Routledge
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Williamsonian modal epistemology, possibility-based

Barbara Vetter

Institut für Philosophie, Friedrich-Alexander-Universität Erlangen, 91054, Erlangen, Germany

ABSTRACT
Williamsonian modal epistemology (WME) is characterized by two commitments: realism about modality, and anti-exceptionalism about our modal knowledge. Williamson's own counterfactual-based modal epistemology is the best known implementation of WME, but not the only option that is available. I sketch and defend an alternative implementation which takes our knowledge of metaphysical modality to arise, not from knowledge of counterfactuals, but from our knowledge of ordinary possibility statements of the form 'x can F'. I defend this view against a criticism indicated in Williamson's own work, and argue that it is better connected to the semantics of modal language.

1. Williamsonian modal epistemology

This paper is an exercise in broadly Williamsonian modal epistemology (WME): while I will disagree with Williamson on some important points, I share his general outlook, which I take to be characterized by two basic commitments. The first is a commitment to *realism*: what we know about, when we know about metaphysical modality, is an entirely objective or mind-independent phenomenon that has nothing whatsoever to do with the human mind (except, of course, where the possibilities or necessities concern the human mind). The second commitment is *anti-exceptionalism*[1]: in Williamson's own words,

> a plausible non-skeptical epistemology of metaphysical modality should subsume our capacity to discriminate metaphysical possibilities from metaphysical impossibilities under more general cognitive capacities used in ordinary life. (Williamson 2007, 136)

According to anti-exceptionalism, our knowledge of metaphysical modality is *continuous* with our everyday knowledge about the world.

The two commitments are not entirely independent: as Williamson notes, an exceptionalist modal epistemology, with its 'apparent cognitive isolation of

CONTACT Barbara Vetter ✉ barbara.vetter@fau.de

metaphysically modal thought' (Williamson 2007, 136) has a difficult time explaining how such isolated thought is to hook on to reality. An anti-exceptionalist has a much better chance of explaining the relation of our metaphysically modal thought to an independent metaphysically modal reality in terms of the relation between our ordinary thought to ordinary (modal and non-modal) reality.

WME, as I understand it, is intended to answer two distinct but related questions.

The first question concerns our grasp of the *concepts* of metaphysical modality: how do we even get to think about *metaphysical* modality (as opposed to some more mundane forms of modality, say practical or epistemic modality)? The second question concerns our knowledge of the *extension* of those concepts: how do we know what is metaphysically possible or impossible? It would appear that the two questions, and Williamson's answers to them, are closely related: knowledge of the extension of the metaphysical modalities, the subject of the second question, requires that we have – in whatever form, under whatever name – some concept of these metaphysical modalities; and if the concept of metaphysical modality is 'the exclusive preserve of philosophers, then so is knowledge of metaphysical modality' (Williamson 2007, 135). In what follows, I will take care to address both questions: the question where we get our concept of metaphysical modality, and the question how we know about its extension.

The *locus classicus* for WME is chapter 5 of Williamson (2007). But arguably there is some reliance on WME in the methodology of Williamson's own more recent work on modality, culminating in Williamson (2013) (see especially the 'methodological afterword'). However, in what follows I will focus on Williamson (2007) and some more recent papers that pick up threads from it.

Williamson's own account of modal knowledge is, of course, more specific than the broad outlines that I have sketched so far. It is his *implementation* of these broad outlines that I will take issue with in what follows. Section 2 presents his implementation, and some preliminary reasons for exploring the kind of alternative that I prefer. Section 3 presents my preferred implementation of WME, which I call a 'possibility-based approach'. Sections 4–6 argue for my account by defending it against a challenge of Williamson's, and then turning the challenge around and arguing that it is in fact a problem for Williamson's implementation, not for mine. My argument will rely to a large extent on the findings of contemporary semantics, following Williamson's dictum that '[p]hilosophers who refuse to bother about semantics . . . resemble scientists who refuse to bother about the theory of their instruments' (Williamson 2007, 284f).

2. Williamson's modal epistemology

Williamson's own account, as is well known, is twofold. In a first step, Williamson identifies the *entry point* into the relevant kind of modal thought and knowledge within our ordinary thought and knowledge about the world. In a second step, he explains how we extend modal thought and knowledge beyond that entry point to its *limiting case*: metaphysical modality.

First, the *entry point* into modal thought and knowledge, for Williamson, are counterfactual conditionals such as 'If the bush had not been there, the rock would have ended in the lake' (Williamson 2007, 142). Our knowledge of such counterfactual truths, Williamson argues, does not require any outlandish cognitive capacities. In evaluating a counterfactual, we typically use 'offline' the very capacities that we would use 'online' in perception and expectation-forming. Moreover, it is not surprising that we have the capacity to evaluate counterfactuals, since having such capacities brings with it clear evolutionary advantages.

Second, Williamson argues that given our knowledge of counterfactual conditionals, we are in a position to know about metaphysical necessity as a kind of *limiting case* because necessities are logically equivalent to certain counterfactual constructions:

(V□) $\Box A \equiv (\neg A \,\Box\!\!\rightarrow \bot)$
(V*□) $\Box A \equiv (\neg A \,\Box\!\!\rightarrow A)$
(Q□) $\Box A \equiv \forall p (p \,\Box\!\!\rightarrow A)$

(And likewise for possibility, applying the standard definition in terms of necessity.)

In what follows, I want to develop and defend a different kind of WME. Like Williamson's own approach, mine will be realist and anti-exceptionalist. It will differ from Williamson's primarily in the 'entry point' that it stipulates for our modal thought and knowledge: not counterfactual conditionals, but restricted possibility statements of the form 'x can F' and their equivalents in other languages. A different entry point will, of course, also require a different story about how we reach the limiting case of metaphysical modality (see Section 3). As will become clear later, my proposed entry point into modal thought and knowledge differs from Williamson's in two ways: it is a form of possibility, and it is an ascription of modal properties. To have labels for the two approaches, I will refer to Williamson's own modal epistemology as 'counterfactual-based' and mine as 'possibility-based'.[2]

Why even look for an alternative? For one thing, there is clearly room within WME for different approaches, and it should be of interest to everyone who is sympathetic to the general approach what the available implementations are. Moreover, there have been a fair amount of concerns raised about Williamson's

own implementation. If those concerns do not apply to my proposed implementation, that should make it a worthwhile option to explore.

One kind of worry concerns whether the equivalences offered by Williamson are a realistic description of how we do (as opposed to how we might in principle) gain modal knowledge (see Vaidya 2015; Jenkins 2008).[3] Perhaps most relevant to our present purposes, Sonia Roca Royes argues that Williamson's equivalences are too demanding to provide a plausible account for our very easy knowledge of a great many *de re* possibilities, such as the possibility of my desk breaking or the possibility of my speaking French (Roca Royes 2011; Roca Royes forthcoming). Roca Royes herself suggests that a possibility-based modal epistemology does much better justice to the ease with which we come by some such modal knowledge. I hope it will become clear in Section 3 that this is true for my own preferred account.

A second kind of worry that has been raised about using Williamson's equivalences to explain modal knowledge is that the equivalences require the vacuous truth of counterpossibles, that is, counterfactuals with a metaphysical impossibility as their antecedent.[4] But of course this commitment to vacuous truth is highly controversial (see e.g. Nolan 1997). I myself tend to be convinced by Williamson's argument for the vacuity thesis (Williamson 2007, 171–175; Williamson forthcoming-a). But even so, a worry about the use of the equivalences in accounting for our modal knowledge remains. This worry is not about the *truth* of the vacuity claim, but about its non-obviousness. Recognition (implicit or explicit) of this non-obvious fact, the vacuous truth of counterpossibles, should not count as a precondition for knowledge of metaphysical modality – after all, the latter is presumably much more widespread than the former, and it certainly has been throughout the history of philosophy.

My own approach, it will be seen, proceeds without such a commitment. It is, I take it, less demanding, and more in line with the way in which philosophers have historically thought about metaphysical modality, than Williamson's own implementation. Nevertheless, it is firmly Williamsonian in the sense outlined in Section 1. It is time now to have a closer look at it.

3. A possibility-based approach

In recent work, Williamson (ms) proposes that we understand 'metaphysical modality as the maximal objective modality' (Williamson ms, 5), where objective modalities include practical and physical modality, and in general everything that is classified as 'circumstantial' modality in linguistics. A proposition, on this proposal, is 'metaphysically possible if and only if it has at least one sort of objective possibility' (Williamson ms, 2).

The proposal in Williamson (ms) is about the nature, not the epistemology, of metaphysical modality. But my claim is that it is very close to a promising

version of WME. This version, which I will sketch in the present section, will deviate from Williamson's model in Williamson (ms) in two respects. First, Williamson thinks of metaphysical possibility as the 'union of *all* types of objective possibility' (Williamson ms, 3). I, on the other hand, will introduce metaphysical possibility as a gradual extension from a single kind of possibility (or, at any rate, a single kind of expression), the restricted possibility expressed by ordinary uses of the modal auxiliary 'can'. Second, Williamson tends to use the past-tense/subjunctive form 'could have' as a linguistic starting point, while I use the indicative 'can'. According to Williamson, '[a]lthough 'could' is the past tense of 'can', English permits us to recruit the past tense to express something more purely modal' (Williamson ms, 3). Whether or not this is true,[5] I think that it is not a suitable entry point into modal thought and knowledge – presumably we need to already have some understanding of metaphysical modality to recruit the past tense in this way. Moreover, it is 'can' (in the indicative form) that is *the* paradigmatically circumstantial (i.e. objective) modal (see Collins 2009; Vetter 2013) – a fact to which I will return below.

