to him that the ball will veer to the right, and that, therefore, he, Newton, now knows this to be so. Newton might properly say

16. I know the ball won't veer to the left, though it isn't now causally determined that it won't

and

17. The ball will not veer to the left, though it is not now causally determined that it will not.

While his saying these things may be based on some strange beliefs of Newton's, he is making no linguistic error in how he expresses his beliefs, and there seems to be no clash or contradiction involved in either of them.

By contrast, these conjunctions are troubled:

18. I know the ball won't veer to the left, but it might
 19. The ball won't veer to the left, but it might
 20. I know the ball won't veer to the left, but it's possible that it will
 21. The ball won't veer to the left, but it's possible that it will.

As with their brethren (12)–(15), there is a linguistic error in uttering any of (18)–(21), as those with 'golden ears' will tell you. Now, given the context, if Newton *were* to utter one of (18)–(21), we should probably be able to figure out what it is that he is trying to say – in each case he would be trying to say something roughly like (16) or (17). But (18)–(21) are wrong here. Why? According to our GET, it is because the modal second conjunct of each is invariably epistemic, and therefore invariably at odds with the knowledge either claimed or represented in (the assertion of) the first conjunct.

If a simple 'might' or a statement of the form 'It is possible that p_{ind} ' *could* mean anything like 'not causally determined not to be', then (18)–(21), we should expect, would here succeed in expressing the consistent thought voiced by (16) or (17), and would be acceptable. The context strongly suggests such a reading, and the modal statements are in conjunctions where such a non-epistemic reading is needed for the conjunction to make sense.

(1) really is ambiguous between an epistemic sense incompatible with the speaker's knowledge that Michael did not lead the league in scoring, and another sense consistent with such knowledge. Where (1) occurs in a context in which the latter sense is contextually relevant, it conjoins nicely with a claim to know that Michael did not lead the league, or with a flat-out assertion that he did not. So if we are not in a context in which the focus is on the issue of whether it was Michael, or rather someone else, that led the league in scoring last year, but we have been discussing what would have happened if Michael had played last year, then here, where the second sense of 'might have' is called for, we might, without any impropriety, conclude either of the following:

- 1+A. Michael might have led the league in scoring last season, but he didn't

1+B. Michael might have led the league in scoring last season, but I know that he didn't.

By contrast with the 'might have' sentence, (1), simple 'might' sentences and sentences of the form 'It is possible that p_{ind} ' do not happily enter into such conjunctions. That (18)–(21) are wrong even in our physicists' context, where a non-epistemic reading is strongly called for, supports our general thesis that the statements in question invariably express epistemic possibilities and *do not have* such a 'metaphysical' sense.

(vi) *Flexing the 'epistemic' interpretation*

Why then can it seem as if they do? It is here that we have to move beyond our rough do-not-know-otherwise (according to the contextually relevant standards for knowledge) analysis of epistemic possibilities. I have elsewhere defended the following analysis:

p is epistemically possible if and only if (a) no member of the relevant community knows that p is false, and (b) there is no relevant way by which members of the relevant community can come to know that p is false

where there is a good deal of flexibility in what the relevant community is and in what is to count as a relevant way of coming to know, i.e., where these matters, like the matter of what is to count as knowledge, vary according to features of the context in which the epistemic possibilities are expressed.⁶ In that earlier defence, I was taking 'epistemic' possibilities to be those that are typically expressed by sentences of the form 'It is possible that p_{ind} '. (If GET is correct, that 'typically' can be dropped.) I shall now extend that flexible account to cover simple 'might's as well. The arguments in my 'Epistemic Possibilities' for such an account of 'It is possible that p_{ind} ' seem to apply equally well to simple 'might's. Positing such flexibility, I argued, is needed to account for the wide variety of ways the sentences in question are used. The first kind of flexibility – the flexibility in the matter of what the relevant community is – need not concern us much here, though that the speaker is a member of the relevant community is needed for my account of the problematic nature of (12)–(15) and (18)–(21). We may suppose that, as the scientists of our story converse, the relevant community relative to which their epistemic modal statements are to be understood includes just the two of them.

