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MODAL EPISTEMOLOGY

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Introduction

The phrase 'modal epistemology' is most commonly used in two main ways nowadays. In one, it concerns the epistemology of necessity and possibility. In another, it refers to epistemologies which claim that for a belief to count as knowledge there has to be a modal tie either between the belief and its being true or between the cognitive habits of the believer and the believer's beliefs tending to be accurate.¹ Though it would be interesting to consider their inter-relations, this survey is of modal epistemology in the former, predominant sense.

Modality is a flourishing topic in logic, philosophy and computer science. Work is dominated, though, by semantic, ontological, applied and, to a lesser extent, syntactic concerns. Work on modal epistemology though, is thin on the ground.² The dearth of work on modal epistemology should be of special concern to anyone who wants to uphold some form of realism about modality, since it is epistemological concern that often motivates rejection of modal realism.³ Another somewhat concerning fact is that recent writers on modal epistemology have largely neglected to engage with each other, especially over issues where there is disagreement in the literature. The same cannot be said of work concerning modal logic, modal semantics and modal metaphysics: fairly widespread engagement with one's peers is the order of the day in these

1. For a stimulating study of modal epistemologies in the second sense, see Lars Bo Gundersen, *Dispositional Theories of Knowledge* (Acumen, 2003). George Bealer, 'Modal Epistemology and the Rationalist Renaissance', in Tamar Szabó Gendler and John Hawthorne (eds.), *Conceivability and Possibility* (Oxford University Press, 2002), pp. 71–125, p. 71 relates three senses of 'modal epistemology', concerning (i) knowledge of the necessary and the possible; (ii) investigation into what knowledge is possible and (iii) 'the intersection of the first two: the theory of *possible modal knowledge*—that is, of what modal knowledge is possible'. I cannot report having seen any other occurrence of usage (ii) in the literature. It seems to me that looking into (i) involves the others, but anyhow I don't here take the trouble to be quite as particular as Bealer.
2. Compare Peter van Inwagen, 'Modal Epistemology', *Philosophical Studies*, 92 (1998), pp. 67–84, p. 75 and John Divers, *Possible Worlds* (Routledge, 2002), p. 164.
3. If George Molnar, *Powers: An Essay in Ontology* (Oxford University Press, 2003), p. 124 is right that anti-realism about immanent modality leads to a more thoroughgoing anti-realism, then the need for a modal epistemology becomes even more pressing.

fields. One cannot help but suspect that the relative lack of both industry and progress in modal epistemology may partly be due to the lack of such engagement.

The onus is upon you to provide an epistemology of the modal if and only if you are a semantic realist about modality. For the sake of this discussion, I presume an affirmative answer to the question of whether we should be semantic realists about the modal. What sort of epistemology does semantic realism require? What relationships obtain between the modal, the a priori and the empirical?

Modal knowledge is a paradigmatic example of a form of knowledge apt for classification as fundamentally a priori. Kripkean necessity a posteriori does not undermine this tenet, since Kripke takes each instance of necessary a posteriori knowledge to be derived, via *modus ponens*, from a necessary a priori major premise and an empirical minor premise.⁴ For example, we infer that necessarily, water is H₂O from the empirical premise that water's chemical formula is H₂O and the a priori premise that if a chemical stuff has a given chemical formula then it has that formula of necessity.⁵

Recent approaches to the epistemology of the necessary a posteriori largely emanate from the Kripkean model in one way or another. Colin McGinn and Christopher Peacocke both try to show that the modal aspect of all modal knowledge boils down to a priori knowledge and both, though particularly Peacocke, address the question of what principles are fit to feature as major premises in arguments to necessity a posteriori.⁶

George Bealer develops the Kripkean model by arguing that rationalism is limited to the modal major premise, that intuitions (so prominent in Kripke) carry evidential weight and that only a rationalist account of the ultimate principles fit to feature as modal major premises is adequate.⁷

Alan Sidelle appropriates the Kripkean model, giving it an ontologically anti-realist twist. He holds that the major premise is analytic and that analyticity is a matter of stipulation.⁸

