

Octopropositionalism

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Abstract This paper concerns the necessary/ contingent dichotomy, the *a priori* / empirical dichotomy and the analytic / synthetic dichotomy. These three dichotomies can be combined to produce a tri-dichotomy of eight modal categories. The question as to which of these categories house propositions and which don't is a pivotal battleground in the history of analytic philosophy, with key protagonists including Descartes, Hume, Kant, Kripke, Putnam and Kaplan. All parties to the debate have accepted that *some* categories are void. This paper argues, to the contrary, that all eight categories house propositions—a position I dub 'octopropositionalism'. Examples of propositions belonging to all eight categories are given.

Keywords Analytic · A Priori · Necessary · Hume · Kant · Kripke

1. Introduction

In this paper I defend what I frankly admit may appear, on first inspection, to be a preposterous position. I say it may appear 'preposterous' advisedly, because every philosopher I have ever discussed it with has earnestly assured me *it is* preposterous—until, that is, the argument has been explained, whereupon much chin rubbing and head scratching ensues. The argument is, I hope the reader will agree, quite good.

The position concerns the three great modal dichotomies:

- *The metaphysical dichotomy.* A proposition is *necessary* iff it is impossible for it to be false. Otherwise it is *contingent*.
- *The epistemic dichotomy.* A proposition is *a priori* iff it can be known independently of experience. Otherwise it is *empirical* (or *a posteriori*).
- *The semantic dichotomy.* A proposition is *analytic* iff it is true in virtue of meaning alone. Otherwise it is *synthetic*.

These three dichotomies can be combined to produce the tri-dichotomy of Figure 1:

	<i>necessary</i>	<i>contingent</i>	
NAS2			CAS6
	NAA1	CAA5	<i>a priori</i>
	NEA3	CEA7	<i>empirical</i>
NES4			CES8
	<i>analytic</i>		
	<i>synthetic</i>		

Figure 1.

Figure 1 depicts eight modal categories:

NAA1: Necessary, A priori and Alytic
 NAS2: Necessary, A priori and Synthetic
 NEA3: Necessary, Empirical and Alytic
 NES4: Necessary, Empirical and Synthetic
 CAA5: Contingent, A priori and Alytic
 CAS6: Contingent, A priori and Synthetic
 CEA7: Contingent, Empirical and Alytic
 CES8: Contingent, Empirical and Synthetic

To help the reader keep track of what is going on, the name of each modal category consists of *both* an acronym *and* a number.

A modal category ‘has members’ if propositions belonging in that category exist. It is ‘empty’ if there are no propositions of that type. For example, NAA1 has members iff there is at least one proposition that is necessary, *a priori* and analytic. On the (plausible) assumption that [1] is such a proposition, NAA1 does indeed have (at least one) member:¹

(1) All bachelors are unmarried.

The position I will defend is this:

Octopropositionalism: All eight modal categories have members. None is empty.

Why might octopropositionalism appear preposterous? Well, because it flies in the face of received opinion going right back to Hume. Hume famously held that there are just two types of propositions, *relations of ideas* and *matters of fact*. The former are (in my terminology) NAA1 propositions, being necessary, *a priori* and analytic. An example is [1]. The latter are CES8 propositions, being contingent, empirical and synthetic. An example is [2]:

(2) The sun will rise tomorrow.

The doctrine that only these two types of propositions exist is ‘Hume’s fork’.

Octopropositionalism lies at one extremity of a spectrum that has Hume’s fork at the other extremity. For Hume, the three modal dichotomies are co-extensive and collapse into a single dichotomy—that between relations of ideas and matters of fact. For the octopropositionalist, in contrast, the three modal dichotomies are maximally non-coextensive: they come apart *every which way*.

In arguing for his ‘fork’, Hume (an arch empiricist) was partly motivated by a wish to deny that Descartes (the rationalist) was correct in claiming that [3] is *a priori*:

(3) A thinking thing exists.

If Descartes *were* right about [3] being *a priori* then, since [3] is contingent and synthetic, it would be a CES6 proposition. This Hume takes to be impossible.

¹ Here [n] denotes the proposition expressed by statement (n), and [blah blah] denotes the proposition expressed by the statement ‘blah blah’. [Is this supposed to say blah blah???](#)

Kant argued, contra Hume, that a third category of propositions exist, which are necessary and *a priori* on the one hand, but synthetic on the other, therefore being of type NAS2. [4] is an example.

- (4) The world-as-it-appears consists of objects and events arranged in a spatiotemporal and causal manifold.

In more recent times, Kripke (1980) produced examples both of propositions that are necessary but empirical—e.g., [5]—and of propositions that are contingent but *a priori*—e.g., [6]. The former are members of either NEA3 or NES4, depending on whether they are classified as analytic or synthetic. The latter are members of either CAA5 or CAS6.

- (5) Water is H₂O.
- (6) Either ‘one meter’ fails to refer, or the length of the Standard Meter Bar at time *t*₀ equals one meter.²

Kaplan (1977, pp. 509 & 540) has also argued that [7] is *a priori*, contingent and analytic, making it a CAA5 proposition:

- (7) I am here now.

Pulling these ideas together, we obtain the following list of candidate members of the different modal categories:

- NAA1: Hume’s [1]
- NAS2: Kant’s [4]
- NEA3: ----- } Kripke’s [5] goes in one
- NES4: ----- } of these two places
- CAA5: Kaplan’s [7], ----- } Kripke’s [6] goes in one
- CAS6: Descartes’ [3], ----- } of these two places
- CEA7:
- CES8: Hume’s [2]

Thus, even when the ideas of all these philosophers are combined, the resulting picture comes nowhere close to vindicating octopropositionalism. In the first place, neither Descartes, Kant, Kripke, nor Kaplan provides us with a putative example of a CEA7 proposition. In the second place, if Kripke is right then [5] is a member *either* of NEA3 *or* of NES4, but it can’t be a member of both—which leaves one of these two sectors vacant. Third, it is not obvious that the ideas of Descartes, Kant, Kripke and Kaplan are compatible and that they can all be accepted conjointly—which might leave one or more of NAS2, CAA5 or CAS6 empty.

