The Logic of Morality: 
Georg Henrik von Wright, Immanuel Kant, and the “Ought/Can” Inference

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The work of Georg Henrik von Wright advances logical theory by extending the application of logic to a variety of fields, most notably ethics. His “deontic logic,” or logic of duty, borrows greatly from the intuitions of the great moral philosopher, Immanuel Kant. Among the contributions von Wright receives from Kant is the conviction that “ought implies can”; that is, if I ought to perform some action, a, it follows that I can perform a. I argue that Wright’s semantics cannot support the “ought/can” inference even though he takes it to be tautological, critical to the further development of a deontic logic, and congruent with common moral intuitions. Kant is much less systematic than von Wright. However, I argue that it is possible to piece together a deontic logic from Kant’s works. Further, and more importantly, that logic of morality supports the “ought/can” inference where von Wright’s cannot.

Can a deontic logic capture the moral intuition that “ought implies can” – i.e., to say that one ought to perform some action a should imply that one can perform a? I believe that it can, though some deontic logics have as a consequence that the ought/can implication is not a valid inference. In this paper, I first consider the seminal work of Georg Henrik von Wright. Since the full scope of von Wright’s work is clearly beyond the more limited scope of this paper, I will focus my attention on the semantics that are intended to express the “ought implies can” implication. By counterexample, I will show that von Wright’s semantics fail to capture this moral intuition. That is, given his deontic semantics, the ought/can implication is not a valid one. I then turn to the foundation of modern deontological moral theory to argue that a semantics suggested by Immanuel Kant preserve the validity of the ought/can implication. This should not be taken to suggest that Kant outlined a formalized semantics, much less that he did so in the rigorous manner of von Wright. However, absent the strict formalization, there is a logic of morality that undergirds Kant’s deontological moral theory. As in the case of von Wright, I will focus on the ought/can implication and the question of preserving its validity.

Section 1. Von Wright’s semantics

1. Von Wright begins with a brief but important claim about the historical development of modal concepts. On his view, there are at least three (and perhaps four) discrete groups of modal concepts and attendant modal logics. He describes them this way, “There are alethic modes or modes of truth. … There are epistemic modes or modes of knowing. … There are deontic modes or modes of obligation. … As a fourth main group of modal categories one might add the existential modes or modes of existence.[1] The modal concepts, then, form a constellation of concepts that correspond exclusively to the particular logic. The alethic concepts are necessity, possibility, and contingency (that is, the necessarily true, the possibly true, and the contingently
true). The epistemic concepts are verified, undecided, and falsified. The deontic concepts are obligation, permissible, and forbidden. Finally, the existential concepts include universality, existence, and emptiness. With this differentiation in place, von Wright presents an “elementary formal logic of the deontic modalities.”[2]

2. Von Wright develops the semantics of his deontic logic with permissibility as primitive. This notion of permissibility he calls the “only undefined deontic category that we need.”[3]

“Forbidden” is then defined in terms of permissibility. That is, an act is forbidden if it is not permitted. Consider the act of theft. “Theft is not permitted, hence it is forbidden.” He elaborates by specifying a sort of working meaning for permissibility: “We are not allowed to steal, hence we must not steal.”[4] Given the example, I think it safe to assume that “permission” is related (and perhaps equivalent) to “allowed.”

Finally, “obligation” is defined in terms of “forbidden.” He claims that “if the negation of an act is forbidden, the act itself is called obligatory.”[5] Again, his example provides some illustration of his understanding of obligation: “it is forbidden to disobey the law, hence it is obligatory to obey the law. We ought to do that which we are not allowed not to do.”[6] Thus, the relationships between these three operators can be formalized as follows:

1. An act \(a\) is permitted if it is not forbidden.
\[
P(a) \iff \neg F(a) : F(a) \iff \neg P(a)
\]

2. An act \(a\) is obligatory if the agent is not permitted not to do \(a\).
\[
O(a) \iff \neg P\neg(a) \iff \neg F\neg(a)
\]

3. Moral indifference is ultimately defined in terms of permissibility as well. A morally indifferent act is one that an agent is both permitted to do and permitted not to do. To show the asymmetry between indifference and permission, von Wright claims that “what is obligatory is also permitted, but not indifferent.”[8] He rightly takes this as a demonstration that indifference is a narrower category than permission. The reader could assume further, on the basis of the claim that what is obligatory is permitted that von Wright accepts the ought/can inference as a valid one. This further assumption proves correct, for von Wright later explicitly states that being obligated to perform \(a\) “entails” being permitted to perform \(a\) and that “this entailment is a tautology.”[9] Thus, von Wright accepts the ought/can inference as valid. The question, then, is whether his semantics support such a claim.

