Logic for Liberals about Modality

Modal liberalism holds that everything is possible – with a few principled exceptions: roughly, those propositions that are ruled out by non-modal logic, broadly construed to include truths traditionally called `analytic', plus the uncontentious truth that what is necessary is true. We arrive at modal liberalism if we take seriously the view that there are no brute necessities. But modal liberalism does not in any way identify possibility with logical consistency. It claims that that there are no brute necessities, but not that there could not be – after all, nothing in non-modal logic rules out that there are brute necessities. Indeed, nothing in non-modal logic rules out that fatalism is true, the view that the necessary coincides with the true.

In this paper, I examine what modal logic a modal liberal can accept. A simple argument shows that the logic needs to provide the so-called "rule of disjunction" (or have the "disjunction property", in an alternative terminology): that if the disjunction of formulas `Lpi' is a theorem ($0 < i < n+1$), then at least one of pi is a theorem too (`L' is the necessity operator). Otherwise modal logic will dictate that ~pi, for some i, is impossible even though it is not ruled out by logic. The widely accepted logic S5 does not provide the rule of disjunction, and thus needs to be rejected by the modal liberal (for example, LMp v LM~p is a theorem even though neither Mp nor M~p is). Likewise, the logic KTB fails to satisfy the disjunction property. Logicians have shown that there is a wide range of logics that do provide the rule, though, including KT, S4, and S4 with the addition of the McKinsey axiom M. I will argue that among the normal modal logics, the modal liberal should only accept KT. However, she can adopt a non-normal logic that includes S4 and even M, provided she restricts the rule of necessitation in such a way that it does not apply to theorems derived with the help of these axioms.