

## Varieties of Modality

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### ABSTRACT

How many different kinds of modality – different realms of possibility and necessity – are there? Philosophers commonly talk at least about metaphysical, conceptual, epistemic, logical, physical, mathematical, biological, technological, normative and natural modality. It is not always clear how these different types of modality are related, or whether some of them are more fundamental than others. The relationships between metaphysical, conceptual and logical necessity and possibility are particularly interesting. This paper is a survey of our options in this regard. We can distinguish four approaches which are currently widely discussed: the Kripkean approach, the conservative approach, the conceptualist approach, and the essentialist approach. The differences between these approaches are best described by comparing their takes on the distinction between metaphysical and conceptual modality. The Kripkean approach holds that this distinction is genuine and that we are dealing with two different kinds of modality. The conservative approach, which is familiar for instance from Bob Hale's work, challenges the role of metaphysical modality and suggests that logical necessity is the most fundamental type of modality, it is *absolute*. The conceptualist approach, most forcefully argued for by Frank Jackson and David Chalmers, also questions the distinction and suggests that metaphysical modality can be fully accounted for in terms of conceptual modality. Finally, the essentialist approach, defended especially by Kit Fine, suggests that conceptual and logical modality can be seen as species of metaphysical modality. I will also consider an alternative approach based on the essentialist approach, which takes metaphysical modality to be absolute in Hale's sense.

## 1. Introduction

How many different kinds of modality are there? Philosophers commonly talk at least about metaphysical, conceptual, epistemic, logical, physical, mathematical, biological, technological, normative and natural modality. The subject-matter of some of these seems clear enough: for instance, physical modality concerns possibility and necessity in virtue of the laws of physics. In some cases though even the subject-matter of the modality is rather unclear; this could be said to be the case with metaphysical modality, even though the notion is used very often. On a natural reading, metaphysical modality concerns *all* things, but, then again, many things that are widely considered to be metaphysically impossible seem possible in some sense, such as water failing to be H<sub>2</sub>O. Here we arrive at a difficult problem which is in fact our primary topic: how do we distinguish between different kinds of modality and what kind of relationship do they have with each other? To settle these questions, we must consider another question, namely, whether some modal spaces are more *fundamental* than others. By a fundamental modal space I mean a modal space which does not reduce to another modal space.<sup>1</sup>

Modal spaces such as technological and biological modality fairly uncontroversially *do* reduce to another modal space, they are presumably species of physical modality. Physical modality itself is perhaps a more controversial case. Physical modality is generally understood to concern the *actual* laws of physics, that is, possibility and necessity in virtue of

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1 The exact nature of these modal spaces – whether they are to be understood in a realist or anti-realist fashion, figuratively or non-figuratively, in a concrete or abstract manner – is a question that I wish to leave open at this point. The different views that will be considered would answer this question differently as well, but our primary concern is whether these approaches are able to give a plausible account of the relationships between different kinds of modality. See for instance Divers (2002: 16 ff.) for a survey of the options regarding the nature of modality.

the laws of physics that hold in this world. This leaves open the strength of the laws of physics – are they metaphysically necessary? In other words, could there laws of physics have been different, are there possible worlds with alternative laws of physics? If not, then perhaps physical necessity is a proper subset of metaphysical necessity. However, there are some who think that the laws of physics indeed are metaphysically necessary and thus that physical necessity is at least as strong as metaphysical necessity (e.g., Shoemaker 1998, Smith 2001)<sup>2</sup>. This might even give us a reason to think that physical modality, or, as it is sometimes called, natural modality, is fundamental.<sup>3</sup> We will return to this issue briefly later, but our primary concern are the relationships between conceptual, epistemic, logical and metaphysical modality. The relationships between these types of modality are perhaps the most interesting – or certainly the most controversial. In fact, all of the mentioned types of modality have been suggested to be fundamental.

In the next section I will outline what I call the *Kripkean* account of the relationship between conceptual, epistemic, logical and metaphysical modality – this is the approach that has perhaps been most prominent since Kripke. The Kripkean account suggests that both metaphysical and conceptual modality are genuine types of modality – whether they are both fundamental is another question. We will also consider the distinction between conceptual and epistemic modality and see that they may in fact be co-extensive. The role of logical modality in this picture is difficult to determine, but there are some reasons to think that it is co-extensive with metaphysical modality.

The third section concerns a view which I call the *conservative* account (cf. Hale 1996), which questions the commitment to metaphysical modality familiar from the Kripkean account. In this picture logical modality is considered to be fundamental. However, as we will

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2 Kripke (1980: 99) also mentions this possibility, but does not take stand.

3 Kit Fine (2002) has defended this view.

see, this approach may be not be as severely opposed to the alternative accounts as it initially seems.

In the fourth section I will examine an approach familiar from the work of David Chalmers (1996) and Frank Jackson (1998), which I call the *conceptualist* account. This approach as well criticises the Kripkean approach and its commitment to metaphysical modality. The conceptualist account suggests that conceptual modality is fundamental, and indeed the only genuine type of modality.

In the fifth section I will analyse an approach which especially Kit Fine (1994) has defended, I will refer to it as the *essentialist* account. According to this approach, metaphysical modality is fundamental, and conceptual and logical modality can be seen as species of metaphysical modality.

Finally, in the sixth section I will propose an alternative analysis, which is sympathetic to the essentialist account, but suggests further that metaphysical modality is the only genuine type of modality: it concerns all things, whereas other types of modality concern proper subsets of all things.

## **2. The Kripkean account**

Our inquiry begins with the distinction between metaphysical and conceptual modality. According to the Kripkean view, following Kripke (1980), this distinction is valid and there are some things which are conceivable, i.e., conceptually possible, but metaphysically impossible, such as water failing to be H<sub>2</sub>O. So, according to the Kripkean story, ‘Water is H<sub>2</sub>O’ is, although *a posteriori*, metaphysically necessary. Indeed, much of what Kripke says about the topic is concerned with explaining how something, such as water failing to be H<sub>2</sub>O, can be metaphysically impossible, yet seemingly possible. To avoid launching into Kripke

exegesis, I will abstain from analysing Kripke's own position, instead I will refer to the established interpretation of Kripke on these matters.<sup>4</sup>

We should begin by examining the nature of conceptual possibility in terms of the Kripkean line. Presumably, conceptual possibility is grounded in concepts and our epistemic access to it is via conceivability – thus there is an obvious link between conceivability and conceptual possibility.<sup>5</sup> A clarification is needed though, because the notion of epistemic modality is often used as if it were synonymous with conceptual modality, yet it seems that there is a way to distinguish these two modalities. The distinction concerns the subjective character of epistemic modality: something is epistemically possible for a given subject if it is not ruled out by what that subject knows (Vaidya 2008). The apparent similarity between epistemic and conceptual modality is due to the fact that we seem to use conceivability to determine epistemic possibilities as well, such as well-established empirical facts turning out not to be true. One of Kripke's passages about the nature of epistemic possibility goes as follows:

If I say, 'Gold might turn out not to be an element,' I speak correctly; 'might' here is epistemic and expresses the fact that the evidence does not justify a priori (Cartesian) certainty that gold is an element. I am also strictly correct when I say that the elementhood of gold was discovered a

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4 Proponents of this general line of thought that is usually referred to as 'Kripkean' are many, recent accounts include Hughes (2004) and Soames (2005). See also Tahko (2009b) for discussion of this approach.