Crawford Elder modifies the standard account by arguing that the major premise is empirically known and that recognising necessity a posteriori does not require commitment to trans-empirical modality.⁹

4. Saul A. Kripke, 'Identity and Necessity', in Milton K. Munitz (ed.) *Identity and Necessity* (New York University Press, 1971), pp. 135–64, p. 153. For discussion, see Jonathan Dancy, *An Introduction to Contemporary Epistemology* (Blackwell, 1985), pp. 219–21; George Bealer, 'The Limits of Scientific Essentialism' *Philosophical Perspectives*, 1 (1987), pp. 289–365, pp. 292, 300; Bob Hale, 'Modality', in Bob Hale and Crispin Wright (eds.) *A Companion to the Philosophy of Language* (Blackwell, 1996), pp. 487–514, p. 492; Christopher Peacocke, *Being Known* (Oxford University Press, 1999), p. 41 and Crawford L. Elder, *Real Natures and Familiar Objects* (MIT Press, 2004), pp. 4–7.
5. The example follows Hale, 'Modality', p. 492.
6. Colin McGinn, 'Modal Reality', in R. Healey (ed.) *Reduction, Time and Reality* (Cambridge University Press, 1981), pp. 143–187; Peacocke, *Being Known*, Ch. 4, incorporating his 'Metaphysical Necessity: Understanding, Truth and Epistemology', *Mind*, 106 (1997), pp. 521–74.
7. See the aforementioned works by Bealer and his 'The A Priori', in John Greco and Ernest Sosa (eds.) *Blackwell Guide to Epistemology* (Blackwell, 1998), pp. 243–70. Bealer's view contrasts with that of Brian Ellis, *Scientific Essentialism* (Cambridge University Press, 2001), who rejects rationalism.
8. Alan Sidelle, *Necessity, Essence and Individuation: A Defense of Conventionalism* (Cornell University Press, 1989).
9. *Real Natures and Familiar Objects*. See also 'An Epistemological Defence of Realism About Necessity', *Philosophical Quarterly*, 42 (1992), pp. 317–36.

Semantic realism about modality includes moderate conventionalism and ontological realism. Moderate conventionalism, a position subscribed to by the logical positivists and revived, in a modified form, by Sidelle, holds that modal truth is not grounded in extra-mental reality, but is a mere reflection of our linguistic conventions.¹⁰

The ontological realist, meanwhile, holds one of the following positions:

Objectual modal realism: non-actual but real possible worlds are the ultimate truthmakers for modal claims. (No worlds are modal in nature. Modal truth at a world is relative to actual truth at other worlds.)

Non-objectual modal realism: non-actual possible worlds are not the ultimate truthmakers for modal claims. Rather, necessity and possibility are immanent in the actual world. (The actual world is modal in nature. Non-actual worlds either do not exist or are ontologically dependent upon modality.)

Empiricists and modal non-cognitivists typically view ontological realism of either hue as ontologically profligate and epistemologically mysterious. Talk of a peculiar, necessity-detecting faculty being a requirement of realism is invoked partly to debunk realism. Often, such hostility to modal realism is premised on a causal model of knowledge whereby we know an object by means of its causal interaction with our cognitive faculties and the status of a belief that p as knowledge is tied up with direct or indirect observational evidence for p .

Conservativeness and the Analogy with Mathematics

Modality and mathematics are commonly held to be epistemologically akin in that a causal model of knowledge can accommodate neither. The stock response of the modal realist is ‘so much the worse for causal models of knowledge’. The fault lies with the sparse epistemology, not the lavish ontology. As part of this response, the realist sometimes says something like the following. ‘Look: we can’t know mathematical truths causally. We do know mathematical truths. So, a causal model of knowledge is inadequate anyway. We don’t need to worry, then, about the fact that modal knowledge can’t be accounted for causally.’

