A Conditional Theory of Permission and Obligation

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Summary. We propose a novel, conditional semantics for deontic logic, and show how it improves on the standard semantics. Crucially, we argue that deontic modals are not only context dependent, but also *condition dependent*: the set of deontically accessible worlds depends on the statement whose deontic status we are evaluating, in the same way that the evaluation of a conditional depends on the conditional antecedent.

Background. According to the standard semantics for deontic logic, something is required just in case it holds in every deontically ideal world, and allowed just in case it holds in at least one (Hanson 1965, Lewis 1973:100, McNamara and Van De Putte 2022:§2.3).

We present a challenge to the standard semantics of deontic logic.[1] The challenge comes from *coordination cases*, discussed by Smith (1977:246), Jackson (1985:189), and Lassiter (2011, 2017:229–37). In our talk we present a number of coordination cases. Here is one such case: two trains are approaching an intersection in a dense forest at full speed. One is travelling north to south, the other east to west. Each train driver can either apply the brakes or continue through the intersection. If both continue, they will crash. The rules governing the train network in this context are given in Table 1.

Network configuration	**Deontic status**
A goes B goes	Forbidden
A goes B stops	Allowed
A stops B goes	Allowed
A stops B stops	Allowed

Table 1: The rules governing the train network.

Consider: Is train A allowed to continue going? Is train B?

Intuitively, that depends on what the other train does. Certainly it would be wrong—reckless, even—to tell both drivers that they are allowed to continue going.[2] (In the talk we present experimental results testing these judgements in four coordination cases.)

Let us analyse this case according to the the standard semantics of deontic logic. It is natural to take the possible worlds in this case to be of four types—the possible configurations of the train network above—and take the deontically ideal worlds to be those with an allowed configuration. Notice that in this scenario, there is an allowed configuration where train A goes through, and one where train B does. Thus on this implementation (to our mind, the most plausible one), the standard semantics predicts "train A is allowed to go through the intersection" and "train B is permitted to go through the intersection" to both be true, contrary to what we observe. This is a striking, but underappreciated challenge to the standard semantics.

Our proposal. The goal of our talk is to revive an older theory, initially proposed by Stig Kanger in the 1950s (Kanger 1957). The idea is that something is obligated just in case if it does not happen, necessarily, the relevant normative ideals have been violated,

[1] Our examples concern what is often called *strong* permission, in which something is explicitly permitted, rather than *weak* permission, in the sense of not being explicitly forbidden. For discussion of the distinction see, e.g. von Wright (1963), Royakkers (1997), and Hansson (2013).

[2] The same goes for other expressions, such as "train A may/is permitted to go through the intersection".

and something is permitted just in case if it does happen, possibly, the relevant normative ideals have been met. On this theory, conditional reasoning is central to the notions of obligation and permission, so we will call it a *conditional theory*.

In developing our conditional theory, we take inspiration from Korean and Japanese, in which permission and obligation are most commonly expressed using conditionals (Akatsuka 1992, Wymann 1996, Nauze 2008, Knoob 2008, Narrog 2009), using what Kaufmann (2017a) calls 'conditional evaluative constructions'. This is illustrated in (1) and (2).

(1) *Permission:* JAPANESE (Akatsuka 1992: ex. 3 and 5)
Tabe-temo ii.
eat even if good
lit. "It is good even if you eat." = "You may eat."

(2) *Obligation:*
Tabenakere-ba ikenai/ dame da.
eat Neg if can go Neg no good is
lit. "It is not good if you don't eat" = "You must eat."

Even before giving the formal details, we can appreciate how such a conditional analysis gives the correct results for the train case above. Intuitively, what each train does is independent of what the other does. On the conditional analysis, therefore, when we evaluate whether train A is allowed to go, we hold fixed what the other train does. For instance, train B might go and it might not. If it goes, and train A also goes, things will not be good. Since we do not know whether train B will go, the conditional analysis predicts that we do not know whether train A is allowed to go, and therefore cannot assert so (assuming we may only assert what we know). Similarly, we cannot assert that train B is allowed to go.

Crucially, on the conditional theory, when we evaluate the deontic status of a statement, the facts we hold fixed depend on that statement. For instance, when we evaluate whether train A is allowed to go, we hold fixed what train B does, since supposing that A goes leaves unchanged what B does. But when we evaluate whether train B is allowed to go, we do not hold fixed what train B does, since supposing that B goes may not leave unchanged what B does. In contrast, on the standard theory, the set of deontically ideal worlds is not sensitive to the statement whose deontic status we are evaluating, but only the broader conversational context. In other words, on the standard theory, deontic modals are context dependent but not condition dependent, while on the conditional theory, they are both context and condition dependent.