5 In fact, the issue is somewhat controversial, as conceptual possibility could be understood without any reference to conceivability, e.g., as anything that is possible in virtue of the definitions of concepts, that is, anything that is not conceptually contradictory. However, as we will see, one plausible way to understand *conceivability* refers to conceptual coherence in a similar manner, so at least on an appropriate reading of conceivability there is a clear link between conceivability and conceptual possibility. We will return to this issue in the fourth section.

posteriori. If I say, ‘Gold might have turned out not to be an element,’ I seem to mean this metaphysically and my statement is subject to the correction noted in the text. (Kripke 1980: 143n.)

Here the ‘might’ is epistemic because it does not need to be true in any (metaphysically) possible world that gold is not an element. Given that the sentence ‘Gold is an element’ is (necessarily *a posteriori*) true, it is not (metaphysically) possible that Gold might have turned out not to be an element. To generalise: for a proposition to be epistemically possible, it does not need to be metaphysically possible. So, the sentence ‘Gold might have turned out not to be an element’ seems to make a metaphysical claim, when it should only be making an epistemic claim, as in the case ‘Gold might turn out not to be an element’. This is the kind of correction that Kripke refers to in the quoted footnote. Accordingly, Kripke seems to be worried about confusing epistemic and metaphysical modality.

Christopher Hughes (2004: 189–192) has given the following example of this confusion. His example concerns the case of ‘Hesperus is Phosphorus’. The line of thought goes as follows: if it looks metaphysically possible to you that Hesperus could exist apart from Phosphorus, yet you know that Hesperus is Phosphorus, you should not believe that Hesperus could exist apart from Phosphorus. So, the general case of this is that if you know that  $P = Q$  and that  $Q$  could not exist apart from  $P$ , you should not believe that it could, even if it initially looks to you that  $Q$ 's existing apart from  $P$  is metaphysically possible.<sup>6</sup> The point is that we

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6 Formally the idea could be put as follows (some of these steps are also in Hughes 2004: 190, n. 260.):

1.  $\sim(P = Q) \rightarrow \Box \sim(P = Q)$
2.  $\sim\Box \sim(P = Q) \rightarrow \sim\sim(P = Q)$
3.  $\Diamond(P = Q) \rightarrow (P = Q)$
4.  $(P = Q) \rightarrow \sim\Diamond \sim(P = Q)$
5.  $\sim\Diamond \sim(P = Q) \rightarrow \Box(P = Q)$

easily read epistemic possibility as if it were metaphysical possibility, and Kripke tried to highlight the importance of distinguishing these two modalities and avoiding the type of error described avoid. Consider another passage from Kripke:

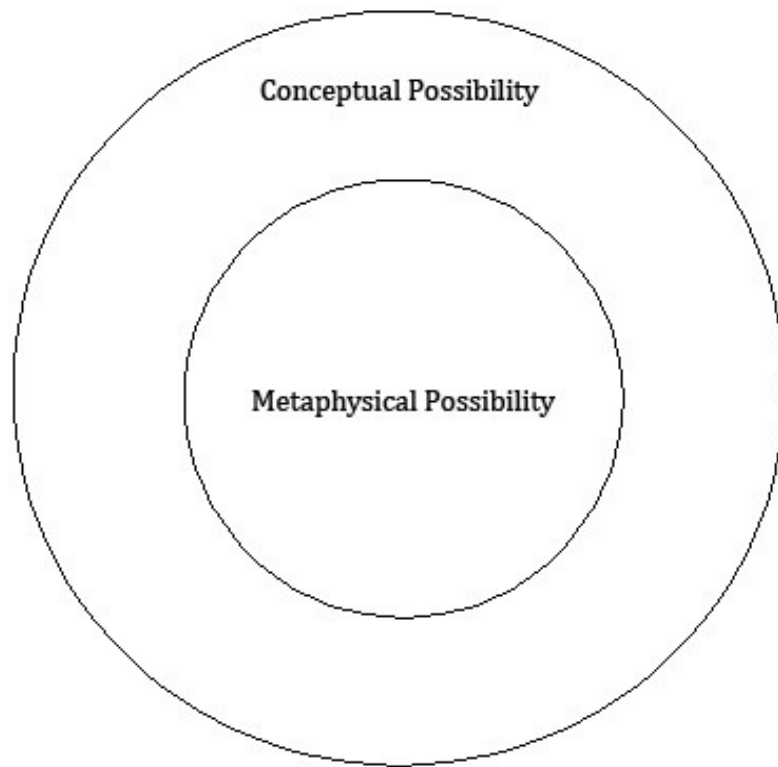
What, then, does the intuition that the table might have turned out to have been made of ice or of anything else [than wood], that it might even have turned out not to be made of molecules, amount to? I think that it means simply that there might have been *a table* looking and feeling just like this one and placed in this very position in the room, which was in fact made of ice. In other words, I (or some conscious being) could have been *qualitatively in the same epistemic situation* that in fact obtains, I could have the same sensory evidence that I in fact have, about *a table* which was made of ice. (Kripke 1980: 142.)

The lesson that we are supposed to learn from this is that whatever the modality in effect here is, it is not metaphysical modality, as the table that Kripke talks about is *essentially* made of wood. We can entertain the scenario that there is a table made of ice similarly situated and so on, but it would not be the *same* table. Epistemic modality is thus entirely distinct from metaphysical modality. Indeed, it appears to be a kind of pseudo-modality which is unfortunately often confused with genuine, metaphysical modality.

I will not consider the complications introduced by conceivability and modal epistemology here, but it appears that the distinction between conceptual and epistemic possibility concerns specifically modal epistemology – the space of conceptual possibilities and the space of epistemic possibilities are identical when they are understood in an absolute fashion, that is, when the subject doing the conceiving or knowing is ideal, e.g. God. If either one of these modal spaces is understood in terms of a specific, epistemically limited subject, then they become dynamic. For the purposes of simplicity, we shall assume that everything not ruled out by *a priori* reasoning is conceivable and hence conceptually possible (Chalmers 2002a),

although there is an on-going debate about how exactly to interpret conceivability, and we could also give a more positive definition of conceivability (cf. Gendler & Hawthorne 2002). If we interpret this in terms of an ideal conceiver, then it appears that everything that is conceivable to an ideal conceiver is also knowable to her, and indeed only those things which are conceivable to her are knowable to her. This entails the co-extensiveness of conceptual and epistemic possibility. In what follows I will assume this ideal reading of epistemic and conceptual modality and dismiss the dynamic reading; we can then minimise the complications introduced by modal epistemology, which are not our primary concern here.

Now that we are somewhat clearer on the distinction between epistemic and conceptual modality, and specifically about their co-extensiveness, it is sufficient to consider only one of them in what follows, I will opt for talking about conceptual modality. We can now proceed with our initial topic, namely the relationship between metaphysical and conceptual modality. From what has been said above it should already be obvious that conceptual possibility has a wider scope than metaphysical possibility, that is, there are conceptual possibilities which are not metaphysically possible. However, it also seems clear there are no metaphysical possibilities which could be ruled out by *a priori* reasoning, and if this is the case then all metaphysical possibilities are also conceptually possible. Accordingly, we get the following picture about the relationship between conceptual possibility and metaphysical possibility:



*Figure 1*

As is clear from *Figure 1*, according to this account metaphysical possibility is a proper subset of conceptual possibility. It is by no means certain though that this is the picture that Kripke had in mind, but at the very least it is consistent with what he says about conceptual (i.e. epistemic) and metaphysical modality. Another option would be to interpret conceptual and metaphysical modality as fully distinct modal spaces in such a way that there is no link between them, but this would raise a number of difficult questions concerning modal epistemology. For instance, there are propositions which on the face of it are clearly both metaphysically and conceptually possible, such as ‘it is possible that cows could have wings’. To circumvent this problem, we could introduce a union of conceptual and metaphysical possibility, but even in this case there would still be metaphysical possibilities which are not

conceptually possible, that is, some metaphysical possibilities which are ruled out by *a priori* reasoning – this seems quite implausible. Thus, it is more likely that Kripke had something like the picture in *Figure 1* in mind.

