

Contingent Objects and the Barcan Formula

The Barcan Formula and its converse (Marcus 1946) can be taken as axioms for a quantified modal logic that straightforwardly combines first-order quantification and the modal logic S5.

$$\begin{array}{ll} \text{(BF)} & \Diamond \exists x Fx \rightarrow \exists x \Diamond Fx & \text{— or, equivalently —} & \forall x \Box Fx \rightarrow \Box \forall x Fx \\ \text{(CBF)} & \exists x \Diamond Fx \rightarrow \Diamond \exists x Fx & \text{— or, equivalently —} & \Box \forall x Fx \rightarrow \forall x \Box Fx \end{array}$$

Jointly, these formulas require that the domains of all possible worlds be identical: everything that could exist does exist, and everything exists necessarily. Since it seems clear that some objects are contingent, existing in some worlds but not others, quantified S5 with BF and CBF has never been popular as the correct logic for metaphysical modality. However, Bernard Linsky and Edward Zalta (1994, 1996) and more recently Timothy Williamson (1998, 2000) have defended BF and CBF. Linsky and Zalta in particular are motivated by the desire to simplify quantified modal logic. I shall argue that the cost of adopting this unorthodox ontology is higher than might first appear, quite possibly high enough to outweigh the benefits of a simpler logic.

The argument against BF standardly runs thus. Although Wittgenstein died childless, there could have existed an object (presumably a person) fathered by him. By BF, it would follow that there actually exists an object that could have been fathered by Wittgenstein. But no actual object was fathered by Wittgenstein, so if we accept the doctrine of the necessity of origin, no actual object could have been fathered by him. To preserve the necessity of origin, we must reject BF.

Linsky/Zalta and Williamson respond as follows. It's true that no actual *person* could have been fathered by Wittgenstein, but there is nevertheless an actual object that could have been fathered by Wittgenstein. It doesn't occupy space-time in this world; it is 'contingently non-concrete' (to use the terminology of Linsky and Zalta (1996), who reserve the term 'abstract' for those objects which are concrete nowhere, such as numbers).¹ This object is not a person. But in another world, it *is* concrete, and *is* a person fathered by Wittgenstein. All possible objects are actual objects, imported into this world solely to be bearers of modal properties: 'bare possibilia' (Williamson 1998). If there is an *F* in another world, there is an object in this world which is possibly *F*, even though it may not be much else in this world. Worlds at which it looks like I do not exist are in fact worlds at which I exist but am non-concrete.

The analogous move with respect to tense would be to claim that anything that ever exists always exists. Death is not an end to existence, but the process of becoming non-concrete. Birth is the making concrete of something that has existed since the beginning of time and will exist until the end of time.

I find this account highly counter-intuitive. What we usually think of as non-existence (non-actuality) has been relabelled as non-concreteness. The distinction between existence and non-existence has been rendered worthless, to be supplanted by a distinction whose adequacy is questionable on several fronts.

Suppose we wish to say

(1) George W. Bush exists in some worlds, but not in others.

The Linsky/Zalta translation is:

(1') George W. Bush exists in all worlds, but is concrete in some and not in others.

We could certainly adjust to this change in terminology; just remember to substitute ‘is concrete’ for ‘exists’ and ‘is non-concrete’ for ‘doesn’t exist’. Suppose we wish to say that George W. Bush is essentially human. The usual and revised paraphrases are respectively:

- (2) $\Box(\text{George W. Bush exists} \rightarrow \text{George W. Bush is human})$
 (2') $\Box(\text{George W. Bush is concrete} \rightarrow \text{George W. Bush is human})$

Now, suppose we wish to say that George W. Bush is essentially concrete. The obvious paraphrase would proceed analogously to (2'):

- (3') $\Box(\text{George W. Bush is concrete} \rightarrow \text{George W. Bush is concrete})$

Clearly, this will not suffice. Such a condition would be vacuously satisfied by any object, not just George W. Bush, and many objects are *not* essentially concrete. We cannot gloss this by finding some other synonym for ‘is concrete’ (such as ‘is located in space-time’, or Williamson’s ‘S-exists’) to use in place of the first occurrence of ‘concrete’ in (3').