The analogy with mathematics occurs in, among other places, the work of Colin McGinn (a non-objectual modal realist) and David Lewis (the arch objectual realist).¹¹ At least on the surface, objectual modal realism looks more epistemologically suspect than non-objectual realism, since we are in perceptual contact with the actual world but cannot be with non-actual worlds. If modality is immanent in the actual world rather than transcending it, then, as a matter at least of *prima facie* intuition, modality is less seriously epistemologically puzzling. It is striking, too, that among the ontological realists it is the non-objectual realists who have tended

10. Against Sidelle’s view, see Stephen Yablo’s review, *Philosophical Review*, 101 (1992), pp. 878–81; and Elder, *Real Natures and Familiar Objects*, Ch. 1.

11. McGinn, ‘Modal Reality’; David Lewis, *On the Plurality of Worlds* (Blackwell, 1986), pp. 108–9.

both to acknowledge the difficulty of providing an epistemology for modality and risen to the challenge of attempting to do it, rather than just settling for the sort of rejoinder to the causal epistemologist voiced by Lewis and summarised in the previous paragraph.¹²

It seems to me to be a central (though largely implicit) question in the recent literature as to whether or not modality is *empirically conservative*. I believe this notion to lack satisfactory definition in the literature, but the basic idea is that modality is empirically conservative if and only if adding modalising to a (putatively) non-modal empirical theory would not alter the empirical consequences of the theory. McGinn¹³ views modality as akin to mathematics in being empirically conservative, while Peacocke¹⁴ views a commitment to the conservativeness of the modal as desirable in a philosophy of modality.

McGinn employs the notion of conservativeness in characterising modality as *trans-empirical*. He claims that modality is trans-empirical in the sense that it is, though truth-apt, empirically conservative. He takes it to follow from this that modality is also trans-empirical in the (I think separate) sense that, though truth-apt, our knowledge of the modal truth could not be based on direct observation, indirect observation or argument to the best explanation of observed phenomena.

Peacocke is non-committal on whether modality is empirically conservative but he agrees that modal knowledge could not be based on direct observation, indirect observation or argument to the best explanation of observed phenomena. It seems, anyway, that endorsing conservativeness is neither necessary nor sufficient for commitment to modal rationalism. It is not sufficient, because to claim that a discourse is empirically conservative does not (unlike commitment to rationalism about its epistemic justification) involve commitment to its truth-aptness. It is not necessary, since the rationalist need not reject what Peacocke calls a “partially modal conception of reality” associated with one kind of semantic primitivism about modality to the effect that “there is no relevant non-modal segment of discourse of which modal principles might be a conservative extension”.¹⁵

Though commitment to the trans-empirical status of modality, in the second sense I marked out, is apparently a sufficient condition for commitment to rationalism, it is not a necessary one. In order to be a rationalist about the modal, one need only claim that *some* modal truths are trans-empirical, not that modality is *always* trans-empirical. Again, the consistency of rationalism with a partially modal conception of reality bears this out.

Though they do not use the term, the anti-rationalists Elder, Ellis and Mišćević reject the thesis of conservativeness and the thesis of the trans-empirical status of modality.¹⁶ Elder is most

12. Otavio Bueno and Scott Shalkowski, ‘A Plea for a Modal Realist Epistemology’, *Acta Analytica*, 15 (2000), pp. 175–93, complain about Lewis’s lack of provision of a positive epistemology and question the legitimacy of the analogy with mathematics. For a more sympathetic discussion of Lewis, see Divers, *Possible Worlds*, Ch. 9.

13. ‘Modal Reality’, pp. 178–82.

14. *Being Known*, p. 175.

15. *Ibid.* Peacocke regards commitment to the conservativeness of modality as not *required* by his principle-based account of modality. It seems to me that a problem with the notion of conservativeness, as it stands, is that it is not clear whether it requires that there is such a non-modal segment.

16. See the works by Ellis and Elder cited above and Nenad Mišćević, ‘Explaining Modal Intuition’, *Acta Analytica*, 18 (2003), pp. 5–41.

explicit on this, holding both that we can discover necessities by solely empirical means and that an essentialist claim will issue in different *empirical consequences* from an unmodalised claim. Ellis's work, meanwhile, seems to suggest that the postulation of modality in nature provides the best explanation of observed phenomena and of features of the laws of nature. McGinn anticipated such a view, which is partly why he took the trouble to argue for conservativeness. A modalised description of an actual world phenomenon does not, thinks McGinn, add any predictive content to a description expunged of the modality. Nor can observation, *per se*, serve to justify a modal claim.

