

Recent Work: Modality without Possible Worlds

Barbara Vetter

**This is the penultimate draft of a paper forthcoming in *Analysis reviews*.
Please cite the published version only.**

1 Introduction: The new actualism

Introducing a recent collection of his papers on modality and tense, Kit Fine writes:

It is an oddity of current thinking about modality that it has been heavily influenced, one might say dominated, by two extreme and highly implausible views. The first of these, associated with the name of Quine, is that modal notions are lacking in sense. ... The second of these two views, associated with the name of David Lewis, is that the possible and the actual are on an ontological par. Other possible worlds and their inhabitants are just as real the actual world and its inhabitants [...]. (Fine 2005, 1)

Actualists, such as Fine himself, have long aimed to avoid both the scylla of Quinean scepticism and the charybdis of Lewisian realism by taking modality to be real, yet exhaustively accounted for by the contents of this, the actual world. *Classical* actualists have been happy to take modality as a primitive¹, but have been concerned to provide a theory of possible worlds constructed entirely out of the materials of the actual world. In recent years, a different stripe of actualists has emerged. These *new actualists*, as I shall call them, do not feel the onus of providing an actualist account of possible worlds. Possible worlds, they say, may be a useful formal device in modal logic (as well as in other formal contexts), but they have little to do with the metaphysics of modality. Instead of accounting for possible worlds, then, these theorists have sought to provide an account of modality directly; their shared aim is to identify, within the actual world, the grounds,

¹As Stalnaker (2003, 7) has recently put it: ‘modal notions are basic notions, like truth and existence, which can be eliminated only at the cost of distorting them. One clarifies such notions, not by reducing them to something else, but by developing one’s theories in terms of them.’

source, or truthmaker of modal truths. (Contessa (2009) has called these theorists ‘hardcore actualists’ because, unlike ‘softcore actualist’, they do away entirely with the appeal to possible worlds.)

The new actualists do not, however, aim to provide a *reductive* account of modality. To understand the kind of non-reductive account that they seek, it helps to reflect briefly on what is meant by the term ‘modal’.

We can use the terms ‘modal’ or ‘modality’ in two ways. In a *narrow* sense, there are two modalities: necessity and possibility, though perhaps these both come in different flavours (epistemic, deontic, metaphysical). Related to them in some way, and still part of the narrow conception, is the counterfactual conditional. In a *broader* sense, the modalities comprise a much larger package: necessity, possibility, and the counterfactual are part of that package, and so are dispositional properties and powers, essences, and anything that is expressed by modal expressions in the linguists’ sense: *can, must, may, would*, and so on.

It has long been an unquestioned assumption that necessity and possibility (and, perhaps, the counterfactual conditional) are at the core of the larger modal package, and that other parts of the package have to be accounted for in terms of them. (The ‘conditional analysis’ of dispositions and the ‘modal account’ of essence, both to be discussed shortly, bear witness to this assumption of priority.) The new actualists reverse the order of explanation within the broader modal package and claim that it is necessity and possibility (and, perhaps, the counterfactual conditional) that have to be accounted for in terms of some other part of the package.

But why reverse the order of explanation?

The broader modal notions that the new actualists appeal to are typically more discriminating than necessity and possibility: an essence or a disposition is always the essence or necessity *of* some particular object; a necessity or possibility is not. It is this relativization to objects that makes the notions of essence and dispositionality particularly appealing to the new actualists. Some (such as Kit Fine) argue that the traditional direction of explanation fails to capture the finer distinctions that can be made with a notion such as essence; a natural reaction is to reverse the direction of explanation and begin with essence or dispositionality. Moreover, it seems that, if modality in general is grounded in essences and dispositions, and thus in properties, of objects, then modality itself is a matter of how things stand with objects; it is anchored in the objects of our world. The new actualism does not reduce modality, it merely locates it in the actual world.

