What do we talk about when we talk about metaphysical modality? A case study in conceptual systematicity

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1 Introduction

One thing that makes metaphysics both interesting and difficult is its half-way status between the questions of everyday life and those of formal disciplines. When we ask about the nature of personal identity, our theorizing will be answerable to both our concerns from real life – are you the person who signed this contract? – and those from the logic of identity. When we ask about composite objects, our theorizing will be answerable to both our familiar dealings with the composite objects around us – tables and their legs, houses and their bricks – and to formal issues in mereology. When we ask about possibility and necessity, our theorizing will be answerable to both our everyday concerns – what could I have done differently? what would have happened if ...? – and to concerns coming from logic, the logic of modality as well as the sense of necessity and possibility that is used within logic.

In approaching any given topic, we may take as our starting point either the everyday concerns or the formal issues, and in theorizing come to successively accommodate the other side. This is not a feature which is specific merely to metaphysics. Peter Godfrey-Smith, in a paper on models in biology, sketches two approaches that biologists can take (and have in fact taken):

> In response to a problem that arises, the [one] response might be "Let's see how this works in sponges and cnidarians." The [other] response is to imagine the simplest possible system in which the problem arises, and work from there.
> (Godfrey-Smith 2006, 734)

The second response is that of model-based science, and part of Godfrey-Smith's point is that these two approaches can peacefully coexist. Model-building has been advocated as a method in philosophy too (see Williamson 2017), and characterized as particularly useful when 'the complex,

messy nature of the subject matter tends to preclude informative exceptionless universal generalizations.' (Williamson 2017, 159) My concern here is not with model-building but with the general attitude that we take to the complexity and messiness that tends to come with our everyday acquaintance with phenomena.

One approach is to take at face value all the complexity and details, the glorious mess in which we live, as Godfrey-Smith's first biologist does, and see what we can learn from it, cautiously proceeding by generalization and abstraction. I will call this the approach the bottom-up approach or, in honour of a philosopher who was not afraid to cut open fish in search of a general theory of the natural world, the Aristotelian approach.

Another approach is to start with an abstraction, something that we can have under intellectual control from the start – a model, a formal system, a piece of mathematics – and see what we can learn from it, perhaps making it more complex over time to approximate the complexity and messiness of the phenomena we are interested in. I will call this approach, in honour of a philosopher who made famously vivid the idea that we can understand our messy world only by turning away from it, the Platonic approach. (No connection with the more standard use of those labels in the debate on universals is intended.)

Ideally, the two approaches will complement each other. Ideally, they will meet in the middle. At the very least, we can expect them to merely illuminate, as it were, from different sides the same phenomenon. In the case of biology, Godfrey-Smith's example, this is ensured by the easily accessible nature of the phenomenon to be explained: both the bottom-up and the top-down biologist looks at the same animals, the same numbers indicating a decline in population, or what have you. In metaphysics, ensuring coreference is not so easily achieved. Or so I will argue, using as my case study the notion of metaphysical modality. Metaphysical possibility and necessity cannot be pointed to like an animal or a population, they are not as neutrally accessible as a row of numbers. Nor are they, like (perhaps) the notion of knowlege, concepts that we come into philosophy already having mastered; or, like (perhaps) the notion of a function, concepts which can be defined in a formally perspicous way. They are, as Rosen (2006) notes, 'technical concepts of philosophy', and prime examples of such concepts being half-way between the everyday and the formal.

In what follows, I want to argue that it matters how we approach the concepts of metaphysical possibility and necessity: it matters to the question of what it is that we are even trying to give a theory *of*, and what the constraints and desiderata are for our theorizing. I take this to be another of the many ways in which metaphysics is *systematic*: not only are different metaphysical claims and theories tied up with each other, the very concepts we employ are tied up with the theoretical concerns that drive us in introducing them.

2 Metaphysical modality, and some distinctions

What is metaphysical modality? As Rosen (2006) notes, there are two readings of this question. On one reading, it asks for an account of the nature of metaphysical modality. This is the question that metaphysicians of modality typically try to answer, and in vastly different ways; let us call

it the *metaphysician's question*. To get the other reading of the question, imagine it asked by the 'neophyte who's never heard the phrase before and simply wants to know what philosophers have in mind by it' (Rosen 2006, 13). On this reading, the question asks for a pre-theoretical grip on the phenomenon that the various answers to the metaphysician's question are disagreeing about. Let us call this the *neophyte's question*. But metaphysicians should care about the neophyte's question too. For in the face of vast and deep disagreement about metaphysical modality, an answer to the neophyte's question would help ensure a joint target for our different theories.

