

Claims and Consistency: Outlining a Rights-Based Deontic Logic **Samuel Monkman, Class of 2018**

Deontic logic is a branch of formal logic used to represent normative and specifically moral claims. It has roots in modal logic, which deals with necessity and possibility of propositional statements. Traditional models of deontic logic use two monadic operators to represent obligation and permission, analogous to necessity and possibility, respectively. Due to the wide variety of ethical theories available, however, this logic must often choose between vagueness and controversy. Consequentialist and deontological theories of ethics have different baseline assumptions, and argue for right action in different ways. As a result, it is difficult for any single formal system to adequately capture the reasoning involved in both prominent fields. Even within these families of theories, opinions differ considerably on what sorts of obligations, freedoms, and prohibitions exist and how they interact. With this project, I aimed to narrow the scope of deontic logic. I evaluated and adapted contemporary and foundational models of deontic logic to capture the particular features at work in rights-based ethical theories.

I examined three models for deontic logic. The first is a fairly standard system using a possible-world framework borrowed from modal logic. The second tries to capture agency by placing choices in a system of branching histories representing indeterminate time. The problem is that the operator for action does not include change, only an actor and a resultant state of affairs. The deontic component also makes use of value-comparisons based on utilitarian theory, which is ineffective for representing individuals' rights against particular actions. The final system I looked at, by Georg von Wright, was foundational to the field of deontic logic, as one of the first systems for representing normative statements. The deontic operators themselves are simply "obligatory" and "permissible", providing the precedent for similar logics based closely on modality. The theory of action in this third system was particularly useful, however, as it includes a method for representing change, as well as fitting nicely into the clever branching-time framework from the utilitarian logic.

In the end, I sketched the outline for a workable deontic logic incorporating pieces from the logics I examined. The logic of action and change came almost directly from von Wright's system. The semantics of time, which was required for change, was adapted from the utilitarian branching-time model by John Horty. The deontic operators required more careful attention, as the logics I examined were all inadequate for this. In order to reflect the unique relationship between rights-holders and agents, I proposed a triadic operator, where an individual *A* has a claim against another agent *B* that *C*, where *C* is an action-statement. Interpreting this statement requires a semantics for compliance and violation toward obligations, rather than ideal vs. non-ideal possible worlds. Due to the scope of the project, certain technical portions of the logic are left open for later development, but the core requirements are in place for a symbolic methodology for rights-based reasoning. Such a system could inform future philosophical work on the subject of rights. The logic also has applications in legal theory, since rights are a common theme in jurisprudence, and clear and effective reasoning is vital to both fields.

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