**Section 2. The Difficulty**

1. The fact that von Wright accepts the validity of the ought/can inference does not settle the question of whether or not, on his view of the semantics of deontic logic, the ought/can inference is in fact valid. I think it is not. The difficulty lies in the vagueness of P. Consider the following situation: (Example 1)
Little Tommy is a fifth-grade student. In the middle of his grammar class, he raises his hand and asks, “Can I go to the bathroom?” To which his teacher, hoping to make a point, replies, “I don’t know. Can you?” Realizing his misstep, Tommy rephrases his question in the following way: “May I go to the bathroom?”

This example captures the “ordinary language” distinction between “can” and “permitted;” that is, between “able” and “allowed.” The force of that distinction can be made clearer with another example. Consider the following: (Example 2)

Billy and Mary are students in a high school philosophy class. They both feel the call of nature and ask “May I go to the restroom.” The substitute teacher accepts their individual requests and grants them permission. Mary gets up and leaves the room. Unbeknownst to the substitute, Billy suffered two broken legs in the conference championship football game over the weekend and requires a wheelchair to get from place to place. His friends had wheeled him to class and then taken the wheelchair to the shop to fix the alignment of the tires. He cannot get up and go to the restroom. In both cases, precisely the same permission was given. And yet, in the one case, Mary can perform the action and in the other, Billy cannot.

This example does not explicitly address the ought/can inference. However, it does point out a vagueness in P that should help clarify our intuitions when approaching the ought/can question. When we say that “ought implies can,” it seems that something more than “allowed” is meant. It seems that a much more robust sense of can, namely “ability” is involved. This is so for two reasons. The first is that Example 2 can be altered in such a way to involve a moral dilemma. Perhaps the issue is saving a child from drowning. It is a permissible action for both; but only physically possible for Mary. That is, only Mary is able to perform the action. Given that Billy cannot perform the action, it seems that it is not appropriate to ascribe moral obligation to him. Thus, the “can” of the “ought implies can” certainly seems to involve more than “allowed.”

The second reason this is so is that on the view that “can” is equivalent to “allowed,” an action may be impermissible and yet morally obligatory. The actions of Harriet Tubman and the Underground Railroad smuggling slaves from the antebellum South into freedom in the North is a good example. (Example 3) These actions were forbidden (in the sense of not allowed). Indeed, the actions were forbidden at every level of relevant authority, except one. It seems that Harriet Tubman could coherently speak of the moral obligatoriness of her actions. Here, if “can” involves nothing more than “allowed” and forbidden (defined in terms of permissibility) involves nothing more than “not allowed,” then the moral force of “ought implies can” is greatly weakened and the logical force is breached entirely. This seems inconsistent with both my own intuitions and von Wright’s stated objectives.

It is surely apparent by now that the force of these counterexamples depends entirely on the vagueness of the definition of P. If permissible only means “allowed,” then it is insufficient to capture the “ability” intuition of “can.” This insufficiency results in actions being permissible but not possible; that is, the agent is allowed to act but unable to do so. Thus, “ought implies can” fails because the antecedent may be true and the consequent false. At the same time, an act
may be forbidden, yet morally obligatory (e.g., Example 3).