Implicitly or explicitly, the new actualists are ‘anti-Humeans’. They reject the thesis of Humean supervenience, as captured in Lewis’s famous dictum that ‘all there is to the world is a vast mosaic of local matters of particular fact, just one little thing and then another’ (Lewis 1986, ix). The Lewisian mosaic, of course, is

ill-suited to provide sources or grounds for modal truths; it is characterized by the rejection of necessary connections in nature. If the Humean is to find modality at all, she must look beyond the mosaic, to other possible worlds. The anti-Humean has no need to ‘outsource’ modality in this way; she will find it in the features of this world. Anti-Humeans, therefore, have been particularly active in developing the new actualism. If a historical reference is required (or desired), the new actualists replace Hume, as the metaphysician’s hero, with Aristotle; many of them would happily describe themselves as ‘neo-Aristotelians’.

The new actualism is a trend in current metaphysics, but by no means a homogeneous movement. (My need to invent a label for it probably shows as much.) It comes in several versions, which may be distinguished according to which of the alethic modalities (necessity, possibility, the counterfactual conditional) they hold to be primarily grounded in which feature of the actual world (essences or dispositional properties). I will discuss the different versions in turn.

2 Essentialism

2.1 Object essentialism

‘Essentialism’ is often used to describe the view that objects have certain properties in all possible worlds; an essential property on this view is the same as a necessary property. In this sense, Kripke and Plantinga are essentialists (while Lewis, presumably, is not). Essentialism in this sense is not enough for the new actualism, and hence will not be discussed here. Rather, I will focus on what Lowe (2008) calls ‘serious essentialism’ and Oderberg (2007) ‘real essentialism’: the view that essence comes first, and provides the grounds for necessity.

Kit Fine, beginning with his seminal Fine (1994), has almost singlehandedly rehabilitated the notion of essence as a primitive, by providing influential counterexamples to the ‘modal account’ of essence in terms of necessity (Fine 1994), spelling out a non-reductive account of essence and an essentialist account of ontological dependence (Fine 1995c, Fine 1995b), and formulating a logic complete with a formal semantics of essence (Fine 1995a, Fine 2000). Unsurprisingly, his work on the subject still dominates the debate.

According to Fine,

metaphysical necessity is to be understood in terms of its distinctive source. A logical necessity has its source in logical form; it is true, or necessary, in virtue of its logical form. ... [A] metaphysical necessity has its source in the identity of objects; it is true, or necessary, in virtue of the objects with which it implicitly deals. (Fine 2005, 7)

[E]ach class of objects, be they concepts or individuals or entities of some other kind, will give rise to its own domain of necessary truths, the truths which flow from the nature of the objects in question. The metaphysically necessary truths can then be identified with the propositions which are true in virtue of the nature of all objects whatever.' (Fine 1994, 9)

It is important for Fine that a necessary truth need not have its source in the essences of *all* the objects that it is about. Thus, intuitively, it is true, and necessary, that Socrates is a member of his singleton set {Socrates}, because it lies in the essence of the singleton to contain Socrates—*not* because it lies in the nature of Socrates to be a member of that set.

This asymmetry of essentiality is at the core of Fine's influential argument for essentialism. Fine (1994) argues that essence is not adequately understood in terms of necessity. On the standard, 'modal' account of essence, an essential property of x is a property that x possesses necessarily (if x exists), or in all possible worlds (in which x exists). But that approach fails to recognize the asymmetry of essentiality that I have just pointed out: it makes Socrates's membership in singleton Socrates essential to both Socrates and his singleton, since it is necessary that Socrates is a member of that singleton (if he exists). The essentialist conception of necessity is introduced, in Fine's 1994 paper, as an explanation for the failure of the modal account:

Each object, or selection of objects, makes its own contribution to the totality of necessary truths; and one can hardly expect to determine from the totality itself what the contributions were. (Fine 1994, 9)

The irreducibility of essence to modality is the only reason given, in Fine 1994, for adopting his essentialist approach to modality. Consequently, discussions of Fine's seminal paper have focussed on his counterexamples to the modal account. Some, such as Gorman (2005), reject Fine's counterexamples as artificial. Others, such as Zalta (2006) and Correia (2007), have instead accepted the counterexamples and tried to reconcile them with a modal account of essence by providing alternative diagnoses for them.