Let me, then, sketch my own version of a possibility-based WME. Like Williamson's own counterfactual-based proposal, my possibility-based proposal requires two steps.

First, I need to identify an *entry point* into modal thought and knowledge from our ordinary thought and knowledge about the world. I have already indicated that the entry point consists in ordinary statements of the form 'x can F', which I will from here on call 'can statements'.

Second, I need to show how we extend our understanding of this entry point so as to reach the *limiting case* of metaphysical modality. My suggestion will be that this works in much the same way as it does in other cases, such as ontology: we gradually extend the contexts of utterance, we abstract from times, and we then apply any other methods of systematic metaphysical theorizing that we have at our disposal.

The main claim that I will be defending in this paper is the claim that the entry point to thought and knowledge about metaphysical modality consists in can statements. My defence of this claim comes in Sections 4–6. In this section, I will briefly address the more immediate questions about this entry point: how do we know the truth of can statements? And how do we manage to extend from them to the limiting case of metaphysical modality?

How do we know the truth (or falsity) of can statements? As with counterfactuals (see Williamson 2007, 152), there is presumably no unique way of properly evaluating can statements. But it is abundantly clear that we do know, of a great many can statements, whether they are true or false, and that we must have such knowledge prior to philosophical reflection. It is crucial for practical deliberation that we know what we can do (if I cannot jump over the river, there is no point in deliberating about whether to attempt such an action), how things can be manipulated (if the stone is so heavy that it cannot

be lifted, then again there is no point in deliberating about whether or not I should pick it up to use it as a tool) and how other people and animals can react (out in the wild, it may be important to know that a tiger can run faster than I can). It would not be surprising, therefore, if at least some of our ways of knowing about what objects can do were hard-wired.

Margot Strohminger (forthcoming) argues that we can know by perception, in at least some cases, what things can do and what we can do with them: I perceive, and thereby come to know, that I can reach the mug, that the mug can shatter, and that the tomato is edible. According to a roughly Gibsonian theory of perception, such modal properties of objects are even directly represented in perception (see Nanay 2012, 2011, 2013).[6]

Other ways of knowing about what can do what are certainly available, and need not consist in explicit theoretical reasoning. Imagining may well play a role here, as it does with counterfactuals (see Williamson 2007; Williamson forthcoming-b[7]). Sonia Roca Royes (forthcoming) argues that much of our knowledge of simple *de re* possibility claims such as 'my desk can break' is obtained by induction on actualized possibilities; such induction, of course, is often performed implicitly without much theoretical thought being given to the matter at all.

It may seem that my entry point into thought about metaphysical modality already is a form of knowing about metaphysical modality. It is very nearly; but not quite. Each can statement entails a metaphysical possibility;[8] by knowing that entailment, our knowing about the more mundane objective possibilities expressed by can statements puts us in a position to know about metaphysical possibilities as well. But in order to know about the entailment, we need to have some grasp (implicit or explicit, under this name or any other) of metaphysical possibility. And of course, since the possibilities in question are restricted, our knowledge about the falsity of a can statement does not yield knowledge of metaphysical impossibilities and necessities. What we need is some sort of grasp on metaphysical, as opposed to the more restricted forms of, possibility. Having some such grasp should enable us to turn our knowledge of restricted possibilities into knowledge of metaphysical possibilities, and it should also ensure that we do not turn knowledge of restricted impossibilities into false beliefs about metaphysical impossibilities.

This takes us to the second task of this section, an account of how we reach the *limiting case* that is metaphysical modality.

My proposed response is this. We begin with can statements such as the ones that I have mentioned above: I can reach the mug, I can speak French, the desk can break, the tomato can be eaten. Can statements are our paradigmatic forms of expression for objective, or in linguistic terms: circumstantial modality. (See Kratzer (1991), and the corpus-linguistic surveys Coates (1983) and Collins (2009); according to Collins, 'can' is used circumstantially in 81% of its uses, which is far more than any other modal auxiliary.) In order to get from ordinary

can statements to metaphysical modality we do what we generally do when we go from ordinary thought to thought in metaphysics: we generalize. In particular, we generalize away from times and from contextual restrictions.

Here is an analogous case. When we make or consider existence claims (in the present tense) in ordinary contexts, we talk about what there is *in some relevant domain* and *at the time of the utterance*. When we think about existence claims in metaphysics (also usually phrased in the present tense), we want to speak timelessly and unrestrictedly. If our theories about existence and about existents did not cover dinosaurs because they no longer exist,[9] or if they did not cover distant stars or elementary particles because those are not generally relevant to us, then that would constitute a problem for those theories; metaphysics is about all there is, at any time, whatever our interests.[10]

Likewise, when we make or consider possibility claims, in particular can statements (in the present tense) in ordinary contexts, we talk about *relevant* possibilities obtaining *at the time of the utterance*. When we think about possibility claims in metaphysics (also usually phrased in the present tense), we want to speak timelessly and unrestrictedly. A metaphysics of modality is about all possibilities whatsoever, at any time, whatever our interests. Let's see how we might implement this thought.

First, times. When we think about metaphysical possibility, we don't just ask ourselves whether this can be or that can be. We think (metalinguistically) about whether a sentence of the form '*x* can F' is, was or will ever be true; or we think (in object language) about whether it is, was, or ever will be the case that *x* can F. This idea is nicely captured by Dorothy Edgington:

> The [. . .] pre-philosophical notion [behind the philosophical notion of metaphysical modality] is that certain things can happen, certain things can't; people and other objects can do certain things and can't do others. What can and can't happen, in this sense, is a matter of empirical discovery. This car can do a hundred miles per hour (though it never will), this other car can't – as they are presently constituted. Later, when the first has deteriorated and the second hotted up, the position may be reversed. Diseases which were once incurable no longer are. [. . .] Call something absolutely metaphysically impossible if it is metaphysically impossible at all times. Its negation is absolutely metaphysically necessary. What is not absolutely metaphysically impossible is absolutely metaphysically possible. (Edgington 2004, 6)

Second, contexts. Can statements, like modal statements in general, are notoriously context-sensitive (Kratzer 1977; Kratzer 1981). Take a well-known example from Lewis 1976: compared to an ape, I can speak Finnish; I have the requisite larynx, brain and nervous systems. An ape can't speak a human language such as Finnish; but I can. However, don't expect me to speak Finnish. I can't speak Finnish; I've never learned it. Many more examples of this kind can be constructed. Fortunately, it is the very context-sensitivity of can statements that allows us to overcome their restricted nature and ultimately reach an unrestricted notion of metaphysical possibility.

Lewis's example points the way. My friend Mari can speak Finnish, but I can't; or so we would say in one context. Compared to an ape, of course, I *can* speak Finnish – I have the requisite physiological and neural make-up. And what about the ape? He doesn't have the right larynx or neural wiring to speak a human language such as Finnish. But with surgical alteration, he could in principle be changed in those respects (I think) and become able to speak. He contrasts with, say, a rock: no amount of surgery could make a rock able to speak. Compared to a stone, the ape *can* speak – it just takes more changes for him to realize that possibility than it does for me.[11]

Can statements made in ordinary language are context-sensitive; with a little work on the context, we can generally extend the realm of true possibility statements. It seems, though, that this ends somewhere. I cannot think of a context that would make me assent to 'Mount Everest can speak Finnish' (and if you can, then try 'the number two can speak Finnish'). The concept of metaphysical possibility simply marks the result of the extension, whatever exactly it may be; the concept of metaphysical necessity marks the limits of such an extension, whatever they may be.

We do not, of course, always actually go through some such process of gradual extension. We use terms such as 'absolutely' (as in Edgington's passage above) to mark the end-point of such extensions directly; sometimes the work is done simply by the fact that we are using modal terms while doing metaphysics. (Compare again the case of existence: we could, but we do not usually, extend the context for our quantificational statements gradually; rather, we tend to use adverbs such as '*simpliciter*' to mark the end-point of such an extension.) The important point for present purposes is that there *are* natural limits to contextual extension, though it is not always easy, and almost never uncontroversial, to state where they are located.

Note that all this is not intended as a definition or an analysis of metaphysical possibility or our concept of it, but simply as an account of how we come to think about (and consequently to know about) metaphysical possibility. I am not saying that *p*'s being metaphysically possible consists in the truth of 'it can be that *p*' in some (actual? or possible?) context. The proposal is merely that this kind of relaxation of actual contextual restrictions is what leads us to thinking about metaphysical possibility, and ultimately also about metaphysical necessity. (And as the examples illustrate, we need not have a notion of linguistic context in order to perform this kind of relaxation of contextual restrictions.) An analogous claim, I have suggested, is plausible for the metaphysical notion of existence.

We need careful attention to individual cases and contexts to see just how far such an extension can go. But that too is unsurprising: figuring out the extension of the metaphysically possible is hard; every metaphysician can attest to that. Note, however, that even absent a demarcation of the limits of metaphysical possibility, we know a great deal about metaphysical possibility

on this approach. Can statements entail statements of metaphysical possibility, and given an understanding of metaphysical possibility along the lines I have sketched, this entailment is now something that we are in a position to know.