Prima facie there are two ways that Linsky and Zalta might respond, neither attractive. The first would be to deny that George W. Bush is essentially concrete, on the grounds that he is non-concrete in some worlds. By this token, they would also have to deny that Bush is essentially human, on the grounds that he fails to be human (by failing to be concrete) in some worlds. Such a move would bankrupt any meaningful talk of essences, and is unlikely to be attractive to Linsky and Zalta. In order to avoid commitment to anti-essentialism, they could bite the bullet and concede that George W. Bush’s essence does not consist in being concrete, or human, or (minimally) rational, but in being *possibly* concrete, possibly human, possibly rational, and so on. In other words,

where we would normally say that George W. Bush is essentially F , Linsky and Zalta could say that he is essentially possibly F . However, this would not be a good two-way translation. We would no longer be able to express the distinction between objects that have F essentially and those that have F contingently; both of these come out as essentially possibly F . My ring is essentially circular, but the gold of which it is made is only contingently circular. If ‘essentially circular’ is analysed as ‘essentially possibly circular’, both the ring and the gold turn out to be essentially circular.

The second response open to Linsky and Zalta would be to make the metaphysical assumption that no object can straddle the concrete/abstract division: no object can be concrete in one world and abstract in another, although it can be concrete in some worlds and non-concrete in others. The essential concreteness of George W. Bush could then be preserved by redefining ‘essentially concrete’ to mean ‘possibly concrete’. (This strategy will give rise to a third possible response by Linsky/Zalta, to be discussed later.) Again, there would be an unwarranted formal disanalogy between this paraphrase and (2’).

It might be argued that such formal disanalogies are inescapable. Usually, ‘ x is essentially F ’ is paraphrased as ‘ $\Box(x \text{ exists} \rightarrow x \text{ is } F)$ ’. However, ‘ x exists essentially’ is usually² paraphrased as ‘ $\Box(x \text{ exists})$ ’, rather than as ‘ $\Box(x \text{ exists} \rightarrow x \text{ exists})$ ’, in order to avoid making everything a necessary existent. So shouldn’t Linsky and Zalta be entitled to two paraphrases as well? Where F stands for a property other than concreteness, the appropriate paraphrase for ‘ x is essentially F ’ is ‘ $\Box(x \text{ is concrete} \rightarrow x \text{ is } F)$ ’. For ‘ x is essentially concrete’, Linsky and Zalta have two options: to translate it as ‘ $\Box(x \text{ is concrete})$ ’ and deny that George W. Bush is essentially concrete, or to translate it as ‘ $\Diamond(x \text{ is concrete})$ ’³ and deny that objects can be concrete in some worlds and abstract in others.

Unfortunately, both of these options are more *ad hoc* than the standard translations. There is a plausible reason why ‘ x exists essentially’ should be treated differently from ‘ x is essentially human’: existence is not a genuine predicate, so the difference between ‘exists’ and ‘is human’ is a matter of logical form — or so it could be argued (although this is admittedly controversial). In contrast, it would be difficult to argue that ‘ x is essentially concrete’ should be treated differently from ‘ x is essentially human’ simply because of *logical* differences between concreteness and humanness.

This may all seem like a matter of housekeeping; but good housekeeping is a desideratum, and one which can be weighed against the desideratum of a simple quantified modal logic, which is what motivates Linsky and Zalta. The cost of the messier house (plus the assumption that no object can be abstract in some worlds and concrete in others) must be counted against their view, even as the simplicity of their logic counts for it.

There are further difficulties for Linsky and Zalta, though, beyond the untidiness described above. The real problem is with entities which we normally regard as both contingent and abstract. Some examples, all admittedly controversial, are: fictional characters; works of literary fiction; impure sets; properties; tropes; states of affairs. With respect to fictional characters, Amie L. Thomasson (1996, 1999) has argued that if Sir Arthur Conan Doyle’s medical practice had been more successful, the character of Sherlock Holmes would not have been created (would not have existed). If the character of Sherlock Holmes were a necessary existent, Conan Doyle could not have *created* it; it would simply have been discovered, in the way that a mathematical proof might be discovered.