Zalta (2006) appeals to his independently motivated theory of objects: for him, an ordinary concrete object such as Socrates exists necessarily, but is only contingently *concrete*; thus, while it is (surprisingly) not true that Socrates might have failed to exist, it is true that he might have failed to be concrete. Had Socrates failed to be concrete, he would have been an *abstract* object.² Zalta then defines

²Zalta's view is closely similar to that of Williamson (2002), with the subtle difference that for Williamson, Socrates's not being concrete does not entail his being an abstract object.

the *weakly* essential properties of an object to be those that it has in all worlds where it is concrete, and its *strongly* essential properties to be those properties that it has in all *and only* the worlds where it is concrete. Since Socrates is a member of singleton Socrates in every world, whether or not he is concrete, being a member of singleton Socrates is weakly but not strongly essential to Socrates; hence the Finean asymmetry has been captured.

A different response to Fine's counterexamples is offered by Correia (2007), who appeals to a non-standard (and also independently motivated) theory and formalism of modality and possible worlds. On Correia's 'Priorean' picture of modality, the standard, 'globally' possible worlds need to be supplemented with merely *locally* possible worlds, incomplete possible situations at which there may be no facts (positive or negative) about certain objects. An object's essential properties are, roughly, those properties that it possesses at every (globally or merely locally) possible world where there are facts about that object. Since there may be facts about Socrates without there being facts about his singleton (but not vice versa), there are some locally possible worlds where there are facts about Socrates, but where those facts do not include his being a member of {Socrates}. Hence, again, the asymmetry of essentiality is captured. Fine (2007) responds that Correia is an essentialist in disguise: metaphysically speaking, the question which locally possible worlds there are, and which there aren't, is best answered by looking at the essences of things that constitute them.

Other criticisms of Fine's views have focussed directly on his essentialist conception of modality. Thus Cameron (2008) complains that while Fine's positive proposal, the grounding of necessity in essence, is intuitive when applied to *de re* necessities, Fine 'has not given us any reason to think that *every* metaphysically necessary truth arises from some truth concerning the essence of some thing(s)' (Cameron 2008, 272). In particular, the proposal is less natural when applied to *de dicto* necessities such as 'Necessarily, if there is a thing, there is a singleton of that thing' (*ibidem*).

As should be evident from the detailed criticism that it has received, Finean essentialism is now generally viewed as a serious contender among theories of modality. In a recent *Philosophy Compass* article on 'the grounds of necessity', Cameron (2010) lists it as one of the three main options, the other two being Lewisian modal realism and a conventionalist or deflationary approach to modality.

Finean essentialism is, in many ways, a rather modest form of essentialism. Its motivation is largely formal, and Fine makes few, if any, positive claims about what is essential to a given object. Other essentialists have been less restrained, and motivated by different kinds of consideration.

Like Fine, Lowe (2008) argues that 'essences are the ground of all metaphysical necessity' (Lowe 2008, 45). Unlike Fine, however, Lowe's argument for this

view is primarily an epistemological one: modal knowledge, Lowe argues, cannot be grounded either in a posteriori empirical evidence or in logical or conceptual knowledge; it can arise only from our *sui generis*, a priori grasp of the natures or essences of things. (Consequently, Lowe rejects much of the traditional Kripkean picture of the necessary a posteriori.)

In a book-length treatment on the subject, Oderberg (2007) has proposed a substantial, traditionally Thomistic version of essentialism, where an object's essence is given wholly by its kind, and the relation between this essence and an object's matter is to be understood along Aristotelian-Thomistic, hylomorphic lines as one between act and potency. Following Fine, Oderberg too suggests that possibility and necessity in general (even logical possibility and necessity) are 'grounded in the natures of things' (Oderberg 2007, 126), while the possible existence of non-actual objects is grounded in prime matter, which is conceived as 'pure potentiality'.