In answering the neophyte's question, the different temperaments that I have sketched in the introduction matter. For our grip on the concept of metaphysical modality is half-way between the logical and the everyday in (at least) two ways. One way is *extensionally*: When characterizing what metaphysical possibility is, we often begin by explaining that it is meant to be a kind of possibility that is wider than the everyday notion of what can or could have happened (hence it may be metaphysically possible that I travel faster than the speed of light), but narrower than the logical notion of what is consistent or non-contradictory (hence it is not metaphysically possible that water not be H_2O), and conversely for nececssities. Either way, metaphysical modality is sandwiched between the two kinds of modality that we have a more direct grip on: the modality expressed in ordinary life with expressions like 'can', 'cannot' and 'must', on the one hand; and the modality that arises when we think about consistency and contradictions in logic, on the other. Ideally, of course, we will arrive at the same phenomenon whichever way we come from, the top (logical modality) or the bottom (ordinary modality). But in what follows we will see that it matters where we start and how.

There is a second way in which our grip on the concept of metaphysical modality is between the formal and the everyday. Since the rise of modal logic at least, our grip on modal concepts can be said to be at least partly constituted by our understanding of certain logical axioms about it, starting with the interdefinability of possibility and necessity and the rule that every tautology is a necessity; axioms K and T; and, typically, axioms S4 and S5. On the other hand, we can get some grip on the notion in terms not of abstract logical structures, but of concrete examples: it is possible that I should have been a biologist, but impossible that 2+2=5, for instance. Typically, of course, we will appeal to both: logical structure and concrete examples. But in what follows, again, we will see that it matters where we start and how.

Before we can begin, let me address an objection.

I have assumed thus far that we must come to metaphysical modality, as it were, indirectly: through the distinct modalities that I have called 'everyday' and 'logical', and through either logic or example. But, it may be responded, we might try to characterize metaphysical modality, in response to the neophyte's question, more directly: either theoretically, in terms of its theoretical role; or indeed based on the standard examples of specifically metaphysical modality, such as the necessity that water is H_2O. Let me briefly note why I think that no such response will succeed.

Some philosophers have characterized metaphysical modality, like a theoretical term in the sciences, as that, whatever it is, that plays a certain role specified in metaphysical theories – most famously, the roles specified in Lewis 1986, of accounting for modal language, for properties, for content, and for supervenience. (Cp. Chalmers 2010, Wilson 2020, 23f. for two recent, but

otherwise very different, examples of this strategy.) But such a specification will not suffice. For suppose that, as some have argued (Nolan 1997), several of these roles are best played by what we would intuitively describe as *im*possible worlds.[1] It should not follow that those impossible worlds are in fact what characterizes metaphysical possibility.

Instead, we might try to characterize metaphysical modality, at least in part, directly in terms of its paradigmatic examples, such as the necessity that water is H_2O. That would circumvent the need to appeal to either everyday or logical modality, But such a strategy would make Kripke's arguments for a posteriori necessities redundant, indeed trivial. We need a notion of metaphysical modality that allows for substantive discoveries – and indeed disputes – about the most interesting cases of specifically metaphysical modality itself.

It is no wonder, then, that metaphysical modality is approached typically from the top down or from the bottom up – or both. In what follows, I will look at approaches that are, in the sense outlined at the beginning of this section, top-down, bottom-up, or mixtures of the two. In doing so, I will have to paint with a broad brush, and to extrapolate from the existing literature. For philosophers are rarely explicitly concerned with answering the neophyte's question; typically, they aim to answer the metaphysician's question.[2] I will call answers to the neophyte's question 'approaches', and answers to the metaphysician's question 'theories'. My focus here is on approaches, not theories; and my goal not to defend or reject any approach, but rather to show that they make a difference: depending on which approach we take, we end not only with potentially very different metaphysical theories, but with different desiderata and criteria for theory choice. Theorizing about metaphysical modality is thus systematic (at least) in that it depends on how we begin to get a grip on our phenomenon in the first place.

3 Metaphysical modality, top-down

Top-down approaches to metaphysical modality begin with modality where we seem to have the firmest theoretical grip on it: in logic. Logical modality, in the sense here at issue, may be understood *narrowly*, in terms of validity and consistency (e.g. in Hale 2013); or *broadly*, as a sort of conceptual necessity (e.g. in Chalmers 2010). Either way, it will be clear that logical modality itself is too wide to be identified with metaphysical modality: there are more logical than metaphysical possibilities, and fewer logical than metaphysical necessities. The standard examples where the two come apart are Kripkean necessities, such as the metaphysical (but not logical) necessity of water's being H_2O. Metaphysical modality is supposed to be both objective or 'worldly' and absolute; logical modality has some claim to being absolute, but what is needed is a more 'worldly'

[1] Of course, that cannot apply to all roles, and in particular not to the role of accounting for modal discourse (though counterfactuals are often considered a case in favour of appeal to impossible worlds). But impossible worlds may still be what best plays the overall role, with some restrictions – such as a restriction to the possible – on them for certain purposes.

