**A Unified Account of A Posteriori Necessities**

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**Naming and Necessity at 50**

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**1 Introduction**

(NB this talk builds on joint work with Marion Godman and Antonella Mallozzi.)

Kripke introduced us to a range of putative a posteriori necessities—of origin, constitution, identity. But why just those ones? Why think my parents are essential to me, but not my birthplace? Kripke offered no explanation beyond a gesture at “conceptual truths”. But there must be more to say. A community that viewed birthplaces but not parents as necessary to people would be wrong, not just conceptually different.

**2 Background**

*Kinds* are properties whose instances share many distinctive properties. Give or take a bit, these properties are not only necessary but individually sufficient for Kind membership. (I’ll come back to particulars at the end of the paper.)

Chemical: elements, compounds, metals, . . .

Biological: species, genera, . . .

Astronomical: main sequence stars, supernovae, . . .

Functional: chairs, aerial insectivores, eyes, . . .

In nearly all these cases, the many common features of the instances are explained by their possessing some specific *super-explanatory* property. (The shared features comprise a bunch of correlations, which calls for a causal explanation.)

Chemical substances—molecular structure

Biological taxa—founding ancestors (genome?)

Astronomical objects—physical constitution

Functional kinds—selection for some end

Boyd said Kinds are “homeostatic property clusters”—right about the property clusters, but these are rarely homeostatic. Craver and Khalidi opt for a “simple causal account”—right about the causal, but they miss the single common cause.

**3 Modality**

It is intuitive to think of these super-explanatory properties as the *essences* of their Kinds, and therewith to view them as modally necessary and sufficient.

More precisely, if K is a Kind and E its super-explanatory property, then

1. Nec (x)(Kx 🡪 Ex) – E is modally necessary, an essential property.

Also (2) Nec (x)(Ex 🡪 Kx) – E is modally sufficient, an essence.

Note that E’s being essential to/the essence of K doesn’t make it essential to/the essence of the particulars that fall under K.

**4 Rabbits and Hats**

Suppose it’s granted that some super-explanatory E is the “essence” of K. That’s a fact about *this* world. Why exactly then should E be *modally* necessary and sufficient to K?

Penelope Mackie: how do we “deliver a modal rabbit out of a non-modal hat”? (Mackie 2020.)

I think we can add a principled explanation to the intuitions. Metaphysical modality goes with counterfactual thinking. And counterfactual thinking requires us to embrace all the *causal* consequences of our counterfactual suppositions.

So when we suppose away some super-explanatory property E of an instance of some K—we suppose this liquid weren’t H2O—we suppose away all the many other features distinctive of K-hood—we suppose away its being odourless, tasteless, etc.

Normally, when we counterfactually suppose something to have some different feature—*if Nixon had lost the election, if water were much rarer*—we hold most of its other features fixed. It’s only features in the “causal shadow” of the changed feature that we need to vary. But when we remove a super-explanatory feature of some K, all those features that are distinctive of K are in that causal shadow, and so removed. All bets are off, and we’re left with nothing of K at all. If we suppose something isn’t H2O, we suppose away everything to do with water.

Conversely, when we suppose something does have E—we suppose this stuff were H2O—we therewith suppose it to possess all the many other distinctive of K features—we suppose it to be all of odourless, tasteless, etc.

This argues that the presence of K is tied to E across counterfactual scenarios. The presence or absence of E fully determines whether you’ve something worth counting as water. H2O will be counterfactually both necessary and sufficient for water, and in general any super-explanatory E will be counterfactually both necessary and sufficient for its K.

**5 Far-Off Possibilities**

This argument might seem to fall short of showing that E will be necessary and sufficient for K across *all* metaphysical possibilities.

What about worlds with very different physics and chemistry, in which some liquids are odourless, tasteless, etc, without being H2O, and vice versa?

With respect to nearby counterfactual worlds, with our physics and chemistry, we can all agree that H2O will be necessary and sufficient for water, however we think of water. Take away H2O and you take away everything to do with water, add it and you add everything to do with water.

But that doesn’t mean it has to be absolutely so metaphysically necessary and sufficient. Why not allow that there could be far-off worlds with water but without H2O, and vice versa?

Well we could think like that, but we don’t. And there are reasons why this is the reasonable way to go.

In effect, to accept (1) Nec (x)(Kx 🡪 Ex) and (2) Nec (x)(Ex 🡪 Kx) is to *identify* the properties K and E—we identify *water* with *H2O*. The alternative suggestion before us is in effect to identify the property *water* with say *odourless and tasteless and colourless . . .*

But if we opted for the latter, then we’d lose the automatic bundling of all the water-distinctive properties across nearby worlds that is afforded by identifying water with H2O. To suppose that something is not *odourless and tasteless and colourless . . .* doesn’t automatically imply that it’s not any of them. But we do want this implication to follow, for nearby worlds, from the supposition that something’s not water.