Whether or not the literature contains a perspicuous definition of the notion of empirical conservativeness for modality, there is certainly a lack of engagement among those who view (or hope to view) the modal as conservative and those who (without using the word or mentioning him) make claims either explicitly or implicitly inconsistent with McGinn's view.¹⁷

Conceiving, Intuiting and Possibility

The question of whether such psychological operations as conceiving and intuiting serve as guides to possibility is a more overt, and more widely discussed, topic than that of the whether modality is empirically conservative and/or trans-empirical. There is also the related question of whether the stronger relationship of *entailment* ever holds between such propositions as:

x intuits that p
 x conceives that p

and

It is possible that p .

There is an unavoidable air of stipulation to such discussions, since there is no widespread agreement among philosophers as to what we mean by *conceives* and *intuits* and the everyday notions are hopelessly imprecise.

It seems to me that the question of whether modality is trans-empirical is prior to that of whether p 's being the intentional object of some psychological operation either entails or serves as evidence that p . Surely, we only are only *forced* to resort to such hazy appeal if we really cannot know the modal by (relatively straightforward, less hazy) empirical means, whether direct or indirect.

Nevertheless, claims which would, if true, be genuinely informative can be made about the relationship between the operations of our purported psychological faculties and possibility. Both traditionally and recently, the appeal to the idea that p 's being the object of some such

17. Mišćević's article is the only discussion I have found that engages with named parties from both camps. The article, though containing numerous editing errors, is philosophically worthwhile.

psychological operation serves as evidence for the possibility that p has featured in both rationalist and empiricist accounts of modal knowledge.

Stephen Yablo holds that my conceiving that p gives me defeasible grounds for holding that *it is possible that p* .¹⁸ Colloquially, ‘conceivable’ just means believable, whereas, in the technical sense, p is conceivable only if *it seems possible that p* . ‘Seems’ here is taken in an intellectual sense. “Whatever you find [philosophically] conceivable, you are *prima facie* entitled to regard as metaphysically possible.”¹⁹ Philosophical conceivability does not entail believability. It’s conceivable that I should never have existed, but not believable that I never have. Believability does not entail philosophical conceivability, since, for example, neither “Goldbach’s conjecture nor its negation is conceivable in the relevant sense” though both, given our current epistemic situation, are believable.²⁰

Though Bealer rejects conceivability as a guide to possibility,²¹ his position is rather analogous to Yablo’s except that Bealer holds that it is my intuiting that p that gives me defeasible grounds for holding that *it is possible that p* . For Bealer, when I intuit that p then it seems (in an intellectual sense) to me that p .

I detect three other strands in the literature concerning the relationship between p ’s being the object of a certain intention and it being possible that p .

Outright dismissal. According to Ellis, what we find conceivable is determined not by the nature of reality, but by how our minds work. Modal reality is out there, so we have no grounds for thinking that conceiving, intuiting or imagining that p gives us evidence that *it is possible that p* .²²

Epistemic naturalism. In contrast to Ellis, Mišćević holds that our cognitive habits are as they are because they have been shaped by the natural world over the course of evolution.²³ We should therefore not be surprised if it turns out that we have modal intuitions which track the deep modal structure of reality.

Conceivability entails possibility. Chalmers commits to probable entailment between a kind of conceivability (in a technical sense I won’t explore) and possibility.²⁴

Two Sorts of Modal Knowledge

As a matter of orthodoxy, mathematical and logical truths, if necessary, are taken to differ epistemologically from Kripkean necessities a posteriori. At least, our methods of *arrival* at knowledge of these truths are taken to differ. Mathematical and logical truths can be known directly. Necessities a posteriori, as the standard post-Kripkean account has it, can only be

18. Stephen Yablo, ‘Is Conceivability a Guide to Possibility?’, *Philosophy and Phenomenological Research*, 53 (1993), pp. 1–42.