2. This difficulty is highlighted by von Wright’s own insistence on the discreteness of the classes of modal logic and their respective concepts. In the course of von Wright’s description of his deontic semantics, he has an abiding concern with the resemblance of deontic logic to three other classes – alethic, epistemological, and existential. The concepts particular to each class are roughly analogous to one another. That is, obligation, permissible, and forbidden (deontic) are analogous to necessity, possibility, and impossibility (alethic) and so on for the other classes. On his view, the domains within which the concepts are meaningful are restricted to the class of logic being considered. This becomes clearer in light of his own example. He considers whether for any action \( a \), both it and its negation could be forbidden.[10] Thus, it would seem that “the falsehood of all the deontic units means that we are forbidden to act in any way whatsoever.”[11] In two of the classes (alethic, epistemological), this sort of phenomenon (some proposition and its negation being false together) is a logical impossibility. In the remaining class (existential), such a phenomenon is not so clearly logically impossible. Indeed, because the “Universe of Discourse may have no members” at all, it seems that having a proposition and its negation false together is in fact possible. On this view, this is to say that neither the property, \( p \), nor its negation is a member of the Universe of Discourse.[12]

The point of this example, for von Wright, is to shed light on the question, “Which of the three classes most resemble the deontic one?” As he has characterized the example to this point, the answer would seem to be the existential. To clarify further, von Wright recalls the relation between forbidden and obligation. “For \(~P(\neg a)\) [we can] write O(\( a \)).” Applying this to both the act, \( a \), and its negation we find “that an act itself is both obligatory and forbidden.” Appealing to ordinary language, then, von Wright claims that we must “reject the idea that all the units in a deontic realm could be false.” The resemblance then will be between deontic logic and its epistemological and alethic counterparts. From this, von Wright then advances the Principle of Permissibility (PP).

**PP:** Any act is either itself permitted or its negation is permitted.

To formalize the Principle of Permissibility we can write:

\[
PP: (P(a) \lor P(\neg a))
\]

But this is equivalent to \(~P(a) \lor P(\neg a)\), i.e., \(~P(\neg a) \lor P(a)\). And this is equivalent to O(\( a \)) \lor P(\( a \)). That is, “ought implies can.”

The example serves another purpose, one unintended by von Wright. It serves to highlight the vagueness of \( P \). Consider again the case of Harriet Tubman (Example 3). Here is an example of an act (smuggling slaves to freedom) which is both obligatory and forbidden. This is precisely the situation that von Wright wants to avoid, but with which he is left.

3. To summarize, von Wright’s semantics do not seem to capture the validity of the “ought/can” inference even though he takes the inference to be a tautology. This is so because of the limited scope of the \( P \) operator (which can cause the “ought/can” inference to fail) and the separateness
between constellations of modal concepts for which von Wright argues. A solution to this
dilemma should address both of these concerns.

Section 3. A Possible Solution (or “Remembering Kant”)

1. As the reader might expect, I suspect that there is an answer to each of the concerns, though
the resulting deontic logic will be quite different from von Wright’s. Immanuel Kant does not
provide us with a formalized logic of morality, though that he thinks a logic of morality exists is
universally accepted. In the following sections, I will approach the concerns that arise from von
Wright’s view and demonstrate how Kant’s position can handle each of them.

2. There are at least two ways to handle the concerns: (1) eliminate the firewalls between modal
concepts [allow for necessity, δ, and possibility, à, operators to modify P], and (2) introduce a
third operator, Can [“able”] to fix the meaning of P [“allowed”]. Kant takes a sort of third
position that is a mixture of (1) and (2). This may overdetermine things, but it does not suffer
from underdetermination in the same way von Wright’s system seems to.

3. For von Wright, permissibility is primitive. As he writes, it is the only “undefined deontic
category that we need.”[13] Kant, on the other hand, takes ought or obligation to be
primitive.[14] That the moral law (the oughts) is fundamental to Kant’s moral logic is clear
from his view of the concepts of good and evil. Without the moral law, good and evil are
without definition. He writes, “the concept of good and evil is not defined prior to the moral
law, to which, it would seem, the former would have to serve as foundation; rather the concept of
good and evil must be defined after and by means of the law.”[15] So, it is apparent that Kant
not only uses obligation as his primitive deontic notion, but that he also offers a further
definition of it from beyond the category of deontology. The alethic concept of necessity is
primitive to the concept of obligation.