In summary, although Descartes, Kant, Kripke and Kaplan can each be seen as providing reasons to think that propositions are more modally diverse than Hume’s fork allows, their ideas are all compatible with the more modest Humean doctrine that

² I add a clause to cover reference-failure that Kripke doesn’t bother including. Evans’ (1982, p. 31) [Julius invented the zip] could serve just as well as Kripke’s [6].

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some modal categories are empty.³ It is this more modest doctrine, which has stood the test of time down the centuries, which is the target of the octopropositionalist. In order to target it successfully the octopropositionalist must show that *all* the slots in the above list can be filled, a task that could well appear impossibly difficult in view of philosophy's history.

Setting aside the apparent unlikelihood of octopropositionalism's *being* true, why, if it *were* true, would its truth *matter*? Its truth would be important for essentially the same reasons that Kripke's discoveries about propositions like [5] and [6] have been important. In demonstrating that empirical necessities and *a priori* contingencies are possible, Kripke showed that there is danger in the common practice of treating apriority as a reliable guide to necessity and *vice versa*. If octopropositionalism were correct then the same lesson would apply more generally: no modal attribute of a proposition would be a reliable guide to any other. This wouldn't debar us from appealing to heuristics *such as* 'if a proposition is synthetic then it is empirical' or 'if a proposition is necessary then it is analytic'. But it would mean that such heuristics would need *always* to be treated with caution, with a careful eye to known classes of counterexamples.

A closely related reason why the truth of octopropositionalism would matter is because of its bearing on what is surely *the* most central and important concept in analytic philosophy—namely, *entailment*. Three species of entailment can be distinguished, as follows.⁴ (Here the arrow represents the material conditional.)

ϕ metaphysically entails ψ iff $\phi \rightarrow \psi$ is necessary.

ϕ epistemically entails ψ iff $\phi \rightarrow \psi$ is *a priori*.

ϕ semantically entails ψ iff $\phi \rightarrow \psi$ is analytic.

Philosophers rarely distinguish these notions, instead treating them as interchangeable. But if octopropositionalism is true then we conflate them at our peril, for, since octopropositionalism implies that none of the modal attributes is a reliable guide to any other, it also implies that none of these three species of entailment is *a* reliable guide to any other. For instance, if $\phi \rightarrow \psi$ were empirical but analytic, then ϕ would semantically entail ψ without epistemically entailing it. Or if $\phi \rightarrow \psi$ were necessary but synthetic, then ϕ would metaphysically entail ψ without semantically entailing it.

§2 explains the strategy I use to argue for octopropositionalism—a strategy which involves showing that NAS2, NEA3, and CAA5 propositions exist, and then using these propositions as 'raw ingredients' for logically constructing members of the remaining sectors. §3 presents the case for thinking NAS2 propositions exist. §4 and §5 do likewise for NEA3 and CAA5 propositions. §6 summarizes how these three types of propositions can be combined to fill all eight modal categories. §7 dispenses with a possible objection concerning the proper framing of the analytic/synthetic distinction. §8 wraps things up.

2. Conjunction and Disjunction

³ Kant explicitly endorsed this doctrine in holding: (i) that empirical analytic propositions are impossible (*Critique of Pure Reason*, B11); and (ii) that the necessary / contingent and *a priori*/empirical distinctions are co-extensional (*ibid.*, B4).

⁴ I owe this point in part to (Pollock, 1970, p. 300).

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My argument for octopositionalism hinges on the following two all-important facts, which to the best of my knowledge have heretofore received no attention in the literature on modal dichotomies:⁵

1. Logical operations on a pair of propositions, p and q , can potentially yield a proposition that belongs in a different modal category than either p or q .
2. Remarkably enough, propositions belonging to *all eight* modal categories can be manufactured by performing logical operations on propositions drawn from *just three* modal categories.

I now show why 1 and 2 are true. The argument revolves around the following six ‘trumping rules’:

The conjunctive rules

- T1. In a conjunction, contingency trumps necessity, in the sense that if either p or q is contingent, then ‘ $p \wedge q$ ’ is contingent too.
- T2. In a conjunction, empiricalness trumps apriority, in the sense that if either p or q is empirical, then ‘ $p \wedge q$ ’ is empirical too.
- T3. In a conjunction, syntheticity trumps analyticity, in the sense that if either p or q is synthetic, then ‘ $p \wedge q$ ’ is synthetic too.

The disjunctive rules

- T4. In a disjunction, necessity trumps contingency, in the sense that if either p or q is necessary, then ‘ $p \vee q$ ’ is necessary too.
- T5. In a disjunction, apriority trumps empiricalness, in the sense that if either p or q is *a priori*, then ‘ $p \vee q$ ’ is *a priori* too.
- T6. In a disjunction, analyticity trumps syntheticity, in the sense that if either p or q is analytic, then ‘ $p \vee q$ ’ is analytic too.

For example, let p be any contingent proposition. Since it is possible for p to be false, it follows that it is possible for $p \wedge q$ to be false, irrespective of the identity of q (for $p \wedge q$ will be false if p is). Thus p ’s status as a contingent proposition will be inherited by $p \wedge q$. Thus $p \wedge q$ can be necessary only if both p and q are necessary. In short, contingency trumps necessity within conjunctions. This is what T1 tells us.

T2, T3, T4, T5 and T6 are easily confirmed using similar examples.

