

## Essence and Modality: Continued Debate

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*Abstract:* Here I offer a critical evaluation of modalism about essential properties. To that effect, I begin by rehearsing Fine’s now infamous counterexamples to pure modalism. I then consider two recent defenses of it, offered by Livingstone-Banks and Cowling, respectively. I argue that both defenses fail. Next I consider the most plausible variety of impure modalism – sparse modalism – which has recently been defended by Wildman and de Melo. Skiles has argued that sparse modalism fails too. I argue that Skiles’s counterexamples misfire; nonetheless, his conclusion that, like pure modalism, sparse modalism is too broad, is on the right track. And so, I offer an original objection – the sparse modal propria counterexample – to show that this is so. I conclude by considering ways the modalist might once again modify her account to circumvent this new objection and improve the account’s extensional adequacy.

*Keywords:* Essence and Essentialism; Essentialism and Quantified Modal Logic; De Re Modality; Properties; Kit Fine.

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## 1. Pure modalism

What is an essential property? More to the point, do essential properties admit of a reductive analysis or not? And if they do, how ought we to analyze what it is to be an essential property? Within the dispute over the character of essential properties, answers to the second question divide reductivists about essences from nonreductivists (or primitivists); and answers to the third distinguish reductivists from one another.

“Modalism” denotes a family of reductive analyses. The unifying thought behind all varieties of modalism is that essences are fundamentally modal in character. Modalism comes in two varieties. Pure modalists suppose that essences are completely reducible to de re modality. Impure (or hybrid) modalists suppose only that essences are partly reducible to it; some other nonmodal phenomenon is appealed to in the analyses as well.

The most popular (and plausible) version of pure modalism is the Existential-Modal Account (EMA). According to EMA, Socrates is essentially human iff: necessarily, Socrates is human if he exists. Put formally,  $\Box(\exists x(x = s) \rightarrow H(s))$ . Or, put in terms of possible worlds, for all worlds,  $w$ , if Socrates exists at  $w$ , then Socrates is human at  $w$  too.

Modalism (and especially EMA) enjoyed almost unanimous acceptance among essentialists between the 1950s and 1990s, and especially during the 1970s and ‘80s, by and large as a result of the work of Kripke (1972/1980) and Plantinga (1970, 1979), among others.<sup>1</sup> It captures well the intuition that essential properties of an object are necessary for the existence of their bearers. Accordingly, it also captures well the intuition that paradigmatic accidental properties are not necessary for their bearers, but rather are possibly had or not had.<sup>2</sup> On this assumption, essentialists defined themselves by a commitment to this thesis; and antiessentialists, like Stalnaker (1979), by an opposition to it.<sup>3</sup>

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<sup>1</sup> Plantinga (1970, 474): “[A] property is essential to Socrates just in case he has it and there is no world in which he has its complement...”

<sup>2</sup> Aristotle (c. 350 BC[b], Topics 102b5-10): “An accident is... something which may possibly either belong or not belong to any one and the self-same thing.”

<sup>3</sup> Stalnaker (1979, 344): “[F]or every individual and every property, there are possible worlds in which the individual has the property and possible worlds in which it does not.”

Modalism has since fallen in disrepute. In 1994, Kit Fine famously offered a series of counterexamples to EMA, intended to show that, even if it captures an important necessary condition for being an essential property, as it stands, the analysis is insufficient. As Roca-Royes (2011: 66) notes, “Fine’s counterexamples to EMA have been widely accepted; to a degree that is unusual for philosophical arguments.”

Fine offers five counterexamples to EMA. His first is that EMA would count existence as an essential property of Socrates, since necessarily, he has the property of existing if he exists. But, intuitively, neither Socrates nor any other mere contingent being has the property of existing essentially. Maybe God exists essentially, but Socrates does not. His second is that EMA would count distinctiveness properties as essential, since necessarily, Socrates has the property of being distinct from the Eiffel Tower if he exists. “But it is not essential to Socrates that he be distinct from the Tower, for there is nothing in his nature which connects him in any special way to it” (Fine 1994: 5). His third is that EMA would count necessary truths as essential, since necessarily, Socrates has the property of being such that  $2 + 2 = 4$  if he exists. But it is no part of Socrates’s essence that some necessary truth obtains. His fourth is that EMA would count metaessential properties (i.e., essential properties of other objects) as essential, since necessarily, Socrates has the property of being such that being human is essential to Plato, if Socrates exists. But, if this is so, then – “O happy metaphysician!” (Fine 1994: 6) – it would follow that if one discovers the essence of one thing, one also thereby discovers the essence of everything else. But this is intuitively false.

And his fifth, and perhaps most famous, objection is that EMA would count set-membership properties as essential. Necessarily, Socrates has the property of being the sole member of the singleton set {Socrates} if he exists. “But, intuitively, this is not so. It is no part of the essence of Socrates to belong to the singleton” (Fine 1994, 5). And so, for not just one, but five reasons, EMA is too broad and so extensionally inadequate.

Fine’s diagnosis is that EMA (and pure modalism generally) has failed in each case because any adequate analysis of essential properties must answer the question, asked of any particular thing ‘What is it?’ Not every property that is necessary for the existence of its bearer answers this question, and so

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pure modalism goes sideways. Fine recommends we adopt an alternative non-reductivist position, the Real Definitional Account (RDA) whereby essences are treated as a primitive (perhaps hyperintensional) notion.

## 2. Thesis

The goal for this paper is to critically evaluate several recent modalist responses to Fine's counterexamples. Modalists have responded to Fine in one of two ways. Some have argued that Fine's counterexamples to EMA are not genuine, for one reason or another. This amounts to a defense of pure modalism. Other modalists have gone impure. They argue that Fine's counterexamples only show that some distinction should be drawn between kinds of properties an object might possess. Most promisingly, some have followed Armstrong (1979) and Lewis (1983a) in drawing a sparse vs. abundant property distinction. Using this resource, they then show that at least one form of modalism (*viz.*, sparse modalism) can escape his counterexamples unscathed.

