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COUNTERPART THEORY AND CHISHOLM'S MODAL PARADOX(ES)

Chisholm's [2] modal paradox, as presented here, arises from a compelling principle concerning artefacts:

> **The Moderate Toleration Principle (MTP)**
> Any (large) composite object (such as e.g. a ship) might have originally been composed of a *slightly different* set of parts (i.e. the same-but-for-one-or-two parts), but could not have been composed of a *very different* set of parts.

Suppose a ship α is composed of a set of *n* planks, P_0, in the actual world w*. Let '$P_k x$' mean '*x* is a ship that is qualitatively identical in design and composition to S as it is in w*, and comprises all but *k* of the planks S is made of in w*.

Since α is P_0 in w*, by MTP α is P_1 in some other world w_1; but, then, by MTP again, *that ship*, the one is w_1, which is α by hypothesis, is P_2 in yet another world w_2; and by MTP again, α is P_3 in a world w_3. And so on. Eventually, we reach the conclusion that α is P_n in some world w_n.

In short, the paradox is this: MTP apparently allows that the set of sentences:

$$\Gamma_1 = \{P_0\alpha, \neg\Diamond P_n\alpha, [\Box(P_k\alpha \rightarrow \Diamond P_{k+1}\alpha)] \text{ for each } k, 0 \leq k < n\}$$

is consistent, but Γ_1 is inconsistent on Kripke-semantics for S5 quantified modal logic (KML).

Kripke's solution: reject (MTP)

Of course, Kripke [4] takes the paradox as grounds for maintaining that the original composition of a (composite) object is *essential* to it: e.g. that α's original composition could not have been even slightly different.

But this response is liable to rule out far more than Kripke intends. For example, Kripkeans would surely want to allow that I might have been born a few seconds earlier than the time I was actually born, but perhaps not a thousand years before. On the face of it, our earlier reasoning can be applied here too to generate a KML-contradiction. Kripkeans are thereby led to maintaining that the time at which someone is born is an essential property of that individual.

In any case, I seek a solution that accommodates (MTP).

The Chandler/Salmon solution: reject S4 (allow for *contingent* possibilities)

Chandler [1] and Salmon [7] render Γ_1 consistent by rejecting the transitivity of the accessibility relation between worlds So, e.g. what is possible relative to world w_1 need not be possible relative to the actual world w*; thus, although α's being P_2 at world w_2 entails [$\Diamond\Diamond P_2\alpha$], it does not entail [$\Diamond P_2\alpha$].

Counterpart-theoretic solution 1: Denying transitivity of counterpart-hood (and S4).

As Chandler [1] notes, counterpart theory—let's take Lewis's theory (LCT) [5] as our example—can accommodate the consistency of Γ_1 by denying the transitivity of the counterpart relation: in w_2 it is a *counterpart of a counterpart* of α that is P_2; if transitivity is denied, it does not follow that α has a counterpart that is P_2. In LCT denying the transitivity of counterpart-hood is tantamount to denying the S4 axiom. (LCT replaces the accessibility relation between worlds deployed in Kripke-semantics with an accessibility relation between counterparts; but, as before, we get S5 if accessibility is an equivalence relation, S4 if transitivity is denied, etc.

Counterpart-theoretic solution 2: *Forbes's 'degrees of de re possibility'*

Forbes [3] cautions against solutions to Chisholm's paradox which focus on accessibility; since [$\Box(A \rightarrow \Diamond B)$] is equivalent in S5 to [$\Diamond A \rightarrow \Diamond B$], the paradox can be recast as involving premises of the form [$\Diamond P_k\alpha \rightarrow \Diamond P_{k+1}\alpha$)]. This recasting displays a parallel the Sorites paradox and, second, shows that the paradox does not pivot on the transitivity of the accessibility relation, since we do not have iterated operators here.

Forbes proposes a solution to both paradoxes that invokes *degrees of truth*. Briefly, in the case of our paradox, the idea is that for any counterparts of α, x and y which are P_k and P_{k+1}, respectively, the degree to which x is a counterpart of x, *deg*(Cxa), will be greater than *deg*(Cya); hence, the inference from [$\Diamond P_k\alpha$] and [$\Diamond P_k\alpha \rightarrow \Diamond P_{k+1}\alpha$] will be *invalid* for *any* k; as he puts it, each inference would be guilty of the fallacy of detatchment.

AIMS OF THE TALK

- I will argue that Forbes's still has to deny S4 to resolve Chisholm's paradox.
- I argue that neither of the above CT-theoretic solutions resolves another version of Chisholm's paradox which invokes the KML-inconsistent set:

$$\Gamma_2 = \{P_0\alpha, \neg\Diamond^n P_n\alpha, [\Box\forall x(\neg P_k x \vee \Diamond P_{k+1}x)] \text{ for each } k, 0 \leq k < n\}$$

- I recommend a counterpart-theoretic semantics where denying transitivity of the counterpart relation does not affect the S4 and S5 axioms (as in e.g. Ramachandran [6]).[1]

References

[1] Chandler, H. Plantinga and the Contingently Possible. *Analysis* 36, 1976, pp. 106-109.

[2] Chisholm, R. Identity Through Possible Worlds: Some Questions. *Noûs* 1, 1967, pp. 1-8.

[3] Forbes, G. Two Solutions to Chisholm's Paradox'. *Philosophical Studies* 46, 1984, pp. 171-87.

[4] Kripke, S. *Naming and Necessity*. Basil Blackwell. 1980.

[5] Lewis, D. Counterpart Theory in Quantified Modal Logic. *Journal of Philosophy* 65, 1968, pp. 113-26

[6] Ramachandran, M. Kripkean Counterpart Theory. *Polish Journal of Philosophy* 2, 2008, pp. 89-106.

[7] Salmon, N. *Reference and Essence*. Princeton University Press. 1981.

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