[2] An exception is Rosen 2006. His answer to the neophyte's question is that metaphysical necessity is (i) a necessity; (ii) alethic; (iii) not epistemic; (iv) sometimes a posteriori and synthetic; and (v) absolute (cp. Rosen 2006, 14-16). Note that, as argued in the previous paragraph, clauses (iii)-(iv) make Kripke's arguments redundant.

aspect. There are, as far as I can see, two ways of introducing such an aspect: the relativization strategy, and two-dimensionalism.

In order to narrow down the range of possibilities from the logical to the merely metaphysical, the simplest approach would be to use what Kit Fine (2002) has called *relativization*. Just like nomological necessity can be conceived of as necessity relative to the laws of nature, we might think that metaphysical modality could be conceived as necessity relative to some set of metaphysical facts – the essences of things, perhaps, or the laws of metaphysics[3]. Thus we might define the operators for metaphysical necessity, $\Box_M$, and metaphysical possibility, $\Diamond_M$, in terms of the operators for (broadly or narrowly) logical modality, $\Box_L$ and $\Diamond_L$, and a set of propositions M expressing the relevant metaphysical facts in the usual way:

(L1) $\Box_M\phi =_{df} \Box_L(M \rightarrow \phi)$

(L2) $\Diamond_M\phi =_{df} \Diamond_L(M \wedge \phi)$

The relativization approach has not enjoyed much support (but see Mallozzi forthcoming for a recent exception). Not only is it difficult to locate the right set of propositions M (see Fine 2002, 237); the approach appears not to do justice to the idea that metaphysical modality is *absolute* (though Mallozzi forthcoming argues that we can bite this bullet). It is not clear whether we should count the relativization strategy as an answer to the neophyte's question; given any set of propositions M, it carries substantial theoretical commitments about the nature of metaphysical modality. If we use it to answer the neophyte's question, that answer would thus be highly *metaphysically commital*.

Perhaps the most popular top-down approach in the literature is the *two-dimensional approach*, influentially formulated by Jackson 1998 and Chalmers 2010, which takes a more complex route from logical to metaphysical modality. Very roughly, the approach begins with the space of broadly logical possibilities, but notes that we can take two different perspectives on it: one that holds fixed where in it we are located, and one which does not. The latter perspectives yields *primary intensions* for sentences such as 'water is H_2O': to determine whether the sentence's primary intension is true in a possible scenario S, we consider S to be actual and let it fix both the reference of the terms (such as 'water') and the truth-value of the sentence. The former perspective yields *secondary intensions* for sentences such as 'water is H_2O', where we hold fixed what the actual world is and which reference it has bestowed on expressions such as 'water', and evaluate other possible scenarios S only for whether the sentence thus understood is true at S. These two perspectives give us a reading on which 'water is H2O' is contingently true (when we look at the primary intension), and one where it is necessarily true (when we look at the secondary intension). It is the latter reading that is supposed to give us a grip on metaphysical modality.

Again, it is not clear whether two-dimensionalism counts as an answer to the neophyte's question. It is not as metaphysically committal as the relativization approach, but it is committed to – and indeed motivated by – *modal monism*: the idea that there is no 'distinction among the possible worlds between the metaphysically possible and the conceptually possible ones' (Jackson 1998,

[3]See Mallozzi forthcoming for the former, and Tugby 2022 for the latter idea.

70), and that the concept of metaphysical possibility is 'a rational modal concept, tied constitutively to consistency, rational inference, or conceivability.' (Chalmers 2010, 42) Methodologically, two-dimensionalism yields a strong *contingency bias*: for any given sentence, p, if p is not a broadly logical truth or falsehood, the default is that p is metaphysically contingent. It is only when we notice actuality-dependent vocabulary in p that we should question this default, because it is such vocabulary that gives rise to a discrepancy between primary and secondary intensions, and thus between logical and metaphysical possibility.

If we take two-dimensionalism as an answer to the neophyte's question, then, our theorizing will be guided by a contingency bias and by a theoretical bias towards modal monism. Several more substantive theories of metaphysical modality, such as essentialism or dispositionalism, will be, if not ruled out from the start, hard pressed to accommodate these biases. We will see in a moment that other approaches yield very different guidelines and biases.