19. *Ibid.*, p. 34.

20. *Ibid.*, p. 11.

21. ‘Modal Epistemology and the Rationalist Renaissance’, pp. 75–7.

22. *Scientific Essentialism*, e.g., pp. 54, 280.

23. ‘Explaining Modal Intuition’.

24. David J. Chalmers, ‘Does Conceivability Entail Possibility?’, in Gendler and Hawthorne (eds.), *Conceivability and Possibility*, pp. 145–200, esp. pp. 194–5.

derived rather than axiomatic. For ease of reference, and for want of a better way of doing things, I will dub such necessities ‘hypothetical’, as opposed to the ‘categorical’ necessities purportedly known directly. The main reason for using the term ‘hypothetical’ necessity is that, despite my earlier claim that modal knowledge is an archetypal candidate for classification as a priori, I do not wish to beg the question against some recent thinkers who seek to reject the a priori but retain the modal.²⁵ I would be so doing if I referred to hypothetical necessity as the ‘necessary a posteriori’, since such thinkers so deem all necessity (except, in at least one case, analytic necessities).²⁶ Still, I need some way of marking out the orthodox distinction as a prerequisite for my discussion. In any case, the term ‘hypothetical’ seems apt in this context, since: (i) the objects of such necessities are not necessary existents, as the Kripkean notion of weak necessity is precisely intended to capture; (ii) we know them only if we know that the antecedent of a given known conditional is true.

It seems that the primary epistemological question for the semantic realist is that of how we know the categorically necessary. On no going theory that I have encountered is it denied that knowledge of the hypothetically necessary is dependent on knowledge of the categorically necessary (even if some would have it that we can know necessity without appeal to rationalism). Some writers on modality don’t seem to address this relationship at all,²⁷ but no-one, as far as I know, voices such denial. There was a time, very recently, when it could have been said that no contemporary essentialist questions the need for the a priori in an account of how we know the necessary a posteriori but the very recent writings of Ellis, Elder and Mišćević change that.

Categorical Necessity

Partly in reaction to Lewis, semantic realists who reject objectual realism are agreed that there should be a close connection between that which makes a modal truth true and the means by which we come to know it. McGinn describes this as a condition upon ontological imputations.²⁸ Peacocke refers to it as ‘the Integration Challenge’.²⁹

Sidelle attempts such integration by arguing that all necessity stems from categorical analytic necessity. The moderate conventionalist traditionally had it that necessity and analyticity are co-extensive. Sidelle does not subscribe to this view, holding that there are a posteriori necessities. However, he does hold that all necessity boils down to analyticity, since the a posteriori necessities owe their necessity (though not their truth) to the analyticity of the major premises in *modus ponens* inferences to necessity a posteriori. Analyticity, in turn, Sidelle holds to be a matter of convention.

25. The thinkers are Ellis, Elder, and Mišćević.

26. Ellis, *Scientific Essentialism*, views analytic necessities as true by convention and, I would hazard, trivially a priori, though he has it that we need not appeal to the a priori in accounting for essentialist necessities pertaining to the objects and laws of the actual world.

27. E.g., Ellis, *Scientific Essentialism*.

28. McGinn, ‘Modal Reality’, pp. 146–7.

29. Peacocke, *Being Known*, Ch. 1.

Other recent semantic realists who have addressed the epistemology of categorical necessity have mainly done so by appeal to rationalism. Modal rationalisms certainly have a more prevalent and developed profile in the literature than do their pro-modal but anti-rationalist rivals.

Bealer and Peacocke are among the leading exponents of modal rationalism. Both appeal to considerations concerning the possession conditions on concepts, though this plays a more central and technically developed role in Peacocke's account than in Bealer's. Intuition is the central notion in Bealer's rationalism.