These trumping rules collectively imply that a conjunction or disjunction can potentially belong to a different modal category than either of its conjuncts or disjuncts. For example, suppose Kant were right about [4] being a NAS2 proposition, and that Kaplan were right about [7] being a CAA5 proposition. The conjunction of [4] and [7] is [8]:

- (8) The world-as-it-appears consists of objects and events arranged in a spatiotemporal and causal manifold, and I am here now.

[4]’s necessity will be trumped by [7]’s contingency, in accordance with T1—and so [8] will be contingent. Both [4] and [7] are *a priori*, so T2 won’t cause

⁵ For example, they are discussed neither by (G. Russell, 2008) nor by (Juhl & Looms, 2010).

apriority to be trumped by empiricalness in this case: i.e., [8] will be *a priori* like both its conjuncts. [7]'s analyticity will be trumped by [4]'s syntheticity, in accordance with T3—and so [8] will be synthetic. In short, [8] will be contingent, *a priori* and synthetic, making it a CAS6 proposition. The same considerations apply generally: when *any* NAS2 proposition is conjoined with *any* CAA5 proposition, the resulting conjunction will be a CAS6 proposition. This being so, whomever grants that both NAS2 propositions and CAA5 propositions exist must grant that CAS6 propositions can be manufactured too.

Table 1 shows, for any conjunction, $p \wedge q$, how the category it belongs to is determined by which categories p and q belong to. (The operative trumping rules are T1, T2 and T3).

\wedge	NAA1	NAS2	NEA3	NES4	CAA5	CAS6	CEA7	CES8
NAA1	NAA1	NAS2	NEA3	NES4	CAA5	CAS6	CEA7	CES8
NAS2		NAS2	NES4	NES4	CAS6	CAS6	CES8	CES8
NEA3			NEA3	NES4	CEA7	CES8	CEA7	CES8
NES4				NES4	CES8	CES8	CES8	CES8
CAA5					CAA5	CAS6	CEA7	CES8
CAS6						CAS6	CES8	CES8
CEA7							CEA7	CES8
CES8								CES8

Table 1.

Table 2 does the same for disjunctions (with the operative trumping rules being T4, T5 and T6):

\vee	NAA1	NAS2	NEA3	NES4	CAA5	CAS6	CEA7	CES8
NAA1	NAA1	NAA1	NAA1	NAA1	NAA1	NAA1	NAA1	NAA1
NAS2		NAS2	NAA1	NAS2	NAA1	NAS2	NAA1	NAS2
NEA3			NEA3	NEA3	NAA1	NAA1	NEA3	NEA3
NES4				NES4	NAA1	NAS2	NEA3	NES4
CAA5					CAA5	CAA5	CAA5	CAA5
CAS6						CAS6	CAA5	CAS6
CEA7							CEA7	CEA7
CES8								CES8

Table 2.

Tables 1 and 2 have been constructed by simply applying the relevant trumping rules to each pair of 'parent' propositions, in order to deduce the modal status of the 'child' proposition.

Most entries in these tables are (relatively) uninteresting for one or both of these reasons:

- (a) The 'child' proposition obtained by conjoining or disjoining p with q belongs to the same modal category as either p or q . (For instance conjoining a NAS2 proposition with a NES4 proposition merely yields another NES4 proposition, getting us nowhere.)
- (b) The 'child' proposition is a Humean NAA1 or CES8 proposition (of which bountiful uncontroversial examples already exist).

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Entries in Table 1, **which** are not ‘uninteresting’ for either of these reasons are indicated in bold. There are only three of them, and they say the following:

- Rule 1: **NAS2** \wedge NEA3=NES4
- Rule 2: **NAS2** \wedge CAA5=CAS6
- Rule 3: **NEA3** \wedge CAA5=CEA7

Table 1 also implies the following pair of rules (both of which turn out to be useful):

- Rule 4: **NAS2** \wedge NEA3 \wedge CAA5=CES8
- Rule 5: **NES4** \wedge CAS6=CES8

There are likewise three ‘interesting’ entries in Table 2, indicated in bold, which say:

- Rule 6: **NES4** \vee CAS6=NAS2
- Rule 7: **NES4** \vee CEA7=NEA3
- Rule 8: **CAS6** \vee CEA7=CAA5

Table 2 also tells us that:

- Rule 9: **NES4** \vee CAS6 \vee CEA7=NAA1
- Rule 10: **NAS2** \vee NEA3=NAA1

Putting all these rules together, we obtain two ‘recipes’ by which a ‘full house’ of all eight types of propositions can be constructed by conjoining and disjoining just three ‘raw ingredients’.

Recipe 1. Start with ‘raw ingredients’ consisting of: (i) any NAS2 proposition; (ii) any NEA3 proposition; and (iii) any CAA5 proposition. Then construct a ‘full house’ as follows:

- NAA1: **NAS2** \vee NEA3 (by Rule 10)
- NAS2: **-raw ingredient-**
- NEA3: **-raw ingredient-**
- NES4: **NAS2** \wedge NEA3 (by Rule 1)
- CAA5: **-raw ingredient-**
- CAS6: **NAS2** \wedge CAA5 (by Rule 2)
- CEA7: **NEA3** \wedge CAA5 (by Rule 3)
- CES8: **NAS2** \wedge NEA3 \wedge CAA5 (by Rule 4)

Recipe 2. Start with ‘raw ingredients’ consisting of: (i) any NES4 proposition; (ii) any CAS6 proposition; and (iii) any CEA7 proposition. Then construct a ‘full house’ as follows:

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NAA1:	NES4∨CAS6∨CEA7	(by Rule 9)
NAS2:	NES4∨CAS6	(by Rule 6)
NEA3:	NES4∨CEA7	(by Rule 7)
NES4:	-raw ingredient-	
CAA5:	CAS6∨CEA7	(by Rule 8)
CAS6:	-raw ingredient-	
CEA7:	-raw ingredient-	
CES8:	NES4∧CAS6	(by Rule 5) ⁶

Let conditions C1 and C2 be defined as follows:

C1: NAS2, NEA3, and CAA5 propositions exist.