4 Metaphysical modality, bottom-up

Bottom-up approaches begin with modality as we encounter it in ordinary life; in Dorothy Edgington's words, they 'take as basic our pre-philosophical use of modal concepts, and [...] derive the more rarefied philosophical uses from them' (Edgington 2004, 5). Although Edgington argues that Kripke falls in this camp, and I can report (from many conversations) that they enjoy some popularity, full-blown bottom-up approaches have not been spelled out in much detail in the literature. In this section, I will sketch what I take to be the best version of such an approach.

Which 'pre-philosophical use of our modal concepts' is a bottom-up approach to start with? It seems clear that it should start with what linguists have calle *circumstantial*, and philosophers *objective* modality (see, e.g., Kratzer 1981, Williamson 2016). Natural language provides some good markers for such modals, setting them clearly apart at least from the epistemic modals (see Brennan 1993, Hacquard 2006, Cinque 1999). While it takes some theorizing to uncover the workings of these syntactic markers, the fact that we use them competently indicates that we have a good, if implicit, grip on the distinction.

A bottom-up approach, then, begins with the the pre-philosophical circumstantial/objective uses of our modal concepts, such as Edington's example: 'This car can do a hundred miles per hour (though it never will), this other car cant – as they are presently constituted. Later, when the first has deteriorated and the second hotted up, the position may be reversed.' (Edgington 2004, 6) The approach cannot, however, start with a *theory* of such uses. For our pre-philosophical use of modal concepts no more supplies us with a theory of them than our pre-scientific use of the concept of 'water' supplies us with a theory of water.

We have seen where the bottom-up account should start, then: with everyday modality, and with concrete examples. Starting with examples rather than theory has the advantage of promising a genuine and metaphysically non-committal answer to the neophyte's question. But it does not yet show us how to go beyond the examples and ensure reference to genuinely metaphysical modality.

Metaphysical modality is supposed to be both objective and absolute. Objectivity is secured, on the bottom-up approach, by the initial examples. What about absoluteness?

Elsehwere I have suggested (Vetter 2016) that in speaking about metaphysical modality we simply drop all contextual restrictions. But that is not enough: who is to say that dropping all contextual restrictions will not land us with mere logical possibility, thus losing our connection to the objective, 'worldly' aspect of metaphysical modality? (See Clarke-Doane 2019.) I would now like to provide a more substantial hypothesis on behalf of a bottom-up approach. For there are well-known cases where we manage, by reference to examples, to pick out a more general phenomenon even without yet knowing, or needing to know, what that phenomenon is. On the orthodox Kripkean view, this is precisely what happens with natural kind terms such as 'is water': what the term refers to is fixed by initial examples together with a certain semantic machinery. My suggestion, then, is that a bottom-up approach should think of 'metaphysical modality' and its cognate terms as akin to Kripkean natural kind terms. But rather than prejudge whether metaphysical modality itself is a natural kind, I will use a recent generalization of the Kripkean semantics for such terms.

Nimtz (2017) has introduced a generalized semantics of 'paradigm terms', which include but are not limited to Kripkean natural kind terms (see also Nimtz 2021). A paradigm term comes with a *value structure* comprising an equivalence relation R and a set of objects O;[4] the term applies, in any possible world, to all and only those things that stand in relation R to objects from O as they actually are. In the case of a natural kind predicate such as 'is water', R is the relation *is of the same underlying structure as*. But paradigm terms can come with other equivalence relations: the predicate 'is one meter long', for instance, R is the relation *is the same length as* and O is the singleton set of stick no 6 in Paris at 0 Celsius. In each case, the equivalence relation is 'controlled' (Nimtz 2017, 126) by a property that the objects in O actually have in common: having the underlying structure H_2O, in the case of 'is water'; having a length of exactly 100cm, in the case of 'is one meter long'. Paradigm terms can be successfully introduced by ostension, and are often introduced even though competent speakers do not know much about either the paradigms, or the exact nature of the relation; as a result, a paradigm term 'is F' 'may well have determinate conditions of application even though no one can informatively distinguish the Fs from the non-Fs' (Nimtz 2021, 159).

My hypothesis on behalf of the bottom-up approach, then, is that terms expressing metaphysical modality are paradigm terms. To get a better grip on the hypothesis, let us see how we might fill it in (but keep in mind that I can only provide a sketch here).