It is the second flexibility, that of what is to count as a relevant way of coming to know, which is most important to our present purposes. Before I

⁶ 'Epistemic Possibilities', especially pp. 593–4.

get to the use I shall make of this flexibility, it should be noted that, in general, there is a tremendous amount of flexibility here. Sometimes the relevant sentences mean roughly that we (the members of the relevant community) do not know that not- p , and cannot come to know that not- p in any *readily available* way. In other contexts, however, not so readily available ways of coming to know are relevant. Sometimes, for instance, very particular ways of coming to know, which we have especially in mind, are relevant in context, while other, simpler ways of coming to know are irrelevant. And in some special, limiting cases, *no* ways of coming to know are relevant. Here, if, as can also happen in a special, limiting case, the relevant community consists of just the speaker, we have a special case where 'It is possible that p_{ind} ' or a simple 'might', *in context*, means 'I do not know that not- p '.

How shall we understand the problematic uses of 'possible' and 'might' which seem to mean 'not causally determined not to be the case'? In our scientists' context of section (ii), I propose that we understand their use of

7. It is possible that the ball will veer left

and

8. The ball might veer left

along the lines sketched above, where the contextually relevant way of coming to know is, roughly, by deducing (if it is deducible) what will happen from all the relevant facts concerning the present state of affairs together with all the relevant laws of nature. This, to be sure, is a way of coming to know that is quite the reverse of readily available, since our heroes, we may suppose, are *very* distant from even knowing what all the relevant laws are, much less how they apply to the present situation, and they may be ignorant of the vast majority of relevant details of the current state of affairs. But so what? On the present suggestion, (7) and (8), in context, mean '(a) We (the scientists) do not know that the ball will not veer to the left, and (b) we cannot come to know that it will not veer to the left by deducing (if it is deducible) what will happen from all the relevant facts concerning the present state of affairs together with all the relevant laws of nature', where – and this is important – the force of the 'cannot' is not just that they cannot deduce what will happen because of their own present limitations, in the way that one cannot bisect an angle with a compass and a straight edge when one's only compass is broken or when one has not yet learnt how to perform the task (though in another context, their modal sentences might mean that they cannot so deduce because of such personal limitations), but that they cannot deduce what will happen in the way that one cannot trisect

an angle with a compass and a straight edge – because it is not deducible. ('Can' and 'cannot', of course, are paradigm cases of semantically flexible words.) Alternatively, we can say that the relevant way of coming to know is by coming to know everything about the situation that is now causally determined to be the case. Again, when this way of coming to know is plugged into the second clause of our analysis, yielding the requirement that it be true of our scientists that they *cannot* come to know in this way, the 'cannot' should be understood in such a way that the second clause does not just mean that, because of their own limitations, our scientists are unable to come to know in that way, but rather that even if they were to come to know everything that is at present causally determined to be the case, they *still* would not know that the ball will not veer left. Why? Because it is not causally determined that the ball will not veer left.

Given this specification of the content of their assertions, we can see why (7) and (8) can seem to mean that it is not causally determined that the ball will not veer to the left. Since it is commonly known by both of our scientists that neither of them knows which way the ball will veer, and it is thus presupposed that the first clause of the above truth-conditions is met, the point they would mainly be trying to convey by asserting (7) or (8) is that the second condition is met – that it is not causally determined that the ball will not veer left. This, of course, is all more straightforwardly explained by the rival hypothesis that 'possible' and 'might' just mean here 'not causally determined not to be'. But our current proposal also explains the problematic nature of the conjunctions (12)–(15) and (18)–(21). And it does not postulate an ambiguity in the types of sentence in question (simple 'might's and indicative possibilities).