2.2 Property essentialism

Essentialism of the Finean variety attributes essences to a great variety of objects, including Socrates, the number 2, the empty set, the property of being human (understood as an abstract object), or the word 'Socrates'. An alternative account, which may be subsumed under the essentialist approach even though it does not always go by that name, locates the source of necessity and possibility in the natures, not of objects, but of *properties*.³ Such an account has recently been proposed by Michael Jubien (2009) (see also Jubien 2007). Jubien's ontology includes a realm of abundant, Platonic properties. These properties each have their own intrinsic nature; and any pair of properties stand in intrinsic relations thanks to their respective intrinsic natures. Necessity and possibility consist in the holding of these intrinsic relations, and in particular, a relation that Jubien calls *entailment* and another that he calls *compatibility*. The property of being a horse entails the property of being an animal, and is compatible with the property of being blue; hence it is necessary that all horses are animals, and possible that some horses are blue. Jubien does not give a general definition of necessity, but rather a case-by-case analysis of various necessities. The reader is to understand that all necessities – and possibilities – are to be analysed along these lines, but is not given a general rule for doing so. (Turner (2010) raises doubts about the ability of Jubien's analysis to cover all cases of alleged necessities.) Jubien's account is intended as an *analysis*, where 'an analysis of a concept tells us what the concept *is* by telling us what its constituents are and

³If properties are abstract objects, then this version of essentialism is a restricted form of object essentialism.

how they are combined in the concept.’ (95) The analysis is *not* reductive: if entailment and compatibility are to be the sources of modality, they must themselves be modal (98).

Unlike Fine’s, Jubien’s form of essentialism lends itself most naturally to *de dicto* modality, a fact which he himself points out. Modality *de re* is then treated as a special case of modality *de dicto*: among Jubien’s Platonic properties are such properties as the property of being a particular object, x : x ’s object-essence. The *de re* necessities about x are those necessities that are grounded in what x ’s object-essence entails, the *de re* possibilities about x are those possibilities that are grounded in what x ’s object-essence is compatible with.

A more restricted version of property essentialism has been advocated in recent years by some metaphysicians of science, beginning with Ellis (2001). These ‘scientific essentialists’ believe that the fundamental properties in the sciences, and especially in physics, have essences which are the source or grounds for the laws of nature that concern these properties. Thus it is a law of nature that two negative charges repel each other when in close proximity because it is the *essence* of negative charge to repel other negative charges when in close proximity to them. This view can be traced back at least to Shoemaker (1980); its most recent, and most thorough to date, articulation and defense has been given by Bird (2007). Since it is the essence of the fundamental properties to behave as they do, the laws that codify this behaviour are true of necessity; and hence, according to scientific essentialists, the essences of fundamental properties provide the grounds for a select set of metaphysical necessities, the laws of nature. It is, of course, highly controversial that the laws of nature are metaphysically necessary to begin with, and scientific essentialism is not intended to provide an account of metaphysical necessity in general. (A detailed argument against the scientific essentialist’s subsumption of ‘natural’ under metaphysical necessity can be found in Fine 2002.) When scientific essentialists have speculated about such an account, it has been not so much in an essentialist spirit but in a dispositionalist one; and it is to dispositionalism that we now turn.

3 Dispositionalism

The view that has just been introduced as scientific essentialism often goes under the label ‘dispositional essentialism’: it claims not only that the fundamental properties that science deals with have essences, but also that these essences are dispositional. While these two aspects are not always clearly separated, they lend themselves to two different approaches to modality: an essentialist one, and a dispositionalist one. It is the second that I will be discussing in this section. Its ap-

peal is wide-spread among scientific/dispositional essentialists, but is not limited to them.

