

Grounding modality in essence?

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Abstract

I present and critically discuss different answers to the grounding problem for metaphysical modality, which I take to be the question of what makes it true that things have modal properties (Socrates being possibly white, his being necessarily human) and there being irreducible modal truths (that there may be more people than there actually are, that nothing can be both square and round etc.). In particular, I discuss recent proposals by Fine ("Essence and Modality") and Correia. For an overview, cf. Ross Cameron, "The Grounds of Necessity", in the Philosophical Compass.

The grounding problem for modality

What is it to say, of Socrates, that he is possibly white or necessarily human? This question may mean different things:

1. What *predicate* is predicated of Socrates in these assertions? How is it analysed, what are its syntactic and semantical properties, what are its application conditions? Under what conditions is it true to say of Socrates that he is possibly white or necessarily human?
2. What *property* is attributed to Socrates in these assertions? Is it simple or complex? Is it constituted by the property of being white (or the property of being human) or, if not, in what relation does it stand to them? In what way does this property, if exemplify, qualify its objects?
3. What *fact* is claimed to hold in these assertions? How does the world have to be for the assertion to be true? What difference does its truth make, in what is it grounded, what makes the assertion true?

All three questions are importantly different, even though their possible answers stand in (intricate!) logical relations. David Lewis' theory of modal realism + counterpart theory is a philosophical doctrine that aims to answer all three questions simultaneously:

natural language	logical form	semantics	ontology	truthmaking
(i)	(ii)	(iii)	(iv)	(v)
s is possibly white	$\Diamond Ws$	$\exists v(Rwv \wedge I(Ws, v) = \mathbf{v})^1$	$\exists w(R@w \wedge w \models Ws)$	$\exists s'w(C(s'sw) \wedge Ws')$
s is necessarily human	$\Box Ws$	$\forall v(Rwv \rightarrow I(Ws, v) = \mathbf{v})$	$\exists w(R@w \rightarrow w \models Ws)$	$\forall s'w(C(s'sw) \rightarrow Ws')$
Possibly, p	$\Diamond p$	$\exists v(Rwv \wedge I(p, v) = \mathbf{v})$	$\exists w(R@w \wedge w \models p)$	$\exists(Pw \wedge p_w)$
Necessarily, p	$\Box p$	$\forall v(Rwv \rightarrow I(p, v) = \mathbf{v})$	$\exists w(R@w \rightarrow w \models p)$	$\forall(Pw \rightarrow p_w)$

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¹ $I : \text{Fml}(\mathcal{L}) \times W \rightarrow \{\mathbf{v}, \mathbf{f}\}$ is the interpretation function of model $\langle W, R, I \rangle$, where R is a binary relation over a non-empty domain W . " p_w " denotes the restriction of " p " to things existing in w , i.e. " p " with every universal quantifier $\forall x\phi$ replaced by $\forall x(x \text{ exists in } w \rightarrow \phi)$ and $\exists x\phi$ replaced by $\exists x(x \text{ exists in } w \wedge \phi)$.

At each step to the right, some significant philosophical questions are answered:

the step from (i) to (ii) gives a *formalisation* of both so-called ‘de dicto’ and ‘de re’ modalities as operators, attributing their difference to a difference of subsentential components under quantificational embeddings; it characterises these operators further by axiomatic systems, circumscribing the class of valid inferences essentially involving them;

the step from (ii) to (iii) gives a *formal semantics* for the formalisations, implicitly defining the notion of ‘truth in a model’ and setting up a correspondence between valid inference patterns in (ii) and formal relations of the relation R in a class of models; the step to (iii) also allows to give a certain intuitive justification for certain axioms in (ii): for example, the duality of $\Diamond p = \neg\Box\neg p$, sometimes taken as axiomatic within (ii), is reduced to (and thereby explained by) the duality $\exists Fx = \neg\forall\neg Fx$;

the step from (iii) to (iv) gives an *ontological interpretation* of the formal semantics, interpreting the formal notion of truth-in-a-model in terms of the complex notion of truth-in-a-possible-world: it interprets this notion as built up from a singular term w for a possible world (a way the world might be) and the relation *being true in* or *being true according to*, denoted by “ \models ”; among the possible worlds, it introduces a special one, denoted by @, to be used for the ontological interpretation of unembedded modalities;