I'll argue for two theses here. The first is that two of the best pure modalist defenses fail. Fine's counterexamples are genuine, and so the modalist's best bet is to go impure. And the second is that the most plausible variety of impure modalism – sparse modalism – fails too. Like pure modalism, it is extensionally inadequate because too broad. I'll offer an original counterexample to this effect. After offering my counterexample, I'll consider and refute one potential response to it before offering my diagnosis of why modalism (of both the pure and impure varieties) is ultimately unsatisfying.

## 3. Livingstone-Banks's defense

The pure modalist responds to Fine by denying that his counterexamples are genuine. Both Livingstone-Banks (2017) and Cowling (2013) have recently taken this approach. I take their responses to be representative of the best pure modalist responses available in the dialectic. Nonetheless, they are both problematic.

Livingstone-Banks's basic move is to challenge the appeals to intuition (either implicitly or explicitly) embedded in the statements of all five cases. He says that Fine faces a dilemma:

There are two ways we might interpret these intuitions. On the one hand, they might be pre-philosophical opinions. This raises the epistemic question of how we might have access to essentialist facts sufficient for our intuitions to be an accurate guide to essence, and the methodological question of how we can insist that any theory of essence be beholden to those intuitions (especially before we have a satisfactory answer to the epistemic question). On the other hand, we might understand those intuitions as being philosophical in nature, in which case the examples Fine presents in his critique of [modalism] should not be interpreted as arguments against [EMA], for to do so is merely to beg the question in favor of [RDA]... (Livingstone-Banks 2017, 816–18)

And so, Fine's counterexamples either beg the question in assuming his own position (RDA), or they rely on purportedly clear pre-theoretical intuitions about essences – but there are none.

On its face, this is a smart move. Nonetheless, there are several ways Fine might sail between the two horns. Most promisingly, I think the critic of modalism should follow Lewis (in this dialectical context) in supposing that:

Our 'intuitions' are simply opinions; our philosophical theories are the same. Some are commonsensical, some are sophisticated; some are particular, some general; some are more firmly held, some less. But they are all opinions, and a reasonable goal for a philosopher is to bring them into equilibrium. (Lewis 1983b, x)

Like Livingstone-Banks, Lewis endorses a kind of Prior Opinions, or Common Law, account of intuitions. He then makes four distinctions. First, he distinguishes between sources of prior opinions. Following him, we can say that there are (i) our own opinions, (ii) commonsense opinions (which may) include the opinions of scientists in our community), and (iii) the opinions of other philosophers; relevant for present purposes, the opinions of other metaphysicians of essence. Second, he distinguishes between beliefs

firmly held and more loosely held. Third, he distinguishes between general intuitions and particular intuitions; let's call an intuition general if it is about what essential properties are generally; we'll call it particular if pertains to this or that particular case, whether this or that property is essential to a certain object or not. And finally, he says that the job of the philosopher is to bring beliefs into equilibrium. Equilibrium is a matter of degree. Nonetheless, the more a belief coheres with all three sets of beliefs, especially those firmly held, the better an equilibrium it strikes (i.e., the more intuitive it is, all things considered).

Using Lewis's distinctions, we can then show that Livingstone-Bank's disjunctive premise is false. He says that Fine is either begging the question in assuming RDA, or he is relying on nonexistent clear pre-theoretical intuitions. This isn't so. First, Fine is correct in saying that our general intuitions about essences is that they should answer the 'What is it?' type questions asked of some object. This coheres well with all three sets of prior opinion, whether one finds RDA plausible or not. But second, Fine need not appeal to this general intuition at all in order for his counterexamples to go through. EMA would need to count the property of being such that  $2 + 2 = 4$  as essential to Socrates, as such. But, our particular intuitions say that this isn't so. And so, EMA's verdict on this case fails to strike a decent equilibrium with our beliefs about this case, as well as all of the other cases too. His counterexamples are successful because they show that EMA is out of step with our particular intuitions, not our more general, and our intuitions about the cases are fairly clear.

So, Livingstone-Banks's defense of pure modalism fails. There is no dilemma here. The way to strike the best equilibrium is to reject EMA.

#### 4. Cowling's defense

Cowling has offered a second defense of pure modalism. Cowling's basic move is to challenge our previous claim, that the best way to strike an equilibrium with our prior opinions is to reject EMA. He argues that a distinction ought to be made between essences, on the one hand, and natures, on the other. He says that Fine's counterexample to EMA only seem genuine because we have mistakenly identified the two. Pure modalism is

the correct analysis of essence. Fine's counterexamples only show that it's the wrong analysis of natures.

Cowling's main argument for this distinction appeals to the need to preserve the integrity of the debate about the scope of essence. He is particularly concerned to find a place in the debate for Quine, who was famously an eliminativist about essences and essential properties. Quine supposed that there are no essential properties and, more pointedly, that de re modality is incoherent. But, he did suppose that objects have natures, and he set about working to discover what the natures of various objects are. In doing so, he thought he was addressing the question 'What is it?' And so, we face (another) dilemma. Either Quine was conceptually confused, which then ruins the integrity of his contribution to the discussion; or we must say that Fine is conceptually confused, and so his counterexamples misfire and target the wrong thesis. Cowling supposes we should preserve the integrity of the debate on the scope of essential properties (involving Quine), and so reject that Fine's counterexamples to EMA are decisive. The way to strike the best equilibrium is to reject that essences are identical to natures; this is the important lesson we should learn from Fine's cases.

On its face, this is a smart move too. However, the defender of Fine should say two things here. First, she should concede that preserving a place in the dispute for Quine would strike the optimal equilibrium, all the while denying that this is a sufficient reason for making an (apparently) artificial distinction. Returning to a previous point, intuitively, the two terms 'essence' and 'nature' are synonymous. I myself make no distinction between the two. Commonsense likewise makes no distinction between the two. And importantly, many other metaphysicians (both contemporary and historical) do not make a distinction between the two either.