C2: NES4, CAS6, and CEA7 propositions exist.

If C1 obtains, then all eight kinds of propositions can be constructed using Recipe 1, so octopropositionalism is true. Likewise if C2 obtains then all eight kinds of propositions can be constructed using Recipe 2, so octopropositionalism is true. Hence octopropositionalism can be defended *either* by showing that C1 obtains *or* by showing that C2 obtains. Whoever denies octopropositionalism must deny *both* that C1 obtains *and* that C2 obtains.

Notice the dramatic shift in burdens of proof that has just been achieved. It might have been thought that an octopropositionalist must argue independently for the existence of each of the eight different types of proposition. This would provide her opponent with as many as eight independent lines of possible resistance. But it has just been shown that in practice the octopropositionalist only needs to demonstrate that *three* types of propositions exist, for she can then use these three to construct the other five. Moreover she even has a choice as to which three raw ingredients to start with: NAS2, NEA3 and CAA5, if she uses Recipe 1, or NES4, CAS6 and CEA7, if she uses Recipe 2.

That's the good news for the octopropositionalist. The bad news is that one of these two ways of proceeding can be *almost* immediately discounted. In order to be able to use Recipe 2 it would first be necessary to show that condition C2 obtains, which would (in part) require demonstrating the existence of some CEA7 proposition. As noted in §1, however, plausible examples of CEA7 propositions are decidedly thin on the ground. For this reason Recipe 2 is unlikely to be viable. Recipe 1 (which uses Rule 3 to construct CEA7 propositions from NEA3 and CAA5 ingredients) will therefore be the focus from now on.

Recipe 1 involves manufacturing propositions that go in some modal categories by conjoining or disjoining propositions from other categories. It might be objected that this is a sneaky and underhand way of proving the octopropositionalist's case. This I deny.⁷ Conjoining and disjoining propositions, is, after all, a rather philosophically fundamental practice!

⁶ In practice *it is* not necessary to construct NAA1 and CES8 propositions using the methods contained in Recipes 1 and 2, since uncontroversial examples of such propositions are easily found (e.g., [1] and [2]). The rules that these recipes use to construct such propositions—namely, Rules 4, 5, 9 and 10—are therefore of much less real significance than the remaining rules—Rules 1, 2, 3, 6, 7 and 8.

⁷ I do not deny that it remains an interesting question which categories can be filled by methods *other* than conjunction and disjunction.

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To be able to use Recipe 1 it is first necessary to show that C1 is satisfied, which means demonstrating that its NAS2, NEA3, and CAA5 ‘raw ingredients’ exist. The following sections consider these three modal categories in turn.

3. The case for thinking NAS2 propositions exist

Kant reputedly showed long ago that NAS2 propositions (which are necessary, *a priori* and synthetic) exist. For Kant knowledge of such truths derives from awareness of *the limits of possible experience*, in contrast to analytic knowledge, which derives from the law of non-contradiction, and empirical knowledge, which derives from the *actual* contents of experience. ϕ will thus be a Kantian NAS2 proposition iff $\neg\phi$ isn’t flatly self-contradictory, but if every state of affairs that the rational mind can potentially imagine or experience conforms to certain strictures, imposed by the mind’s own structure, that ensure ϕ will be verified and $\neg\phi$ falsified.

Kant provided many putative examples of such propositions, including, for instance, [4]. Matters might simply be left there. But some of Kant’s examples have stood the test of time poorly (e.g., his claim that determinism is *a priori* and necessary), and his examples are generally controversial. (Kantians tend to be sympathetic to them, but many other philosophers are not.) [4] is, I believe, a plausible example of a NAS2 proposition, for while [4]’s denial is pretty clearly non-contradictory—making [4] synthetic—it also seems that we cannot but imagine and experience reality as having a causal (if not deterministic), and hence temporal, and hence spatiotemporal, structure—making [4] necessary and *a priori*. That said, the case for octopositionalism would still be greatly boosted if the existence of NAS2 propositions could be demonstrated without relying on [4] or any of Kant’s other examples. [4] is a useful ‘Exhibit B’, but the octopositionalist needs a compelling ‘Exhibit A’.

With this in mind, consider [9]:

(9) At least one of LNC (the law of non-contradiction) and LEM (the law of the excluded middle) is sound.

LNC says it a logical theorem that no proposition is *both* true *and* untrue. LEM says it is a logical theorem that every proposition is *either* true *or* untrue. Some logicians—paraconsistentists—reject LNC, while others—constructivists—reject LEM. However no logician rejects both laws, for a ‘logic’ conforming to neither law is so inferentially weak as to be no real logic at all.⁸

With this in mind, it is clear [9] is necessary, not contingent. If [9] were a contingent truth then it would be possible for it to be false, but this is not possible. After all, logic is our guide when we judge what is possible and impossible, and [9] makes an extraordinarily modest claim about logic itself—a claim so modest that no extant logic countenances [9]’s falsity.

Another way of seeing that [9] is necessary is by noticing that when one attempts to conceive of a state of affairs constituting a counterexample to [9], one finds one’s mind is unequipped to do what has been asked of it, for one’s imaginative capabilities have limits—limits described by logic, and, so in part, by [9]. (In Wittgenstein’s words, ‘The truth is, we could not even *say* of an “unlogical” world how it would look’ [Wittgenstein, 1922, §3.031]). In virtue of the mind having these

⁸ In the unlikely event of a coherent new logic being discovered that disclaimed both the LNC and LEM, we could simply water [9] down by adding to the disjunction some fundamental principle that is relied on by this new logic.