On Peacocke's account, a thinker's a priori knowledge that p consists in their cognitive competence in using the concepts employed in p . This will encompass (at least covert) grasp of *principles of possibility*. These branch into principles of possibility at the level of sense and principles, dubbed 'constitutive principles of possibility' at the level of extension. Such principles are instances of the following principle:

Unified Modal Extension Principle. An assignment s is admissible only if: for any concept C , the semantic value of C according to s is the result of applying the same rule as is applied in the determination of the actual semantic value of C . (*Being Known*, p. 136)

Principles at the level of sense account for a priori truths of mathematics and logic, while the constitutive principles of possibility underwrite modal metaphysical knowledge in a wider sense.

Peacocke asserts, rather than argues for, such constitutive principles as that where " P is a property which is an object x 's fundamental kind, then an assignment is inadmissible if it counts the proposition x is P as false",³⁰ and that an assignment is inadmissible if it breaches Kripkean doctrines on the necessity of origin.³¹ There is an apparent lacuna in Peacocke's account in that it does not elaborate on how constitutive principles of possibility are known.

Bealer's modal epistemology seeks to provide a full articulation of the acquisition of modal knowledge. The account encompasses the basic claims fit to feature as major premises in arguments to hypothetical necessity. Such claims are ultimately justified by rational intuition. Intuition is not some strange cognitive faculty. "To have an intuition that A is just for it to *seem* to you that A " and such "seeming is *intellectual*, not sensory or introspective (or imaginative)".³² Intuitions are either "noninferential beliefs regarding the applicability of a concept to a hypothetical case" or "mental states having a strong modal tie" with such beliefs.³³ This, in turn, requires an explanation of why intuitions have 'evidential weight'.³⁴ He initiates his account by distinguishing, without suggesting that the divisions are hard and fast, between *naturalistic, category* and *content* concepts:

30. *Ibid.*, p. 145, after the thought of David Wiggins, *Sameness and Substance* (Blackwell, 1980).

31. *Ibid.*, pp. 145–6, after Saul Kripke, *Naming and Necessity* (Blackwell, 1980).

32. Bealer, 'The A Priori', p. 247.

33. 'The Limits of Scientific Essentialism', p. 300. Bealer unites the two forms of modal epistemology distinguished in my first paragraph. 'The A Priori', p. 247 inclines away from the former partly on the basis that intuition, unlike belief, is a form of seeming. See also 'Modal Epistemology and the Rationalist Renaissance', p. 73 for differences between intuition, imagination and belief.

34. On this dialectic, see 'The Limits of Scientific Essentialism', pp. 300–2. Playing devil's advocate, Bealer asks why intuitions should be any more weighty than gamblers' hunches.

Naturalistic concepts . . . include, for example, the concepts of water, heat, gold, lemon, arthritis, beech, elm and so forth Examples of category concepts are the concepts of stuff, compositional stuff, functional stuff, substance, quality, quantity, action, artificial, natural, cause, reason, person, etc. Examples of content concepts are familiar phenomenal qualities (pain, itching, tingling-sensation, etc.) and basic mental relations (knowing, perceiving, deciding, loving, etc.).³⁵

Naturalistic intuitions have evidential weight insofar as they are instances (albeit empirically informed instances) of category/content intuitions that do not employ naturalistic concepts. The latter intuitions, when correct, provide modal knowledge fit for input as major premises in arguments to necessity a posteriori. For example, the intuition (supposing it correct) that nothing other than H₂O counts as water derives its legitimacy from the empirical knowledge that paradigm samples of water have the chemical formula H₂O, together with the a priori category intuition that “If paradigm samples of a compositional stuff have a certain complex composition, then items lacking that composition would not qualify as samples of the compositional stuff”.³⁶ Scientific essentialism depends on intuitions counting as evidence; naturalistic intuitions counting as evidence depends on non-naturalistic intuitions counting as evidence; non-naturalistic intuitions counting as evidence depends on there being “an autonomous level of category and content concepts, determinate possession of which must be explained in a traditional, noncausal way and theoretical knowledge of which may be obtained absolutely a priori”.³⁷ So, scientific essentialism depends on a form of rationalism. By the lights of Bealer’s moderate rationalism, there is a modal tie between our intuitions and the truth. Necessarily, when a person possesses a concept then in (at least) most cases in which they are to make a non-inferential judgment about whether or not that concept applies to an elementary hypothetical case, their judgment will coincide with the truth.³⁸ Since an intuition is closely akin to such a judgement, intuitions have evidential worth.³⁹ We can see, then, why Bealer calls his epistemologies of the modal and the a priori ‘modal reliabilism’ and that, in appealing to conditions constitutive of the full possession of concepts, Bealer and Peacocke are kindred epistemologists.⁴⁰ For Bealer, a given intuition is not necessarily primitively compelling. Rather, the outcome of rational intuition may be arrived at via a kind of reflective equilibrium or dialectical weighing of intuitions.