Our final issue for this section concerns the place of logical modality in this picture. Kripke says very little about the relationship between logical and metaphysical modality, but the two notions are often used synonymously. Putnam (1975: 233; 1990) for instance uses ‘logical possibility’ seemingly in the same sense as we might use ‘metaphysical possibility’, as he insists that it is not logically possible that water is not H<sub>2</sub>O. Putnam (1990) also seems to attribute the view to Kripke. Kripke’s (1971) writings on the necessity of identity might offer some support for this line of thought. If water is H<sub>2</sub>O and we have necessity of identity, then it would appear that water failing to be H<sub>2</sub>O is not even conceivable at this time. For Putnam at least, this seems to be enough to consider ‘Water is H<sub>2</sub>O’ a logical necessity. But the question is, does the necessity of identity bring in further *metaphysical* assumptions, or is it true strictly in virtue of the laws of logic? If the latter is the case, then we might be entitled to think that metaphysical and logical necessity are co-extensive. Certainly, there is no clear answer to this question in Kripke’s writings. It is not in our interest to dwell on this issue here, but I hope to clarify our options in terms of logical modality in what follows.

It should be mentioned though that one source of confusion here is that logical modality is sometimes considered to be an umbrella term for all types of modality (cf. Lowe 1998: 15): we can distinguish between strict, narrow and broad logical modality, where strict logical modality is something that is possible or necessary strictly in virtue of the laws of logic, narrow logical modality is co-extensive with conceptual modality, and broad logical modality is co-extensive with metaphysical modality. So, if ‘logical modality’ is read in the sense of broad logical modality, then it can indeed be treated as metaphysical modality. However,

there are subtle terminological issues here that we will need to address, and we will return to this in detail in the fifth section.

### **3. The conservative account**

From these remarks concerning logical modality, it is natural to move to a view which is perhaps closer to the pre-Kripkean view; I will call it the *conservative* account. This approach gained popularity as the shortcomings of the Kripkean account became apparent, but there are few explicit defences of it. One of the most illustrative treatments is perhaps Hale (1996). The basic idea of this approach is that logical necessity is *absolute*: it is at least as strong as every other kind of necessity, including metaphysical necessity. More specifically, ‘ $\Box_{\text{logical}} p$ ’ always entails ‘ $\Box_{\text{metaphysical}} p$ ’, i.e., if  $p$  is logically necessary then  $p$  is metaphysically necessary. The first type of necessity can be said to be *stronger* if the converse entailment does not apply. According to Hale, this causes problems for the friend of metaphysical modality, as it appears that metaphysical modality is only *relative*, and Hale claims that the friends of metaphysical modality took it to be absolute.

This is welcome news for those who are sympathetic to the ‘old school’ idea that logical modality concerns only what follows from the axioms of logic, which is what we called strict logical modality above. However, most contemporary philosophers working on modality would agree that, given Kripke’s work, this approach is not feasible because it leaves out a vast number of modal truths, specifically conceptual necessities and metaphysical necessities. This is where the conservative approach comes in, for if logical modality is interpreted in the broad sense, then all modal truths can be accommodated.

How exactly does this work? Well, if logical modality concerns the consequences of logical axioms and only them, then to accommodate further modal truths we must extend the

set of logical axioms to include at least the definitions of concepts, mathematical axioms and the laws of physics. Once we have the broad notion of logical modality, we can define conceptual, mathematical, physical, and other types of modality by restriction. So, according to this view, logical modality is the only fundamental type of modality and other types of modality reduce to it.<sup>7</sup> However this view (purposely) leaves out a set of metaphysical necessities which the Kripkean view includes, namely those based on the *natures* or *essences* of entities, such as ‘cats are animals’; these are by and large *a posteriori* necessities. The reason for this is that these necessities cannot be derived from the extended set of logical axioms, at least unless essentialist principles as well are included in this set; but it is exactly due to the hostility of the conservative approach towards such essentialist principles that its proponents wish to offer an account that excludes them.

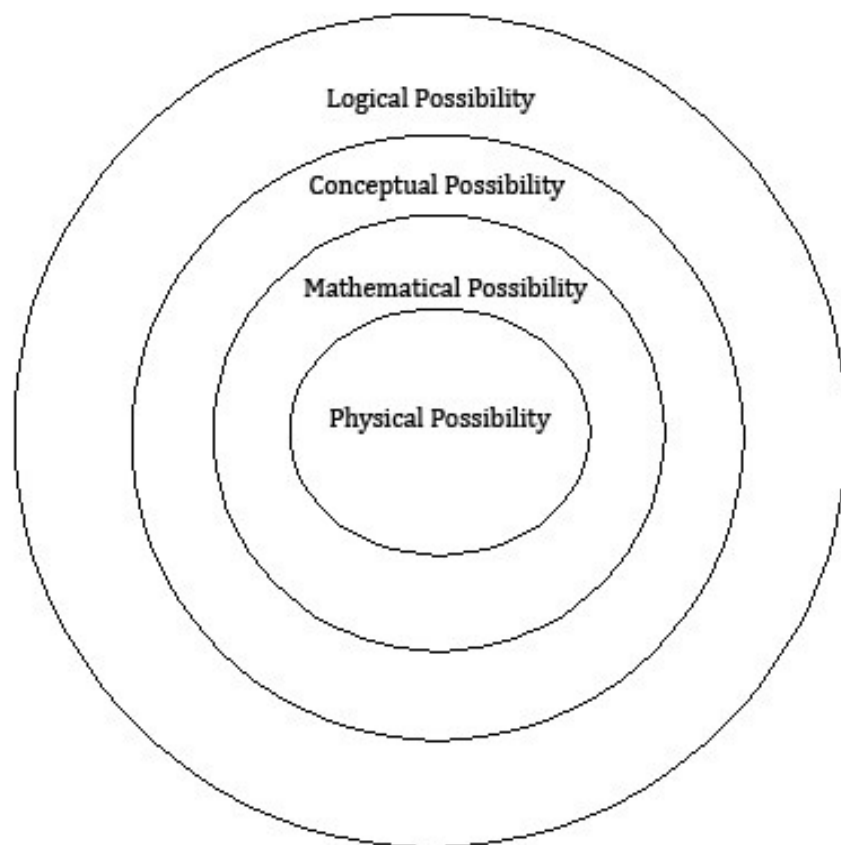
We will not consider the arguments for the conservative approach in detail, although we will return to some of these issues in the fifth section where the essentialist account is introduced.<sup>8</sup> For now, it is sufficient to note that Hale’s argument for the conservative view is based on a generalised form of McFetridge’s Thesis: ‘if the conditional corresponding to a valid inference is [broadly] logically necessary, then there is no sense in which it is possible that its antecedent be true but its consequent false (Hale 1996: 97). For Hale, broadly logical necessities are ‘propositions whose truth derives entirely from the concepts involved in them (together, of course, with relevant structure)’ (ibid., 100). Hence, by McFetridge’s Thesis, if we take logical consequence to be expressive of broad logical necessity in Hale’s sense, there

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7 Hale (1996: 95) explicitly excludes epistemic modality from his considerations, presumably because allowing it might undermine absolute necessity: there would always be a non-relative form of epistemic possibility which would undermine any supposed necessity. So, Hale dismisses the type of dynamic, non-relative epistemic modality, which I also dismissed in the previous section.