It is important here to keep in mind the distinction between the two questions that I have distinguished in Section 1: how we get to think about metaphysical modality, and how we manage to extend our knowledge about it. I am suggesting that the two extensions I have outlined – relaxing context, abstracting from times – are enough to get us thinking about metaphysical modality proper (as opposed to some more restricted form of modality): metaphysical possibility is, as Williamson has said, the 'maximal' or most general form of objective possibility, that is, of the kind of possibility that we express in ordinary talk with can statements. I emphatically do not say that the two extensions I have outlined are enough to get us all the knowledge we need about metaphysical modality. It is just a start. (Again, the comparison with existence claims holds: relaxing context and abstracting from times is not enough to know what the right ontology is.) But I take it that what we need to make further progress is not all that different from what we do when theorizing in metaphysics about other phenomena: we need to carefully reflect on features of the everyday phenomenon with which we started (here: our understanding of can statements) and apply systematic metaphysical theorizing to them. For instance, reflection on certain temporal asymmetries in can statements, explicit or implicit, may give rise to the idea that an object could not have originated otherwise than it did. We can use all the resources of philosophical (and scientific) theorizing: considerations of simplicity and elegance, parsimony, the internal coherence or instability of a theory, formal representations and models, and so forth.

What is distinctive about knowledge of metaphysical modality is not so much how we get on once we have started the inquiry; it is rather how we get into an inquiry of *this* phenomenon, it is the entry point from which we generalize. It is this claim about the entry point – can statements, rather than counterfactual conditionals – that I will defend in the remainder of this paper.

Williamson discusses, albeit very briefly, a possibility-based alternative to his own modal epistemology (Williamson 2007, 177f.) which differs from my proposal in this section by taking 'could have' statements, rather than can statements, as its starting point. He takes the two approaches as 'not mutually exclusive . . . but rather as different cases in which the cognitive mechanisms of the one already provide for the other' (Williamson 2007, 178). My discussion in this paper should go some way towards showing that there are indeed substantial differences between the two approaches. Williamson then goes on to raise two worries about the envisaged possibility-based approach.

First, it is less clear how the possibility-based approach, starting as it does from more ordinary cases of circumstantial possibility, ever reaches the 'limiting case' of metaphysical possibility. Williamson's own epistemology, of course,

does so smoothly: by incorporating contradictions (or a quantifier), it takes us immediately to the limiting case. My favoured approach, proceeding by gradual extension, gives no guarantee of ever reaching the limiting case. I take this to be part of what is otherwise an attractive feature of the approach: it provides a degree of continuity between ordinary and metaphysical modal thought that seems truer to the spirit of anti-exceptionalism than Williamson's leap from ordinary counterfactuals to the rather unordinary counterfactuals in his equivalences. Still, I agree that there is a worry here; to point out just one case, I have not even said anything thus far on how we get to *de dicto* possibility statements. Important as the worry is, I will only address it very briefly in my concluding remarks in Section 7. I want to focus, instead, on Williamson's second challenge to a possibility-based approach.

Here is the second challenge. A possibility-based approach, Williamson says, needs to provide 'some account of what demarcates the relevant forms of possibility from irrelevant ones, such as epistemic possibility' (Williamson 2007, 178). The question arises twice over: first with our entry point, and second with the extension to the limiting case.

First: starting, as I have suggested we do, from can statements, how do we know that some of those can statements do not express epistemic possibility? It is well known that epistemic possibility, unlike circumstantial possibility, does not entail metaphysical possibility: it is epistemically possible that Goldbach's conjecture is true and epistemically possible that it is false, but one of these epistemic possibilities corresponds to a metaphysical impossibility. So if some of the can statements that we start from expressed epistemic possibility, we would have no guarantee that by generalizing from can statements we would not end up including metaphysical impossibilities.

Second: even if it were granted that we start only with properly objective can statements, how can we be sure that in generalizing from them we do not generalize too far, thus again including some epistemic possibilities that are metaphysically impossible? I suggested above that there is a natural limit of our contextual extension; yet how can we be sure that the limit is firmly located between metaphysical and epistemic possibility?

Let me refer to this double challenge as the *demarcation challenge*. I will argue in the remainder of this paper, first, that my own possibility-based approach easily meets the demarcation challenge (Section 4); and second, that it is in fact the counterfactual-based account that is faced with a serious demarcation challenge regarding its own entry point, counterfactual conditionals (Sections 5 and 6). The considerations on which my argument is based will also bring into sharper focus the second aspect of my entry point that has so far been somewhat in the background – the fact, that is, that we use 'can' to ascribe modal *properties* to objects.

4. The demarcation challenge

What, then, demarcates 'the relevant forms of possibility from irrelevant ones, such as epistemic possibility'? My answer to this question, in the present section, will appeal to some recent work in linguistics which indicates that we very clearly distinguish circumstantial modality (the relevant form for our purposes) from irrelevant, in particular epistemic, modality at the level of logical form. We have a deeply engrained, if mostly implicit, knowledge of that distinction; and respecting the relevant features of the distinction, as (we will see) my sketch in the previous section did, we run little to no risk of confusing the circumstantial possibility expressed by can statements with epistemic possibility, either at the level of the entry point or in properly extending from there to the limiting case of metaphysical modality.

In the now classic approach to modal expressions (henceforth abbreviated to 'modals'), shaped especially by Angelika Kratzer (see Kratzer 2012), all modals are alike at the level of logical form: they are sentence operators that take a whole sentence to form a new sentence. The resulting sentence is true or false depending on whether the embedded sentence is true or false in all or some of the selected worlds. Epistemic modals differ from circumstantial ones merely in their selection of worlds.

More recent work in linguistics, though still very much in the Kratzerian spirit, presents a more nuanced picture. It is now widely recognized that 'different semantic categories of modals are located in different positions in syntactic structure', and in particular that 'epistemic modals reside higher in the tree than non-epistemic ones' (Portner 2009, 143), at any rate higher than circumstantial modals.[12] Specifically, it can be seen across languages that epistemic modals take scope over the tense, aspect, and sometimes over quantifiers of the embedded sentence; while circumstantial modals scope below any tense, aspect, and quantifiers, which is to say, their complement does not itself contain any tense, aspect, or quantifiers.

There is a growing linguistic literature on these contrasts and how to interpret them (see, for instance, Brennan 1993; Cinque 1999; Viebahn and Vetter forthcoming; Hacquard 2006; Hacquard 2009; Hacquard 2010, and for an overview Portner 2009). In the present context, I will only be able to illustrate them briefly before continuing to discuss their implications for our present purposes. My illustrative examples will all be English, but the phenomenon is well attested across many languages of different families (Cinque 1999).

Circumstantial modals scope below, and epistemic modals above, tense and aspect. A first, though still somewhat superficial observation in this direction is that we can embed verbs with explicit tense and aspect under an epistemic, but not a circumstantial modal, as testified by the following sentences ('may' is a standard expression of epistemic, and 'can' of circumstantial possibility):

(1)   (a)   He may have travelled to Paris last summer. (epistemic)

> (b)   *He can have travelled to Paris last summer. (circumstantial)
(2)   (a)   He may be travelling to Paris right now. (epistemic)
> (b)   *He can be travelling to Paris right now. (circumstantial)

We can also see how the same form of a modal, when read either epistemically or circumstantially, elicits different readings:

> (3)   (a)   Mary had to be home at the time of the crime. (Epistemic: it is now necessary that in the past Mary was home at the time of the crime.)
> (b)   Mary had to sneeze. (Circumstantial: in the past, it was necessary for Mary to sneeze.)

We get both readings also with the past-tense/subjunctive 'could':

> (4)   (a)   Mary could have committed the murder; we certainly have no evidence to rule it out. (Epistemic: it is now possible that in the past Mary committed the murder.)
> (b)   Mary could have committed the murder; she had a weapon at her disposal and plenty of opportunity – but I'm sure she didn't do it. (Circumstantial: in the past, Mary had the means and the opportunity to commit the murder.)

The availability of epistemic readings as witnessed by (4-a) is one reason why I used the indicative 'can', rather than 'could (have)', in my positive proposal in Section 3.

There is some debate concerning whether or not epistemic modals can be in the scope of another tense operator: a well-known counterexample is

> (5)   A: Why did you look in the drawer?
> B: My keys might have been in there. (=It was possible that my keys were in there)

(The example is from Hacquard (2006, 121), who adapts the example from von Fintel and Gillies 2008. For discussion, see Hacquard (2006, 120–123) and von Fintel (2012, 476–477)). In fact, we might even get a tense-over-modal reading of our earlier examples: imagine, for instance, (3-a) uttered by a detective who is asked why she ceased to investigate Mary as a possible suspect and uses (3-a) to explain her past state of evidence. But what is uncontroversial in the linguistic literature is that circumstantial modals always scope below, and never above, any temporal operator, while epistemic modals always scope above a temporal operator (whether or not they may also scope below another). Hacquard goes so far as to say that '[o]ne way to unambiguously distinguish an epistemic from a root [including a circumstantial] interpretation is to look at the modal's interaction with tense' (Hacquard 2009, 289).

As for quantifiers, Brennan (1993, 93) notes that the following two sentences differ in the availability of a *de dicto* reading:

(6) Every radio may get Chicago stations and no radio may get Chicago stations.