(Do we really want “it wouldn’t be tasteless” to follow from “it’s not water”? Aren’t plenty of other things tasteless? Hm. Remember the idea that, give or take a bit, Kind properties are not only necessary but individually sufficient for Kind membership. To the extent that this is true, we will indeed want not-K to imply not-P for all the Kind’s distinctive properties, at least for nearby worlds.

But if the Kind’s properties are both necessary and sufficient for Kind membership, won’t we then get it’s not *odourless and tasteless and colourless* implying it’s not any of them, after all, since as soon as something’s not one of them, it won’t be all of them, at least for nearby worlds. Hm. That isn’t how we normally think counterfactually. It involves backtracking, from “something’s not tasteless” to “it lacks thecause of the tastelessness*”*, and hence the other consequences of that cause. The more natural though is that “if this liquid weren’t tasteless, something would have flavoured it”.)

The cost of this bundling is then that we lose the implication that, in some far-off worlds, liquids with/without *odourless and tasteless and colourless* are/aren’t water. But that seems a price well worth paying.

**6 An Anthropology of Metaphysical Modality**

Anyway, I don’t suppose there’s some prior fact here—is H2O *really* metaphysically necessary/sufficient for water?—to which our counterfactual reasoning practice must answer. Rather I just want to show how the principles governing our practice are sensible and understandable.

At the beginning I objected to the idea that the Kripkean conditionals are nothing more than optional conceptual commitments.

If C has molecular composition M, then Nec (x)(Cx 🡨🡪 Mx)

If S is descended from founding ancestors D, then Nec (x)(Sx 🡨🡪 Dx)

. . .

But at a higher level I’m happy to agree we reach a conceptual grounding for our metaphysically modal talk:

1. If Kind K has super-explanatory property P, then Nec (x)(Kx 🡨🡪 Px)

This principle is constitutive of our modal discourse and needs no further defence other than being sensible and understandable, for the reasons just given.

**7 Essence as Identity**

Why am I making such heavy weather of all this? Can’t I just get the modal principles I’m after—(1) Nec (x)(Kx 🡪 Ex) and (2) Nec (x)(Ex 🡪 Kx)—much more simply straight from the *identity of properties* K and E plus the *necessity of identity*? (Water *is* H2O, tigerhood *is* being descended from the founding tigers, . . .)

Well, it’s not as simple as that. But let me first digress and say something about another debate about “essence as identity”. Correia and Skiles have argued that essences and modality can be linked up simply enough by thinking of essences as *identities*—what the relevant entity *is*—and then by appealing to the necessity of identity. (That’s how to “deliver a modal rabbit out of a non-modal hat”.)

My colleague Jessica Leech has responded in *Mind* that the standard derivation (Nec (a = a); a = b; Nec (b = a)) of the necessity of identity appeals to

(4) Nec (a = a) – or to (x) Nec (x = x), or to the second-order equivalents

– and where did *that* come from?

The natural answer is just to say that *a = a* is necessary just because it’s part of logic.

Jess observes that this doesn’t obviously fit the ambitious Kit-Finean programme of getting *all* necessities out of essentialist hats. I agree entirely.

Jess also observes that there’s something odd about getting the supposedly distinctive *metaphysical* necessities to fall trivially out of a *logical* necessity.

Interesting. I’m not too worried *per se* about yoking metaphysical possibility onto logical possibility. As I see it, logical necessity consists of those propositions we hold fixed in all reasoning, indicative suppositions included (thus it includes *a = a* but not all true *a = b*); metaphysical necessity consists of those propositions we hold fixed in all counterfactual reasoning (including all true *a = b*). So of course the latter includes the former.

So I’m perfectly happy with the idea that once we’ve embraced an identity it will be necessary.

That just falls out of the facts that counterfactual thinking is *de re/de qualitate* and *logic* contains *a = a/F≡F*?

**8 Requirements for Identity**

Once we’ve embraced an identity, it will be necessary. But which identities should we embrace?

I say that *a = b*/*F≡G* only when it independently makes sense to tiethem together for purposes of counterfactual reasoning.

Correia and Skiles, and far too many others, think it is a sufficient explanation of the “essence” of something to bang your first on the table and say that it’s the *real definition*/*what* *makes it what it is*/*what it* ***is***.

But where do facts like that come from? *Why* is *H2O* the real definition of *water*, rather than *odourless and colourless and tasteless*? *Why* is my parental origin (part of) the real definition of me, but not my birthplace?