Those reluctant to admit fictional characters as contingent abstract objects may feel more comfortable about admitting fictional works themselves into this category. (Although sequences of symbols are not contingent, fictional works are not mere sequences of symbols: they are ontologically dependent on contingent creators, hence themselves contingent.) There are people who could have had literary careers but forsook them for financial security. Many actual authors have died tragically young, prompting literary critics to mourn the loss of the books they would have written. There could have been more abstract objects than there actually are.

Consider a possible world in which the character of Sherlock Holmes (or, if you prefer, *A Study in Scarlet*) does not exist because Conan Doyle was too busy with his medical practice. On Linsky and Zalta's view, these abstract entities do exist at that possible world (since they exist everywhere). However, these abstract entities cannot be described as non-concrete, since that implies that they are concrete elsewhere. Are they, perhaps, 'contingently non-abstract', on a par with non-concrete objects which are concrete at other worlds? But surely they *are* abstract if they exist; they certainly are neither concrete nor non-concrete. Some new terminology will have to be thought up: 'contingently unrealized', perhaps. But when we consider what other sorts of contingent abstract entities there might be which such a term would not fit, we may start to regret the loss of that useful word, 'non-existent'.

Suppose we wished to say that *A Study in Scarlet* is essentially fictional. The standard paraphrase is (4), and the Linsky/Zalta paraphrase might be (4'):

- (4) $\Box(A \textit{ Study in Scarlet} \text{ exists} \rightarrow A \textit{ Study in Scarlet} \text{ is fictional})$
 (4') $\Box(A \textit{ Study in Scarlet} \text{ is realized (?)} \rightarrow A \textit{ Study in Scarlet} \text{ is fictional})$

The antecedents of (4') and (2') require two separate predicates, 'is concrete' and 'is realized' (or some such thing that can handle other contingent abstract objects), to do exactly the job that 'exists' used to do. One versatile word is preferable to two separate phrases, especially if one of the latter is of dubious applicability. For example, to say that *A Study in Scarlet* exists contingently but the number 17 exists essentially, we would have to say that *A Study in Scarlet* exists in all worlds but is unrealized in some, whereas the number 17 both exists and is realized in all worlds. Clearly 'realized' is inadequate, and I am not hopeful that a better surrogate is in the offing.

Furthermore, the trouble we encountered earlier with two translations for 'x is essentially F' will double when we take abstracta into account:

(i) 'x is essentially human' will be ' $\Box(x \text{ is concrete} \rightarrow x \text{ is human})$ ', but this formula must be restricted for use only with possibly concrete x .⁴ Since the number 17 is concrete in no worlds, it would come out as being essentially human. Thus a more accurate translation would be ' $\Diamond(x \text{ is concrete}) \wedge \Box(x \text{ is concrete} \rightarrow x \text{ is human})$ '.

This assumes that no object can straddle the concrete/abstract divide.

(ii) 'x is essentially concrete' will be either ' $\Box(x \text{ is concrete})$ ' and false for all x , or ' $\Diamond(x \text{ is concrete})$ ' and true for all x that are concrete in at least one world.

(iii) 'x is essentially fictional' will be ' $\Box(x \text{ is realized (?) } \rightarrow x \text{ is fictional})$ ', but again this formula must be restricted for use only with possibly abstract x . Otherwise, given that only abstracta can qualify as 'realized', George W. Bush will count as essentially fictional. Thus the translation must be amended to ' $\Diamond(x \text{ is abstract}) \wedge \Box(x \text{ is realized (?) } \rightarrow x \text{ is fictional})$ '.

(iv) 'x is essentially realized' will be ' $\Box(x \text{ is realized})$ '.⁵

This panoply of formats replaces the single format required for more standard ontology: ‘ x is essentially F ’ is usually translated as ‘ $\Box(x \text{ exists} \rightarrow x \text{ is } F)$ ’. Finally, what we would usually express as ‘ x exists essentially’ will be translated either as ‘ $\Box(x \text{ is concrete})$ ’ or as ‘ $\Box(x \text{ is realized})$ ’, on a case-by-case basis; or simply as ‘ $\Box(x \text{ is concrete}) \vee \Box(x \text{ is abstract})$ ’.⁶

Perhaps some will still balk at counting fictions as contingently existing abstract objects, in which case the above example will not be persuasive. However, the mushrooming of alternate paraphrases can be halted only if one can somehow show that all abstract objects are necessary existents.