While many dispositionalists believe that properties have (dispositional) natures or essences, it is not the idea that properties have essences which does the modal work; it is the content of their essence: their dispositionality. (One can be a dispositionalist without being an essentialist: see Mumford 2005.) Dispositions are modal properties. A disposition such as fragility is generally characterised by a counterfactual conditional such as ‘If x were struck, x would break’. Moreover, objects possess many dispositions without manifesting them (any fragile but unbroken glass will serve as an example); the manifestation of such a disposition is merely *possible*. Dispositions are linked both to counterfactual conditionals and to possibility, thus opening two routes to the dispositionalist who wants to ground modality in dispositions.

3.1 Dispositions, counterfactual conditionals and necessary connections in nature

The route through counterfactual conditionals has certainly been the route more travelled, partly due to the fact that the relation between dispositions and counterfactuals has been a core concern in the literature about disposition. Starting with Martin (1994), the so-called conditional analysis (analysing disposition ascriptions in terms of the associated conditionals) has been challenged repeatedly by appeal to so-called ‘finks’ and ‘masks’: a fragile glass may be struck and yet not break because some external condition (for instance, anti-deformation packing) interferes with its breaking. Yet the falsity of the counterfactual conditional does not deprive the glass of its fragility; dispositions are, more often than not, *intrinsic* properties of their bearers, while the truth of the counterfactual conditional depends, in part, on conditions external to the object concerned, such as the presence or absence of anti-deformation packing around it. (For a recent summary of the debate around finks, masks, etc., see Manley and Wasserman 2008.) If the analysis of dispositions through counterfactuals fails, and so (many believe) does a reductive account of dispositions, then a line of argument akin to Fine’s reasoning suggests itself: perhaps it is not dispositions that are reducible to counterfactuals, but counterfactuals that are made true by dispositions. Martin (2008) suggests that we might reverse the order of explanation and see counterfactuals only ‘as clumsy and inexact linguistic gestures to dispositions and they should be kept in that place’ (p. 19, reprinted from Martin 1994, 8). Many of the outspoken anti-Humeans, and in particular the dispositional essentialists, have followed his cue. For dispositional essentialists, the laws of nature are grounded in the dispositional properties at the fundamental level of nature: for instance, the law that like charges, when in prox-

imity of each other, repel each other is grounded in the fact that it is the very nature of charge to repel like charges when in proximity to them. It would be surprising, to say the least, if that very same dispositional nature should not also ground the truth of counterfactuals of the form ‘If x were in proximity of another negatively charged object, it would move away from it’. If, moreover, this idea could be generalized to provide a treatment of all counterfactuals, the rest of modality (narrowly understood: necessity and possibility) would follow suit. Bird (2007) sketches this programme in the final footnote of his book-length treatment of dispositional essentialism:

This opens up the possibility of a dispositional account of modality. Note that $\Box p \equiv \neg p \Box \rightarrow p$. So if [the conditional analysis of dispositions] were true, we could use this equivalence to provide a dispositional analysis of necessity; details await development. (Bird 2007, 218, fn.146)

Other dispositionalists have voiced similar ideas of routing some kind of modality (not always explicitly the counterfactual conditional) in dispositions, and restoring the ‘necessary connection’ in nature that Humeans have denounced:

[N]ecessities in nature ... require truthmakers, and it seems that it will be real powers which provide such truthmakers. (Molnar 2003, 223)

In virtue of being powerful, [properties] provide natural necessity and possibility and are fit to be the truthmakers for modal truths. (Mumford 2004, 170)

Reacting to speculations of this kind, Eagle (2009) and Schrenk (2010) have criticized the dispositionalist project by turning the dispositionalists’ own anti-reductionist considerations against them.