(7) Every radio can get Chicago stations and no radio can get Chicago stations.

(6), featuring the epistemic modal 'may', exhibits both a *de re* reading that (on the obvious background assumption that there are radios) sounds contradictory and a *de dicto* reading that is consistent; while (7), featuring the circumstantial modal 'can', cannot be heard as consistent (on the same background assumption), showing that it has only the contradictory *de re* reading.

On the basis of this and other evidence, Brennan generalizes to the claim that circumstantial modals allow only for *de re* reading, taking scope below any quantifiers (unless they are part of the verb phrase), while epistemic modals can scope either above or below any quantifier. (Both epistemic and circumstantial modals can scope above quantifiers that are part of the verb phrase, e.g. as part of the object of a transitive verb: cp. 'She can keep every ball in the air simultaneously'.[13]) Some even argue that quantifiers can never take scope over epistemic modals (see, for instance, von Fintel and Iatridou (2003); Swanson (2010) disputes the view but notes that is it a 'common view', Swanson (2010, 529)). For our purposes, again, it is enough that circumstantial modals always scope below, and never above, quantifiers that are not part of the verb phrase, while epistemic modals may uncontroversially scope above such a quantifier (whether or not they can also scope below one).

How is this claim to be accommodated in a semantic theory? Generally speaking, the idea is this: circumstantial modals ascribe *modal properties* such as abilities, dispositions, and capacities to objects, typically to the subject of the sentence; such properties may be gained and lost, hence their ascription is tensed. Typically, therefore, they function by relating a sentence's subject to an (untensed) predicate. Epistemic modals express the epistemic standing (typically, at the time of the utterance) of an entire proposition, hence they apply to a sentence that expresses a full-blown proposition complete with tense, aspect and possibly quantifiers.

Exactly how this general idea is implemented, is somewhat controversial. Brennan (1993) argues that while epistemic modals are sentence operators just as Kratzer's semantics has it, circumstantial modals are predicate modifiers, taking a verb phrase to form another verb phrase expressing a modal property, which is then attributed to the sentence's subject. Potential counterexamples to this claim include such apparently circumstantial sentences as 'there can be rain in California', which lack a semantic subject. Brennan (1993) and Portner (2009) respond by introducing an additional category of 'quantificational modals'. Others modify the original proposal, while upholding the general idea. Hacquard, in particular, holds that circumstantial modals apply to a tense- and

aspectless 'proto-sentence', which expresses an event, and are 'anchored to' some object participating in the event – typically, but not always, the object referred to by the sentence's grammatical subject – to which a modal property is ascribed. Epistemic modals, on the other hand, apply to a full-blown sentence and are anchored to the 'local knowledge bearer' – typically, but not always, the speaker of the sentence. (Hacquard 2010, 92)

For our purposes, these differences do not matter. What matters is the general diagnosis: circumstantial modals such as 'can' and epistemic modals differ significantly in their syntactic behaviour. Circumstantial modals are restricted to a certain place in the sentence structure: below tense, aspect, and any quantifiers (outside the verb phrase). Epistemic modals appear freer in their syntactic position, but they must have tense and aspect in their scope, and they certainly can scope above any quantifier. Moreover, these differences are best explained by the semantic fact that we implicitly recognize a significant semantic distinction: circumstantial modals ascribe modal properties to the objects that the sentence is about; epistemic modals express, in some way or another, the epistemic standing of a proposition relative to a subject that the sentence need not in any sense be about.

We are now in a position to answer the demarcation challenge, both as it applies to the entry point itself and as it applies to the process of generalizing from it.

How do we manage to start with a non-epistemic modal concept as our *entry point*? The answer is, first, that we start with an understanding of expressions of circumstantial modality, the modal 'can' and its cognates in other languages, and that we have a firm if usually implicit grasp of the distinction between such circumstantial modality and epistemic modality, as evidenced by our mastery of the subtle syntactic differences between them. Secondly, we can now see that this syntactic implementation of circumstantial and epistemic modality is no accident. We use circumstantial modals such as 'can' to ascribe modal properties to objects; apart from some special cases,[14] we do not generally use epistemic modals to ascribe properties to objects (or only, perhaps, to a special kind of object: propositions). This is not an arbitrary distinction: we tend to think about objective, mind-independent reality as a matter of objects having properties. It is no wonder that we use that same way of thinking for objective, as opposed to epistemic, modality.

Further, given this entry point, how do we avoid *generalizing* too far and ending up with mere epistemic possibilities after all? The answer should now be clear. The meanings of circumstantial modals are sufficiently different from each other that we should expect there to be a natural boundary between them when we generalize beyond the restrictions of ordinary circumstantial modals. In fact, they are so different from each other that there is little reason to expect a natural passing from one to the other; so the question of a boundary between them may not even arise.

To be sure, we have modals that express both circumstantial and epistemic modality[15]); but as we have seen in this section, there are important disanalogies with respect to both syntax and semantics, suggesting that such modals in fact exhibit a kind of ambiguity, or more precisely, polysemy.[16]

This is emphatically not to say that philosophers never do, in fact, mistake mere epistemic possibilities for metaphysical possibilities; I think they often do, in particular when they simply examine intuitions about sentence-operators such as 'it is possible that . . .', which are epistemic in all ordinary contexts (see Kratzer 1981; DeRose 1991). It is to say, rather, that there is a good way of not making that mistake: by linking metaphysically modal thought, however implicitly and however indirectly, to thought about the modal properties of objects.

So far, I have argued that the possibility-based approach has the resources to meet Williamson's demarcation challenge. Williamson's phrasing of the challenge suggests that he believes no analogous problem to apply to his own, counterfactual-based account. In the next two sections, I will argue that this is not so. The counterfactual-based account begins with our understanding of linguistic constructions like the English 'if it were the case . . . then it would be . . .'. I will argue for two claims. First, counterfactual conditionals have epistemic as well as circumstantial readings. And second, it is much less clear that we can implicitly demarcate these readings for counterfactuals, making counterfactuals a less suitable entry point into metaphysical, non-epistemic, modal thought and knowledge than can statements. This is my own demarcation challenge to Williamson's modal epistemology, more specifically, to its entry point. Section 5 will defend the first claim, Section 6 the second.

5. Epistemic counterfactuals

Williamson (2007) does not explicitly state but clearly assumes that the counterfactuals to which he appeals have circumstantial and not epistemic readings (see also Williamson ms, 10). In a more recent paper, he explicitly states that '[n]ormally, counterfactuals are on the objective side of this contrast [between objective/circumstantial and epistemic]' (Williamson forthcoming-a, 14); he does not say anything about any abnormal readings.

I begin by arguing that there are counterfactuals, i.e. sentences of the form 'if it were/had been that . . . then it would be/would have been that . . .', which have epistemic readings. A nice array of examples can be found in Edgington (2008) (numbers and paragraphs are inserted by me):

(i) There is a treasure hunt. The organizer tells me 'I'll give you a hint: it's either in the attic or the garden.' Trusting the speaker, I think 'If it's not in the attic it's in the garden.' We are competing in pairs: I go to the attic and tip off my partner to search the garden. I discover the treasure. 'Why did you tell me to go to the garden?' she asks. 'Because if it hadn't been in the attic it would have been in

the garden: that's (what I inferred from) what I was told.' That doesn't sound wrong in the context.
 (ii) Or consider: 'Why did you hold Smith for questioning?' 'Because we knew the crime was committed by either Jones or Smith – if it hadn't been Jones, it would have been Smith.'
(iii) There's also a nice example of van Fraassen's (. . .): the conjuror holds up a penny and claims he got it from the boy's pocket. 'That didn't come from my pocket', says the boy. 'All the coins in my pocket are silver. If that had come from my pocket, it would have been a silver coin.'
(Edgington 2008, 16f.)[17]

In all three cases, it seems clear that the connection between the antecedent and the consequent of the conditional is not 'worldly' but rather relative to our state of information: the utterance in (i) is true even if the organizer never had the intention, or even the option, of hiding the treasure in the garden; it is true simply by virtue of the speaker's having had the evidence that she had. The utterance in (ii), likewise, is true even if there was never objectively any significant objective chance of Smith committing the murder; rather, it is related to the evidence that the speaker had in the past. Finally, the boy in (iii) makes no claim to the effect that the coin would have turned into silver had it been in his pocket. Rather, it is relative to his knowledge that all the coins in his pocket are silver that this coin would have to (epistemic *have to*!) be silver if it had come from his pocket.

Edgington (2011) and Khoo (2015) have both pointed out that we can produce epistemic readings along the lines of (ii) for just about every counterfactual, even the paradigmatic example 'if Oswald hadn't shot Kennedy, someone else would have': just imagine a detective explaining why she was investigating other suspects after it has become clear that Oswald was indeed the shooter (see Edgington 2011, 239; Khoo 2015, 25f.). This should not come as much of a surprise: we noted a corresponding reading for non-conditional modals in Section 4.

I would like to add a hypothesis of my own to extend the class of epistemically-read counterfactuals. Williamson has argued in a number of places (Williamson 2007, 171–175; Williamson forthcoming-a) that counterpossibles are vacuously true. Imagine that, while walking in the wilderness, we enter a clearing and something runs past us from an unexpected angle. In fact, it is a harmless gazelle; but we both know that there are dangerous tigers about. Shocked, you say to me:

(8) If that had been a tiger, we would be dead now.