8 But see Shalkowski (1997, 2004) for a critical analysis of Hale’s argument.

is no stronger form of necessity than broad logical necessity. However, Hale as well recognizes the distinction between broad logical necessity and narrow logical necessity, where the latter constitutes a proper subset of the previous (ibid., 104). Accordingly, we can interpret broad logical necessities as those truths which are true in virtue of the nature of all concepts and narrow logical necessities as those truths which are true in virtue of the natures of all *logical* concepts. We could extend this further to mathematical concepts (or mathematical truths) and even physical concepts (or the physical truths). This gives us the following picture about the relationships between different kinds of possibility:



*Figure 2*

Metaphysical possibility is fully absent from this picture, as logical possibility has taken its place. However, Hale (ibid., 101) does go on to offer a compromise for the friend of metaphysical modality: he suggests that the relationship between logical and metaphysical possibility and necessity could be seen as a union, as this would fulfil the requirement of logical necessity being at least as strong as every other kind of necessity. Logical and metaphysical necessity would then be of equal strength. Hale is not happy with this compromise, but it is unlikely that the friend of metaphysical modality would be either. In this alternative picture we would have logical possibilities which are metaphysically impossible, as well as metaphysical possibilities which are logically impossible, both of which seem highly implausible. A potential move here, which Hale proposes, would be to consider such implausible possibilities as ‘possibilities in name only, not real or genuine possibilities at all’ (ibid., 100), which is exactly the move that Hale himself makes to exclude what he calls *austerely* logical impossibilities, such as the possibility of there being male vixens. We will take advantage of this idea later on, but the friend of metaphysical modality also has an alternative route in replying to Hale’s critique.

An alternative reply is available because the definition of broad logical necessity that Hale gives contrasts with the one that we saw towards the end of the previous section: there we took broad logical necessity to be co-extensive with metaphysical necessity, whereas Hale’s definition makes it co-extensive with conceptual necessity (cf. Lowe 1998: 19). The confusion is not just terminological though. Since Hale identifies broad logical necessity with conceptual necessity, all he is entitled to say is that there are some conceptual possibilities which are not metaphysically possible, as Lowe (ibid.) has pointed out. Now, this is of course sufficient for Hale’s case against the absoluteness of metaphysical necessity: if there are genuine conceptual possibilities which are not metaphysically possible, then metaphysical

necessity clearly cannot be absolute. But, as we recall, this is also perfectly compatible with the Kripkean picture! However, Hale's primary target is not Kripke, but rather Kit Fine, whose essentialist account we will look into in the fifth section. It should be noted though that Fine nowhere defends the view that metaphysical necessity is absolute, and it is not clear that any essentialist account of modality would have to do this – Kripke certainly does not.<sup>9</sup> Accordingly, perhaps the tension between the Kripkean account and the conservative account can be reconciled after all. In fact, in later work Hale (2002) seems much more sympathetic to the essentialist account.

#### **4. The conceptualist account**

The view that we will outline next is best known from the work of David Chalmers (1996) and Frank Jackson (1998), but similar ideas have also been defended for instance by Alan Sidelle (1989, 2002). I will call this approach the *conceptualist* account, although it could just as well be called *deflationary*. Whereas the Kripkean and the conservative account could be described as broadly realist about modality, the conceptualist account could perhaps be described as anti-realist. The driving force behind the conceptualist account is that there is just one fundamental modal space, namely conceptual modality. There is a simple motivation for this approach: if metaphysical possibility is a proper subset of conceptual possibility, as the Kripkean picture suggests, then what stops us from reducing metaphysical possibility to conceptual possibility altogether? Well, the original reason to distinguish metaphysical and conceptual modality, familiar from Kripke, is that metaphysical necessities, such as 'Water is H<sub>2</sub>O', are sometimes, indeed, very often, *a posteriori*, whereas conceptual necessities, such as

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<sup>9</sup> This type of critique against Hale's argument has also been noted by Scott Shalkowski (2004: 57–63). As he puts it: "'Absolute necessity' is a term of art and its application to metaphysical necessity is not something to which the essentialist is wedded' (p. 62).

‘All bachelors are unmarried’, are *a priori*. Accordingly, it seems that the subject matter of metaphysical modality is rather more complex than that of conceptual modality: it concerns the *natures* or *essences* of things such as natural kinds, and according to the Kripkean picture these are often discovered *a posteriori*. Here we see clearly how the realist accounts of modality differ from anti-realist or deflationary ones: the latter see the nature of modality as merely linguistic, whereas the former take it to concern mind-independent features of reality.

Indeed, it appears that there is an argument available for the conceptualist, who would rather see the Kripkean metaphysical modality to be reduced to conceptual modality altogether. Here is how it goes: the sentence ‘Hesperus is Hesperus’ is clearly purely *a priori* and necessary. To establish the supposed metaphysical necessity, ‘Hesperus is Phosphorus’, we require *a posteriori* information, but is there anything *else* that separates it from sentences like ‘Hesperus is Hesperus’? According to Jackson (1998: 69–70), this difference in epistemic status is all there is to it. Moreover, there is nothing else than the empirical discovery that Hesperus is in fact Phosphorus that differentiates these sentences. If this is the case, it would seem that the type of modality that is in effect in the case of ‘Hesperus is Hesperus’ is quite sufficient for the case of ‘Hesperus is Phosphorus’ as well. There is a difference between these cases, but ‘The difference lies, not in the kind of necessity possessed, but rather where the labels “a priori” and “a posteriori” suggest it lies: in our epistemic access to the necessity they share’ (Jackson 1998: 69–70).

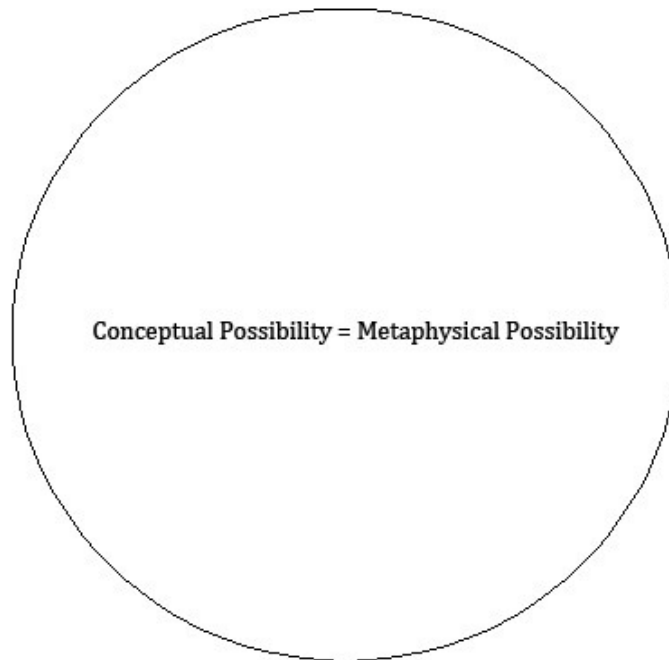
More developed arguments associated with the conceptualist view are based on the so called two-dimensional modal framework, which Chalmers and Jackson, among others, have developed (e.g., Chalmers 2006). A thorough analysis of this topic is beyond the scope of this survey, so I will omit a detailed discussion of it. The basic idea is that there are two distinct ways to understand possibilities, namely by considering the possibility *counterfactually* (C-

intension) and by considering it *actually* (A-intension), i.e., as if the possibility were true in the actual world. Chalmers (2002b: ch. 7) argues that what is relevant for the Fregean view of language are the A-intensions, and thus epistemic or conceptual modality, whereas Kripke's account of *a posteriori* necessities involves C-intensions and thus metaphysical modality. The A/C-intension distinction comes from Jackson (1998), the following passage summarises the previous argument with the help of this terminology, and claims further that even the epistemic difference between conceptual and metaphysical modality can be undermined:

[T]he C-intension of 'All water is water' is identical with the C-intension of 'All water is H<sub>2</sub>O', so 'they' have the same modal and epistemic status: in particular, the C-intension in question is necessary, and, plausibly, a priori. It is the C-intension that people most often have in mind, naturally enough, when they talk of the proposition *expressed* by a sentence, and what I am saying in this terminology is that the proposition expressed by 'All water is H<sub>2</sub>O' is one and the same, namely, the set of all worlds, so there cannot be any difference in modal or epistemic status. (Jackson 1998: 85.)