Obligation, though primitive, does not go undefined for Kant. Obligation carries the
weight of necessity. As J. B. Schneewind points out, moral necessity for Kant is analogous to
the necessity of gravitational laws of Newtonian mechanics. He writes that the laws of morality,
on Kant’s view, have a “pure a priori status akin to that of the necessity categorizing Newton’s
gravitational laws.”[16] This is consistent with Kant’s general view of laws of nature and
experience. In the Prolegomena, Kant argues that experience itself requires a priori laws as
foundation for experience to be possible. He writes,

How is nature possible in the formal sense, as the totality of the rules under which all
appearances must come in order to be thought as connected to experiences? The answer must be
this: It is only possible by means of the constitution of our understanding, according to which we
think (namely, by rules) and hence experience also are possible. … There are many laws of
nature which we can know only by means of experience; but conformity to law is the connection
of appearances, that is, in nature in general, we cannot discover by any experience, because
experience itself requires laws which are a priori at the basis of its possibility.”[17]

This passage also serves to clarify Kant’s assertion that the moral law depends on the
will. Clearly, it is not a will wholly distinct from experience; rather it is prior to experience and
makes experience of the moral law possible. The Kantian ideal here is the will of a perfectly rational will. According to Schneewind, Kant understands *ought* to express the following relationship: “whatever a perfectly rational will necessarily *would* do is what we imperfectly rational agents *ought* to do.”[18] Indeed, this is the very standard that Kant establishes as the benchmark in the *Groundwork*: “A will whose maxims necessarily accord with the laws of autonomy is a holy, or absolutely good, will. The dependence of a will not absolutely good on the principle of autonomy (that is, moral necessitation) is *obligation*. … The objective necessity to act from obligation is called *duty*.”[19]

Thus, Kant is committed to the view that if an act *a* ought to be done it is because the perfectly rational will necessarily would do *a*. Indeed, as Schneewind points out, “true moral necessity … would make an act necessary regardless of what the agent wants.”[20] So, for Kant then, *ought* is connected directly to the alethic notion of necessity and that relationship can be formalized in the following way:

\[
(1) \ O(a) \ \& \ A(a)
\]

where *O* represents the *obligation* operator, and *A* represents the perfectly rational (or ideal) will.

4. The definition of the *ought* or *obligation* operator is still incomplete without a discussion of the Categorical Imperative. Since we do not possess the perfectly rational will, the notion is that one should “act only according to that maxim through which you can at the same time will that it should become universal law.”[21] This form of the Categorical Imperative is the one Kant takes to be primitive. Kant takes this to be a formal principle governing willing because in this formulation the Imperative is devoid of content, with one notable exception. The reference to the universal law seems to capture the notion of connection to necessity discussed earlier. Contradictions at this foundational level then will guide the agent away from the action that forms the content of her maxim because that content contradicts the moral law. Kant allows for no contradiction of duty to be considered right actions. He writes in discussing the concept of Duty, “I pass over here all actions which are obviously known to be contrary to duty, even though they may be useful for this or that purpose. For with them there is no question at all as to whether they might have happened from duty, since they go so far as to contradict it.”[22] With this connection to necessity in mind, it follows for Kant that for someone to will that a maxim become universal law is to be able to will that the maxim be necessary for the perfectly rational will. For this reason, Kant can advance the ought/can inference. The agent’s maxim, whatever it might be, provides the content to the Categorical Imperative. Kant writes,

An action from duty has its moral value *not in the purpose* which is to be achieved through it, but in the maxim according to which it is resolved upon. … For the will is as it were upon a crossroads between its principle *a priori*, which is formal, and its impulse *a posteriori*, which is material. And since it must be determined by something or other, it must be determined by the formal principle of willing in general, since every material principle has been removed from it.[23]
This is expressed again in Section 2 of the *Groundwork*:

The conception of an objective principle so far as this principle is necessitating for a will is called a command (of reason), and the formula of this command is called an *Imperative*.