This seems a reasonable thing to say under the circumstances, and a useful statement reminding us to be more careful in the future (next time it might be a tiger instead of a gazelle). On the contrary,

(9) If that had been a tiger, it would have had tea with us.

Seems, on the face of it, clearly false. Of course, given the necessity of kindhood (or at least the necessity of not belonging to a very different biological kind), both are counterpossibles, and hence both are true, according to Williamson. The difference between them is one of assertability, not of truth (Williamson 2007, 173; Williamson forthcoming-a, 9). Arguably, however, if we had a way of making (8) true and (9) false without getting into trouble, that would be the preferable reading. Williamson, of course, has forceful arguments to show that we *do* run into trouble unless we accept the truth of both (8) and (9). But, as I have pointed out elsewhere (Vetter forthcoming) and as Williamson readily acknowledges (see Williamson 2007, 175; Williamson forthcoming-a, 14), his arguments turn on the idea that the counterfactuals in question are objective, that is, circumstantial. If (8) and (9) are read epistemically, then the metaphysical impossibility of their antecedents has little bearing on their truth-value.

Compare: on a circumstantial (objective) reading of 'could', the following are both false in the scenario described for (8) and (9):

(10) This could have been a tiger.
(11) This could have been a cloud.

On an epistemic reading, this is not so: (10) is true, while (11) is, presumably, false. Epistemic readings allow us to make distinctions among metaphysical impossibilities that are important, and to allow those distinctions to be just what they appear to be: differences in truth-value, not in assertability. I suggest, therefore, that we read (8) and (9), as well as other (metaphysical) counterpossibles, as epistemic.[18] (We will meet the two tiger conditionals again later.)

It seems, then, that there are a reasonably wide range of epistemically read counterfactuals. So, in gaining knowledge about metaphysical modality from our knowledge of counterfactuals, we must make sure that the counterfactuals we start with are understood circumstantially, not epistemically.

Khoo (2015) appears to offer an easy way out arguing that the circumstantial reading is the default reading of a counterfactual. According to Khoo, epistemic counterfactuals all share with circumstantial counterfactuals (but not with indicative conditionals) a syntactic feature that we have seen to be typical of circumstantial modals: they are embedded under a (past) tense. The epistemic counterfactual in Edgington's (ii) is properly read as saying that *in the past* it was epistemically necessary, under the supposition that it wasn't Jones, that it would have been Smith. Khoo takes this to explain why circumstantial readings are the default reading for this kind of construction: we rarely 'care about past possibilities which are no longer open possibilities (having learnt something new which rules them out)' (Khoo 2015, 27).

However, I take Edgington's example (iii) to constitute a counterexample to this general claim. In (iii), what we have is an epistemic counterfactual that is relativized to the boy's current evidence (in particular, his knowledge about the coins in his pocket all being silver, and having been so when the conjuror

did his trick). It *is* necessary (at the time of utterance: present tense), given his present evidence, that if in the past the coin had come from the boy's pocket, it would then in the past have been silver. The interaction between the epistemic counterfactual and the past tense appears to be more complex than Khoo's hypothesis allows; and therefore his explanation for, and his claim of, a default circumstantial reading does not apply in all cases. (Moreover, as we will see shortly, there may well be reason to care about counterfactuals even when they concern past possibilities that are no longer open: like circumstantial counterfactuals, they help us learn from experience.)

Of course, to close off the easy way out is not yet to show that there is no other way out. However, I will now argue that it is not at all clear that we are as good at distinguishing the relevant forms of counterfactuals from the irrelevant ones, in particular the epistemic ones, as we are with the simpler modal constructions, such as expressions of possibility.

6. Demarcating counterfactuals

How are we to demarcate circumstantial from epistemic counterfactuals, so as to make sure that we do not infect our metaphysically modal thought with epistemic modality? This section will offer no positive answer to the question, but rather point out that an answer is not as easy to come by as in the case of can statements: we are, I suggest, not all that good at drawing the required distinctions, at least not without some theoretical background. This makes counterfactuals less suited as an *entry point* into metaphysically modal thought, although it may be that with more advanced theorizing about these kinds of modality, we come to understand and apply the distinction competently and successfully. But that understanding has to start elsewhere; my suggestion has been that it starts with can statements.

I offer three kinds of consideration to support my claim. First, the syntactic considerations that I used for the case of can statements do not carry over to counterfactuals. Second, there is evidence that speakers with the relevant linguistic and metalinguistic competence do indeed disagree dramatically about the readings of standard counterfactuals. And third, given the practical and evolutionary role that counterfactuals play, there is no reason to expect that we should be very good at distinguishing between their epistemic and circumstantial readings, for they serve much the same purposes.

6.1. First consideration: syntax

To begin with, note that the considerations that I have adduced for the case of can statements do not straightforwardly apply to counterfactuals. As we saw in Section 4, there is good syntactic and semantic evidence that we use 'can' to ascribe modal properties to objects, and that we are implicitly very aware of the

distinction between the (circumstantial) ascription of modal properties on the one hand and epistemic modality on the other. After all, we consistently apply it in the syntactic construction of modals. Counterfactuals, whether epistemic or circumstantial, do not appear to ascribe modal properties to individual objects; they appear rather to link two states of affairs to each other.[19] This is mirrored in their syntactic structure.

The exact connection between the syntactic features of the different modal flavours, as described in Section 4, on the one hand and counterfactuals on the other hand has not received (or has, perhaps, resisted) the kind of attention and theoretical work that would provide us with a systematic understanding of them. But it is relatively easy to see that counterfactuals, even if they are plausibly read circumstantially, do not exhibit the syntactic marks of circumstantial modals. First, the counterfactual 'would' – unlike any of the standard circumstantial modals – can embed both aspect (as in (12)) and quantifiers (as in (13)). Consider:

(12)　(a)　If you were in Italy, you would be having dinner right now.
　　　(b)　If you had gone to Italy, you could have been eating pasta all week.
(13)　(a)　If that rock had fallen down, somebody would have been hurt.

The relation between counterfactuals and tense is somewhat more complicated (and contested). Hacquard (2006, 160), for instance, argues that counterfactuality is a syntactic element in its own rights, situated below epistemic modals and tense, but above aspect and circumstantial modals. A further complication arises from what is sometimes called 'fake tense' (Iatridou 2000): an apparent past tense which, as in (12-a) ('you were'), does not serve to indicate a past time at all but rather appears to have a modal function itself. I cannot even begin to disentangle these various issues here. But there are at least some cases where the circumstantial, counterfactual 'would' must take scope over a past tense: backtracking counterfactuals. (Here I use 'backtracking' in a more narrow sense than is usual in the literature, for counterfactuals whose consequent is about a time prior to the time of the antecedent; those are the only cases that I am interested in at present.) It would appear that there are true instances of backtracking counterfactuals with circumstantial readings, such as

(14) If she had a twin sister, her mother would have had at least two children.
(15) If she had measles now, she would have got it from someone else.
(16) If Jim had asked Jack for help, they wouldn't have quarreled yesterday.

((14) is from Arregui (2005), (16) is adapted from Lewis (1979)). Each of these sentences, in at least some contexts, are circumstantial: they are about the necessary conditions for someone to have a twin sister, about the causal history of a child's disease, and about Jim's character; and each of these sentences is or at least may well be true in such a context. But in each of these sentences,

the past tense of the consequent does not take scope over the counterfactual 'would': it is *now* the case that a certain present state counterfactually requires a certain past state.

If this is right, then the counterfactual 'would', unlike standard modals, can in principle scope above tense, as well as over aspect and quantifiers (outside the verb phrase). The syntactic-cum-semantic considerations that I have used to counter the demarcation challenge to my own possibility-based approach does not, then, seem to be available for a counterfactual-based account.

6.2. Second consideration: linguistic intuitions

Perhaps Williamson will respond that we nevertheless have a good intuitive grasp of the distinction between epistemic and circumstantial readings in the case of counterfactuals; perhaps that is all we need. I respond that there is little reason to think that we do have such a grasp. An indication of this can be found in classifications made by professional linguists, certainly reflective and informed speakers of their native language *par excellence*.

While the semantic literature on the various flavours of modals tends to neglect the counterfactual 'would', there have been two comprehensive corpus-linguistic studies on the English modals including the uses of 'would' in counterfactual conditionals (Coates 1983; Collins 2009). Both are characterized by their authors' close and careful attention to the semantic features, in particular the modal flavours, of the enormous number of real-life examples that they examine. Both largely classify the 'would' of the counterfactual conditional as epistemic. Coates (1983, 213), in fact, classifies *all* occurrences of 'would' where it occurs as a 'general hypothetical marker' (rather than a past-tense or hypothetical form of 'will') as epistemic. She does so, unlike with other modals, not so much on the grounds of her linguistic intuitions about particular cases, but because the counterfactual 'would' aligns syntactically with epistemic, not circumstantial or deontic modals, with respect to several syntactic markers that she found to be 100% correlated with epistemic modality in her sample.[20] I myself would not accept her sweeping classification of all hypothetical 'would' as epistemic. But it is interesting that Coates herself, a trained linguist with a keen ear for semantic classifications (much of her study relies on her classifying occurrences of various modals according to semantic intuition) has no qualms in so classifying it. In a more recent study based on larger, computer-generated text corpora, Collins (2009) found that the hypothetical 'would' was used epistemically in 64.3 % of cases, and circumstantially in only 22.9% (Collins 2009, 140), though he does not discuss his reasons for classifying the occurrences as he does.