First, our set of paradigms, O. I have already said what this set is to consist of: everyday modal truths. (There is some disanalogy here, as these are not obviously objects. I will assume that the framework works independently of the ontological level of the paradigms, and remain vague on exactly what their ontological status is.) Not any such truths will do, however. For any paradigm term will include in its extension *at least* most of its paradigm cases. There can be some give and take – dolphins may have served as paradigms for the predicate 'is a fish' – but largely the paradigm examples for a paradigm term will be included in the term's extension. Now,

[4]Nimtz's value structure also includes the actual world. I simplify here to make things more manageable.

every ordinary possibility is also a metaphysical possibility, but not (and not even almost!) every ordinary necessity is a metaphysical necessity. If we included both possibilities and necessities among our paradigm cases, the extension of the resulting notion of metaphysical modality would be much too narrow (and indeed difficult to determine, given the variability of everyday modals). So a paradigm-based approach to metaphysical modality should focus on the paradigm examples that we do want included in the extension of our metaphysical modal terms: everyday possibilities.

Next, the equivalence relation, R. Like samples of water, instances of everyday objective possibility have many different things in common. Paradigmatic samples of water are liquids, they consist mostly of H_2O, but they also all contain some further elements. Paradigmatic cases of objective possibilities are action-guiding, logically consistent, and in accordance with the laws of nature. Not all of these properties should control the equivalence relations for 'is water' and for 'it is metaphysically possible that ...', respectively. But how are we (or rather, how is the semantics of these terms) to pick the ones that should?

Here opinions may well diverge. We may think that paradigmatic samples of water have a deep feature in common, their nature, and that this nature consists in being composed of H_2O; analogously, we may think that paradigmatic objective possibilities have a deep feature in common, their nature, which might consist in being dispositions possessed by objects, being compatible with the essence of the individuals concerned, or being true in some parallel universe. If this is so, then we can spell out R as 'has the same nature as'. Or we might think that among the many things that paradigm cases have in common, we have reason to priviledge some as being explanatorily more important: water's being H_2O simply plays a more important role in scientific explanation of the behaviour of the paradigmatic samples. Analogously, in the case of metaphysical modality, we might spell out R as 'shares the explanatory most salient features with', but focus on philosophical, rather than scientific, explanations.

In some cases, the paradigms have only superficial features in common – think of the term 'is jade', which has turned out not to pick out a natural kind but rather a class of gem stones unified by their appearance. If it should turn out that our paradigm cases of objective possibilities do not share features of the deeper kind sketched in the previous paragraph, we might have to settle for a less substantial equivalence relation here too, such as 'has the same formal features as', or even only 'is conventionally grouped together with'.

This is not the place to determine what, according to the approach I am here sketching, the equivalence relation in question should be. As with natural kinds such as 'is water', investigation into the phenomenon in question is needed not only to reveal the nature of the paradigm cases themselves but also to clarify the equivalence relation at work. (And what if it turns out that the controlling property is logical consistency? Then, on this approach, metaphysical modality really is logical modality. But we would then have a principled theoretical reason for saying so.)

I think we have said enough for present purposes about how the bottom-up approach might go; let me now turn to the contrast with top-down approaches.

The paradigm-based approach that I have recommended for the bottom-up theorist differs fundamentally from the top-down approaches of section 3. Unlike a relativization approach, this approach makes no prior commitments on the right theory of modality; it is specifically tailored to

our getting a fix on a phenomenon *without* having, and indeed prior to developing, a theory of it. It is thus particularly suited for answering the neophyte's question – not perhaps so as to be informative to an actual neophyte, but so as to allow metaphysicians to have a common subject-matter for their widely disagreeing views. But it does, of course, have its own biases. I want to point out two, both of a methodological nature.

When theorizing about a paradigm term, the initial paradigms will be assigned a privileged role vis a vis other putative instances that were not included among the paradigms. Beyond from the paradigm cases, the extension of a paradigm term is determined by theory, and may be surprising – thus to the chemically ignorant, it might seem obvious that the stuff on Twin Earth is water, but given our knowledge of chemistry as applied to the paradigm cases, it turns out that it is not. Accordingly, the bottom-up approach I have sketched gives centre stage to the paradigm cases in deciding what the right theory of metaphysical modality is. Everything else – any alleged possibility, impossibility, or necessity – must have its status determined by its relation to the paradigms. In particular, when it comes to judging the extensional adequacy of a theory of metaphysical modality, it is always the paradigms that we must look to first. There is no place for intuitions about non-paradigmatic cases; they will fall where they may (given our paradigms and general theoretical considerations about them). In short, the approach has a *paradigm bias*.