In short, parsimony —for predicates, for translations, and for world-populations — dictates that we reject fixed domains across worlds.

Williamson has a further argument in favour of acceptance, however. Suppose that we have two knife blades, B_1 and B_2 , and two slotted handles, H_1 and H_2 . A knife is made simply by inserting a blade into a handle. We might ask, ‘How many knives could have been made from B_1 , B_2 , H_1 and H_2 (and no other parts)?’ In one sense, the answer is ‘two’, because in no single world could we have more than two knives made of these parts. But in another sense, the answer is ‘four’: B_1 inserted in H_1 , B_1 in H_2 , B_2 in H_1 , and B_2 in H_2 . There are four possible knives. This last is to be taken literally: there are, in this world, four possible knives. No more than two are actual knives; the others are merely possible knives, without any spatio-temporal location.

Are we in fact counting possible knives, though? Williamson notes, rightly, that we aren’t simply counting the (four) sets containing exactly one blade and one handle, because there would be more than four possible knives if there were more than one way

to fit a given blade into a given handle (and if these different ways would produce numerically distinct knives). But this objection gives us the solution we want. In both the revised and the original example, we are not counting actual possible knives; we are counting *ways* of fitting blades into handles.

There are two issues here: whether we are really counting possible objects, and whether the objects we are counting are actual. On the first issue, it must be admitted that neither possible objects nor ways are as ontologically respectable as one might wish. However, we do routinely quantify over ways ('there's more than one way to skin a cat'; Paul Simon's 'Fifty Ways to Leave Your Lover'), more naturally than we quantify over possible objects. In fact, most everyday contexts involving apparent talk of possible objects can easily be paraphrased in terms of ways. One might ask, 'How many possible routes are there from *A* to *B*?', meaning, 'How many ways are there to get from *A* to *B*?' An elementary exercise in combinatorics might read, 'There are twenty children in a local soccer club, of whom eleven can form a team. How many possible teams are there?' The question is asking for the number of different ways in which a team of eleven can be formed from the twenty children. It is not necessary to resort to an ontology of possible objects.

Even if there were a pressing reason to quantify over possible objects, that would not settle the question of their actuality. For example, on the counterpart-theoretic semantics offered by David Lewis (1968), possible objects can be quantified over, but no object exists in more than one possible world. Possible knives are thus not actual objects. Perhaps counterpart theory should be rejected on other grounds, but these grounds would have to be rehearsed if possible objects are to count as actual.

All in all, a simple ontology of contingent objects and ways is preferable to a simple quantified modal logic that validates BF and CBF.⁷

Notes

¹ Williamson uses the terms ‘S-existence’ and ‘L-existence’ for what he calls the *substantial* and *logical* senses of existence respectively (Williamson 2000: 130). A three-dimensional object S-exists iff it exists in time-space; all objects L-exist. Where Linsky and Zalta say that an object is contingently non-concrete, Williamson would say that it L-exists but does not S-exist. Some things that L-exist but do not S-exist would not fall into Linsky and Zalta’s ‘contingently non-concrete’ category; Williamson gives the example of events (because events do not *exist*, but *occur*).

² Not always, however. For example, Plantinga (1976) writes:

Among the properties essential to all objects is *existence*. [...] For clearly enough, every object has existence in each world in which it exists. That is not to say, however, that every object is a *necessary being*. A necessary being is one that exists in every possible world; and only some objects—numbers, properties, pure sets, propositions, states of affairs, God—have this distinction. (pp. 261-262 in Loux)

³ In quantified S5, this would be equivalent to ‘ $\Box \Diamond(x \text{ is concrete})$ ’.