Now, as philosophers, we need not be silenced by these kinds of syntactic observations. We need not agree with either Coates or Collins; we may argue, on a case-by-case basis, that the most natural reading of 'would' in the counter-

factuals in question is circumstantial. (I, for one, think that it often is.) But the fact that qualified linguists, who certainly understand what they are talking about, disagree with us does show that there is some uncertainty about whether or not a given counterfactual is to be read epistemically or circumstantially. With 'can', on the other hand, there are no advocates of widespread epistemic readings; 'can' is firmly and uncontroversially circumstantial. I take this to be a clear advantage of my proposed approach vis-á-vis the demarcation challenge.

6.3. Third consideration: evaluating counterfactuals

I now turn to a third kind of consideration: there is no reason, given our practice of evaluating counterfactuals and the evolutionary explanations for those practices, why we *should* be particularly good at keeping them apart. Our evaluations proceed in much the same way, and serve much the same purposes, whether the counterfactuals in question are circumstantial or epistemic.

How do we evaluate counterfactuals with circumstantial readings, according to Williamson? There is no uniform answer to this question: 'In general, our capacity to evaluate counterfactuals recruits *all* our cognitive capacities to evaluate sentences. . . . There is no uniform epistemology of counterfactuals'. (Williamson 2007, 152) Nevertheless

> [w]e can still schematize a typical overall process of evaluating a counterfactual conditional thus: one supposes the antecedent and develops the supposition, adding further judgements within the supposition by reasoning, offline predictive mechanisms, and other offline judgements. . . . To a first approximation: one asserts the counterfactual conditional if and only if the development eventually leads one to add the consequent. (Williamson 2007, 152f.)

It is natural to think that, if this picture is right for (many) circumstantial counterfactuals, it is right also for (many) epistemic counterfactuals. This may be easiest to see when we eliminate the role of past tense in epistemic counterfactuals. For instance, imagine a group of police officers considering possible suspects for a murder. The weapon has not been found, but the flat of suspect A has been thoroughly searched. If in this context one of the officers says,

(17) If A were the murderer, she would be hiding the weapon in a very safe place,

then this is plausibly read epistemically.[21] How would the police officers reason about (17)? Plausibly, by supposing A to be the murderer and developing the supposition further, using the evidence that is currently available to them (e.g. that the weapon has not been found).[22] But this is just what one would do in the circumstantial case. Admittedly, the kinds of evidence that are considered in the two cases seem to differ, and I am not able to give, nor do I know of anyone giving, a systematic account of exactly how they differ.

Nevertheless, my point stands: what we do in the two cases is a very similar kind of process.

There is one relatively clear disanalogy between how we (properly) evaluate circumstantial and epistemic counterfactuals, which is clear when there are indexicals involved. Consider again the counterfactual (8): 'if this had been a tiger, we would be dead now'. In evaluating this counterfactual circumstantially, we would have to develop the impossible supposition that this very thing, which is a gazelle, was a tiger. In evaluating it epistemically, we can focus on the way in which 'this' is presented to us, rather than on what the word 'this' refers to. We might say, then, that we are developing a different supposition. (In two-dimensional terms, we are dealing with the A-intension, not the C-intension, of the antecedent.) We might also say that we are holding fixed different pieces of knowledge, or belief, in evaluating the counterfactual circumstantially or epistemically. When evaluating the circumstantial reading, we hold fixed what Williamson calls 'constitutive matters' (Williamson 2007, 170) such as the identity and kind of the object involved. When evaluating the epistemic reading, we hold fixed the more superficial matters of how things appear to us; their constitution need not be of concern to us in this case. This is a substantial difference; but it is not one, I submit, to which we pay much attention in reasoning with counterfactuals. For most practical intents and purposes, we can switch between these two kinds of considerations just as easily as we switch between holding fixed different sets of facts. This is because both circumstantial and epistemic counterfactuals serve more or less the same purposes in everyday life – or so I am now going to suggest.

Williamson stresses that there is a valid evolutionary explanation available for our reliability in evaluating (objective) counterfactual possibilities. In general, he says,

> [o]ur overall capacity for somewhat reliable thought about counterfactual possibilities is hardly surprising, for we cannot know in advance exactly which possibilities are or will be actual. We need to make contingency plans. In practice, the only way for us to be cognitively equipped to deal with the actual is by being cognitively equipped to deal with a wide variety of contingencies, most of them counterfactual. (Williamson 2007, 137)

Note that this, too, applies to the epistemically possible if it applies to the circumstantially possible. In practice, we may add, it makes little difference whether a certain contingency is objectively possible given how things are, or whether it is epistemically possible, not ruled out by what we know. We prepare for contingencies that we know have some chance of coming about; and we prepare for contingencies that we know we can't well rule out. Theoretically, there is a world of a difference between the two; practically, that difference vanishes because we cannot easily tell the difference between facts and known facts – the known facts are, after all, the only facts that we know of.[23]

What goes for circumstantial and epistemic modality in general, goes for circumstantial and epistemic counterfactuals. Williamson points out that counterfactuals can provide abductive and deductive evidence for their antecedents: the counterfactual 'if Jones had taken arsenic, he would have shown just exactly those symptoms which he does in fact show' can be used to infer (abductively) that Jones has taken arsenic, while 'If Jones had taken arsenic, he would not have shown just exactly those symptoms which he does in fact show' can be used to infer (by modus tollens) that Jones hast not taken arsenic (Williamson 2007, 137). Likewise, Edgington's epistemic counterfactual 'If that (coin) had come from my pocket, it would have been silver' is used by the boy in Edgington's example to infer, by modus tollens, the falsity of its antecedent. In a different scenario, it might well be used the other way around, to infer abductively from the coin's being silver to its having come from the speaker's pocket.

Counterfactuals are crucial for learning from mistakes, as Williamson (2007, 140) notes (for a more extensive exposition of the point, see Krödel (2012) and Krödel (forthcoming)). To use Thomas Krödel's example,

> suppose that I am attacked by a tiger while asleep during an expedition and only narrowly escape death. I reason that I would not have been attacked by a tiger if I had lit a campfire, and resolve to light a campfire on similar occasions in the future. Doing so, I avoid tiger attacks for the remainder of the expedition and return home safely. (Krödel 2012, 4)

Now consider again our earlier example of what I have argued to be an epistemic counterfactual: 'if that had been a tiger, we would be dead now'. This, too, enables us to learn from mistakes: I will resolve never again to tread so carelessly in the wilderness, because from what I know, that might end very badly.

I am not saying that epistemic counterfactuals share all the useful features of circumstantial ones; many circumstantial counterfactuals do not share all those features either. (Epistemic counterfactuals presumably do not link to causation in the way that many circumstantial ones do, to mention an obvious point of departure; but many circumstantial counterfactuals are not linked to causation either, see Williamson 2007, 140f). But given that the two kinds of counterfactuals share important functions for practical and practice-oriented reasoning – delineating options for action, providing a basis for inductive inference, learning from mistakes – there is no reason to believe in any evolutionary pressure for a sharp distinction between the relevant cognitive capacities.

This completes my third, and longest, consideration. Given both the available practices for evaluating counterfactuals, and the evolutionary pressures under which those practices may be supposed to have evolved, there is no reason to expect that we are particularly good at telling them apart. Their syntactic and semantic structure does not help either, as we have seen in my first consideration; and, as my second consideration showed, there is

empirical evidence from corpus linguistics that even reflective, competent native speakers do not firmly have the right intuitions (whether it is Coates or us – one side has to be wrong).

Do similar considerations not apply to my own approach? Like circumstantial counterfactuals, can statements presumably share with their epistemic counterparts a great deal of their practical and evolutionary significance. But this fact does not have the same implications in the case of can statements that it does in the case of counterfactuals. For we have, in the case of non-conditional modal statements, the syntactic-cum-semantic considerations outlined in Section 4. And moreover, the methods for assessing a can statement may differ drastically from those used for assessing a statement of epistemic possibility – after all, one is a method for evaluating the ascription of modal properties to objects, while the other is a method for evaluating the attribution of an epistemic standing to a proposition.

7. Conclusion

WME is characterized by realism about metaphysical modality, along with anti-exceptionalism about our ways of knowing about it. In this paper I have suggested a form of WME that differs from Williamson's own version in that it takes can statements, not counterfactual conditionals, as the entry point into modal thought. We come to understand and know about metaphysical modality, on the view that I have suggested, by gradually extending from can statements and understanding the phenomenon about which we are reasoning to be the limiting case of that extension. I have argued that, *contra* a suggestion of Williamson's, my own approach does better justice to the deep division between metaphysical, that is objective, and epistemic modality. It does so precisely because can statements are, *qua* attributions of modal properties, syntactically and semantically set apart from statements of epistemic modality in a way in which circumstantial counterfactuals are not.

How much weight we are willing to attribute to this depends on how much weight we are willing to attribute to the demarcation challenge in general – that is, it depends on how concerned we are (or think we should be) about confusing metaphysical with epistemic modality. Given the history of philosophy, I think there is reason to take the demarcation challenge very seriously. (Recall that WME, in both versions, is intended as a descriptive thesis, but descriptive only of what happens in the best case: when we do acquire knowledge.)