Cowling says that the essence of a thing answers what is possible or impossible for it, whereas the nature of a thing answers the 'What is it?' question. But consider Descartes (1647) on this point: "The impossibility of existing without a valley is part of the nature of a mountain; and it belongs just as much to the nature of the human mind that it is what it is..." (AT VIII B 348). He evidently thinks the nature of a thing answers both questions. Or, if a distinction is made, it is made as Aristotle (c. 350 BC[a]) put it in his philosophical lexicon: "'Nature' means the essence of natural

objects... By an extension of meaning from this sense of ‘nature’ every essence in general has come to be called a ‘nature,’ because the nature of a thing is one kind of essence” (Meta.  $\Delta$ 4 1014b35-1015a13). Incidentally, in following Cowling, we would keep Quine in the dispute only at the expense of excluding the two of them. This is an even less happy equilibrium than the alternative.

And a second problem with Cowling’s response is that, as he himself states the objection, “[T]he modal view of essence, once separated from the modal view of nature, is theoretically uninteresting and irrelevant for metaphysical inquiry. But since essence cannot plausibly be viewed as uninteresting or irrelevant, the essence-nature distinction must be rejected” (2013: 11). In response to this objection, Cowling maintains that there does remain one theoretically interesting and relevant role for essence to play in our metaphysical inquiry. Namely, we can ask what properties an object has that are both essential to it and of its nature, and that this inquiry will tell us something very interesting and relevant about the thing (i.e. its natural essence).

But this response is insufficient too. This would make essences theoretically interesting and relevant only in some derivative or parasitic sense. I, the ordinary person, and most other metaphysicians suppose that knowing the essence of something – quite apart from knowing anything else about the object – is intrinsically valuable and interesting. Essences inherently carry with them a kind of metaphysical gravitas, as Wildman puts it. In order to preserve this intuition, Cowling would need to show how knowing the essence, once divorced from nature, is by itself valuable. For my part, I do not see how this challenge can be met if EMA is assumed.

And so, for these reasons, Cowling’s defense of pure modalism is unsuccessful. It is better not to make a distinction between essences and natures; and so, it is better to suppose that Fine’s objection are not misdirected at a modal view of natures, but rather are adequately directed at the modal view of essence.

## 5. Sparse properties

Other pure modalist responses are possible; nonetheless, I think these two are representative of the best responses available in this dialectic. And



so, since they fail, the modalist should accept Fine's critique of pure modalism and work instead to add some further stipulation into their analysis to block his counterexamples.

This is the route that most modalists have gone. Impure modalists reject Fine's conclusion that modalism, in general, is false. Rather, they maintain that his cases just show "the more modest conclusion that some naturalness restriction needs to be imposed on candidate properties for essentiality" (Vetter 2009: 3). This "naturalness" restriction is drawn in various ways (cf. Robertson & Atkins 2018: §2). At present, sparse modalism is the most popular (and plausible) variety of impure modalism (cf. Wildman 2016). It carves out the distinction in terms of sparsity.

Sparse properties are properties that carve up nature at its joints. This is usually cashed out by distinguishing properties that (a) ground qualitative similarity and dissimilarity between objects; (b) track the causal powers of objects; and (c) do, or might, figure into our best sciences of the laws of nature – from those properties that do not. Whereas members of the first class are fundamental and genuinely seem to pick out natural features of the world, members of the second are derivative and correspond to any property that can be thought whatsoever; for any two objects, there will correspond a property that picks them out. Examples of sparse properties (might) include: being green; being an electron; and being a planet. Examples of nonsparse (i.e. abundant) properties include: being grue; being an electron that comprises my left ear; and being a planet or not a planet. We might need to appeal to abundant properties in our best formal semantics; but otherwise they form a metaphysically useless and redundant class.

The distinction between sparse vs. abundant properties was originally introduced by Armstrong (1979), and then further championed by Lewis (1983a). According to Lewis, an appeal to sparse properties is needed in our best systematic metaphysics. (Note that both Armstrong and Lewis appeal to sparse properties independently of discussion about the character of essences, and so, by appealing to sparse properties, the sparse modalist can quickly escape the charge that their modified account is merely ad hoc). Lewis provided something like a laundry list of tasks for which sparse properties are needed. As Wildman recounts, sparse properties

could be employed in analyzing the laws of nature, causation, intrinsicity, and supervenience; are needed to account for Moorean facts of common sense, provide a minimal notion of physicalism, handle Kripke's rule-following worries, and respond to Putnam's objections to metaphysical realism; and, perhaps most importantly, are required to determine what, in the fundamental sense, objects are like – without the elite properties fixing the objective facts about the comparative characters of objects, we'd have to fall back into the unpalatable position that the only real structure of the universe is its cardinality. (Wildman 2013, 763)

That they might play some of these roles in our best systematic metaphysics gives us one reason to make the sparse vs. abundant property distinction and suppose that there are sparse properties.

As noted by Schaffer (2004), at least two conceptions of sparse properties are possible, depending on how one understands criterion (c), what counts as our “best sciences.” On a fundamental conception of sparsity, only those properties that are needed in fundamental physics are sparse (i.e., only those properties needed to describe the microphysical world, from which everything else is built up). On the assumption that scientists are only concerned with sparse properties, this would then amount to that view that all of science is either physics or stamp-collecting. And on a broadly scientific conception of sparsity, properties that are appealed to in our softer sciences (e.g., biology, psychology, etc.) also count as sparse. Schaffer has argued that, of the two, the latter is the best, and most sparse modalists have followed him in this respect. On this latter conception, a property like being human would then count as sparse, since it is a property appealed to in our biological sciences.