Relatedly, where the two-dimensionalist had a contingency bias, this approach has a *necessity bias*. The default status for any proposition that is not contained in our paradigm set is necessary truth (if true) or falsehood (if false); it is only by standing in the right relation, R, to the paradigm cases that a proposition earns the status as a possibility. Where possibility was the default for the two-dimensionalist, on this view possibility must be earned, and necessity is the default.

So far, I have looked at the two most extreme kinds of approach: a fully top-down, and a fully bottom-up approach. Most of what we find in the literature takes elements from both sides of my divide. In the next section, I will look at some such approaches, say how they fit into the classifications I have offered, and argue that they, too, come with distinctive desiderata and guidelines that differ from other approaches and make our inquiry into metaphysical modality characteristically systematic.

5 Mixed approaches

In section 2, I have distinguished two readings of the top-down/bottom-up distinctions. The approaches I have discussed so far were on the same side of each distinction, with logical modality and (perhaps less prominently) the logic of modality taking pride of place in section 3, while the approach in section 4 started with concrete examples of ordinary modality. In principle, however, we might start with logical modality and concrete examples, or with ordinary modality and modal logic. The former is a rare but (I think) underappreciated option, while the latter has become increasingly popular, mostly due to work by Tim Willliamson. I will take a look at both in turn.

First: Paradigms and logical modality. In principle, the kind of paradigmatic approach I have sketched for the bottom-up approach of section 4 could be adopted by theorists who approach

modality top-down from logical modality. Such an approach would take the paradigm cases for metaphysical modality to be not our pre-philosophical uses of modal concepts in everyday life, but our philosophical uses of modal concepts in logic. One lesson we learned in section 4 is that a paradigm-based account should start with cases that can, at least largely, be preserved into the extension of the term that is being introduced. In the case of the bottom-up approach of section 4, this meant focussing on ordinary possibilities, not necessities. With the approach now under consideration, the situation is reversed: every logical necessity is a metaphysical necessity, but not every logical possibility is a metaphysical possibility. Our paradigms, thus, should be the logical *necessities*. Like the bottom-up approach of section 4, this will come with a paradigm bias: the logical necessities take centre stage in deciding what the right theory of modality is. And because the paradigm cases are necessities, this approach will come with a contingency bias: the default status for any proposition that is not contained in the paradigm set is contingency; a proposition qualifies as necessary only by standing in the right relation to the paradigm cases.

While this kind of approach has not, to my knowledge, been explicitly pursued in the literature, it might capture an aspect of Bob Hale's approach to metaphysical modality in Hale 2013. Hale begins by arguing that (narrowly) logical necessities have their source in essences, and goes on to show that there are other truths that are equally explained in terms of essence, concluding that all of these are necessary in the same sense as the logical necessities.

Second: Logic and ordinary modality. A more common mixed approach combines the bottom-up starting point in ordinary, or at any rate more restricted, kinds of modality (rather than with the wider notion of logical modality), with the top-down focus on the logic of modality (rather than focus on concrete examples). Several authors have introduced metaphysical modality as the broadest objective modality. Williamson (2016), for instance, introduces the notion of an objective modality by reference to everyday modals (citing the linguistic literature that I gave on behalf of the bottom-up account in section 4), but captures it in terms of logical postulates, and characterizes metaphysical necessity as the strongest objective necessity in the sense that it implies every objective necessity (and conversely, metaphysical possibility as possibility that is implied by every objective possibility).[5] Roberts (forthcoming) begins not quite with ordinary but still with a more restricted type of necessity, to wit, physical necessity, and characterizes metaphysical necessity as a natural extension from it by logical means.[6] In another aspect of his approach, Hale (2013) begins by thinking about more restricted kinds of modality, such as practical or physical modality, and takes metaphysical modality to be the limiting case where we relativize to an empty set of propositions (see also Leech and Hale 2017, Leech 2015). What all of these, when read as answers to the neophyte's question, have in common is that they begin, like the bottom-up approach of section 4, with a more ordinary, restricted kind of modality, and expand from there to metaphysical modality via considerations from modal logic.

[5] A related approach is pursued in Bacon and Zeng 2022, who explicitly quantify over *operators* and drop the restriction to objective modality.

[6] Roughly, Roberts argues that physical necessity does not conform to the S4 axiom: it is physically possible that there should have been other physical possibilities than there actually are. Metaphysical modality is reached as an extension, in accordance with an S4 logic, of this notion of physical modality.

My goal here, again, is not to evaluate any of these approaches, but merely to point out again that it matters which approach we take.