35. ‘The Limits of Scientific Essentialism’, p. 295. See also ‘Modal Epistemology and the Rationalist Renaissance’, p. 107.

36. ‘The Limits of Scientific Essentialism’, p. 304. Over pp. 310–4 Bealer extends modal intuitionism to the choice of basic principles in logic, metaphysics and mathematics.

37. *Ibid.*, p. 309.

38. *Ibid.*, p. 319; see ‘The A Priori’, p. 254 for a weaker claim.

39. *Ibid.*, pp. 319–20.

40. Also, both are fallibilists about a priori justification and adopt dialectical, as opposed to foundationalist, views of the role of a priori belief in total theory. See Bealer, ‘Modal Epistemology and the Rationalist Renaissance’, p. 74 and Peacocke, ‘How Are A Priori Truths Possible?’, pp. 187–8, 192–3.

Hypothetical Necessity

As far as I know, no writer in the recent literature is a rationalist about hypothetical necessity in the sense of believing that we know hypothetical necessities independently of experience. Rather, the debate about the status of the modal major premises in *modus ponens* arguments to hypothetical necessity is where the anti-rationalists take the action to be. In this, I agree: the story does not end there, though. What of the epistemology for *logical* modality and, in particular, for the modality attaching to principles that embody valid patterns of deductive inference? The tendency among the anti-rationalists is either to overlook the epistemological status of inferential principles altogether or else to provide an account that is, in my view, sketchy and unconvincing. Elder, for example, seems to think that if he has demonstrated that there is an empirical test for distinguishing between the essential and the accidental (be it concerning properties or concerning universal generalisations) he has thereby refuted rationalism. On the contrary, the refutation of rationalism requires a further stage: namely, an argument that logical knowledge does not require the a priori. Among the anti-rationalist ontological realists about the modal, only Ellis can be said to have really addressed this task and no-one has done so very recently.⁴¹ Basically, his strategy was to adopt a form of psychologism according to which logical laws are laws of thought and akin to laws of physics insofar as they are abstractions from actual phenomena. It is highly plausible that one has to be a realist about logic if one wants to be a realist about the modal. On Ellis's onetime account, it would appear that in order to be a realist about logic one has to be a realist about laws of nature. I take that to be an unfortunate consequence.⁴²

Summary

The predominant tendency among ontological realists about the modal has been to respond to epistemologically motivated critics of realism not by supplying a detailed epistemology but by adverting to the superiority qua ontology, of their own position over that of their critics. Even McGinn's position has this basic form,⁴³ though he has done more than most to try to explain why modality is epistemologically problematic and what is at stake in debates about its epistemological status.

Nevertheless, as we have seen, there has been a recent growth in interest among ontological realists in providing a positive epistemology for the modal, with theories being advanced from a rationalist camp and a camp hostile to rationalism. Let's hope that greater engagement will occur among writers both within and between these camps. If it does, we can perhaps expect greater progress in the project of providing an epistemology for modality.

41. Brian Ellis, *Rational Belief Systems* (Blackwell, 1979).

42. In *Scientific Essentialism*, Ellis seems to seek to combine conventionalism about *de dicto* modality with realism about *de re* modality. For reasons I can't go into here, I don't see how this combination can work.

43. As well as 'Modal Reality', see his *Logical Properties* (Oxford University Press, 2000), in which he takes necessity to stand in the way of philosophical naturalism.