## 6. (Absolute) Sparse Modalism

So understood, according to the Sparse Modal Account (SMA), Socrates is essentially human iff (1), necessary, Socrates is human if he exists; and (2) being human is sparse. Put formally, where ‘S’ designates the second-order property of being sparse:  $\Box(\exists x(x = s) \rightarrow (H(s) \wedge S(H)))$ . Or, put in

terms of possible worlds, for all worlds,  $w$ , if Socrates exists at  $w$ , then he is human at  $w$  too, and being human is a sparse property (across all worlds).

SMA has several virtues. First, like EMA, it makes sense of our intuition that essential properties are those properties without which their bearer could not possibly be. Moreover, SMA also satisfies our intuition that essential properties are intrinsically valuable and interesting in their own right. Knowing that Socrates is essentially human, then, tells us something about how he fits into the joints of nature, how he is objectively characterized and is similar to other kinds of natural things, and, given what kind of thing he is, into which scientific domain he falls and to which science it belongs to study him.<sup>4</sup> Notice also that, because sparse properties genuinely characterize things and ground objective relations of qualitative similarity between things, SMA also apparently captures Fine's important general intuition as well – that the essence of a thing ought to (at least partly) answer the 'What is it?' type questions about that thing.

Moreover, by adding in a sparsity condition to EMA, SMA can easily circumvent at least four of Fine's original counterexamples. SMA need not count being such that  $2 + 2 = 4$  as essential to Socrates because this property is not sparse. It grounds no qualitative similarity; it tracks no causal powers; and it isn't needed outside of formal semantics. SMA need not count being such that Plato is essential human, likewise, because it is not sparse. Plato's being essential human grounds no qualitative similarity between Socrates and anything else; it tracks none of his causal powers; and no science needed to described Socrates's place in the world need appeal to it to characterize him. And, in a similar vein, SMA need not count the property of existing as essential to Socrates either. Several arguments might be offered to this effect. Here's one: An existing Socrates is qualitatively identical to a non-existing Socrates. The property of existing makes no qualitative difference to him (even if it makes a qualitative difference to the

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<sup>4</sup> Note that Cowling (2013) supposed that the nature of a thing is best characterized by appealing to its sparse properties. Perhaps for this reason, some suppose that Cowling is also a sparse modalist, and it is not uncommon to see Wildman's and Cowling's defenses lumped together in the literature.

world). And so, the property of existing is not sparse, and so not essential to Socrates, as such.<sup>5</sup>

Fine's other two counterexamples gesture at relations between, in this case, Socrates and something else. SMA says nothing about relations, only about properties. Nonetheless, one sparse modalist response is to allow that there are sparse relations and that those relations might count as essential, and to do so in such a way that distinctiveness properties and membership properties are excluded while (say) a thing's origins are not. This is the route Wildman (2013) takes. In this way, SMA might be said to consist of two theses: sparse property modalism (SPM) and sparse relation modalism (SRM):

[SPM] Object  $x$  essentially has property  $\Phi$  iff (1) necessarily,  $x$  has  $\Phi$  if it exists; and (2)  $\Phi$  is a sparse property.

[SRM] Object  $x$  essentially bears relation  $\Psi$  to  $y$  iff (1) necessarily, if  $x$  exists, then  $\Psi$  holds of the ordered pair  $\langle x, y \rangle$ ; and (2)  $\Psi$  is a sparse relation.

With SRM in place, the sparse modalist can then offer two responses to the case of distinctiveness properties. First, she can deny that Socrates's being distinct from the Eiffel Tower is necessarily true if Socrates exist, since, understood in this way, there will be worlds where Socrates exists and the Eiffel Tower does not (i.e., the ordered pair  $\langle \text{Socrates}, \text{Eiffel Tower} \rangle$  will fail to hold at any world at which one of the relata do not exist). And so, distinctiveness properties fail criterion (1) of SRM. And second, she can say that distinctiveness properties are not sparse, and so fail criterion (2) of SRM as well. This is because distinctiveness properties are not needed in our best sciences to completely describe the world without redundancy; nor do they track causal powers of their bearers.

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<sup>5</sup> Additionally, the modalist can point out that in saying God essentially exists, all we really mean here is that God is a necessary being; i.e.  $\Box(\exists x (x = \text{God}))$ . But this, of course, is not what we're saying in concluding that Socrates essentially exists, but only that necessary, he exists if he exists. The paradox here is merely apparent.

## 7. Socrates and {Socrates}

This just leaves Fine's most infamous case – Socrates's being the sole member of {Socrates}. This is his most famous because, unlike distinctness properties, there's supposed to be a kind of essential asymmetry involved here (Dunn 1990: 77, 89). Presumably, we want to say Socrates is not essentially a member of {Socrates}; but we do want to say that {Socrates}'s having Socrates as a member is essential to it. With the resources of only extensional and intensional analysis, both claims would amount to the same thing. The relation is either sparse or it isn't.

And so, the modalist must make one of two choices here.<sup>6</sup> On the one hand, she can deny that sets have essences and then dispel the air of paradox in saying that {Socrates} does not essentially have Socrates as a member, that way she can deny that Socrates is essentially a member of {Socrates}. On the other hand, she can affirm that sets might have essences and then dispel the air of paradox in saying that Socrates is essentially a member of {Socrates}, that way she can affirm that {Socrates} is essentially membered by Socrates. In either case, she would need to offer us some powerful error theory to explain away the apparent asymmetry we detect in the case.

Neither response is perfectly satisfying. Nonetheless, I think the sparse modalist would do best to deny that membership properties are sparse since Socrates's being a member of {Socrates} tracks none of his causal powers or the like at all. This would entail that neither does {Socrates} essentially have Socrates as a member. On this point, Skiles (2015: 7) has said: "If the sparse modalist is unable to capture the basic essentialist intuition that it be essential to {Socrates} to have Socrates as a member, then the sparse modalist seems unsuccessful at stating what is necessary for essentiality." But this intuition is defeasible. The sparse modalist can offer a more or less plausible three-part error theory on this subject.