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imaginative limits, [9] is true at every world, the mind can coherently imagine—making it necessary.

Next, is [9] *a priori*, or empirical? It is obviously *a priori*, because deductive logic is a source of *a priori* knowledge if anything is, and all deductive logics assume [9]. [9]’s status as an *a priori* truth can be no less secure than that of the results of deductive logic: which is to say, as secure as could ever be.

Finally, is [9] analytic or synthetic? There is a very strong case to be made for thinking it is synthetic. If [9] were analytic then to deny [9] would be to contradict oneself. But to deny [9] is, in part, to deny the soundness of LNC itself and so set oneself beyond its authority. Those who deny [9] are beyond reason, but unlike some who assert both p and $\neg p$ while accepting LNC, they cannot be justly charged with contradicting themselves, or with making a logical mistake. They are allogical, not illogical. They are not doing logic *badly* because they are not doing logic *at all*.

If [9] were analytic then it would be susceptible to direct logical proof based solely on consideration of its meaning. But any purported ‘proof’ of [9] would be manifestly question-begging in a way that a derivation of an analytic truth is not. It would need to rely, in part, on LNC and LEM—the very laws of thought whose soundness is in question when a proof of [9] is being sought. The essential point here has been made many times down the ages—by Aristotle (*Metaphysics*, IV, 4), Leibniz (1973, p. 93), Lewis Carol (1895), Frege (1964, p. 15), and Russell (1912, p. 72) among others: viz., logic can’t lift itself by its own bootstraps; it can’t validate its own foundational principles except on pain of vicious circularity. All logical analysis presupposes certain foundational laws of thought, notably LNC and/or LEM, which are therefore not themselves susceptible of being logically proved. Propositions, like [9], that assert the soundness of these laws of thought are therefore ‘pre-analytic’. Their truth must be assumed before we can even begin to make sense of there being such things as ‘analytic truths’ in the first place. Thus they are synthetic.

But if [9] is not analytic—if it is invulnerable to being proved by logic—then how do we learn *a priori* that it is true? The answer is that we do so by engaging in precisely the kind of transcendental argumentation that, according to Kant, is required to uncover *a priori* synthetic truths. Specifically, we find that the rational mind can only coherently imagine, experience and conceive the world as conforming to such logical principles as the LNC and LEM, and from this we draw the conclusion that the world we cognize and experience (i.e., Kant’s ‘world as it appears’, or ‘phenomenal world’) must be such a world. In other words, the rational mind finds itself imprisoned in certain ways of thinking, imagining, and experiencing, with logic being, so to speak, the science that studies the bars of its prison. Any world that a rational mind coherently imagines or experiences must, *ipso facto*, be a world where the ways of thinking that logic describes hold good, which is to say, a world where [9] is true.

This idea—that the laws of thought are known via a transcendental deduction—was defended by Schopenhauer (although Schopenhauer does not explicitly go on to draw the obvious implication—viz., that the laws of thought are Kantian NAS2 propositions):

It is by means of a kind of reflection which I am inclined to call Reason’s self-examination, that we know that [the laws of thought, including the LNC and LEM] express the conditions of all thinking, and therefore have these conditions for their reason. For, by the fruitlessness of its endeavors to think in opposition to these laws, our Reason acknowledges them to be the conditions of all possible thinking: we then find out, that it is just as impossible to think in

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opposition to them, as it is to move the members of our body in a contrary direction to their joints. (1974, p. 128)

In sum, whoever denies that NAS2 propositions exist must deny that [9] is such a proposition, but this denial would be difficult to motivate. [9] fits the bill of a NAS2 proposition perfectly.

4. The case for thinking NEA3 propositions exist

Consider [5]:

(5) Water is H₂O.

Arguments due to Kripke (1980) and Putnam (1973) strongly suggest that [5] is a NEA3 proposition: i.e., that it is necessary and analytic on the one hand, but empirical on the other.

That [5] is empirical is obvious: ‘water’ is a name for the transparent liquid that fills the lakes, rivers and oceans on Earth. This substance might conceivably have turned out to be something other than H₂O when it was subjected to empirical, scientific analysis.

That [5] is necessary was shown by Kripke. ‘Water’ is a rigid designator: it refers to the same substance in every possible world where it refers to anything at all. ‘H₂O’ is likewise a rigid designator: it refers in every possible world to samples of a certain type of molecule, composed of one oxygen atom and two hydrogen atoms. Given both ‘water’ and ‘H₂O’ are rigid designators, and given that, as an empirical matter of fact, they *actually* refer to the same substance, it follows that they co-refer *necessarily*, i.e., in every possible world.

Whether [5] is analytic or synthetic is less straightforward. Kripke’s position is unclear. His ‘official’ statement on analyticity is as follows:

At any rate, let’s just make it a matter of stipulation that an analytic statement is, in some sense, true by virtue of its meanings and true in all possible worlds by virtue of its meaning. Then something which is analytically true will be both necessary and *a priori*. (That’s sort of stipulative.) (1980, p. 39)

Under this characterization of analyticity, analytic propositions must be both necessary and *a priori*, and so cannot be contingent or empirical. The possibility of NEA3, CAA5 and CEA7 propositions existing is thereby ruled out *tout court*. Hence [5]—as a necessary, empirical truth—must be classified as a NES4 proposition rather than as a NEA3 proposition; i.e., as being synthetic rather than analytic.