the step from (iv) to (v) gives an account of the *truthmakers* for the ontologically interpreted modal assertions: it analyses the notion of truth-in-a-possible-world further into the following components: “Socrates is white” is true-in-a-possible-world iff there is a possible world w (“ Pw ”), that contains some thing, s' , that stands, in w to Socrates in the counterpart relation (“ $C(s, s', w)$ ”) and is white (“ $W s'$ ”).

In his argument for modal realism, David Lewis (1986) assumes the correctness of the path up to (iv), and proposes an argument from elimination against non-realist, ‘Ersatzist’ alternatives to his (v), *presupposing* that the Quinean criterion of ontological commitment obliges us to have *some* story about the nature of the entities quantified over in (iv). Lewis can think of three alternatives: possible worlds as things like books, things like pictures or things magically endowed with representational powers.

The Finean approach to the grounding problem

Subsequent to his influential criticism of the so-called modal account of essence based on the conceptual consistency of necessarily, but accidentally exemplified properties like *being a member of* { *Socrates* }, Kit Fine (1994) speculates that the direction of explanation is in the reverse: essentiality and necessity come apart because statements of essence not only concern the existence of necessary connections, but also their sources:

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 different contributions were. (Fine 1994: 9)
...it seems to me that far from viewing essence as a special case of metaphysical necessity, we should view metaphysical necessity as a special case of essence. For each 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)

He analyses essence in terms of a relation of ontological dependence he takes as primitive: the essence of x is the set of exactly those propositions that are true in virtue of the nature (or: the identity) of x , where the latter notion is taken as “an unanalyzed relation between an object and a proposition” (Fine 1995a: 273). Whenever two things are essentially related, the resulting necessary truth “is true in virtue of the identity of the objects in question; the necessity has its source in those objects which are the subject of the underlying essentialist claim” (1994: 9). Instead of viewing essence as a special case of metaphysical necessity, he invites us to conceive of the latter as a special case of the former: metaphysical necessities are true in virtue of the essences of all objects, essence “performs a similar function [to necessity] but with a finer mesh” (1994: 3). It is its sensitivity to source that makes the concept of essence “a highly refined version” of the concept of necessity.

Problems of the Finean approach

There are at least four difficulties with the idea of grounding necessity in essence by logical consequence. The Finean project requires affirmative answers to all of the following questions:

- Do we find a ‘source’ for every de re necessary statement? Is there a principled way to determine this source?
- Is there a non-overgeneralising notion of ‘essential consequence’ (and a correlative notion of ‘consequential essence’) that allows us to say that necessary truths are essential consequences of all the essences of things?
- Is the principle of cumulativeness plausible, which is crucially used in Finean grounding?
- Is the grounding relation itself plausibly taken to be necessary?

I turn to these questions in turn.

How is the notion of “source” to be understood? Fine understands it in terms of what objects the essentially induced truth is “about”. This notion of aboutness is notoriously difficult to pin down, and there are some reasons to suspect that it ultimately will presuppose, rather than be able to elucidate, a concept of essence.² It is not clear either that appealing to the notion of source will help us making the distinctions we need: in what sense is “God created the world” more *about* God than the world, such that we may hold (with Aquinas, *Sum. Th.* I, q. 17, a. 7) that it is essential to the world to have been created, while it is an accidental property of God to have created the world? In this particular case, and perhaps also in the Socrates/{Socrates} case, the relevant relation may decide which of the two relata is the