First, she can appeal to Cowling's intuition, discussed earlier. Cowling said that a distinction should be made between a thing's nature and its essence. This distinction is decidedly artificial; 'nature' and 'essence' are

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<sup>6</sup> Strictly speaking, this dilemma is false. The sparse modalist could somehow modify her account to make room for essential asymmetry. This point will be discussed at some later point, below.

semantically (and metaphysically) interchangeable. Nonetheless, even if there is no difference in the denotation between the two terms, we might agree with Cowling that there is a difference in the connotation between the two terms. It seems right to say that sets have essences. But, the sparse modalist can ask rhetorically, does it also seem right to say that sets have natures? Put this way, I think the answer is no. Only natural things have natures, and sets do not seem to be natural things.

Second, the sparse modalist can point out that, in saying that it is not the case that {Socrates} essentially has Socrates as a member, we are not thereby committed to saying that {Socrates} only accidentally has Socrates as a member, understood in the usual sense. The sparse modalist can appeal to the threefold distinction between essences, accidents, and necessary-for-existence properties. We can still grant that it is necessary for the existence of {Socrates} that it have Socrates as a member; it is impossible for it to exist as the selfsame thing unless it meets this condition. But this does not mean that it is essential to it that it have this property. We're only tracking the fact that it is impossible for it to be otherwise. But this, as Fine has taught us, is not equivalent to its having some essence.

And third, and perhaps most radically, the sparse modalist might attempt to accommodate our intuitions of asymmetry in the Socrates / {Socrates} case by conceding that some asymmetry exists, but denying that it is an essential asymmetry. Rather, it exists only in some cognate notion to essentiality. There exists here instead an analytic asymmetry.

Analyticity may be defined in several different ways, but consider Kant's (1781) definition that a proposition of the form 'A is B' is analytic iff "the predicate B belongs to the subject A as something which is (covertly) contained in this concept A... If I say, for instance, 'All bodies are extended,' this is an analytic judgment. For I do not require to go beyond the conception which I connect with 'body' in order to find extension as bound up with it" (Intro. IV, p. 48). The modalist can then say, even though the membership relation is essential to neither of the relata, nonetheless there's an analytic relation between '{Socrates}' and its property of having Socrates as a member; whereas there is not an analytic relation between 'Socrates' and his being a member of {Socrates}. The concept '{Socrates}' is defined by its relation to Socrates, but 'Socrates' is in no way defined by its relation

to {Socrates}. Because analyticity is in some respects very similar to essentiality, it's reasonable that we might have confused one for the other.

Some will likely want to bite back against this third move. What sense can be made in saying some judgment is analytic, and yet the property expressed by the judgement's predicate is not essential to its subject? Kripke (1972/1980) has shown us that some property might essentially belong to an object without the corresponding judgement being analytic (e.g., 'Water is H<sub>2</sub>O'); but an analytic judgement that does not also express a fact of essence is incomprehensible. And so, even if the first two moves of the error theory partly explain away our intuitions, this third move does not, and so the problematic asymmetry remains.

If some such case could be presented, this objection would be met. I think such cases can be presented, though, of course, they will be controversial. Here's one case: 'Jaywalking is a crime.' This statement is analytic (in Kant's sense) in that being a crime is contained in our concept of jaywalking. Nonetheless, it is not essential to jaywalking that it is a crime. This is a contingent fact; it is only a crime given that it endangers pedestrians and motor vehicilists. But in a society in which this was not the case, jaywalking need not be a crime at all. Another case: 'Mary's biological child was born of her mother, Mary.' Plausibly, our concept of biological child (covertly) contains within it the concept of being begat by that child's mother. Nonetheless, with the rise of surrogate pregnancy, we can see that this is by no means essential to Mary's biological child. Mary's biological child could just as well have been born by someone else, say Mary's cousin Jill. And so, here is another case of a proposition that is analytic (in one sense) and yet whose predicate does not express a property that essentially holds of the object expressed by its subject.<sup>7</sup>

By appealing to these cases, the sparse modalist can apparently capture our clear intuition that there's something asymmetric between the way

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<sup>7</sup> Despite the fun Kripke made of it, Kant's example that 'Gold [the element] is gold [in color]' is probably another case. Maybe a moral to be drawn here is that sometimes, in light of learning new things about some phenomenon, we broaden the extension of its corresponding concept without always (or as quickly) broadening that concept's comprehension too.

Socrates relates to {Socrates} and the way {Socrates} relates to Socrates; but it's no essential asymmetry. And so, here's our error theory.

### 8. Skiles's first objection

SMA seems to fare much better than EMA. However, Skiles (2015) has recently argued that, even if SMA succeeds over EMA in this respect, it fails in another. SMA is extensionally inadequate too. But, unlike EMA, it fails in both directions: it's both too broad and too narrow.

Against the necessity of SMA, Skiles presents four (apparent) cases of abundant essences. First, it is intuitively true that the Eiffel Tower is essentially a tower. But, plausibly, being a tower is an abundant property. Second, it is intuitively true that the Eiffel Tower was essentially designed by Gustave Eiffel. But, plausibly, being designed by Gustave Eiffel is abundant. Third, it is intuitively true that the proposition <The Eiffel Tower is a tower> is essentially true if the Eiffel Tower is a tower. But, plausibly, being true if the Eiffel Tower is a tower is abundant. And finally, it is intuitively true that Socrates is essentially self-identical to himself. But, since distinctiveness properties were classified as abundant, so too must identity properties. Therefore, Skiles concludes, whereas EMA was too broad, SMA is far too narrow. It can't make sense of abundant essences.

Skiles's too-narrow objections to sparse modalism are plausible. Nonetheless, each of his purported counterexamples is problematic, for one reason or another. With respect to the first case, the sparse modalist can deny that being a tower is abundant. Being a tower is a property that a science might appeal to in order to describe the world without redundancy; certain causal powers are intuitively associated with being a tower; and the world does appear carved up by towers in the important kind of way. So, plausibly, it's sparse. With respect to the second case, the sparse modalist can deny that the Eiffel Tower is essentially designed by Gustave Eiffel. Even Fine supposed that essential properties put *de re* modal constraints on their bearers, such that the bearers could not exist without those properties. But, surely, the Eiffel Tower could exist in a world where Gustave Eiffel does not. Every artist would like to think that they and only they could have created their work; but this is not so.