However Kripke is at pains to emphasize that this characterization of analyticity is merely stipulative (39 & 56n). He makes no attempt to argue for it or motivate it. Moreover, other of Kripke’s comments tell strongly in favor of classifying [5] as analytic. For instance he writes:

When I say that a designator is rigid, and designates the same thing in all possible worlds, I mean that, as used in *our* language, it stands for that thing, when *we* talk about counterfactual situations. I don’t mean, of course, that there mightn’t be counterfactual situations in which in the other possible worlds people actually spoke a different language. (1980, p. 77, his italics)

Here Kripke is implying that counterfactual people who, say, use the term ‘water’ to designate something other than H₂O, are to be regarded as speaking a *different language* than us. Under this way of conceiving matters, ‘Water is H₂O’

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cannot fail to express a truth when uttered *by those who speak our language*. [5] is therefore a *truth of language*, and so ‘analytic’ in one perfectly clear and reasonable sense of the term.

However the case for thinking that [5] is analytic emerges most clearly in the work, not of Kripke, but of Putnam. Putnam (1973) has us consider the case of Oscar, who inhabits Earth, and Toscar, who inhabits another planet, Twin Earth. Both use the term ‘water’ to rigidly designate the substance that is actually the dominant transparent liquid on their own home planet. In Oscar’s case this liquid is H₂O. In Toscar’s case it is a different chemical compound altogether, ‘XYZ’, which is, however, superficially indistinguishable from H₂O. Oscar and Toscar are molecule-for-molecule doppelgangers of each other, but Putnam argues that they nevertheless *mean* quite different things when they say ‘Water is H₂O’, for they *express different propositions*. The proposition Oscar expresses is a necessary truth, extensionally equivalent to [H₂O is H₂O]. The proposition Toscar expresses is instead a necessary falsehood, extensionally equivalent to [XYZ is H₂O]. Of course, since Oscar and Toscar are exactly alike internally, this difference in what they mean is not reflected by any underlying difference in their internal psychologies. For this reason, neither Oscar nor Toscar can use *a priori* reflection to ‘read off’ the meaning and truth-conditional import of the proposition expressed by saying ‘Water is H₂O’. Thus [5] is empirical, rather than *a priori*. But still, Putnam insists, when Oscar says ‘water’ he *means* H₂O, not XYZ.

For Putnam the moral of Twin Earth is that semantic externalism is true—i.e., that “meanings” just ain’t in the *head!*” (1973, p. 704, his italics). If this is right—if the word ‘water’, in our mouths, *means* H₂O despite the truth of the ‘water=H₂O’ identity being inaccessible to *a priori* reflection—then [5] is true in virtue of meaning alone, and so analytic despite being empirical. Putnam doesn’t put it this way himself, but it is a nigh on unavoidable, if little noticed, implication of semantic externalism.⁹

5. The case for thinking CAA5 propositions exist

As mentioned in §1, prospective examples of CAA5 propositions—i.e., propositions that are contingent, *a priori* and analytic—include both Kripke’s [6] and Kaplan’s [7]:

- (6) Either ‘one meter’ fails to refer, or the length of the Standard Meter Bar at time t_0 equals one meter.
- (7) I am here now.

There are, I believe, very strong grounds for classifying both [6] and [7] as CAA5 propositions, but I only need one example, so I will focus on [7]. The case for holding [7] to be a CAA5 proposition—as articulated by Kaplan (1977) and G. Russell (2008)—is straightforward. [7] is (surely) *a priori* because mere rational reflection suffices to establish that ‘I am here now’ is (actually) true, and no possible experience could disconfirm this claim. [7] is (surely) analytic because the meanings of the terms “I”, “am”, “here”, and “now” suffice by themselves to determine that [7] is (actually) true. Finally, [7] is (surely) contingent because although it is *actually* true

⁹ G. Russell (2008, pp. xi, 39–40, 67–68) notes the implication, and goes to considerable trouble to define the analytic/synthetic distinction in such a way as to avoid it. However, although she denies that Kripkean empirical necessities like [5] are analytic, she nonetheless grants that NEA3 propositions exist (p. 68), which is all I need.

that I am here now, *counterfactually* I might not have been. (It is possible I could have been somewhere else now, instead.)

6. Filling all eight modal categories

If what has been said above is right then all eight modal categories can be filled, using Recipe 1, as follows:

- NAA1: At least one of LNC and LEM is sound, or water is H₂O
NAS2: At least one of LNC and LEM is sound
NEA3: Water is H₂O
NES4: At least one of LNC and LEM is sound, and water is H₂O
CAA5: I am here now.
CAS6: At least one of LNC and LEM is sound and I am here now
CEA7: Water is H₂O and I am here now
CES8: At least one of LNC and LEM is sound, and water is H₂O, and I am here now.

Octopropositionalism is thereby vindicated.

7. Defining analyticity

A possible objection to the foregoing argument for octopropositionalism concerns a lack of clarity around the analytic/synthetic distinction. Perhaps—the objection goes—there is a way of framing the distinction under which [9] is a NAS2 proposition, *and* a way of framing it under which [5] is a NEA3 proposition, *and* a way of framing it under which [7] is a CAA5 proposition. But—the objection continues—it is not obvious that these ways of framing the distinction are *one and the same*. There might not be any *single* plausible way of characterizing the analytic/synthetic distinction that implies that [9] is synthetic and that both [5] and [7] are analytic.¹⁰

In tackling this objection I now examine the analytic/synthetic distinction in greater detail. Here is the traditional formulation:

AnSyn1: A proposition is ‘analytic’ iff it is true in virtue of meaning alone. Otherwise it is ‘synthetic’.