⁴ Such a restriction could be used by Linsky/Zalta in the third of their possible replies to my first objection, which was that the putative definition of ‘*x* is essentially concrete’ as (*) ‘*x* is concrete \rightarrow *x* is concrete’ would be vacuously satisfied by all objects. We could restrict the paraphrase (*) for use only with possibly concrete objects. Again assuming that no object straddles the abstract/concrete divide, the possibly concrete objects to which (*) would apply would all vacuously satisfy (*). This makes all possibly concrete objects essentially concrete, as required.

This restriction resuscitates the paraphrase (*) and preserves the intuition that George W. Bush is essentially concrete, but at the expense of the uniform understanding of ‘essential property’ allowed by the traditional view.

⁵ This will be true for all and only what we would call necessary abstract objects, including the number 17 but excluding *A Study in Scarlet*. However, ‘*x* is essentially abstract’ will have two possible translations, depending on a policy decision about abstractness. Does *A Study in Scarlet* count as abstract even in those

worlds where it is unrealized? If it does, the translation should be ' $\Box(x \text{ is abstract})$ '. If not, the translation should be ' $\Box(x \text{ is realized} \rightarrow x \text{ is abstract})$ '.

⁶ Linsky and Zalta note the awkwardness of the traditional paraphrase of ' x is essentially F ' as ' x exists $\rightarrow x$ is F ', in cases where x is a necessary existent: the antecedent is redundant. (I am grateful to an anonymous referee for this observation.) Kit Fine (1994) notes this, as well as a whole host of other problems for the view that ' x is essentially F ' is equivalent to ' x is necessarily F (if x exists)'. He holds that the former entails the latter but the latter does not entail the former. An example: It is part of the essence of the singleton set {Socrates} that it contain Socrates, but it is not part of the essence of Socrates that he belong to the set {Socrates}. Thus, ' $\Box(\text{Socrates exists} \rightarrow \text{Socrates belongs to } \{\text{Socrates}\})$ ' does not entail ' $\text{Socrates essentially belongs to } \{\text{Socrates}\}$ '. This strikes me as right; the language of necessity and possibility is not fine-grained enough to pick out essences as opposed to mere necessary properties.

However, this weakness does not scuttle our objection to the multiplicity of paraphrases required by the Linsky/Zalta ontology. On the traditional view, the one-way entailment from ' x is essentially F ' to ' $\Box(x \text{ exists} \rightarrow x \text{ is } F)$ ' will hold, even if the converse does not. The Linsky/Zalta view requires abandoning both directions of such a uniform paraphrase.

⁷ I am much indebted to Gideon Rosen and an anonymous referee for many helpful comments on an earlier draft of this paper.

References

- Fine, K.: 1994, 'Essence and modality', *Philosophical Perspectives* 8(Logic and Language), 1-16.
- Lewis, D.: 1968, 'Counterpart theory and quantified modal logic', *Journal of Philosophy* 65, 113-126.
- Linsky, B. and E. Zalta: 1994, "In defense of the simplest quantified modal logic", in, *Philosophical Perspectives, vol. 8: Logic and Language*, Ridgeview, Atascadero, 431-58.
- Linsky, B. and E. Zalta: 1996, 'In defense of the contingently nonconcrete', *Philosophical Studies* 84, 283-94.

- Marcus, R. B.: 1946, 'A functional calculus of first order based on strict implication', *Journal of Symbolic Logic* 11, 1-16.
- Plantinga, A.: 1976, 'Actualism and possible worlds', *Theoria* 42, 139-60. Reprinted in Michael J. Loux (ed.), *The Possible and the Actual: Readings in the Metaphysics of Modality* (Cornell University Press, Ithaca, 1979), pp. 253-273.
- Thomasson, A. L.: 1996, 'Fiction, modality and dependent abstracta', *Philosophical Studies* 84, 295-320.
- Thomasson, A. L.: 1999, *Fiction and Metaphysics*, Cambridge University Press, Cambridge.
- Williamson, T.: 1998, 'Bare possibilia', *Erkenntnis* 48(2 and 3), 257-273.
- Williamson, T.: 2000, 'Existence and contingency', *Proceedings of the Aristotelian Society* 100(1), 117-39.