Finally, with respect to all four cases, but especially with respect to the third and fourth, I think the sparse modalist can respond that Skiles has abused our intuitions here. Consider his remarks: “These are plainly not incidental features... [T]hey pertain to the very nature of these things that any adequate philosophical account of what they are must accommodate and illuminate” (Skiles 2015: 11). Skiles supposes that, if the sparse modalist does not count these properties as essential to their bearers, then she must count them as accidental to them, taken in the usual sense such that they could exist without them. But this is not so, as we have seen in a previous section. The sparse modalist can still help herself to properties that are nonessential but nonetheless necessary for the existence of the object under consideration. Utilizing this resource, she can offer another easy error theory again. These properties are not essential to their bearers (because not sparse). Nonetheless, they might reasonably seem essential to them. This is because of the influence of pure modalism. But, Fine has correctly shown us that this is wrongheaded. Those intuitions, nonetheless, remain. And so, she can say that Skiles has made the same mistake as the pure modalist in mistaking mere necessary-for-existence properties with essential ones.

## 9. Relativized Sparse Modalism

All of these error theories might seem less than perfectly satisfying. Suppose one’s intuitions persists that {Socrates} essentially has Socrates as a member, and that the Eiffel Tower is essentially a tower. Perhaps these intuitions really need to be explained, not explained away, as I have done.

De Melo (2019) has recently offered one way the modalist might revise her account again to capture these intuitions. De Melo’s basic move is to suppose that whether or not a given property or relation is sparse cannot be determined absolutely. Rather, sparsity comes in degrees, and whether or not any given property (intrinsic or extrinsic) is sparse is always determined (in part) by what kind of thing the object is to which we are considering ascribing it. In this way, de Melo distinguishes between aSMA – the absolute Sparse Modal Account, what we’ve just been calling ‘SMA’ – and rSMA – the relativized Sparse Modal account. He recommends the sparse modalist go in for rSMA over aSMA.

[a]SMA, as Wildman (2013) details it, is comprised of two theses: sparse property modalism ([a]SPM), and sparse relation modalism ([a]SRM). Like Wildman, de Melo wants to allow that some relations can count as sparse. And so, he recommends the sparse modalist adopt alternative dual theses, rSPM and rSRM:

[rSPM] Object  $x$  essentially has property  $\Phi$  iff (1) necessarily,  $x$  has  $\Phi$  if it exists; and (2)  $\Phi$  is a sparse property relative to a kind,  $K$ , that includes  $x$ .

[rSRM] Object  $x$  essentially bears relation  $\Psi$  to  $y$  iff (1) necessarily, if  $x$  exists, then  $\Psi$  holds of the ordered pair  $\langle x, y \rangle$ ; and (2)  $\Psi$  is a sparse relation relative to the ‘slot’ of the ordered pair occupied by  $x$  and relative to a kind,  $K$ , that includes  $x$ .

With these revisions to sparse modalism, de Melo says, no error theories are needed. The sparse modalist can better respond to both Fine and Skiles.

Reconsider Fine’s {Socrates} and Socrates case. As noted, there’s supposed to be a kind of essential asymmetry here, which aSMA was unable to capture. But rSMA, it seems, can capture that intuition. We can say that {Socrates} essentially has Socrates as a member because membership relations are sparse relative to the kind of thing {Socrates} is – namely, a set. And so, that checks out. And, moreover, we can also say that Socrates is not essentially a member of {Socrates}. This is because membership relations are not sparse relative to the kind of thing Socrates is – namely, a human being. Properties like being rational and relations like originating from (a certain) zygote,  $\zeta$ , are plausibly sparse relative to the humankind; but set membership relations are not. That checks out too.

Now reconsider Skiles’s case of the Tower. I have said that being a tower (maybe) is sparse per our liberal criteria stated earlier. But, then again, maybe it isn’t. rSMA has the virtue of not needing to worry about whether or not it is sparse absolutely. In this case, rSMA can appeal to the kind of thing the Eiffel tower is. Plausibly, the kind of thing that the Eiffel tower is an artifact. And relative to artifacts, being a tower is sparse. It is a property that artifacts naturally might possess; moreover, being a tower carves up the world of artifacts at its joints. And so, even if being a tower would not be a natural property relative to other things, relative to the Eiffel tower, it is. And so, rSMA can capture our intuition that the Eiffel

Tower is essentially a tower too. What has been said here goes also for Skiles's other cases, such as the proposition and its truth conditions. Relative to the kind, proposition, having truth conditions is perfectly sparse – it carves up the world of propositions at its joints and grounds qualitative similarity between different propositions.

## 10. Skiles's second objection

Bracket rSMA for now. More promisingly, Skiles has argued that [a]SMA fails in the other direction too. It is extensionally inadequate because, like EMA, it is still too broad. I think he's right on that point, but I think his particular counterexamples do not work. He offers two. First, it is intuitively true that, for any given water molecule,  $\mu$ ,  $\mu$  essentially has an oxygen atom as a part. Having an oxygen atom as a part seems to count as a sparse relation per SRM. But, if this is so, then it will also be essential to  $\mu$  that it have both an oxygen atom as a part and is such that  $2 + 2 = 4$ . But, being such as to have an oxygen atom as a part and be such that  $2 + 2 = 4$  is intuitively not essential to  $\mu$ . And so, SMA is too broad.

Immediately after presenting this case, Skiles considers a potential sparse modalist response. He imagines that the sparse modalist will deny that this case counts as a genuine counterexample because, even while the simple property of having an oxygen atom as a part is sparse, the conjunctive property of being such as to have an oxygen atom as a part and be such that  $2 + 2 = 4$  is not sparse. She can say that, if complex properties or relations are admitted, then they must be restricted to complexes only containing other sparse properties or relations. Being such that  $2 + 2 = 4$ , we have said, is not sparse.