The fully top-down approaches of section 3 were *metaphysically committal* in either filling in a particular set of propositions for M in a relativized definition of metaphysical modality, or assuming modal monism in the case of the two-dimensional approach. That was no accident: metaphysical modality is supposed to differ from mere logical modality by being in a more substantive sense about the world, and the top-down approaches of section 3 had to spell out that sense. By starting with the more restricted types of (objective) modality that are clearly worldly, the accounts currently under discussion, like the bottom-up account of section 4, avoid the need to specify what it is that makes a modality 'about the world'. When answering the neophyte's question, being metaphysically non-committal seems to be a good thing: it helps ensure that we can all talk about the same thing while disagreeing deeply about its metaphysics. (Williamson 2016, 460 stresses that his conception of metaphysical modality 'leaves open a wide range of theoretical options', from imposing 'only a bare minimum of structural constraints, such as the principles of S5 and the necessity of identity and distinctness' all the way to 'rich essentialist constraints' that might collapse metaphysical into physical modality.)

The fully bottom-up approach of section 4 came with a *paradigm bias* and, given its choice of paradigm cases, a *necessity bias*. The mixed approaches currently under discussion have no such bias: they do not begin with paradigm cases but with a more abstract conception of (objective) modalities; they use examples at most for illustration. Instead, these approaches have what we might call a *logical bias*. They build a certain logical structure into the very concept of metaphysical modality (typically an S5 modal logic). Just like the central status of (the majority of the) paradigms is nonnegotiable for the full-blown bottom up approach, certain aspects of metaphysical modality's logical structure is nonnegotiable for this kind of mixed approach.

6 Upshot

I have sketched a number of different answers to the neophyte's question. Earlier, I claimed that the neophyte's question is of interest to the metaphysician as well, and it is from the metaphysician's perspective that I have discussed it. To finish, let me summarize the different approaches and sketch some scenarios in which they diverge, not only in the theories they yield, but in their methodological guidelines.

We have seen two dimensions along which approaches to metaphysical modality can be top-down or bottom-up: by focussing on either logical modality or everyday modality as our starting point, and by focussing on either the logic of modality or concrete examples as a guide to the phenomenon in question. As a result, metaphysical modality can be approached in (at least) four different principal ways. We can characterize it fully top-down, by relativization or via two-dimensional semantics, either way yielding a metaphysically committal answer to the neophyte's question, and in the case of two-dimensional semantics a contingency bias. We can characterize it fully bottom-up, yielding an approach that is metaphysically non-committal but has a clear

paradigm bias towards examples of everyday possibility and, as a result, a necessity bias. Or we can go for either one of the mixed views: starting with paradigmatic examples of logical modality, yielding an approach that has a paradigm bias towards examples of logical necessity and, as a result, a contingency bias; or starting with everyday modality and the logic of modality, yielding an approach that is neither metaphysically committal nor biased towards particular cases, but instead has a logical bias.

Which approach we take matters to the metaphysics of modality. It matters, first, because it makes us start with a different picture of the goal or our theorizing in mind. It matters, second, because very often different approaches will lead us to prefer different theories. And it matters, third, to *how* we choose, because different approaches impose different constraints and desiderata on our theorizing.

The first point is perhaps easiest to see, though difficult to make precise. For two-dimensionalism, as an approach to metaphysical modality, metaphysical modality is, in Chalmers's words, at bottom 'a rational modal concept, tied constitutively to consistency, rational inference, or conceivability.' (Chalmers 2010, 42) For a bottom-up approach, metaphysical modality is fundamentally both a very mundane and a very real (in some sense that is opposed to Chalmers's 'rational') concept: we encounter instances of it every day in the form of options for and limits to our actions, for example. For views, like the Williamsonian mixed view of section 5, that put much emphasis on modal logic, metaphysical modality is first and foremost a logical phenomenon. Now it may be that all of these are just different modes of presentation of one and the same phenomenon; but it is not, at least, clear from the outset that they are.

The second and third point go closely together: which approach we take matters to which theories we choose, but also to how we choose them. For paradigm-based approaches, for example, the inclusion of (most of) the original paradigms in the extension of the relevant modality is non-negotiable, while the precise nature and extension of metaphysical modality is up for debate. For full-blown top-down approaches, on the other hand, the nature of metaphysical modality is largely fixed in advance, and how we fix it has much to do with what we want its precise extension to be. Approaches with a contingency bias will differ from approaches with a necessity bias when it comes to counterexamples for a given theory: the former will be more likely to complain that a theory does not predict enough possibilities, the latter that it predicts too many. And so on. To illustrate, let us look at two (hypothetical) cases, one where the approaches diverge in their choice of theory in the face of the same evidence, and one where they converge, but for different reasons.