The conditional analysis fails, or so it is thought by many dispositionalists, because a disposition’s manifestation, even when triggered, can always be interfered with. As Eagle points out, the truth of a counterfactual conditional depends on circumstances external to the disposition-possessing object: whether a glass would break if struck depends, not merely on the glass’s fragility, but also on whether or not it is packed in protective packaging; whether x would move away if in the proximity of another object with negative charge depends not only on whether x is negatively charged, but also on the presence or absence of other charges.

For that very reason, Eagle (2009) argues, a disposition such as negative charge never suffices for the truth of counterfactual such as ‘If x were in the proximity of

another negatively charged object, x would move away from it'. The truth of that counterfactual requires more than the possession, by x , of a suitable disposition; it also requires that external circumstances are such that they would not interfere with the disposition's manifestation.

Similarly, Schrenk (2010) rejects the assumption that an ordinary disposition such as fragility or charge can provide any kind of 'necessity in nature'. Necessity is monotonic: if a disposition, together with its triggering condition, necessitated its manifestation, then it would still necessitate it regardless of additional factors. But that is precisely not the case, as the possibility of interfering factors shows. Nothing short of a (near-) totality state of affairs as a disposition's 'triggering' condition would suffice to necessitate its manifestation.

While talk of 'natural necessity' in dispositions has become scarce more recently (Mumford has explicitly renounced it in more recent work), it remains to be seen how a spelled-out dispositionalist account of counterfactual conditionals will meet the difficulty pointed out by Eagle and Schrenk. The most thoroughgoing attempt at such an account, to my knowledge, is Jacobs 2010, who does not, however, explicitly address Eagle's challenge.

Jacobs' basic idea is that each property (which he thinks of as simultaneously qualitative and dispositional) is the 'truthmaker for the counterfactuals describing what objects with that property would do in the various circumstances they might find themselves in' (Jacobs 2010, 241). The basic idea is then put to work in a semantics of counterfactual conditionals along the following lines: 'When I assert a counterfactual, ... the antecedent and consequent, together with context, pick out complexes of natural properties. The counterfactual is true just in case the property complex picked out by the antecedent is a power, every exercise of which would bring about the property complex picked out by the consequent'. (Jacobs 2010, 242.)

Jacobs takes the 'most powerful objection' to a properties-based theory of modality to consist in the sheer formal power of possible worlds semantics, and the lack of a properties-based alternative to it (Jacobs 2010, 240). His own approach is intended to remedy that situation, and he accordingly provides the beginnings of a properties-based semantics for counterfactuals. The semantics uses the idea of 'chains' of property-complexes ('stages') such that each stage is a power to produce the subsequent stage; a counterfactual $A \Box \rightarrow C$ is true, roughly, iff all chains are such that stages containing the property-complex assigned to A are followed by stages containing the property-complex assigned to C . Necessity is then defined via the equivalence $\Box p \equiv \top \Box \rightarrow p$: it is necessary that p just in case p would be the case if the tautology held (or more intuitively: whatever else were the case, p

would still be the case).⁴

Jacobs', or indeed any, powers-based semantics for counterfactuals has yet to be spelled out in full detail, however. Jacobs' semantics, and his informal remarks, say little about the size of the property-complexes and their bearers (his assignment of property-complexes to sentence letters is, obviously, far from standard procedure and awaits integration with the usual semantics for non-modal expressions). This also makes it difficult to judge whether, and how, his proposal might evade Eagle's challenge.

3.2 Dispositions and possibility

A dispositionalist account of possibility need not worry about the relation between the disposition's triggering condition and its manifestation; it is concerned only with its manifestation. According to Borghini and Williams (2008), to a first approximation,

(P1) State of affairs S is possible iff there is some actual disposition d , the manifestation of which is (or includes) S . (Borghini and Williams 2008, 26)

A similar account has been suggested earlier by Pruss (2002).