So, Skiles offers another counterexample. Second, he says, consider the disjunctive property of being such as to have an oxygen atom as a part or being human. We have already said that both disjuncts of this disjunctive property are sparse. And so, it follows that this disjunctive property is sparse too. But, intuitively, it is not essential to  $\mu$  that it have an oxygen atom as a part or is human. Paraphrasing Fine, there is nothing in the essential nature of  $\mu$  that connects it to humanity.

Intuitively, the sparse modalist should not want to rule out all disjunctive or conjunctive properties. For example, it does seem essential to water molecule  $\mu$  that it have the conjunctive property of being such that it has an oxygen atom as a part and has two hydrogen atoms as parts. And so, *prima facie*, Skiles's second case, at least, is successful.

However, the main problem with Skiles's second critique is that it misrepresents the sparse modalist's response to his first (too broad) counterexample. In response to his first case, the sparse modalist says by way of clarification that a complex property is sparse only if all of the properties or relations of the complex are also sparse. From this, Skiles's then infers that the sparse modalist must then count the disjunctive property of being such as to have an oxygen atom or be human as sparse. But the sparse modalist need not count this. The sparse modalist says a complex property is sparse only if all of its parts are sparse; she does not say that a complex property is sparse if all of its parts are sparse. The sparse modalist can allow that some complex properties are sparse, while also saying that each complex property must be taken on a case by case basis. In fact, this is what she should say, given the (scientific) criteria of sparsity.

I think, therefore, that both of Skiles's objections to sparse modalism fail. Nonetheless, as indicated, I am sympathetic with his second critique. Like him, I think that sparse modalism is still too broad, though not on account of the cases he offers. A better counterexample is available here.

## 11. Sparse modal propria

To introduce the new counterexample, it would be helpful to first begin by considering a classical distinction between types of properties that an object might possess.<sup>8</sup> Historically, philosophers made a tripartite distinction between an object's essential properties, its accidental (or coincidental)

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<sup>8</sup> Alternatively, this might be put in terms of "ways of having a property" (Leslie 2011: 277). There is an ongoing essentialist dispute about whether the essence vs. accident distinction describes kinds of properties or ways of property instantiation.

properties, and importantly, its propria.<sup>9</sup> Like Fine, metaphysicians of antiquity understood an object's essence or essential properties to be those properties that make it to be what it is (*id quo res est id quod est*). They are the most metaphysically significant properties that the object possesses, which it must retain throughout all change lest it undergo substantial corruption. By contrast, they understood an object's accidental properties to be those properties that do not make it to be what it is, and which an object either does or might change throughout the duration its concrete existence. And finally, the medievals understood a proprium to be a property that an object possesses throughout the entirety of its concrete existence, one that, in fact, it could not come to exist without, but which nonetheless does not make it to be what it is. A classic example of a proprium of Socrates is his property of being capable of getting a joke (i.e. his risibility). Other (potential) examples of an object and one of its propria include: a triangle and its having interior angles summing to 180 degrees; a duck and its having webbed feet; salt and its solubility in water; and so on.

There are two points I want to make in drawing this classic distinction. The first is that we should recognize this tripartite division among properties, and that we should want our best account of the character of essential properties to recognize it too. This point is intuitive from the first-person perspective; even if Socrates goes his whole life being two-footed, we should not want to say that it was therefore essential to him, since he never existed without it. Additionally, it is intuitive from the perspective of the philosophical tradition; we should want to preserve the distinction made by Aristotle, the medievals, and other metaphysicians as well.

And the second point is critical. The medievals cast the distinction between essences, propria, and accidents in (partially) temporal terms. But there are also modal counterparts of propria.<sup>10</sup> And importantly, some

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<sup>9</sup> Cf. Porphyry of Tyre's (c. 270 AD) *Isagoge* (esp. Chapter 4, "Of Property"). For a recent extended treatment of this concept, see Bassford (2021).

<sup>10</sup> Fine (1995) has recognized this distinction too. His way of carving out the distinction between essences and propria, however, differs in certain respects from the way I'll be drawing it. He considers propria a kind of consequential essence (as opposed to a kind of constitutive essence), whereas I deny that they are essences at all. See Chi (2020) for more on this point.

modal propria are sparse. For this reason, there are a host of counterexamples to sparse modalism, since it cannot distinguish propria of this variety from essences.

Here's a counterexample. Necessarily, Socrates has the disjunctive property of being blind or sighted if he exists. In all possible worlds, he is either sighted (he sees) or he is blind (sight has been deprived of him). Moreover, being sighted or blind is sparse; it carves up nature at its joints since (a) it grounds genuine qualitative similarity and dissimilarity – namely the qualitative resemblance between visual creatures; (b) it tracks causal powers – namely, the power of sight, for to have it just is to have the natural capacity to see; and (c) it is utilized in our best sciences – namely, it is used to define the discipline of optometry, the scientific study of creatures that have this property, and how best to maintain the proper functioning of the former disjunct while preventing the emergence of the latter (via the eyes). Nonetheless, Socrates's property of being sighted or blind is not essential to him, as such. And so, for this reason, absolute sparse modalism (aSMA) is too broad. It counts as essential properties properties that are only sparse modal propria of their bearers.

Relativized sparse modalism (rSMA) falls to this counterexample as well. The relativized sparse modalist might have been inclined to respond to Skiles's too broad counterexample of water molecule  $\mu$  being such as to have an oxygen atom as a part or be human, by objecting that being human is not sparse relative to the kind of thing a water molecule is. And so, she might have resisted this counterexample by supposing that it fails the sparse modalist's stipulation that a complex property is sparse only if all of its conjuncts or disjuncts are sparse relative to the kind to which the object belongs. But this response will not help her with respect to this sparse modal propria counterexample. Using de Melo's language, being sighted or blind is a property that it is perfectly natural for the kind of thing that Socrates is to possess. In this way, it will meet both criterion (1) and (2) of rSPM too. But, the same point stands. Socrates is not essentially sighted or blind. And so, for this reason, relativized sparse modalism (rSMA) is too broad as well. It counts as essential properties properties that are only sparse modal

propria of their bearers.<sup>11</sup> In this way, the case presented is problematic for the sparse modalist, whether she supposes that sparsity is absolute or relative to the object's kind.