AnSyn1 is imprecisely worded. Three ambiguities that need resolving are these:

1. AnSyn1 mentions a proposition’s being ‘true’ in virtue of meaning alone. But is the truth-value in question the proposition’s truth-value in the *actual world*, or its truth-value at *all possible worlds*?¹¹ Depending on the answer, AnSyn1 unpacks into either AnSyn2 or AnSyn3:

AnSyn2: A proposition is ‘analytic’ iff it is *actually* true in virtue of meaning alone. Otherwise it is ‘synthetic’.

¹⁰ Does this issue also arise with respect to the other modal dichotomies? It appears not. It seems clear that under any remotely tenable way of drawing the necessary/contingent distinction, [9] and [5] will come out as necessary, while [7] will come out as contingent. It also appears that under any tenable way of drawing the *a priori*/empirical distinction, [9] and [7] will come out as *a priori*, while [5] will come out as empirical.

¹¹ G. Russell (2008, 41 & 52-57) notes the same ambiguity.

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AnSyn3: A proposition is ‘analytic’ iff it is *necessarily* true in virtue of meaning alone. Otherwise it is ‘synthetic’.

AnSyn3 forbids the existence of CAA5 and CEA7 propositions (i.e., propositions that are contingent but analytic), thereby immediately implying the octopropositionalism is false. It does this because it makes analyticity a subspecies of necessity. AnSyn2, in contrast, is compatible with certain contingent truths, such as [6] and [7], being analytic (for [6] and [7] are *actually* true—if not *necessarily* true—in virtue of meaning alone).

The octopropositionalist must therefore opt for AnSyn2 in preference to AnSyn3.

2. Kripke and Putnam’s examples may be taken as showing that there are two kinds of meaning associated with a proposition, these being: (i) a *narrow meaning* that is fully accessible to *a priori* reflection but which doesn’t always fully determine a proposition’s truth-value at a possible world; and (ii) a *wide meaning* that is sometimes inaccessible to *a priori* reflection, but which is fully truth-functional. AnSyn2 (like AnSyn1, from which it is descended) mentions the ‘meaning’ associated with a proposition, but without specifying which *kind* of meaning is relevant—narrow, or wide. It can be precisified (is this a word?) to yield either AnSyn4 or AnSyn5:

AnSyn4: A proposition is ‘analytic’ iff it is actually true in virtue of *narrow* meaning alone. Otherwise it is ‘synthetic’.

AnSyn5: A proposition is ‘analytic’ iff it is actually true in virtue of *wide* meaning alone. Otherwise it is ‘synthetic’.

According to AnSyn4, the kind of ‘meaning’ that feeds into analyticity is ‘narrow’ meaning, which *just is* the kind of meaning that is accessible to *a priori* reflection. This turns analyticity into a subspecies of apriority. AnSyn4 therefore forbids the existence of NEA3 and CEA7 propositions (i.e., propositions that are empirical but analytic), so implying the falsity of octopropositionalism. AnSyn5, on the other hand, being classified as analytic, is fully consistent with certain empirical propositions, like [5]; for although [5]’s narrow meaning doesn’t suffice to ensure that [5] is actually true, its wide meaning does.

The octopropositionalist must therefore opt for AnSyn5 in preference to AnSyn4.

3. AnSyn5 (like AnSyn1 and AnSyn2, from which it is descended) speaks of a proposition being true *in virtue of* meaning *alone*. How precisely are the italicized parts of this statement to be understood? On a rough first pass, the answer is that if a proposition is analytic then its truth can be *logically deduced* from premises that concern *only* the meaning of its constituent terms or concepts. But is *just any* logical deduction acceptable, even a circular and question-begging deduction devoid of genuine persuasive force, or must the deduction be *non-question-begging*? Depending on the answer, AnSyn5 unpacks into either AnSyn6 or AnSyn7:

AnSyn6: A proposition is ‘analytic’ iff the conclusion that it is actually true *can be deduced* from premises describing its wide meaning. Otherwise it is ‘synthetic’.

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AnSyn7: A proposition is ‘analytic’ iff the conclusion that it is actually true can be derived, via a non-question-begging deduction, from premises describing its wide meaning. Otherwise it is ‘synthetic’.

In §3 I maintained that [9] appears to be a clear-cut example of a NAS2 proposition:

(9) At least one of LNC and LEM is sound.

But *AnSyn6* implies, instead, that [9] is an analytic, NAA1 proposition. It implies this because (as discussed in §3) all extant logics have LNC and/or LEM included among their laws of inference. The soundness of LNC and/or LEM, and hence the truth of [9], is therefore trivially provable in any logic, by simply invoking LNC and/or LEM themselves—the very inference rules whose soundness is in question. Such a proof is, of course, worthless for persuasive purposes, since it presupposes that which is being proved, but *AnSyn6* doesn’t contain any prohibition against such question-begging proofs. *AnSyn7*, in contrast, does contain such a prohibition. For this reason [9] is classified as analytic under *AnSyn6*, but as synthetic under *AnSyn7*.

The octopropositionalist can therefore hold up [9] as an example of a NAS2 proposition only if she repudiates *AnSyn6* and endorses *AnSyn7* instead.

According to the objection to octopropositionalism presently under consideration there is no plausible way of framing the analytic/synthetic distinction under which all of Recipe 1’s raw ingredients (i.e., NAS2, NEA3 and CAA5 propositions) exist. For reasons just explained, *AnSyn7* is consistent with the conjoint existence of all these raw ingredients. So—so far, so good. However, the question still remains as to whether *AnSyn7* offers a *plausible* construal of the analytic/synthetic distinction. It is, after all, one thing to show that the distinction can be *gerrymandered* to give [the](#) octopropositionalist the result she needs, but quite another to show that this construal of the distinction is philosophically well-motivated and preferable to rival construals.