²That the notion of what objects a proposition is about is problematic, has been pointed out by Fine himself: “For propositions, there is a distinction between superficial and deep structure. The objects that appear to be in the proposition may disappear, as it were, on analysis.” (Fine 1977a: 143) Could we then just restrict the claim to fully analysed propositions? I doubt whether this will give us adequate results, for the analysis in question here is of a logical, not an ontological kind. In his (1994: 7), Fine considers adding to the modal analysis “the additional demand on an essential property that it not be an essential property, in the original [modal] sense, of every object whatever”, but dismisses it on the ground that “these [counter]-examples could be readily reinstated by conjoining the given degenerate essential property with one which was not degenerate”. Even in relevance logic, we can always “dummy in” occurrences of variables, e.g. via the even ‘relevantly’ provable equivalence “ $\phi \leftrightarrow \phi \wedge (\phi \vee Fx)$ ” (cf. Dunn 1987: 352). Gorman (2005) tries to characterise the relevant notion of ‘aboutness’ directly, helping himself to a distinction between “features” and “characteristics” (2005: 279) and an ontological notion of explanation (2005: 283). His definition of an essential property of x as a characteristic or x that has no explanation by other characteristics of x has to make another important presupposition: that there is no explanation for the existence of things (2005: 285). Even if the first two presuppositions can be granted, this seems to me wrong: that I have the intention to smile may explain why I smile and it seems a characteristic of (some) smiles that they are intentional, perhaps even an essential one.

source; we may then hold that the relations expressed by “ x creates y ” and “ x is a member of y ” determine essential properties in their second, but not in their first argument place.

Even if it is agreed, however, that it is of the essence of things that are created or have members that they are created and have members and thus that these relations cannot but fail to determine essential properties, I am not sure, however, that this is in general the case, i.e. that every relation that obtains for at least one of its relata essentially will *itself* determine which relatum this is. In particular, it seems to me that relations giving rise to extrinsic essential properties typically will not. In these cases, the source in question will be the source not only of the necessity, but also of the essentiality of the relational predication. In a slightly different context,³ Dunn (1990: 89) gives the example of Queen Elizabeth II having essentially the parents she had, but it’s not being essential to her parents to have her:

“...the distinction is not that $\Box((\lambda x(Rxb))a)$ holds, but not $\Box(\lambda x(Ray)b)$, as with the world and God [or with {Socrates} and Socrates]. It is rather with QE II and the Queen Mother that $(\lambda x(\Box(Rxb))a)$ holds, but not $(\lambda y(\Box(Ray)))b$.”
(Dunn 1990: 90)⁴

Suppose we agree that it is necessary that Queen Elizabeth is the daughter of George VI and Queen Mother.⁵ While we certainly want to say that this necessity is grounded in the essence of QE II, rather than in the essences of her parents, this does not fall out of a quasi-syntactic analysis of the necessary predication. There is nothing about the relation expressed by “ x is a child of y and z ” (or rather: “ x is a child of X ”, for some plural term X , to allow for parthenogenesis) that makes genealogy in general essential. It may well be that some offspring only accidentally has its genealogical properties, while other types of offspring have them essentially.⁶ Essentiality, in other words, may be ‘token-sensitive’: in the same way a given property may be exemplified by some particulars essentially, by others accidentally, relations may be essential to some of their relata in some occurrences, to others in others, and to none at all in a third class of cases. There is no general recipe to ‘read off’ the source of the necessity just from the necessary relation itself.

Another worry is more general: what, e.g., grounds the (alleged) necessity of “there is at least one contingent existent”? Some necessities, as Cameron (2010: 353) puts it, seem to be multiply realisable: while they need some grounds, there are no specific grounds they need. The second problem with the account of necessity as truth in virtue of the nature all things is that it relies on the problematic notion of consequential essence. Contrary to the so-called “constitutive” essence of x , the consequential essence of x is closed under logical consequence (Fine 1995b: 57). Fine argues that we need to acknowledge such a notion to derive consequences of natures that are “propositional in form” (Fine 1995b: 57). To avoid trivialisation of this notion of consequential essence (and the notion of ontological dependence that

³Dunn (1990: 89) makes a relevant example in the course of arguing that essential properties should be identified not with necessarily relevant properties, but rather with properties that are relevantly necessary:

$$(i) \quad a \text{ has } \phi \text{ essentially} \quad : \iff \quad \forall x(x = a \rightarrow \Box(x \text{ has } \phi))$$

I do not follow his lead here, as (i) also falls prey to the Finean arguments summarised above.