All imperatives are expressed by ‘ought’ (*Sollen*). By this they mark the relation of an objective law of reason to a will which is not necessarily determined by this law in virtue of its subjective constitution (the relation of necessitation).[24]

Thus, to say that an action, \( a \), is obligatory is to say that the perfectly rational will would necessarily do \( a \). But, from what von Wright calls alethic modal logic we know that,

\[
(2) \delta A(a) \land \Rightarrow A(a)
\]

Because what is necessary is possible, so too that which is the maxim must be possible. That is, from (1) and (2) we have

\[
(3) OA(a) \land \Rightarrow A(a)
\]

5. One obvious implication of my view of the semantics that can be gleaned from Kant’s discussion of the logic of morality is a denial of von Wright’s thesis that the different classes of logic are functionally distinct. Von Wright does not seem to hold the overly strong view that the classes are distinct in principle. At least, what he says here does not commit him to that view. However, as demonstrated above, he does seem to hold that the different classes are functionally distinct, whatever resemblances they might contingently have.

As Schneewind has pointed out, for Kant it is “necessarily true that whatever acts the perfectly rational agent does are right acts; and whatever states of affairs such an agent deliberately brings about through those acts are good states of affairs.”[25] Thus, we discover what is good prior to discovering what is right; good and evil are defined in terms of the moral law. Here again is the use of necessary truth in regards to deontic concepts. Indeed, this Kantian sentiment can be formalized as follows:

\[
(4) \delta[A(a) \land \Rightarrow R(a)]
\]

where \( A \) is the perfectly rational agent, \( a \) is that agent’s actions, and \( R \) is right-ness. In other words, the rightness of an action necessarily depends on the perfectly rational agent’s action. The gist of this demonstration is to show that for Kant, the two classes (alethic and deontic) are not separate; they are, insofar as one discusses the moral law, inextricably linked.

6. I turn now to consider those actions that are not obligatory. For Kant, these fall into two groups, **permissible** and **forbidden**. I will treat these in reverse order.

Since *ought* is Kant’s deontic primitive (though it in turn is partially defined in reference to alethic necessity), then it should not be surprising that the **forbidden** operator, \( F \), is defined in terms of ought. An act is forbidden just in case one ought to do the negation of it. That is, if one
ought to do \( a \), then one is forbidden from doing \( \neg a \). Or, in formal terms,

\[
(5) \ O(\neg a) \circ F(a)
\]

**Forbidden** is then related to **permitted**, \( P \), in the following way:

\[
(6) \ F(a) \odot \neg P(a).
\]

Kant defines these in the *Groundwork* in this way: “An action which is compatible with the autonomy of the will is permitted; one which does not harmonize with it is forbidden.”[26]

Here, Kant’s most famous example from the *Groundwork* will prove enlightening. Suppose \( a \) is the act of lying. As any student in introduction to philosophy learns, Kant argued that lying is a forbidden act. For Kant, this is true regardless of the consequences or the “good” intentions of the lying agent. Thus, it is the case that one ought never to lie; \( O(\neg a) \). Since one ought never lie, it follows that one is forbidden from lying; \( F(a) \). Further, if an action, like lying, is necessarily forbidden then it follows, on Kant’s view, that the perfectly rational agent will not lie, but will tell the truth.

Because of the necessity involved in **ought**, it is never the case that the negation of an obligatory act will itself be obligatory. Here, von Wright’s demonstration of the resemblance between alethic and deontic logics is helpful. Given Kant’s view of the concepts, von Wright’s claim that we must “reject the idea that all the units in a deontic realm could be false” turns out to be true and his argument for the claim, sound. While this may seem of some comfort to von Wright, the soundness comes at the expense of his separability thesis.

7. The remaining concept for discussion is **permissibility**. I have shown that von Wright’s use of permissibility as analogous to possible results in unfortunate consequences for his view. However, von Wright’s view of *morally indifferent* acts is analogous to Kant’s conception of morally **permissible** acts. For von Wright, the morally indifferent act is one that an agent would be permitted to perform or not permitted to perform. For example, one is not morally compelled to wear a purple polka-dot shirt with blue, striped pants (though it seems some golfers may feel this is a compulsion). One could just as easily wear something much less garish. In this case, one is neither obligated to nor forbidden from wearing a particular outfit. Thus, we have the following logical formulation.

\[
(7) \ \left[ \neg O(a) \land \neg F(a) \right] \odot P(a).
\]

While von Wright calls actions that meet this criterion *morally indifferent*, it seems better to render them as “allowed,” which is to say, “permissible.”