## 12. A potential response

I think that this counterexample points to an endemic problem with all varieties of modalism up to the present point, one which demands serious revision. I'll offer my diagnosis to that effect momentarily. But before doing so, it's worth first considering a potential response to my critique.

It might be objected that my purported counterexample does not show that sparse modalism is extensionally inadequate. Rather, what it shows is that we ought to exclude disjunctive properties from counting as candidate essential ones, even if being sighted or blind seems like it might be sparse. The response to Skiles's critique has shown us that, perhaps, we ought to count certain conjunctive properties as sparse, such as being such as to have an oxygen atom as a part and such as to have two hydrogen atoms as parts. This is okay because it is essential to water molecule  $\mu$  that it have this property. But no example of a disjunctive property that is essential can likewise be offered. And so, SMA may be saved by simply rejecting disjunctive properties as counting as essential properties wholesale.

Prima facie, this is a smart defense on behalf of SMA. However, I think this response is unsatisfactory because too rash. If the sparse modalist would have us exclude all disjunctive properties as candidate essential ones, then she would also have us exclude all determinable properties from counting as candidate essential ones too. This is because determinable properties are both extensionally and intensionally equivalent to the disjunctive property comprised of all of its determinates. Consider the property being red. On its face, this doesn't look like a disjunctive property. But, there's good reason to think it really is disjunctive. Consider that no object is red simpliciter.

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<sup>11</sup> In certain respects, in relativizing sparsity, rSMA fares even worse than aSMA here. Consider Socrates's (relative) sparse proprium of being such that, for any given joke, he either gets it or misses it (which is not equivalent to simply failing to get it – a boulder might fail to get it a joke, but it never misses one).

An object has the property of being red iff it has the property of being maroon or auburn or mahogany or burgundy or coquelicot... etc.

But, we would want to count certain determinables as being essential to their bearers, as such. As a pointed example, consider the property of being an animal. Like being red, nothing has the property of being an animal simpliciter. To be an animal is to be a mammal or a reptile or a fish... etc. But Socrates is essentially an animal. And so, if we exclude all disjunctive properties as candidate essential ones, we must exclude all determinable properties too. If we exclude all determinable properties as candidate essential ones, we must exclude the property of being an animal. But certain objects do have the property of being an animal essentially. And so, we ought not exclude all disjunctive properties from being candidate essential ones to their bearers. The objection stands.

### 13. Concluding remarks

I conclude, therefore, that sparse modalism (SMA) is an extensionally inadequate analysis of the character of essential properties. It is a genuine improvement over EMA, but like pure modalism, it is still too permissive in what it counts as candidate essential properties. The best option would be for the modalist to once again revise her account in such a way as to circumvent the counterexample of sparse modal propria. How she ought to revise her account at this point in the dialectic is unclear. Strategies for doing so will depend on the proper diagnosis of what has gone wrong. Before concluding, I'll offer my own diagnosis.

I think, ultimately, SMA has gone wrong because it offers no explanation of how all of the properties that an object possesses are intimately related to one another. We have said that the essential properties of an object are supposed to come with a kind of metaphysical gravitas. By adding in a sparse criterion, SMA was able to partly satisfy that intuition, for now the essence of the thing will track its causal powers, inform us about how it relates to other kinds of things, etc.

However, knowing the essence of a thing is supposed to provide us with at least one other kind of explanation about that thing's characteristics. Namely, the essence of a thing should make sense of why the thing has



all properties that it does, whether potential or actual. This intuition, as indicated, was shared by Aristotle (c. 350 BC[c], *Post. An.* 74b5ff) and the medievals. However, it was also shared by many of the early moderns too. Consider Locke's (1689) point that the "very essentia, or being, of the thing itself [is] that foundation from which all its properties flow, and to which they are all inseparably annexed" (III.iii.18). Consider also Neoscholastic philosopher C. N. Bittle (1939, 117), writing before the advent of modalism, who remarked that "Out of the essence as out of a matrix all being of a thing is, so to say, born... [T]he elements of a thing, which constitute its being, have existence only in so far as they flow (are born) from the essence." Finally, consider also Kelley's remarks that an object's

essential attribute causes or explains the existence of [its] other attributes... [T]he 'lub-dub' sound is a superficial trait; it is merely a by-product of the heart's essential function, which is to circulate the blood. This essential function explains many of the heart's other properties: the way it beats, the way it is hooked up to the veins and arteries, even the sound it makes. But explanation is a one-way street. The 'lub-dub' sound does not explain the heart's function. (Kelley 1998, 40)

Essences (at least partly) explain all of a thing's properties. At present, SMA does not capture this general intuition. It leaves why the object has all of the essences that it does brute; it leaves why it has the propria that it does brute; and it leaves why it has the accidents that it does brute, as well. Here, I think, is the account's endemic weakness.

Modalists have worked recently to make their accounts mimic in certain respects Fine's RDA. But they ought not forget that there's at least one other account of essences that needs reckoned with too, namely Gorman's (2005) Ontic Explanation Account (OEA). On such an account, H is essential to s iff s's possessing H (ontically) explains s's possessing the other properties that it does too. Accounting for propria is (presumably) no problem there. And so, my advice for the modalist is that she would do well to mimic some features of his account, as well. Maybe a modalism of some such form can be constructed. Maybe 'explanatorily basic,' once added as a criterion into SMA, could even be cashed out modally, in terms of strict

implication relations or iterated counterfactual relations. The upshot of this paper is that more work remains to be done.

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