Of course, our current proposal does posit a lot of flexibility, but it is flexibility we need anyway. If modal sentences of the types we have been considering were usually found to express something relevantly inflexible, like the thought that the speaker does not know otherwise, we should then be rational in positing an ambiguity when we discovered cases in which those sentences served to convey the very different thought that the relevant *p* is not causally determined not to be.

But that is not our situation. Before encountering the cases mentioned above, we already need to postulate enormous flexibility to handle various epistemic uses of the sentences in question. Cases in which those sentences, in context, mean simply that the speaker does not know otherwise are just one limiting case of the flexible account needed. In this situation, the rational conclusion to draw about the case of our scientists is that our flexible account applies here, where the relevant way of coming to know is as explained above.

(vii) *Have we flexed the account beyond the realm of the epistemic?*

One might question whether, even on the above account, the possibilities expressed by the scientists of our example are properly called ‘epistemic’ possibilities. After all, the ‘way of coming to know’ here is *very* inaccessible to them, so inaccessible that it can only in a very thin sense be classified with respect to them as a ‘way of coming to know’. What the second truth-condition (b) amounts to here is really just that it is not causally determined that the ball will not veer left.

There is some merit to this charge. But, first, it is not over a very important issue. What is important to note is that the sentences in question are *not ambiguous*, whether or not what they express can in every case be properly called ‘epistemic’. There is a gradual continuum of how accessible are the ‘ways of coming to know’ involved in uses of the sentences in question, no sharp division that could be used to mark a borderline between different ‘senses’ of ‘might’ and ‘possible’.

And, second, even in the case of our scientists, there is this good reason for calling the possibilities they express ‘epistemic’: the undeniably epistemic first truth-condition – that they do not *know* that the ball will not veer left – is still a part of the meaning of their utterance, as is shown by the unacceptability of (12)–(15) and (18)–(21), even though, being common knowledge to them, it is not the point they would be mainly interested in conveying in asserting (7) or (8).

(viii) *It is certain that*

One of the objections from section (ii) made use of the duality of ‘certain that’ and ‘possible that’. Our present understanding of what our scientists in context mean by ‘possible that’ answers this objection as well. In fact, given the duality of the two phrases, the application to ‘certain that’ is just a straightforward analogue of the points I have made concerning the apparently ‘metaphysical’ uses of ‘possible that’.

‘Possible that’, in the scientists’ context, I have proposed, means that (a) they do not know otherwise, *and* (b) they cannot come to know otherwise in the way described above in section (vi). The second clause, (b), I have admitted, in this context just amounts to the thought that it is not causally determined to be otherwise. Given the duality of ‘certain that’ and ‘possible that’, then, ‘It is certain that *p*’, in their context, means that *either* (a) they do know that *p* is the case, *or* (b) they *can* come to know that *p* in the way described in section (vi), i.e., *p* is causally determined to be the case.

This account explains why, in the situation where it is common knowledge that they do not know that *p*, ‘certain that’ will seem to mean just that

p is causally determined to be the case. Since the first clause of the above account of their use of 'certain that' is presumed false, the truth of the sentence hinges on whether the second disjunct holds, i.e., whether it is causally determined that p . So that p is causally determined to be the case will be the main point being conveyed by such a use of 'certain that'. This account also explains why, once the scientists think that it is causally determined which way the ball will veer, they will say 'Now it is either certain that it will veer left, or certain that it will veer right', even when they do not yet know which way it will veer: it is because they will believe that, with respect to the ball's veering in one direction or the other, the second disjunctive clause of 'certain that' will be met. And, of course, it is no problem for this account that they can consistently add 'But we still don't know which way that is'.