**Section 4. The Implications of this View**

1. The possibility represented in sentence (3) is equivalent to “able.” This addresses the concern from Example 2. In that example, the question – “Why is it that Billy ‘cannot’ go to the restroom?” – indicates a difficulty in von Wright’s semantics. On von Wright’s view, either Billy is not permitted or Billy actually can go to the restroom. By hypothesis, the former is not
the case, because Billy is permitted. And further, Billy cannot go. Kant’s view, on the other hand, accounts for this difficulty. Billy cannot go to the restroom because he is not able to go, not because he is not allowed.

Kant’s view also captures the distinction between “may” and “can” in Example 1. There, little Tommy is shown the linguistic difference between the two words, which are often mistakenly used interchangeably. On my view, Kant’s logic of morality accounts for this common, albeit very important, distinction and preserves it in a way that von Wright’s does not. In short, I have shown that my view of Kant’s logic of morality preserves the “ought/can” inference while von Wright’s does not. My view of Kant’s logic is capable of this preservation because it depends on an interconnection of alethic and deontic logic, a connection that is inescapable in Kant’s writing and one that von Wright seems to at least ignore, if not reject. This dependence then allows for a robust notion of possibility that is defined in terms of obligation and captures intuitions about the distinction between “may” and “can”; that is, between “allowed” and “able.” At the same time, it makes room for von Wright’s notion of moral indifference, though I have used permissible to capture that notion. While von Wright wants the “ought/can” inference as part of his semantics and as a tautology at that, it is actually Kant who delivers.

**Biographical Sketch**

Dr. Kevin K. J. Durand began his work as Assistant Professor of Philosophy in the Fall of 2000. He served as an Adjunct Instructor during the academic year, 1999-2000, and during the Fall of 1995. He completed his Ph.D. at the University of Oklahoma in August, 2000. He previously completed a M.A. in Philosophy at the University of Oklahoma (1997), a M.Div. in Theology at Emory University (1993), and a B.S. in Mathematics at Henderson State University (1990). Currently, Kevin serves as the President-Elect of the Mid-South Philosophy Conference, President-Elect of the Arkansas Philosophical Association, Convener of the Process Circle, and as a member of the Henderson Honors Faculty. His current fields of investigation include the early dialogues of Plato and 19th century British ethical theory.

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[4] ibid., his emphasis.


[6] ibid., his emphasis.
Von Wright uses a rather unorthodox notation to express his concepts. He seems averse to using “(“ and “)””. This can cause some confusion. I have taken care to translate his notation into more standard form (essentially by use of “(“ and “)” where needed).

Von Wright, 305.

ibid., 314.

ibid., 309.

ibid.

This seems a highly controversial claim that von Wright advances without argument. However, as it is outside the scope of this paper, I will not address it further. I will only note that granting his claim is incidental to the point that I draw from the example, namely that on von Wright’s view, the relevant Universes of Discourse are determined by the class of logic. This, then, excludes necessity and possibility operators (alethic logic) from deontic formulations. It is this exclusion that exacerbates the vagueness of the permissibility operator. Together, these seem fatal to von Wright’s semantics.

von Wright, 305.

This is actually a somewhat more widespread approach than taking permissibility to be primitive, as Azisah al-Hibri points out in his Deontic Logic: A Comprehensive Appraisal and a New Proposal, University Press of America, Inc., Washington, D. C., 1978.


Immanuel Kant, Prolegomena to Any Future Metaphysics, Lewis White Beck, translator/editor, The Library of Liberal Arts, 1950, 65. One of the three “antinomies” with which Kant is famously concerned in the Prolegomena regards the tension between determinism and freedom. The “establishment” of freedom (by answering the antinomy) in the Prolegomena actually carves out a place for a negative concept of freedom. In the Groundwork, Kant turns to give something more than a merely negative conception. Nevertheless, in both works, Kant maintains the connection between the moral law, the perfectly rational will, and universal necessity.

Schneewind, 317.

Kant, Groundwork of the Metaphysics of Morals, H. J. Paton, translator/editor, Harper


[22] ibid., 65.

[23] ibid., 70. His emphasis.