Consider, first, a fully bottom-up approach as described in section 4, and suppose that (as I am inclined to think) the nature of our paradigmatic cases of objective possibility is dispositional. This will lead the bottom-up theorist to adopt some dispositional theory of metaphysical modality (my version of which is in Vetter 2015). The dispositions of actual things are somewhat limited in reach when compared to, say, a priori conceivability. Thus it is not clear that anything has dispositions for there to be different laws, philosophical zombies, alien properties; it might even be that nothing has dispositions for there to have been different particles at the moment of the big bang (see Vetter 2015, 276f., Kimpton-Nye 2018). Anyone who approaches metaphysical modality with a contingency bias will take these to be counterexamples to the theory – or at the very least,

seeming counterexamples that need to be explained away. But the paradigm-based approach itself, we have seen, comes with few committments about the extension of metaphysical modality beyond the initial, paradigmatic cases. As a result, it should be sanguine about such putative counterexamples; it is simply not part of its desiderata that certain (non-paradigmatic) possibilities be predicted.

Moreover, on a dispositionalist theory, the logic of metaphysical modality is open for debate: whether it validates T, S4, or S5 depends on what we find out about the nature of the paradigmatic cases, dispositions, by further theorizing.[7] But if it does *not* validate S5 or even S4, then anyone who takes the second mixed approach I have sketched in section 5 will take that as almost a decisive point against the theory. But where the mixed approach sees a modus tollens against dispositionalism, the paradigm-based approach will embrace the corresponding modus ponens and a non-standard logic of metaphysical modality.

Second, consider a case where different approaches converge on the same theory, say essentialism. One route to essentialism is fully top-down, using the relativization strategy and relativizing to the essences of things (as in Mallozzi forthcoming). Here the approach directly determines which theory to choose, and we should hold on to an essentialist theory of modality *come what may*. Another way of reaching an essentialist theory is paradigm-based. Even the fully bottom-up theory of section 4 might find that the common nature of our paradigmatic cases of objective possibility is their consistency with the nature of things, and generalize this to an essentialist theory of metaphysical modality. More naturally, perhaps, the first mixed view I discussed in section 5 may find that the nature of its paradigm examples, the logical necessities, is essentialist (see Hale 2013) and proceed from there to an essentialist theory of metaphysical modality. Either way, the theory stands and falls with the claim about the paradigmatic cases. If that claim is dropped, the theory will have to be revised. But in other respects we will let our theory of metaphysical modality be determined by the theory of essence. If, as some philosophers hold (Bird 2007), the laws of nature are themselves a matter of essences, then the laws of nature are metaphysically necessary – and no protests from, say, a two-dimensionalist will convince us that this is a counterexample to the theory. If, as has recently been suggested (Ditter 2020), essentialism favours an S4 and not an S5 theory of metaphysical modality, then metaphysical modality might have an S4 and not an S5 logic – and no protests from, say, the second mixed view of section 5 will convince us otherwise. However, a third way of reaching an essentialist theory goes via the second mixed approach of section 5, arguing that a generalized essence operator (e.g. the operator $\Box_V$, expressing 'it is true in virtue of the nature of all things ...') is indeed the broadest objective necessity operator. If this is how we reached an essentialist theory, we will care little whether essence really best characterizes the nature of any paradigmatic cases; what matters are its logical features. So even if different approaches lead us to the same theory – such as essentialism – they will still impose different rules and constraints on the debate *about* that theory.

[7]Elsewhere, I have argued that dispositionalism yields T and quite likely S4, but whether it validates S5 depends on further commitments. See Vetter 2015, 207-214 and Kimpton-Nye 2019.

In sum, different approaches may lead us to different theories or they may converge on a theory. But in either case they will lead to different desiderata on our theories, different conditions for what counts as a counterexample, different features considered to be non-negotiable and different rules for what should lead us to change our our theory.

Answering the neophyte's question matters for theorizing about metaphysical modality. It matters for which theory we choose: a theory can be the best candidate on one approach while almost a non-starter on another. But it matters also for how to choose theories: depending on which approach we take, the rules of the game can be very different. Metaphysical modality is not the only metaphysical concept that can be approached in these different ways, top-down or bottom-up. I suspect that other concepts exhibit similar differences in how they are approached, with similar consequences. If that is true, then we have here another way in which metaphysics is systematic: our theories, and even how we evaluate them, is deeply tied up with the theoretical concerns that drive our interest in the concepts at issue. [8]

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