On the Correia-Skiles line, there seems nothing more to *necessary essences* than that we have names for things and these names keep naming those things in modal contexts. That’s of course part of what Kripke claimed, but it’s scarcely everything. The other surprising bit in Kripke was that many of these essences are *a posteriori*.

That is, we have an ordinary name for something—*water*—and then it’s a *further question* what that thing “really is”. Is it *H2O*? Is it *odourless and colourless and tasteless*?

Why is the former answer right? I say it’s because *H2O* and not *odourless* *and colourless and tasteless* . . . is super-explanatory with respect to water. As explained in sections 3-5 above, this is what makes it natural and sensible to hold that *H2O* is necessary and sufficient for *water* across all metaphysical possibilities. And *this* then tells us that *water* is *H2O* and not *odourless* . . .

So we see that, far from getting the modal principles

1. Nec (x)(Kx 🡪 Ex) and
2. Nec (x)(Ex 🡪 Kx)

from the identityof K and E, it’s the identity that is an upshot of the modal principles, and that follows from the super-explanatoriness of E.

**9 False Advertising?**

My title promises a uniform account of all a posteriori necessities. But do they all fit the super-explanatory mould I’ve just given for *water—H2O*? Aren’t there some a posteriori identities that aren’t grounded in super-explanatoriness? Doesn’t my title promise more than I’ve delivered?

For properties I’m not sure. What else could show that some P really is ––, except by filling that slot super-explanatorily?

(In the mind-brain context, I and others have long argued that we can know eg *pain = C-fibres firing* a posteriori solely on the basis of their co-occurrence, shared causal profile etc.

In other papers I myself have argued that, in the absence of some chunky natural kind to attract the reference of a phenomenal term like “pain”, such terms end up indeterminate in content.)

So for properties maybe my title isn’t false advertising after all. For particular objects, though, it arguably is.

**10 Particular Objects**

Note first that there are striking similarities between persisting objects and Kinds. Just as all instances of Kinds share many distinctive features, so do all stages of/encounters with persisting objects. (That’s the real difference between objects and events.)

In line with this, certain features of persisting objects are arguably super-explanatory with respect their shared features, such as aspects of their particular origin and their constitution. (My genome explains a lot of the features that are constant through my life; the constitution of this lectern explains a lot of its constant features; . . .)

And in line with this we find that our reasoning tends to treat these super-explanatory features as essential to the objects that possess them. (Someone with a different genome wouldn’t be me; a lectern made of different stuff wouldn’t be this one; . . .)

True, there’s plenty of looseness about exactly which properties count as so essential. But remember I don’t think there’s any definite right or wrong here. I’ll be satisfied if I can explain in term of super-explanatoriness why most people pick on the essential properties they do.

**11 Particular Object Identities**

Note that nothing in the above implies persisting objects have *essences*, as opposed to *essential properties*. (Siblings have the same parents; identical twins have the same genomic origin; . . .)

It follows that not all identities between particular objects are forced on us by the modal necessity of super-explanatoriness alone. Given that different particular objects can have the same origins or other super-explanatory features, something more than super-explanatory features is needed to determine object identities.

And this will then give us some a posteriori necessities that are not an upshot of super-explanatoriness alone.

The necessity here simply falls out of the identity, courtesy of the facts that metaphysically modal claims are de re and logic contains *a = a.*

So I plead guilty to false advertising at this point.

**12 Particular Object Essential Properties**

Still, nobody has ever been too puzzled about *these* a posteriori necessities. Sceptics like Mackie have always happily granted that particular object identities are metaphysically necessary. Their scepticism has always been directed specifically at further necessities, such as those of origin and constitution.

And to account for these we do need to appeal once more to super-explanatoriness.

As before, it’s not enough just to invoke the necessity of identity.

Correia and Skiles note that since my father is part of my “essence”,

*Being David Papineau = Having Owen Papineau as father and Being David Papineau*

and then they derive the necessity of my father to me from that.

But where do they get that equation from? Why is my father part of my essence and not my birthplace?

And once more the answer is that my parents and not my birthplace are super-explanatory of a rich suite of my properties.

By way of final confirmation of my analysis consider a thought experiment due to Christopher Belshaw. Imagine a world in which all zygotes are genetically the same. Once a couple have produced a zygote, they take it off to the government laboratory to be genetically customised according to the national population plan. In this world, we‘d still feel that no one could have come from a different processed zygote. But we wouldn’t have any difficulty with the idea that you could have had a different father (or mother). Because parents, as opposed to processed genomes, wouldn’t be super-explanatory, we’d cease to think of them as essential to people.