⁴I am following Dunn in formalising “being a child of” as a two-place predicate and I am substituting “ $\lambda x(\phi x)$ ” for Dunn’s relevant predication “ $\rho x(\phi x)$ ”, relevancy not being the main issue here. The replacement is backed up by Dunn’s self-declared “tendency [...] to identify relevant predication with exemplification “properly so-called”” (Dunn 1990: 87).

⁵I will argue against this claim below.

⁶It seems plausible to me, for example, that while some honey bee is essentially the offspring of some particular queen, it is not essentially the offspring of some particular drone: because all drones that are offspring of the queen are genetically identical, every other one would have done as well.

is defined in terms of it, cf. 1995a: 277), Fine imposes a non-triviality condition on consequential essences, not counting as ‘constituents’ of it objects that can be ‘generalized away’: the constituents of some consequential essence will only be the constituents of propositions p such that the consequential essence does not also contain the universal quantification of p (with respect to the occurrences of singular terms in virtue of which the objects were constituents in the first place). It is notoriously difficult to spell out such a non-triviality condition precisely, and I am not sure that the generalisability criterion does the job.⁷ Another worry pertains to the notion of logical consequence: if we are to understand statements of logical consequence as being made true in virtue of the nature of the logical constants, then the property of being a man or a mountain will not be included in the essence of Socrates alone, but only in the cumulative essence of Socrates and disjunction. In what sense are we then justified to say that it is part of *Socrates*’ essence, albeit the ‘consequential’ one?

Correia (2012) discusses some such problems and proposes a so-called “rule-based account” of the essences of logical concepts to remedy it, according to which the essences of such concepts are not propositions, but their introduction and elimination rules according to some system of natural deduction.

The third problem is that Fine’s account of (metaphysical) necessity rests on a principle of cumulativity: if it is true in virtue of the identity of a that p , then it will also be true in virtue of the identity of a and b . In many cases, however, group essences seem thinner rather than thicker than the essences of their individual members.⁸ Particular humans may all – individually – essentially descend from – different – zygotes without humans being essentially descended from any particular zygote. The individual essence of some human will then drop out of the essence of humanity in general, being irrelevant what it is to be human (as opposed to what it is to be a particular human). In many cases, group essences seem thinner rather than thicker than the essences of their individual members. An analogy with the case of belief may be helpful: while Fine characterises group essences by analogy with communal (or distributed) belief – “the concept of what is believed by some member of a given community” (Fine 1994: 9) –, an analogy with common belief seems to me more appropriate: the properties belonging to the nature of some collective have to be appropriately *shared* by its members.

My last reason to be skeptical about Fine’s project of grounding metaphysical necessity in essence is that implication seems too strong: at least in some cases, the grounding relation itself seems contingent. This is so, in my view, in the case of the grounding of some impossibilities: Because everything actual could exist, and have its actual essence, while being accompanied by some unicorn, no actual essence rules out the existence of unicorns. Kripke is right, however, that there is no such thing as what it is to be a unicorn: given that they do not exist, they could not. This actual impossibility of unicorns is not grounded in any actual essence, but rather in the actual fact that there is no such thing as what it is to be a unicorn. This fact is contingent on the non-existence of unicorns: if there were unicorns, they would have essences. What makes it possible, then, that there are unicorns is that no actual essence excludes their existence, but this fact is itself contingent.⁹

⁷It is not entirely clear to me how we can exclude from Socrates’ consequential essence properties like *being such that God is omnipotent*, under the assumptions that God is an essential existent and essentially omnipotent.

⁸According to Yablo (1987: 298), the inclusion relations between individual and generic essences are the same: “There is every reason to see the relation between the Shroud of Turin and the piece of cloth as continuous with that between cow and animal: just as it is harder to be a cow than an animal, it is harder to be the Shroud of Turin than the piece of cloth...”. For a different account of generic essence, cf. Correia (2006).

⁹The alternative of postulating essences for non-existents, considered by Cameron (2010: 353) on Fine’s behalf, has little plausibility. It also explicitly rejected in Fine (1985).

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