If there is no difference in the modal or epistemic status of statements like 'All water is water', which is clearly a conceptual necessity, and 'All water is H<sub>2</sub>O', which was supposed to be a metaphysical necessity, then there is no way to distinguish between conceptual and metaphysical necessity in the first place. Accordingly, we must be dealing with just one type of modality after all. This may seem implausible to the friend of metaphysical necessities, as they are often *a posteriori* and hence there is a difference between them and conceptual necessities, which are generally analytic *a priori* truths. However, Jackson's point is that if the empirical discovery is the only thing that separates these necessities, then the modal content of the statements must be identical. Indeed, we cannot distinguish conceptual and metaphysical modality even with the help of this epistemic difference, since there are also

supposed metaphysical necessities which are *a priori*, such as mathematical truths and perhaps laws of logic such as the law of non-contradiction. So, the conceptualist picture of the relationship between conceptual possibility and metaphysical possibility is simply that they are co-extensive and collapse together:



*Figure 3*

Alan Sidelle (1989, 2002) has defended a very similar analysis of modality, and this type of approach seems to be gaining popularity. Sidelle emphasises that the modal content in propositions such as ‘Water is necessarily H<sub>2</sub>O’ derives from a thoroughly analytic principle, quite like in the case of ‘Bachelors are necessarily unmarried’, and hence there really is no such thing as metaphysical modality; the modal content can always be traced to analytic, linguistic principles (2002: 319).

It would appear that the conceptualist will be looking to account for logical modality in

terms of conceptual modality as well. For instance, Chalmers says that ‘In determining whether it is logically possible that some statement is true, the constraints are largely *conceptual*’ (1996: 35). Chalmers explicitly distinguishes between ‘broadly logical’ and ‘strictly logical’ possibility, but as we saw in the previous section with regard to Hale’s account, broad logical possibility is apparently being identified with conceptual possibility. Hence, there is no room for metaphysical possibility. The upshot of the conceptualist picture seems to be very similar to that of the conservative picture:

[T]he oft-cited distinction between "logical" and "metaphysical" possibility stemming from the Kripkean cases – on which it is held to be logically possible but not metaphysically possible that water is XYZ – is not a distinction at the level of *worlds*, but at most a distinction at the level of *statements*. (Chalmers 1996: 68.)

In other words, there is no modal difference between logical and metaphysical possibility – both can be accounted for in terms of broad logical possibility, which in this picture is interpreted as conceptual possibility. Therefore, there is no difference between the modal statuses of trivial analytic truths and metaphysical necessities.

From the point of view of the friend of metaphysical modality, there is a crucial shortcoming in this account: if all modal truths are either analytic truths or a combination of an analytic principle and an empirical discovery, as in the case of *a posteriori* necessities (Sidelle 2002), then there is no way to distinguish between the following statements:

- (1) ‘All water is water’
- (2) ‘Water has its molecular structure necessarily’

In the conceptualist framework, these statements are both conceptually necessary. Those sympathetic to the Kripkean picture will find that the conceptualist framework is too coarse-grained: we need to be able to distinguish trivial modal truths like (1) from substantial modal truths like (2), and the natural way to do that is to uphold the distinction between conceptual and metaphysical modality.

So, both the conservative and the conceptualist account challenge the role of metaphysical modality in the metaphysics of modality and offer a deflationary picture instead. What can the friend of metaphysical modality do to counter this challenge? In the next section we will consider the most influential suggestion.

## **5. The essentialist account**

The most influential defence of metaphysical modality is due to the work of Kit Fine (1994), but other important authors who are sympathetic to this type of approach or a variation of it include for instance E. J. Lowe (1998), Fabrice Correia (2006, Forthcoming) and Scott Shalkowski (1997). The core of this account, which I will call the *essentialist* account, is that metaphysical modality reduces to essence. As Fine puts it: ‘we should view metaphysical necessity as a special case of essence’ (1994: 8). More generally, we can reduce modality to the essences of the entities it concerns, e.g., conceptual modalities reduce to the essences of concepts, logical modalities reduce to the essences of logical concepts, and metaphysical modalities reduce to the essences of all things – metaphysical modality being the most general type of modality. A natural consequence of this view is that we can define conceptual and logical modality with reference to metaphysical modality:

Given the notion of metaphysical necessity, the various narrower notions of necessity – be it logical, mathematical, conceptual, or the like – can each be defined by restriction. Each of these

other forms of necessity can, in other words, be regarded as a *species* of metaphysical necessity.

(Fine 2002: 255.)

So, according to this strategy, a mathematical necessity is something that is metaphysically necessary in addition to being a mathematical truth. However, Fine thinks that although logical, mathematical and conceptual modality can be regarded as species of metaphysical modality, there are some types of modality, namely natural and normative modality, which are not definable in terms of other types of modality either by restriction or by relativisation. In what follows we will not consider Fine's arguments regarding natural and normative modality, rather, we will focus on the relationships between metaphysical, conceptual and logical modality. We should take note of one important issue here though: since Fine defines other notions of necessity in terms of metaphysical necessity, it follows that logical, mathematical and conceptual necessities are also metaphysically necessary. It is merely because these other necessities concern specific *subsets* of all things that they can be distinguished from metaphysical necessities. Indeed, Fine thinks that natural necessities are not definable in such a manner because there may very well be metaphysical possibilities, based on some alternative laws of physics, which are not natural possibilities, and hence natural necessities need not be metaphysically necessary. It seems, then, that the key question here is whether there are natural necessities which are clearly metaphysically contingent, and Fine thinks that there are, one of them being the proposition that 'every event has a cause', which seems to be metaphysically contingent in the light of the metaphysical possibility of an indeterministic world, yet it is a plausible candidate for a natural necessity that every event has a cause.<sup>10</sup>