(ix) *Stalnaker on 'might'*

Now that the flexible account of epistemic possibilities has been aired, we are in a position to compare briefly the results of the present paper with the account of 'might' that Robert Stalnaker ends up endorsing. For some of my methodology follows Stalnaker's. Most importantly, my account of the 'clash' in the likes of (15), from section (iv) above, is very close to Stalnaker's account of why 'John might come to the party, although he won't' is 'somewhat strange'.⁷ But Stalnaker does not conclude that 'John might come to the party' is *invariably* epistemic; rather, he uses the strangeness of the conjunction as evidence that an epistemic interpretation is the 'dominant' reading of its 'might' conjunct. Stalnaker's view (p. 143) is that 'might' *usually* expresses epistemic possibility, though it sometimes expresses non-epistemic possibility, and sometimes voices what he calls a 'quasi-epistemic' possibility (see two paragraphs below); so he would not accept GET.

However, Stalnaker does not exclude 'might have' sentences from the scope of his thesis, as I did at the beginning of this paper, and, interestingly, uses (*ibid.*) such a sentence as an example of a 'might' which is less epistemic: 'The epistemic interpretation seems less dominant in the past-tense example: *John might have come to the party, although he didn't* is not so strange'. Still, I do not think Stalnaker would accept GET even after 'might have' sentences are excluded. But this is primarily because he is working with an impoverished notion of epistemic possibility. For Stalnaker (*ibid.*), an assertion that p is possible in the epistemic sense means that p 'is compatible with what the speaker knows'. I would certainly agree with him that not all simple 'might's have *that* meaning, though I would reject his claim that most

⁷ R. Stalnaker, *Inquiry* (MIT Press, 1984), p. 143.

do. If we loosen up his account of epistemic possibility to the more flexible account I outlined above at the start of section (vi), so as to make it true that *most* 'might's express epistemic possibility, then, as I have here argued, especially in sections (iv)–(v), we should go all the way to the conclusion that *all* do (excluding perhaps 'might have's; but see the very first paragraph of this paper). On my more flexible analysis of epistemic possibilities, Stalnaker's notion is a special case of epistemic possibility, where the relevant community consists entirely of the speaker, and the relevant ways of coming to know consist entirely of deducing from what the speaker does know. There are *many* examples of uses of modal statements which we *surely* should classify as epistemic, but which do not fit Stalnaker's narrow characterization of epistemic possibility.⁸

Our flexible analysis of epistemic possibilities also takes as a special case another important use of the relevant sentence-types to which Stalnaker calls attention. I accounted for our scientists' problematic use of our target sentence-types by supposing that the contextually relevant way of coming to know was the very inaccessible way specified in section (vi). Another very inaccessible way of coming to know, which can none the less be a contextually relevant way of coming to know, is by learning *all* the relevant facts (including, if it be a fact, that the relevant *p* of 'It is possible that *p*' is true or that it is false). Where *this* way of coming to know is relevant, the first clause of our flexible analysis of epistemic possibility drops out as superfluous (here the second clause entails the first: if you cannot come to know in *this* way, *p* cannot be true, and therefore you cannot know it is true), and the result is the very interesting use of the relevant modal statements that Stalnaker (pp. 145–6) calls '*quasi*-epistemic':

Consider not what is, in fact, compatible with my knowledge, but what would be compatible with it if I knew all the relevant facts. This will yield a kind of *quasi*-epistemic possibility – possibility relative to an idealized state of knowledge. If there is some indeterminacy in the language, there will still remain some different possibilities, even after all the facts are in, and so this kind of possibility will not collapse into truth.... I think there is a general tendency to use epistemic terminology to describe indeterminacy as a limiting case of ignorance – the ignorance that remains after all the facts are in.

If the relevant way of coming to know is a bit more limited, like, for example, coming to learn all the relevant *metaphysically necessary* facts, we shall have a use of the relevant sentences which comes close to expressing metaphysical possibility. But only comes close. Unless we are misusing the

⁸ The modal statements contained in the following cases discussed in my 'Epistemic Possibilities' are just a few such examples: case CTC-1B (pp. 584–5), Hacking's Salvage Ship Case (pp. 586–7), Case CTC-2B (p. 587), and the Revised Salvage Ship Case (p. 590).

sentences (as some philosophers are in the habit of doing), 'It is possible that p_{ind} ' and a corresponding sentence containing a simple 'might' will still carry the implication that the speaker does not know that not- p .