My concern, as I have stressed throughout, has been with arguing that can statements provide a better entry point into metaphysically modal thought and knowledge than counterfactuals. I have left open a great many questions concerning the positive nature of my proposal. In concluding, I want to briefly mention (if not properly address) two limitations of my proposed account that may seem troubling.

An important factor in my argument was that can statements attribute modal properties to objects at times. This may seem to be limiting twice over.

First, we may feel that even abstracting from times in the way that I did (whatever can be the case at *some* time, is metaphysically possible at all times) does not yield properly timeless modality. What about the truths of mathematics, whose necessity seems prior to any time at which they are necessary? And more pressingly, what about possibilities that were not possible at any time – for instance, that the world had always contained fewer objects or more dimensions?

In Section 3, I said that we reach a notion of metaphysical possibility by abstracting from circumstantial possibility both concerning times and concerning contexts. I did not claim that we abstract *only* from times and contexts, in the way I outlined there. Perhaps we can abstract further still and thereby yield a less limited conception of metaphysical possibility, one not subject to temporal asymmetry in the way just sketched. Perhaps appeal to the apparently timeless modal truths of mathematics helps us get on this route. But given our observations about the syntax of circumstantial and epistemic modals, I want to sound a cautionary note here. We should not leap too hastily from the syntactic construction provided by circumstantial modals to a full-blown sentence operator along the lines 'it is possible that . . .', on pain of losing the features that guide our linguistic understanding of the distinction between the relevant (circumstantial) and irrelevant (epistemic) kinds of modality. Perhaps such a move is ultimately needed, for general metaphysical considerations of some sort; but it is one that tends to switch our linguistic intuitions over to the epistemic side. It may be that some of our intuitions about metaphysical possibility are indeed generated by relying too much on our intuitions concerning the truth of sentences which, in ordinary language, are understood as epistemic. What is needed, then, is not reliance on those particular linguistic intuitions, but simply metaphysical theorizing. What I have said here leaves wide open the question how far beyond our entry point such theorizing can take us.

Second, we may feel that the focus on modal properties of objects yields an undue limitation to *de re* possibilities. How, then, do we get a grasp on metaphysical modality *de dicto*?

The most conservative response would be to simply adopt the Barcan formulas (in both directions): *de dicto* possibilities are just *de re* possibilities in a different guise. The consequences of such a stance are well known; it is intuitive for a great deal of *de dicto* possibilities (such as the possibility that there be a woman President of the U.S.), but is committed to either rejecting others (such as the possibility of there being an identical twin of mine) or accepting *mere possibilia* and thereby a significant increase in ontology. Williamson, of course, takes the latter route (see, for instance, Williamson 1999, 2002, 2013). But his

argument is metaphysical; so the question remains whether his metaphysical commitment is properly incorporated into an epistemology of modality.

Again, we may take a less conservative stance here and propose further extending our notion of modality from the circumstantial to the metaphysical.[24] But here as before, we must be careful not to leap into a generalization that may turn the expressions we use into epistemic modals.

The account I have given was, of course, one of our modal *knowledge*, not of modality itself. So even if those limitations persist, they may be epistemic rather than metaphysical. But WME, by its nature, need not be overly conciliatory. Given realism about modality, we may just get things very wrong. Given anti-exceptionalism, we may get things wrong especially when we try to obtain modal knowledge by some exceptionalist route, such as conceiving (in one of the special senses sometimes given to the term by rationalists about modal knowledge). For any putative counterexample, we may reasonably ask what the evidence for the particular possibility (or necessity) is. Appeal to conceivability will not do. [25]

Notes

1. Anti-exceptionalism about philosophical knowledge is, of course, one of the main tenets of Williamson 2007; Williamson uses the term 'exceptionalism' to describe his opponents, see e.g. Williamson(2007, 3).
2. I adapt these labels from Hale (2003). Note, however, that Hale only distinguishes between possibility-based and necessity-based modal epistemologies. Williamson's modal epistemology would be necessity-based by Hale's standards (if it is asymmetric at all) because the natural, and probably the epistemically primary, equivalences in Williamson's picture link necessity to counterfactuals. Moreover, I would like to stress that the possibility-based epistemology that Hale (2003) discusses is quite different from the one that I will sketch in Section 3, precisely because my own version is broadly Williamsonian.
3. In addition, as Krödel (2012) points out, our credence in a necessity claim will normally be higher than that in the corresponding counterfactual on the right-hand side of an instance of (V□) or (V*□), so our knowledge of the former can hardly be explained in terms of knowledge of the latter. I agree; but as Krödel also points out, this objection does not apply to (Q□).
4. Here is why. If counterpossibles are sometimes false, and if A is a necessary truth, then $(\neg A \; \square\!\!\rightarrow \perp)$ and $(\neg A \; \square\!\!\rightarrow A)$ should be prime examples for false counterpossibles: if there is anything that the impossibility $\neg A$ does *not* counterfactually imply, it's its own contradiction (A) or indeed any contradiction ($\perp$). So both (V□) and (V*□) require that all counterpossibles be true. And so does (Q□); otherwise replacing p with $\neg A$ on its right-hand side would yield a counterexample to the universal quantification despite the necessary truth of A.
5. Some linguists claim that we can use tense to express a modal meaning; cf. Iatridou (2000) on 'fake tense'; see also Section 6.
6. Strohminger speaks about 'abilities' where I speak of can statements; Nanay is concerned with 'action properties', a notion that is close to Gibsonian affordances. Both switch between explicit can statements and dispositional idioms

such as 'edible', 'reachable', 'breakable', etc. I take such idioms to be equivalent, probably even synonymous, with corresponding can statements (see Vetter 2014), so I am happy to include them as well. See Nanay (2012, 431f) for some differentiations between his own view, which I have here labelled 'Gibsonian', and Gibson's affordance theory of perceptual content.

7. Williamson (forthcoming-b) can be read as claiming that imagination is a route to knowledge about can statements – but there he appears to think of can statements along the lines of a version of the conditional analysis of ability ascriptions, see Williamson (forthcoming-b, 6, 9). I treat can statements as a kind of restricted possibility statement.

8. *Pace* Spencer forthcoming, who argues against that entailment. My response to his arguments would take us too far afield for present purposes.

9. Of course, we may conclude that dinosaurs do not exist if we are presentists or temporaryists. But the relevant claim then would be that it is *always* that case that what exists is what presently exists (in some sense of that frustrating term), so we must still go beyond the temporal restriction of ordinary existence claims.

10. I am assuming here that we *can* quantify unrestrictedly (see Williamson 2003). If not, the claims in the text could be reformulated accordingly.

11. Am I using counterfactuals in extending beyond ordinary can statements here? If so, do I not require the same resources as Williamson's epistemology, in addition to those of my own? – I am not entirely convinced that the envisaged extension must use counterfactuals. But note that even if it does, it uses them only to get from one objective possibility to another objective possibility. Counterpossibles, or the Williamsonian equivalences, do not feature in the picture at all; and it is the modality expressed by 'can', not that expressed by the counterfactual conditional, which settles the nature of the modality at issue.

12. Deontic modals are harder to classify, but I will focus on the distinction between circumstantial and epistemic modals, since I agree with Williamson that there is less danger of confusing our target type of modality, circumstantial modality, with deontic modality; see Williamson ms, 2.

13. Thanks to Tim Williamson for prompting this clarification and several others.

14. Such as: 'These cities share one feature: Napoleon might have visited them'.

15. 'Can' has hardly any epistemic uses in its positive, present-tensed form. But its negation may be used epistemically, as in 'This cannot be true!'; and of course, 'could' has an established epistemic use. Other languages, such as German, have equivalent expressions which, while predominantly circumstantial, are more easily recruited for epistemic uses.

16. Polysemy is, in short, non-accidental ambiguity – the kind of ambiguity exhibited by 'since' (temporal or causal relation) but not by 'bank'. Emanuel Viebahn and I provide an extended argument for the polysemy of modals in Viebahn and Vetter forthcoming.

17. See also Edgington 2007; Edgington 2011.

18. A more detailed argument can be found in Vetter (forthcoming).

19. I have elsewhere argued that a dispositionalist account for the truth-conditions of counterfactuals can be defended; see Vetter (forthcoming). This is compatible with saying that we do not syntactically or semantically construe counterfactuals in this way.

20. The markers may be somewhat surprising: Coates found that only epistemic, and no circumstantial, modals had (i) inanimate sentence subjects, (ii) existential sentence subjects, (iii) stative verbs, (iv) progressive aspect, and (v) quasi-modals in their scope. As a corpus linguist, Coates makes no claim that

these markers hold for all possible expressions of epistemic and circumstantial modality respectively, and philosophers may find it straightforward to produce counterexamples to some of them (e.g. 'the machine can crush oranges' as against (i)).

21. Add 'have to' after 'would' to make the reading even clearer; I claim that the addition makes no difference to the meaning of (17). Contrast a context where it is A's character that is being discussed: A is extremely cautious and thorough. To illustrate, someone utters (17). That context, I submit, would elicit a circumstantial reading.

22. There are very tricky issues about contextualism vs. relativism here, which I am trying to avoid by imagining the context of utterance and the context of evaluation to coincide. I think that this is fair in the present context because we are not so much interested in agreement and disagreement, but rather in one speaker/thinker coming to a conclusion about whether or not she takes a certain counterfactual to be true.