Four reasons to think that we should use the terms ‘analytic’ and ‘synthetic’ in the way *AnSyn7* prescribes are these:

1. *AnSyn7* is, at the very least, fully consistent with the traditional way of framing the analytic/synthetic distinction—namely, *AnSyn1*—for it amounts to a disambiguated version of *AnSyn1*.

2. *AnSyn7* improves significantly on rival ways of understanding the analytic/synthetic distinction—notably *AnSyn3* and *AnSyn4*—in the respect that it doesn’t make it a matter of definitional stipulation that the following doctrines, K1 and K2, are true:

K1: All analytic propositions are necessary. None is contingent.

K2: All analytic propositions are *a priori*. None is empirical.

AnSyn3, in contrast, builds the notion of necessity directly into the concept of analyticity, thereby trivially implying K1 is true. Likewise, *AnSyn4* builds the notion of apriority into the concept of analyticity, making K2 a trivial truth. Even Kant—who introduced the analytic/synthetic distinction into the philosophical lexicon—wouldn’t have been happy with this way of doing things. Kant vigorously defended

both K1 and K2, but for Kant these doctrines were much more than mere trivial ‘analytic’ consequences of how analyticity is defined. Rather, he took K1 and K2 to be substantive claims justified by the following pair of insights about the interrelationships between meaning, knowledge and possibility:

- (i) The meaning (and thus the full truth-conditional import) of a thought is accessible to *a priori* rational reflection. Hence analyticity entails apriority (for if a proposition is true in virtue of meaning, then *a priori* reflection is able to detect that this is so).
- (ii) A proposition can be knowable *a priori* only if no possible state of affairs in the world could contradict it. Hence apriority entails necessity.

Here (i) justifies K2, and (i) and (ii) together justify K1.

Both (i) and (ii) were accepted as self-evidently correct by philosophers for two centuries after the *Critique of Pure Reason*’s publication, until Putnam demolished (i) with his Twin Earth thought experiment and Kripke demolished (ii) with his arguments regarding rigid designation in *Naming and Necessity*. We might register these groundbreaking discoveries of Kripke’s and Putnam’s in either of two ways. First, we might say that K1 and K2 have turned out to be false—that analytic truths can be contingent and/or empirical despite what Kant thought. This is what the octopositionalist does. Second, we might ‘save’ K1 and K2 by moving the goalposts (as it were) and redefining analyticity along the lines of AnSyn3 and AnSyn4, so as to make it trivially true that no ‘analytic’ proposition can be contingent or empirical. To steal a line from Bertrand Russell (1919, 72), the latter approach ‘has many advantages; they are the same as the advantages of theft over honest toil’.

3. AnSyn7 enables Kaplan’s [7] to be classified as analytic—the intuitively correct classification (as discussed in §5). It enables Kripke’s [5] to be classified as analytic too, and in view of Putnam’s intuitively compelling Twin Earth argument for semantic externalism this again appears to be the correct result. (If one endorses Putnam’s claims that “meanings ain’t in the head”, and that ‘water’ means H₂O, then it is difficult to avoid the implication that ‘water is H₂O’ is true in virtue of meaning alone.) Finally, it enables [9] to be classified as synthetic. Given that [9] concerns the soundness of laws of thought presupposed by all logical analysis, there is an intuitively compelling case for thinking this classification is right (as discussed in §3). In short, AnSyn7 yields intuitively plausible verdicts regarding the semantic statuses of propositions.

4. AnSyn7 supports a useful modal taxonomy. Unlike such alternatives as AnSyn3 and AnSyn4, it doesn’t rule out by definitional fiat the possibility of certain modal categories of propositions existing. By opening up all eight categories for potential use it better enables dissimilar propositions to be pigeonholed appropriately. For example, compare Descartes’ [3] with Kaplan’s [7]:

- (3) A thinking thing exists
- (7) I am here now

These propositions are both contingent. If Descartes was right about [3] being *a priori*—and let’s assume for the sake of argument that he was—then [3] and [7] are also alike in both being *a priori*. Now suppose we were to accept AnSyn3. Since both [3] and [7] are contingent, and since AnSyn3 implies that a proposition can be

analytic only if it is necessary, it implies that both [3] and [7] are synthetic. Hence AnSyn3 obliges us to lump [3] and [7] together in the same modal category, CAS6. AnSyn7, in contrast, doesn't arbitrarily force our hand in this way. It enables [3] to be classified as a synthetic, CAS6 proposition, and [7] to be classified instead as an analytic, CAA5 proposition. It thereby permits us to respect and mark a major point of difference between [3] and [7]: namely, whereas mere analysis of meaning suffices to establish that [7] is true, the Cartesian *a priori* deduction that [3] is true has a synthetic, performative element (Hintikka, 1962).

To summarize: AnSyn7 is consistent with the traditional way of framing the analytic/synthetic distinction, and yields intuitively plausible verdicts regarding the semantic statuses of propositions. Moreover, because it doesn't impose brute definitional restrictions on which combinations of modal attributes can exist, it supports a more useful modal taxonomy than rival ways of framing the distinction (like AnSyn3 and AnSyn4), and jibes better with how Kant intended the distinction to be understood when he first set it up. These are powerful arguments in its favor.

8. Conclusion

Octopropositionalism flies in the face of received opinion. If one wishes to reject it—as I am sure many readers will—then one must either: (a) deny that [9] is a NAS2 proposition; or (b) deny that [6] is a NEA3 proposition; or (c) deny that either [6] or [7] is a CAA5 proposition. In order to make any of these denials one will almost certainly need to repudiate AnSyn7, which will involve explaining why some other, rival formulation of the analytic/synthetic distinction is preferable. Perhaps all this can be done, but it will be far from trivial. The case for thinking octopropositionalism is true is surprisingly robust. The temptation to dismiss it as preposterous should be resisted!

Acknowledgments

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