It is clear that the route taken by Borghini and Williams and by Pruss, i.e. through possibility rather than counterfactuals, is not subject to Eagle's challenge. The possibility of external interference with a glass's breaking when struck may threaten the truth of the counterfactual 'If the glass were struck, it would break'; it does nothing to threaten the much weaker claim that the glass *possibly* breaks. In general, possibility claims are weaker than counterfactual conditionals and hence easier to be had; this is a strategic advantage for Borghini and Williams's approach.

But are there enough dispositions to ground all the possibilities that there are? Borghini and Williams provide for some of the more remote possibilities by what they call 'higher-order dispositions'. An object's higher-order dispositions are its 'dispositions for the having of further dispositions' (Borghini and Williams 2008, 30, fn.21, italics deleted). Thus it is possible that a glass be used as a cutting tool because the glass, by virtue of being fragile, has a second-order disposition to that effect: it is disposed to break and thus become disposed to be used as a cutting tool. Incorporating higher-order dispositions into a revised version of (P1), Borghini and

⁴The fact that necessity and possibility are definable in terms of the counterfactual conditional had long been noted by Stalnaker but has recently been brought to prominence by Williamson (2007). Note, however, that the equivalence used by Jacobs is not what either Stalnaker or Williamson have in mind; it fails on the standard Lewis-Stalnaker semantics.

Williams can ‘greatly expand[...] the range of possibilities that the dispositionalist can countenance’ (Borghini and Williams 2008, 32).

However, Cameron (2008) has argued that a dispositionalist account of possibility is ill-suited to ground the more holistic ‘possibilities concerning how the world could have been globally’ (p.273) – the possibility, for instance, that the laws of nature had been different, or that none of the actually existing things had ever existed.⁵ (Cameron does not address Borghini and Williams, nor they him; the two papers appeared in the same year. For a detailed response to Cameron, which makes reference to Borghini and Williams, see Contessa 2009.)

Rather than seek to accommodate such apparent possibilities, the dispositionalist may choose to bite the bullet and deny that the alleged possibilities really are possibilities. Jacobs (2010) considers this strategy, labelling it ‘pure Aristotelianism’, and Borghini and Williams (2008) explicitly endorse it. The claim is that our only reason for believing that these are genuine possibilities is their conceivability; but the dispositionalist need not, and should not, believe in conceivability as a guide to possibility. Rather, she has at her hands a different and powerful tool to determine, at least in principle, which states of affairs are indeed possible. (See Borghini and Williams 2008, Contessa 2009.) The apparent contingency in these cases may be explained away more specifically in analogy with standard Kripkean explanations for the apparent contingency of identity statements (thus Bird 2007 argues for the apparent contingency of the laws; Jacobs 2010 endorses the explanation).

All in all, dispositionalism cannot yet offer the canonical formulation and rigorous development that essentialism has achieved in the works of Kit Fine; there is much work yet to be done. Dispositionalist theories of modality are an exciting field in modal metaphysics, in which much may be expected to happen in the years to come.⁶

Humboldt-Universität zu Berlin
Unter den Linden 6, 10099 Berlin, Germany
barbara.vetter@philosophie.hu-berlin.de

References

Bird, Alexander. 2007. *Nature’s Metaphysics*. Oxford: Oxford University Press.

⁵Pruss (2002) suggests that the problem can be solved if we are happy to attribute all the problematic powers to a non-contingent, omnipotent being. Cameron (2008, 275f.), however, objects that this theistic solution makes modal epistemology incomprehensible.

⁶I would like to thank Romy Jaster, Stephan Schmid and Markus Schrenk for helpful comments on an earlier version of this paper.