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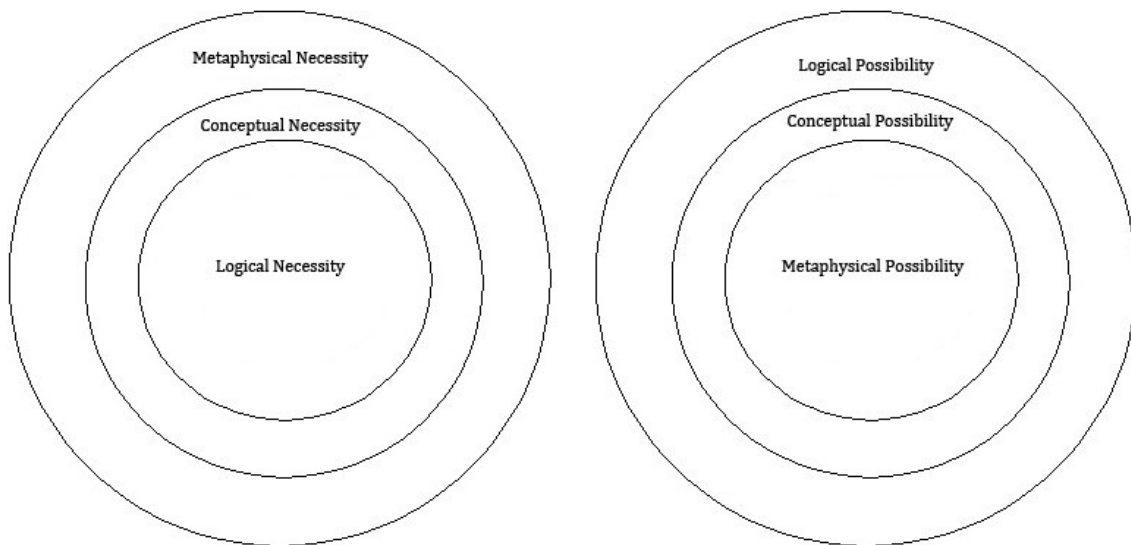
<sup>10</sup> Although there may be ways to challenge this: indeterministic laws seem to be possible in quantum mechanics.

Regardless of what the outcome is in the case of natural (or physical) modality, it appears that we might have a more general pattern emerging – one that will have important ramifications towards the case of conceptual and logical modality as well. That is, if there are propositions that are metaphysically contingent, yet necessary in terms of another type of modality, then the type of modality in question cannot be regarded as a species of metaphysical modality, but would be a distinct form of modality. This might not seem to pose any immediate threat for defining conceptual modality in terms of metaphysical modality: we may certainly say that all conceptual necessities are metaphysically necessary as well, that is, all necessities that are true in virtue of the essences of all concepts are also true in virtue of the essences of all things, as concepts are subsumed under ‘all things’. More generally, it seems that we have the so called principle of monotonicity in effect: if A is true in virtue of the nature of X and X is a subset of Y, then A is true in virtue of the nature of Y. Given Hale’s (1996) argument for the absoluteness of logical necessity, which was briefly discussed in the third section, the general consequence for the essentialist view is that logical necessity is at least as strong as conceptual necessity, which is at least as strong as metaphysical necessity.

What is interesting for us here is the interpretation of the relative strength between different types of necessity, which we already noted in the third section. From Hale we get an explicit definition:

One kind of necessity,  $\Box_1$ , may be said to be *stronger* than another,  $\Box_2$ , if ‘ $\Box_1 p$ ’ always entails ‘ $\Box_2 p$ ’ but not conversely. Assuming the usual relations between necessity and possibility, this relationship will obtain if and only if  $\Diamond_1$  is *weaker* than  $\Diamond_2$ , i.e. ‘ $\Diamond_2 p$ ’ always entails ‘ $\Diamond_1 p$ ’ but not conversely. I shall also say that  $\Box_1$  is *at least as strong as*  $\Box_2$  if the first half of this condition is met, i.e. ‘ $\Box_1 p$ ’ always entails ‘ $\Box_2 p$ ’. (Hale 1996: 94.)

Now, it seems that on this understanding of *at least as strong as*, saying that logical necessity is at least as strong as conceptual necessity, which is at least as strong as metaphysical necessity, amounts to this: if p is logically necessary, then p is conceptually necessary, and if p is conceptually necessary, then p is metaphysically necessary. Hence, we get the following picture about the relationships between logical, conceptual and metaphysical possibility and necessity:



*Figure 4*

This would all seem to corroborate Fine's (2002) analysis of logical and conceptual modality in terms of metaphysical modality, insofar as there are no counterexamples, i.e., logical or conceptual necessities which are metaphysically contingent. It is difficult to see how there could be such counterexamples in the case of conceptual modality: if metaphysical necessities are true in virtue of the nature of all things, then surely all concepts can be subsumed under 'all things'. The same might appear to be true in the case of logical modality, since logical necessities are true in virtue of the nature of all *logical* concepts and can thus be

subsumed under ‘all concepts’ *and* ‘all things’. However, this will only be plausible if all things that are true in virtue of logical concepts are metaphysically necessary, and hence someone who takes the (metaphysical) possibility of alternative logics seriously will not accept this line of thought. In other words, the above picture will only be viable if we have a One True Logic, and further, if this logic is metaphysically necessary.

If we do take alternative logics seriously, a natural counterexample presents itself: if ‘p & not-p’ expresses a metaphysical possibility, as proponents of paraconsistent logics claim (Priest 2006), yet it is logically necessary that ‘p & not-p’ is false (in the model of classical logic), then logical necessities cannot be subsumed under metaphysical necessities. Note that one does not have to believe that there are any actual contradictions to entertain this counterexample, all that is needed is that contradictions are metaphysically possible. Accordingly, we may hold that the actual world conforms to classical logic, and that classical logic is the One True Logic, but still acknowledge that there are metaphysically possible worlds which do not conform to classical logic. The upshot for anyone who accepts the metaphysical possibility of alternative logics is that analogously to Fine’s case concerning natural necessities, logical necessities as well would seem to escape definition by restriction in terms of metaphysical necessities.

To settle the status of logical necessities we would of course need to determine whether mutually exclusive alternative logics are metaphysically possible. This is something that we cannot pursue here, but it does suggest that there is an important difficulty in determining how many fundamental modal spaces there are according to this account.<sup>11</sup> In fact, the account might even clash with some common intuitions about the hierarchy of necessities. Specifically, since all types of necessity that can be subsumed under metaphysical necessity are, according to this picture, also metaphysically necessary, we seem to lose an intuitive

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<sup>11</sup> See Tahko (2009a) for more discussion concerning alternative logics.

distinction between these narrower types of necessity and metaphysical necessity. We can of course divide the space of metaphysical necessities into smaller, proper subsets of metaphysical necessity, which is what we indeed do when we talk about logical and conceptual necessity, but if we then say that something is conceptually necessary, we mean that it is true throughout the proper subset of metaphysical necessity which concerns concepts.

Now, we can certainly say that all conceptual necessities are a proper subset of metaphysical necessities, but it may be misleading to say simply that all conceptual necessities are metaphysically necessary. How could this be when conceptual necessity concerns only a proper subset of metaphysical necessity – it can make no claims outside its designated realm. Thus, perhaps we would be better off if we reserved the term ‘metaphysical necessity’ for those necessities which are not also conceptually necessary, or logically necessary, or indeed necessary only in some narrower subset of metaphysical necessities (cf. Lowe 1998: 15). Similarly, we might not want to say that all notions of necessity which are narrower than conceptual necessity are also conceptual necessities; instead we could rather reserve the term ‘conceptual necessity’ for those necessities which are not also logically necessary, or necessary in any narrower subset of conceptual necessity. This would preserve the intuitive hierarchy between different types of necessity. We will return to the ramifications of the hierarchical view in the next section.