Formal details. Our theory has two components. First, an order over worlds $\leq$, representing betterness according to the relevant deontic ideals: $w \leq w'$ says that world w is at least as good as w' according to the relevant deontic ideals (as usual, we define $w < w'$ just in case $w \leq w'$ but not $w' \leq w$). We assume that $\leq$ satisfies the limit assumption (see Lewis 1973, Kaufmann 2017b): every nonempty set of worlds contains at least one deontically ideal world among the set: a world that is not worse than any world in the set.

Second, a conditional selection function, taking a world and a statement (and perhaps other parameters) and returning the worlds that result from supposing the statement true at that world. Where f is the selection function, A a statement and w a world, $f(A, w)$

is intuitively the set of worlds that result from supposing "if A, ...".[3] Quite naturally, we assume *success*: A is true at every world in $f(A, w)$. Our conditional analysis is given below.

A is obligated	just in case	no world in $f(\neg A, w)$ is good.
A is permitted	just in case	some world in $f(A, w)$ is good.

Which worlds are good? Following Kratzer (1981), we adopt a comparative analysis. The good worlds are the ideal worlds from among the relevant comparison class: the worlds no worse than any world in the class. For any set of worlds P, let $\textsc{best}(P)$ be the worlds in P that come closest to the relevant deontic ideals: $\textsc{best}_{\leq}(P) = \{w \in P : \neg\exists w' \in P, w' < w\}$.

What is the comparison class? We propose that when we evaluate whether something is permitted or obligated, we compare its presence with its absence: we compare the worlds that result from supposing "if it happens" with supposing "if it does not happen". That is, the comparison class is $f(A, w) \cup f(\neg A, w)$. This results in the following analysis.

A is obligated	just in case	no world in $f(\neg A, w)$ is in $\textsc{best}_{\leq}(f(A, w) \cup f(\neg A, w))$.
A is permitted	just in case	some world in $f(A, w)$ is in $\textsc{best}_{\leq}(f(A, w) \cup f(\neg A, w))$.

In other words, deontic reasoning is both *conditional* and *comparative*.

Given success, our analysis is equivalent to the following one, with a familiar form.

A is obligated	just in case	A is true at every world in $\textsc{best}_{\leq}(f(A, w) \cup f(\neg A, w))$.
A is permitted	just in case	A is true at some world in $\textsc{best}_{\leq}(f(A, w) \cup f(\neg A, w))$.

This is remarkably close to the standard semantics of deontic logic: the set of deontically accessible worlds is simply $\textsc{best}_{\leq}(f(A, w) \cup f(\neg A, w))$. There is, however, one crucial difference. On the standard semantics, the set of deontically accessible worlds is not relative to the statement whose deontic status is at issue, but only to the world of evaluation. In contrast, on our conditional theory, the set of accessible worlds is sensitive to both. Thus despite the above equivalence, our theory is not a special case of the standard theory, nor that of Kratzer (1981).

Comparison with Fine. We present a further advantage of our conditional theory. On some theories, something is permitted only if it is permitted for every way in which it might obtain (see e.g. Fine 2014:335). Against this, we present new evidence that permission statements are *coarse*: something can be permitted even though there impermissible ways for it to obtain.[4] For instance, suppose Angelica is allergic to a wide range of foods. She is not allowed to eat nuts, lactose, shellfish, or gluten. Intuitively, it is nonetheless true that she is allowed to eat food. Or suppose that Alice and Bob work together. They both know English and French. Their boss introduces a rule requiring all employees to speak French at work. Still, Alice and Bob continue to communicate in English. Does the new rule permit Alice and Bob to talk to each other at work? Intuitively, it does. (They can talk to each other in French.) But not every way for them to talk to each other at work is permitted—they cannot talk to each other at work in English. Unlike Fine's theory, the conditional theory accounts for these cases since, for A to be permitted, it merely requires that *some* world in $f(A, w)$ be good.

[3] For example, for Lewis (1973), $f(A, w)$ is the set of most similar worlds to w where A is true. On interventionist semantics of conditionals, $f(A, w)$ is the result of intervening at w to make A true (Galles and Pearl 1998, Halpern 2000, Hiddleston 2005, Schulz 2011, Briggs 2012, Santorio 2019, Kaufmann 2013).

[4] The term 'coarse' here comes from Cariani (2013:2), who argues for the analogous principle for *ought*.

Conclusion. The conditional theory is inspired by the expression of deontic modality in Japanese and Korean. It accounts for coordination cases, such as the train case, as well as improving on Kit Fine's analysis of permission. In doing so, it makes essential use of the idea that deontic modals are not only context dependent, but also condition dependent.

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