- Borghini, Andrea and Williams, Neil E. 2008. "A Dispositional Theory of Possibility." *Dialectica* 62:21–41.
- Cameron, Ross. 2008. "Truthmakers and Modality." *Synthese* 164:261–280.
- . 2010. "The Grounds of Necessity." *Philosophy Compass* 5/4:348–358.
- Contessa, Gabriele. 2009. "Modal Truthmakers and Two Varieties of Actualism." *Synthese* 174:341–353.
- Correia, Fabrice. 2007. "(Finean) Essence and (Priorean) Modality." *Dialectica* 61:63–84.
- Eagle, Antony. 2009. "Causal Structuralism, Dispositional Actualism, and Counterfactual Conditionals." In Toby Handfield (ed.), *Dispositions and Causes*, 65–99. Oxford: Oxford University Press.
- Ellis, Brian. 2001. *Scientific Essentialism*. Cambridge: Cambridge University Press.
- Fine, Kit. 1994. "Essence and Modality." *Philosophical Perspectives* 8:1–16.
- . 1995a. "The Logic of Essence." *Journal of Philosophical Logic* 24:241–273.
- . 1995b. "Ontological Dependence." *Proceedings of the Aristotelian Society* 95:269–289.
- . 1995c. "Senses of Essence." In Walter Sinnott-Armstrong (ed.), *Modality, Morality, and Belief. Essays in Honour of Ruth Barcan Marcus*, 53–73. Cambridge: Cambridge University Press.
- . 2000. "Semantics for the Logic of Essence." *Journal of Philosophical Logic* 29:543–584.
- . 2002. "The Varieties of Necessity." In T.S. Gendler and J. Hawthorne (eds.), *Conceivability and Possibility*, 253–282. Oxford: Oxford University Press.
- . 2005. *Modality and Tense. Philosophical Papers*. Oxford: Oxford University Press.
- . 2007. "Response to Fabrice Correia." *Dialectica* 61:85–88.
- Gorman, Michael. 2005. "The Essential and the Accidental." *Ratio* 18:276–289.
- Jacobs, Jonathan D. 2010. "A powers theory of modality: or, how I learned to stop worrying and reject possible worlds." *Philosophical Studies* 151:227–248.

- Jubien, Michael. 2007. "Analyzing Modality." *Oxford Studies in Metaphysics* 3:99–139.
- . 2009. *Possibility*. Oxford: Oxford University Press.
- Lewis, David. 1986. *Philosophical Papers, Volume II*. Oxford: Oxford University Press.
- Lowe, E.J. 2008. "Two Notions of Being: Entity and Essence." *Philosophy* 83:23–48.
- Manley, David and Wasserman, Ryan. 2008. "On Linking Dispositions and Conditionals." *Mind* 117:59–84.
- Martin, C. B. 1994. "Dispositions and Conditionals." *The Philosophical Quarterly* 44:1–8.
- . 2008. *The mind in nature*. Oxford: Oxford University Press.
- Molnar, George. 2003. *Powers. A Study in Metaphysics*. Oxford: Oxford University Press.
- Mumford, Stephen. 2004. *Laws in Nature*. Oxford: Oxford University Press.
- . 2005. "Kinds, Essences, Powers." *Ratio* 18:420–436.
- Oderberg, David. 2007. *Real Essentialism*. London and New York: Routledge.
- Pruss, Alexander R. 2002. "The Actual and the Possible." In R.M. Gale (ed.), *Blackwell Guide to Metaphysics*, 317–333. Oxford: Blackwell.
- Schrenk, Markus. 2010. "The Powerlessness of Necessity." *Nous* 44:725–739.
- Shoemaker, Sydney. 1980. "Causality and properties." In *Identity, cause, and mind: Philosophical Essays*, 206–233. Oxford: Oxford University Press (2003).
- Stalnaker, Robert. 2003. *Ways a World Might Be*. Oxford: Oxford University Press.
- Turner, Jason. 2010. "Review of M. Jubien, 'Possibility'." *Analysis* 70:184–186.
- Williamson, Timothy. 2002. "Necessary Existents." In A. O'Hear (ed.), *Logic, Thought and Language*, 233–251. Cambridge: Cambridge University Press.
- . 2007. *The Philosophy of Philosophy*. Oxford: Blackwell.
- Zalta, Edward N. 2006. "Essence and Modality." *Mind* 115:659–693.