Quite independently of this confusion, there is a further problem concerning metaphysical necessities which are not logically necessary – e.g., the proposition ‘all cats are animals’ – as it would seem to be the case that the proposition ‘cats are demons’ is logically possible, but not metaphysically possible. There seems to be no room for such propositions in the picture at hand, for if logical necessity is to be subsumed under metaphysical necessity, then all

logical necessities should also be metaphysically necessary. As we saw already in the third section, Hale (1996: 100) discusses a similar problem in the case of what he calls *austerely* logical possibilities, such as the proposition ‘there are male vixens’. Hale simply states that these are not genuine possibilities at all, but this hardly solves the underlying problem, which concerns modal epistemology: how are we supposed to know which possibilities are merely pseudo-possibilities? It seems to me that this is a major challenge especially for anyone who wishes to use conceivability as a guide to possibility, as proponents of the conceptualist account such as Chalmers and Jackson do. The problem is that conceivability is unrestricted: metaphysical impossibilities seem to be conceivable.<sup>12</sup> However, we need to be able to distinguish metaphysical possibilities from metaphysical impossibilities, and conceivability is of no help here. The question of modal epistemology is not our main concern here though, so I will not attempt to settle this problem now.

## **6. An alternative account?**

As we have seen, each of the accounts that we have considered suffer from certain problems. A central difficulty for all of the accounts is the exact nature of the relationships between different kinds of modality. I find that the essentialist account comes closest to providing a unified description of the relationship between metaphysical, conceptual, and logical modality, but the essentialist account as well struggles to address the problem of metaphysical impossibilities. More specifically, the essentialist account needs to address the status of possibilities which appear to be wider in scope than metaphysical possibility, such as conceptual and logical possibilities.<sup>13</sup> The following question arises: if we have to rule out

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<sup>12</sup> This is debatable, but at least Chalmers and Jackson, as well as many others, clearly think so (cf. Gendler & Hawthorne 2002).

<sup>13</sup> See Shalkowski (2004) and Hale (2002) for some suggestions as to how we can develop the essentialist

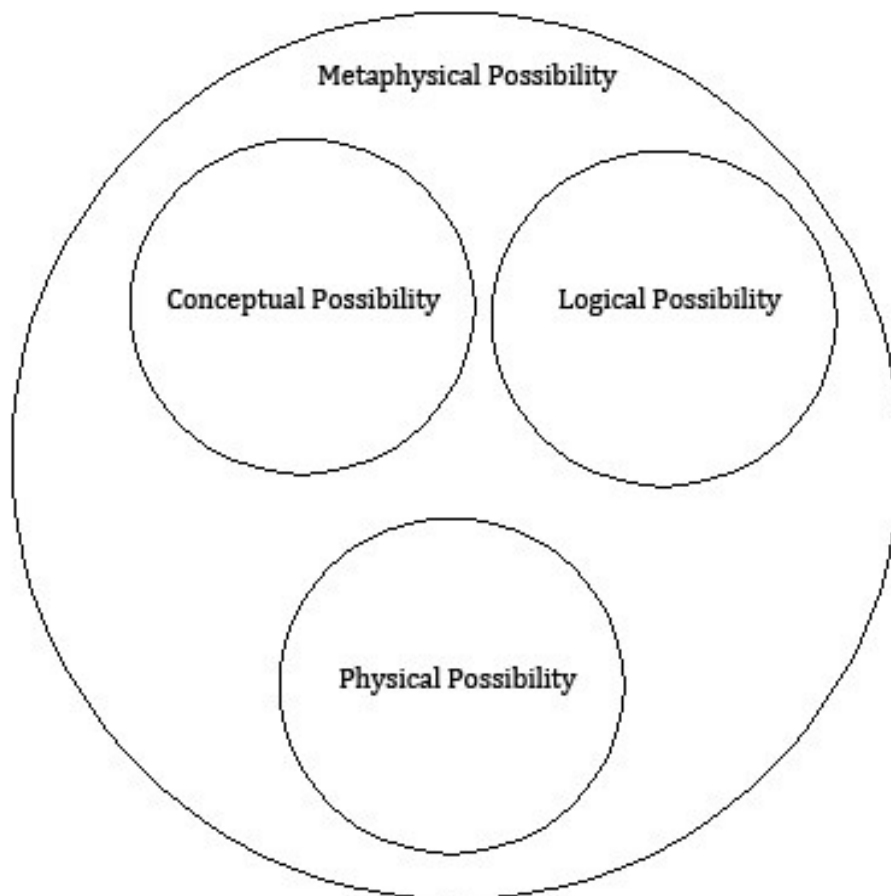
some of these possibilities, such as water being XYZ, by *ad hoc* means, then could we not just as well rule out *all* of the problematic, extra-metaphysical possibilities? That is, why should we include any metaphysical impossibilities in our theory of modality – perhaps they are all pseudo-possibilities.

If we follow this line of thought, metaphysical necessity will turn out to be absolute: there is no stronger type of necessity. This is of course the view that Hale (1996) questioned, although he mistakenly attributed it to the typical friend of metaphysical modality. The problem that emerges is that there seem to be logical possibilities which are not metaphysically possible, such as the case of water being XYZ, and this implies that metaphysical necessity cannot be absolute. However, a possible reply is that these possibilities are merely pseudo-possibilities, as we saw above. Indeed, this type of problem is not peculiar to the view at hand, as everyone will have to give a story about how we distinguish between genuine possibilities and pseudo-possibilities, even if one does think that conceptual and logical possibilities are also genuine possibilities. The suggested solution to this problem that I will now briefly consider is that *only* metaphysical possibilities are genuine possibilities. On the face of it, the upshot would seem to be that metaphysical necessity, conceptual necessity and (strict) logical necessity are all absolute. This appears to be the case because all metaphysical possibilities are surely conceptually and logically possible, and if only metaphysical possibilities are genuine possibilities, then all of these possibilities are co-extensive. While this is correct if we use the terminology familiar from Hale (1996), it has the unfortunate consequence of blurring the hierarchy of modalities that we attempted to salvage in the previous section. In what follows, metaphysical modality will be considered as the only fundamental type of modality, and hence all other types of modality

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account. I am sympathetic to some details of both suggestions, but the account that I will sketch here is independent of Shalkowski's and Hale's accounts.

can be defined in terms of metaphysical modality. However, to preserve the hierarchy of modalities, we shall reserve the notion of metaphysical modality to those modal truths which are not true in virtue of either the definitions of concepts or the laws of logic, and similarly for conceptual and logical modality. So, although we are in fact dealing with only one type of modality, we can delimit different aspects of this modal space by restriction. Accordingly, we get a rather surprising picture about the relationships between different kinds of possibility:



*Figure 5*

Interestingly, the picture that we get for different kinds of necessity will be exactly the

same. The idea is thus that all different types of possibility are proper subsets of metaphysical possibility, and metaphysical impossibilities are not genuine possibilities, while at the same time all different types of necessity are proper subsets of metaphysical necessity. On the face of it, this picture will seem blatantly contradictory or seriously confused: possibility and necessity are surely not the same thing! Also, conceptual and logical possibility are supposed to be at least as wide in their scope as metaphysical possibility, that is, all metaphysical possibilities are conceptually and logically possible, but also vice versa, because we have excluded metaphysical impossibilities. However, this would make distinguishing between metaphysical, conceptual and logical possibility redundant, as they would be co-extensive. But we can still use the notions of conceptual and logical modality exactly in the same sense as we use the notions of physical or biological modality – they are not modalities in their own right, but modalities which are simply different aspects of metaphysical modality. Finally, there is also a group of modal truths which is more general than the modalities which can be delimited by restriction; these include all metaphysical necessities, but also metaphysical possibilities which are not possible in virtue of the natures of concepts or even the laws of physics. It may be rather difficult to determine what this group of possibilities could include, but we will consider some examples in what follows.