(x) *Application: the open future*

Unlike the 'actualist' Newton, the character you met in section (v) above who believes in an actual future even in cases of causal indeterminism, I am a 'non-actualist' about the future: I believe that where it is not yet causally determined that some future-directed p will be true or that it will be false, then neither p nor not- p is now true, and so not even omniscient God knows either that p or that not- p . (I prefer the version of non-actualism which holds that both p and not- p are neither true nor false, while other non-actualists may instead hold that in such cases both p and not- p are false.) Unfortunately, GET might be a source of doubt for non-actualism.

What could be leading one from the thought that neither p nor not- p is now causally determined to be the case to the thought that neither p nor not- p is now the case? One might argue as follows. Since it is now true that

22. It is not causally determined that the ball will not veer left

it is also the case that

7. It is possible that the ball will veer left

and that

8. The ball might veer left.

Likewise, since it is now true that

23. It is not causally determined that the ball will veer left

it is also the case that

24. It is possible that the ball will not veer left

and that

25. The ball might not veer left.

But since (7) and (8) are incompatible with the truth of

26. The ball will not veer left

and since (24) and (25) are incompatible with the truth of

27. The ball will veer left

neither (26) nor (27) is now true. Even those who do not explicitly base their non-actualism on such reasoning may be implicitly relying on some such thoughts when they find non-actualism attractive. The results of the present paper may undermine some of the confidence in non-actualism so based.

In so far as non-actualists are relying on some idea that, say, the truth of (22) shows that (26) is not true, or in so far as they are explicitly or implicitly relying on some *other* bridge to get from the truth of (22) to the non-truth of (26), nothing in this paper should bother them. But in so far as it is the likes of (7) or (8) that are explicitly or implicitly mediating the passage from the truth of the likes of (22) to the non-truth of the likes of (26), there is cause for caution.

In a context in which (7) or (8) is being inferred from (22), its content, given my earlier arguments, is likely to be like that of our scientists' use of these sentences (see section (vi) above). Thus part of the content of such an assertion of (7) or (8) – the second clause – *in context*, is basically (22). But another part of the content – the first clause – is that one does not know that the ball will not veer left. Now it may be that (7) and (8), in context, express something at odds with the truth of (26). In particular, (22), which is part of the content of such an assertion of (7) or (8), *may* militate against the truth of (26). And in so far as one thinks that it does, or has another bridge by which to bring (22) and (26) into conflict, that is fine. But in so far as one is going through (7) or (8) to shore up one's case, one is cheating. For (7) and (8) would *seem* to be at odds with (26) whether or not their second clauses actually are at odds with it. For even in cases where the second clauses of such modal statements completely 'drop out' – the limiting cases in which *no* ways of coming to know are contextually relevant – there is still a clash of *apparent* inconsistency involved in the likes of 'It is possible that p_{ind} , but not- p ', and similar conjunctions where the first conjunct is a simple 'might', for the reasons given in section (iv) above – reasons based solely on the first clause of the analysis of the modal sentences, a clause the holding of which is clearly consistent with the likes of (26). So the likes of (7) and (8) would appear to be inconsistent with the likes of (26) even if they were perfectly consistent with it.⁹

Rice University

⁹ This paper started its life as an enquiry regarding the four conjunctions now numbered (18)–(21), which I emailed to many friends and colleagues. Thanks to all who responded to my survey. As I developed the survey into this paper, I was aided by comments from Graeme Forbes, Mitchell Green, Mark Heller, Christopher Hitchcock, Peter Smith and Larry Temkin.