23. I am not sure that Williamson would disagree with any of these remarks. The role that he sketches for the imagination in Williamson (forthcoming-b), for instance, while tailored to knowledge of objective possibilities, seems to work just as well for epistemic possibilities. Williamson (forthcoming-b, 10) uses an indicative conditional – which is standardly thought to be epistemic – in tandem with a counterfactual one – which is, of course, standardly thought to be circumstantial – as two analogous applications of knowing by imagining, noting only that there are 'subtle cognitive differences in the cognitive process'.

24. I have done so, with only a slightly less conservative point of view but without commitment to the Barcan formulas, in Vetter (2015, ch.7.5).

25. For very helpful comments and discussion, I would like to thank Simona Aimar, Max Bohnet, Mathias Böhm, Luca Castaldo, Steffen Koch, Thomas Krödel, Christian Nimtz, Sonia Roca Royes, Margot Strohminger, Kilu von Prince, and Jonas Werner as well as the audience of a workshop on modality and causation at UCL on 19 December 2015 and my research colloquium at Humboldt-University, Berlin. Special thanks to Mathias Böhm for a very helpful overview of the linguistic literature on conditionals, and of course to Tim Williamson for his extremely helpful comments on an earlier version of this paper.

Notes on contributor

Barbara Vetter is a professor for Theoretical Philosophy at the University of Erlangen-Nürnberg, Germany. She was previously a junior professor at Humboldt-University, Berlin. Her work focuses on dispositions and modality, and has appeared in Mind, Philosopher's Imprint, and other journals. Her recent monograph, *Potentiality: From Dispositions to Modality* develops a novel account of metaphysical modality.

References

Arregui, Ana. 2005. *Backtracking Counterfactuals and Iterated Modalities*. Handout.

Brennan, Virginia. 1993. "Root and Epistemic Modal Auxiliary Verbs." Ph.D. thesis. University of Massachusetts.

Cinque, G. 1999. *Adverbs and Functional Heads: A Crosslinguistic Perspective. Oxford Studies in Comparative Syntax*. Oxford: Oxford University Press.

Coates, Jennifer. 1983. *The Semantics of the Modal Auxiliaries*. London: Croom Helm.

Collins, Peter. 2009. *Modals and Quasi-Modals in English*. Amsterdam/New York: Rodopi.

DeRose, Keith. 1991. "Epistemic Possibilities." *Philosophical Review* 100: 581–605.

Edgington, Dorothy. 2004. "Two Kinds of Possibility." *Proceedings of the Aristotelian Society, Supplementary* 78: 1–22.

Edgington, Dorothy. 2008. "Counterfactuals." *Proceedings of the Aristotelian Society* 108: 1–21.

Edgington, Dorothy. 2007. "On Conditionals." In *Handbook of Philosophical Logic*, edited by Gabbay, D. M. & Guenthner, F., Vol. 14, 127–221. Dordrecht: Springer.

Edgington, Dorothy. 2011. "Causation First: Why Causation is Prior to Counterfactuals." In *Understanding Counterfactuals, Understanding Causation: Issues in Philosophy and Psychology, 230–241*, edited by C. Hoerl, T. McCormack and S. R. Beck. Oxford University Press.

von Fintel, Kai. 2012. "Subjunctive Conditionals." In *The Routledge Companion to the Philosophy of Language*, edited by Fara, Delia Graff & Russel, Gillian, 466–477. New York: Routledge.

von Fintel, Kai, and Anthony S. Gillies. 2008. "CIA Leaks." *Philosophical Review* 117: 77–98.

von Fintel, Kai, and Sabine Iatridou. 2003. "Epistemic Containment." *Lingistic Inquiry* 34: 173–198.

Hacquard, Valentine. 2006. "Aspects of Modality." Ph.D. thesis, Massachusetts Institute of Technology.

Hacquard, Valentine. 2009. "On the Interaction of Aspect and Modal Auxiliaries." *Linguistics and Philosophy* 32: 279–315.

Hacquard, Valentine. 2010. "On the Event Relativity of Modal Auxiliaries." *Natural Language Semantics* 18: 79–114.

Hale, Bob. 2003. "Knowledge of Possibility and Knowledge of Necessity." *Proceedings of the Aristotelian Society*, 103, 1/20.

Iatridou, Sabine. 2000. "The Grammatical Ingredients of Counteractuality." *Linguistic Inquiry* 31: 231–270.

Jenkins, C. S. 2008. "Modal Knowledge, Counterfactual Knowledge and the Role of Experience." *Philosophical Quarterly* 58: 693–701.

Khoo, Justin. 2015. "On Indicative and Subjunctive Conditionals." *Philosopher's Imprint* 15(32): 1–40.

Kratzer, Angelika. 1977. "What 'Must' and 'Can' Must and Can Mean." *Linguistics and Philosophy* 1: 337–355.

Kratzer, Angelika. 1981. "The Notional Category of Modality." In *Words, Worlds, and Contexts*, edited by Eikmeyer, H. J. & Rieser, H., New Approaches in Word Semantics. Berlin/New York: de Gruyter.

Kratzer, Angelika. 1991. "Modality." In *Semantik: Ein internationales Handbuch der zeitgenössischen Forschung, 639–650*, edited by Arnim von Stechow and Dieter Wunderlich. de Gruyter: Berlin/New York.

Kratzer, Angelika. 2012. *Modals and Conditionals: New and Revised Perspectives*, Oxford: Oxford University Press.

Krödel, Thomas. 2012. "Counterfactuals and the Epistemology of Modality." *Philosopher's Imprint* 12(12): 1–14.

Krödel, Thomas. Forthcoming. "Modal Knowledge, Evolution, and Counterfactuals." In *Modal Epistemology after Rationalism*, edited by Fischer, R. W. & Leon, F.

Lewis, David. 1976. "The Paradoxes of Time Travel." *American Philosophical Quarterly* 13: 145–152.

Lewis, David. 1979. "Counterfactual Dependence and Time's Arrow." *Nous* 13: 455–476.

Nanay, Bence. 2011. "Do We See Apples as Edible?" *Pacific Philosophical Quarterly* 92: 305–322.

Nanay, Bence. 2012. "Action-Oriented Perception." *European Journal of Philosophy* 20: 430–446.

Nanay, Bence. 2013. *Between Perception and Action*. Oxford: Oxford University Press.

Nolan, Daniel. 1997. "Impossible Worlds: A Modest Approach." *Notre Dame Journal of Formal Logic* 38: 535–572.

Portner, P. 2009. *Modality*. Oxford: Oxford University Press.

Roca Royes, Sonia. 2011. "Modal Knowledge and Counterfactual Knowledge." *Logique et analyse* 54: 537–552.

Roca Royes, Sonia. Forthcoming. "Similarity and Possibility: An Epistemology of de re Possibility for Concrete Entities." In *Modal Epistemology after Rationalism*, edited by Fischer, B. & Leon, F.

Spencer, Jack. Forthcoming. "Able to Do the Impossible." *Mind*.

Strohminger, Margot. Forthcoming. "Perceptual knowledge of nonactual possibilities." *Philosophical Perspectives*, 29.

Swanson, Eric. 2010. "On Scope Relations between Quantifiers and Epistemic Modals." *Journal of Semantics* 27: 529–540.

Vaidya, Anand. 2015. "The Epistemology of Modality." In *The Stanford Encyclopedia of Philosophy*, edited by Summer, Edward N. Zalta. chapter http://plato.stanford.edu/archives/sum2015/entries/modality-epistemology/.

Vetter, Barbara. 2013. "'Can' without Possible Worlds. Semantics for Anti-Humeans." *Philosophers* 13: 1–27.

Vetter, Barbara. 2014. "Dispositions without Conditionals." *Mind* 123: 129–156.

Vetter, Barbara. 2015. *Potentiality: From Dispositions to Modality*. Oxford: Oxford University Press.

Vetter, Barbara. Forthcoming. "Counterpossibles (not only) for Dispositionalists." *Philosophical Studies*.

Viebahn, Emanuel, and Barbara Vetter. Forthcoming. "How Many Meanings for 'May'? The Case for Modal Polysemy." *Philosopher's Imprint*.

Williamson, Timothy. 1999. "Existence and Contingency." *Proceedings of the Aristotelian Society* 73: 181–203.

Williamson, Timothy. 2002. "Necessary Existents." In *Logic, Thought and Language*, edited by A. O'Hear, 233–251. Cambridge: Cambridge University Press.

Williamson, Timothy. 2003. "Everything." *Philosophical Perspectives* 17: 415–465.

Williamson, Timothy. 2007. *The Philosophy of Philosophy*. Oxford: Blackwell.

Williamson, Timothy. 2013. *Modal Logic as Metaphysics*. Oxford: Oxford University Press.

Williamson, Timothy. Forthcoming-a. "Counterpossibles." In *Philosophical Fictionalism*, edited by Armour-Garb, Brad & Kroon, Fred.

Williamson, Timothy. Forthcoming-b. "Knowing by Imagining." In *Knowledge through Imagination*, edited by Kind, Amy, Oxford University Press.

Williamson, Timothy. ms. "Modal Science." To appear in *The Philosophy of Modality: Beyond the Standard Model*, edited by Vaidya, Anand & Prelević, Duko. [Internet document].