So, according to this picture, different subspecies of metaphysical modality should be considered as concerning the natures of specific subsets of the set of all things. Hence, conceptual modality concerns things that are possible or necessary in virtue of the natures of concepts, and only them. Specifically, although it would commonly be considered that something like ‘It is possible to travel faster than light’ is conceptually possible, according to this picture this is not strictly correct: the possibility of travelling faster than light is not ruled out by the natures of concepts, but nor do the natures of concepts *make* it possible to travel

faster than light. This may admittedly seem counter-intuitive, since one common way of thinking about conceptual possibility is that anything that the definitions of concepts does not rule out is conceptually possible, and surely there is nothing wrong in the *concept* of superluminal travel. Perhaps so, but the view being entertained here calls for a *positive* analysis of modality rather than the negative one suggested by the idea that anything not *ruled out* by the definitions of concepts is conceptually possible. The requirement for a positive definition is motivated by the essentialist background of the theory, which suggests that conceptual possibilities are possible in virtue of the natures, or essences, of concepts. The ‘in virtue of’ relation, I wish to suggest, is analogous to the truthmaking relation, that is, what *makes* it true that something is conceptually possible are the natures of certain concepts.<sup>14</sup> Now, if we consider our example ‘It is possible to travel faster than light’, it would seem that we cannot give it a positive analysis in terms of conceptual modality. This is because the natures of concepts are not viable truthmakers for the possibility of superluminal travel, which is surely a physical process. Presumably, it is not even *physically* possible to travel faster than light, so it appears that if it is possible at all, it must be *metaphysically* possible, that is, there is a metaphysically possible world in which the laws of physics allow for faster than light travel, perhaps even a spacecraft that is capable of this.

It may appear that this analysis is confusing modal talk altogether, but the idea is actually fairly easy to adopt once we acknowledge the essentialist view of modality. Indeed, if metaphysical modality is regarded as the only fundamental type of modality, then the use of notions such as ‘conceptual’ and ‘logical’ modality becomes largely a terminological issue: they can either be defined by restriction, or they can be interpreted as co-extensive with metaphysical modality, provided that metaphysically impossible conceptual or logical possibilities are ruled out. However, the latter option makes these modalities redundant, since

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<sup>14</sup> See Shalkowski (2004) for some discussion of the role of truthmaking in an essentialist account of modality.

we might just as well be talking about metaphysical modality. This is what motivates my suggestion that we should read these modalities as strictly as possible, as in *Figure 5*.

This still leaves open the question concerning the exact subject-matter of conceptual and logical modality. According to this picture, conceptual modality concerns possibilities and necessities that involve the definitions or meanings of concepts (cf. Fine 1994). Classic examples like ‘All bachelors are married’, or ‘There are no male vixens’ would clearly fall into this category, being conceptually necessary, while the proposition ‘The word “gold” could mean the element with the atomic number 78’ is conceptually possible. The notion of conceptual modality becomes rather uninteresting in this picture, as most of the modalities that we are interested in have nothing to do with the meanings of concepts, except perhaps classic examples of analytic truths.

It is apparent that in this picture we cannot use the negative definitions for conceptual and logical possibility which were introduced earlier, i.e., everything that is not ruled out by *a priori* reasoning is conceptually possible, and everything that is not ruled out by the laws of logic is logically possible. Instead, we have to give positive definitions in the manner that was described above. Accordingly, logical modality concerns things that are possible or necessary in virtue of the natures of logical concepts, such as: ‘If it rains, it pours. It rains. Therefore, it pours’. The previous statement is logically necessary, and the modal content of the statement has logical validity as its source, i.e., the conclusion follows by logical necessity if the premises are true – the content of the statement is irrelevant.

What about logical possibility? This would seem to be a problematic case: if logical modality has logical validity as its source, and logical validity always requires necessity, as it would appear to do when we consider the necessary consequences of a group of premises, then all logical modalities would turn out to be logical necessities. This is indeed the case if

we consider logical modality to concern only one logic, the One True Logic, but the story is different if we take alternative logics to be metaphysically possible. In fact, before we can determine exactly which things fall within the scope of logical modality, we must inquire into the metaphysical status of logic, and specifically alternative logics. This is a topic that emerged already in the previous section. In *Figure 5* we have not distinguished alternative logics, but I take it that the status of alternative logics is an open question, and we could easily accommodate them in the picture by making each alternative logic a further proper subset of metaphysical possibility. There would be some overlap between these logics: even though certain laws of logic change between alternative logics, many of them remain the same. This implies that certain statements would fall into more than one category, for instance: ‘If it rains in England and it rains in Scotland, then it rains in England or it rains in Scotland’, is necessary in classical logic, but also, for instance, in intuitionistic logic.

What does all this have to do with the scope of logical possibility? The interesting question concerns those laws of logic which *do* vary between alternative logics, such as the law of non-contradiction. For instance, if we include paraconsistent logic in the picture, then true contradictions are logically possible. This suggests that logical possibility becomes an umbrella term for possibility in virtue of any number of metaphysically possible, alternative logics, whereas logical necessity concerns those laws of logic which do not vary between alternative logics. Of course, nothing stops us from introducing further subspecies of logical necessity for each alternative logic, should we wish to do so, in which case we could associate each subspecies of logical necessity with logical validity within that specific logic. The details are open however, and there are difficult questions concerning the status of alternative logics to settle before this discussion even becomes viable.

There is an alternative route for interpreting logical modality, which might in fact be more

viable. This route comes from Scott Shalkowski (2004: 77–81), who outlines two possible ways to interpret logical modality in an essentialist account of modality:

Essentialists have at least two ways of explaining logical necessity. One is to explain logical necessities as those true in virtue of the natures of logical items, perhaps propositions and their constituent concepts or else other truth bearers and their constituents. Alternatively, logical necessities might be explained as those propositions true in virtue of the natures of every situation or every object and property, thus preserving the idea that logic is the most general science. (Shalkowski 2004: 79.)

The first route is roughly the one I have developed above, but the second route offers a way of reading logical modality which is continuous with metaphysical modality. According to this interpretation, logical modality concerns the most general metaphysical truths, such as, perhaps, the law of non-contradiction when it is considered as a metaphysical principle (cf. Tahko (2009a)). The group of non-logical metaphysical modalities would concern less general metaphysical truths, such as classic examples like ‘gold is the element with the atomic number 79’. As Shalkowski puts it, logical facts would then be general facts about essences – logical relations would reflect the relations of individuals, properties, and states of affairs rather than mere logical concepts. This is appealing if we wish to maintain the idea that logical modality concerns the most general truths, and it may help to highlight the role of general principles such as the law of non-contradiction. Shalkowski suggests that denying the truth of the law of non-contradiction within this framework would amount to a genuine metaphysical attitude instead of, say, the rather trivial point that a model in which the law does not hold can be constructed. Ultimately the difference between these two interpretations of logical modality is not so striking though: (some of) one’s metaphysical commitments

would simply be reflected in one's logic.

The details of this alternative account remain open, but it would appear to offer a potential way to maintain that metaphysical necessity is indeed absolute, while defining conceptual and logical necessity in such a way that they do not end up being co-extensive with metaphysical necessity.

In conclusion, the discussion concerning the varieties of modality is far from settled, and seems to be riddled with terminological issues. I have attempted to clarify some of these issues, although it may be too much to hope that a standard terminology will be established any time soon. At the very least, one should make it explicit what is being meant when notions such as metaphysical, conceptual or logical modality are used. There are of course difficult questions concerning modal epistemology and the metaphysics of modality which will affect the view that one takes towards the varieties of modality and which I have completely omitted. But the alternatives that I have outlined in this paper should give some idea as to what the different options are. It has not been my goal here to defend one approach or the other, although, for what it's worth, I am most sympathetic towards the essentialist approach or a variation of it.

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