

ITERATED MODALITIES AND THE PARALLEL BETWEEN DEONTIC AND MODAL LOGICS*

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In what follows I seek to show that the parallel said to exist between deontic and modal logics cannot be successfully supported by the means at the disposal of deontic logicians. Though my thesis is negative, it is not without importance. For if it is correct, as I maintain, then the efficacy of deontic logic as a way of formalizing normative discourse must be construed as in need of reexamination.

The basic notions of deontic logic, as it is commonly conceived, are said to parallel those of modal logic in a restricted way. The restriction concerns the parallel between systems of deontic logic and the weakened (¹) modal system T (or M), and the non-extensivity of deontic notions to other modal systems whose defining characteristic is some specific concern with iterated modalities. Thus, e.g., the characteristic axiom of S4— $\langle Lp \rightarrow LLp \rangle$ —, which if converted into deontic terms becomes $\langle Op \rightarrow OOp \rangle$, is not admitted as a viable formula applicable to deontic concerns without a word of qualification.

G.H. Von Wright, who fully accepts the parallel between deontic and modal logics, has concerned himself with the possibility of expanding deontic logic from the restricted system T (or M) to systems involving iterated modalities. In *An Essay in Deontic Logic and the General Theory of Action* (Amsterdam, 1968) he has considered the needed qualifications which must be specified before such an expansion is warranted.

As Von Wright himself tells us (pp. 91ff), he was of the opinion at first that, e.g., $\langle OOp \rangle$ is a meaningless statement. His reason for this judgment was that he took the $\langle p \rangle$ of $\langle Op \rangle$ as standing for the name of an action. Consequently $\langle Op \rangle$ could not be a name of an action but rather of a normative statement, and hence $\langle OOp \rangle$ would not constitute a well-formed expression. Another reason for the judgment was that the casting of $\langle OOp \rangle$ into everyday language as $\langle \text{it ought to be} \rangle$

the case that it is permitted that it is the case that p » runs into linguistic difficulties since «an expression of this form is not often used and sounds unclear.»

Despite these difficulties Von Wright did not reject iterated modalities outright as inapplicable to deontic logic because he saw a need for them in treating of what he calls «higher order norms». He argues that « OPp » can be admitted as a viable deontic formula if it is read as «one ought to see to it that it is permitted to see to it that it is the case that p ». Here « p » is regarded as describing a state of affairs which results from the permitted mode of action and « Pp » is regarded as a result of an action (the act of issuing a norm). Thus « OPp » may be read, in an admixture which helps to make the point clearer, «one ought to see to it that Pp ». Von Wright emphasizes that « Pp » is not a state of affairs like « p » but rather is «a state of affairs *that a certain norm exists*, e.g. within a society.»

The issuance of a norm by a competent authority is a crucial aspect of Von Wright's account of iterated modalities. Action, e.g. legislative action, which results in a norm existing Von Wright calls «normative action». Coupled with this notion of normative activity is the notion of normative validity. He writes:

I shall say that a norm is *valid* (in a normative system S), if and only if, the normative act of giving this norm is permitted (in that system). A norm-authority, who gives a norm which is, as given by him, valid, will be said to have normative *competence* to give this norm.

Von Wright remarks that the notion of validity is relative to the notion of a system of norms. But he goes on to say that not all systems of norms contain norms regulating normative activity. Evidently such systems are systems without iterated modalities. Moreover he remarks that not all norms come about as a result of normative action. Presumably he has in mind what he calls a «basic norm»:

[T]he supreme norm validating the chain of subordinate

norms cannot itself be the result of a normative act. This basic norm (*Grundnorm*) which is required to legitimate the normative acts of the supreme norm-authority («sovereign») of the system must itself be a norm of different type from those norms which are «given». This is what adherents of a Natural Law theory of norms have, I think, always rightly insisted upon. But they have failed to convince us that this basic norm is anything more than a logical fiction.

Von Wright does not offer a solution to this difficulty. Thus, after all, it would appear that he himself is not entirely satisfied with his proposed interpretation of deontic iterated modalities. For while some initial difficulties have been dealt with with a degree of success, certain other problems arise in the elaboration of the outline of a system of deontic iterated modalities which offset the initial success of the enterprise, to the extent that the attempt at formulating a system of deontic iterated modalities *may* be nothing more than an exercise in logical futility.

Are we, then, to abandon the attempt to introduce iterated modalities into systems of deontic logic as without much justification and focus our attention entirely on systems without iterated modalities? I think that such a wholesale rejection of iterated modalities as inapplicable to deontic logic without analyzing the consequences of such a rejection would be a sorry move. Rather, the *rationale* behind the introduction of iterated modalities into deontic logic is crucial to a system of logic which purportedly has as its end the formalization of normative discourse.

In order to understand this claim properly, it is necessary to reevaluate certain fundamental presuppositions of deontic logicians, in particular of Von Wright. These presuppositions we have heretofore simply mentioned and not elaborated upon.

The first presupposition which I wish to discuss is a symptom of a much larger problem of limited perspective. It concerns firstly the «*p*» of «*Op*». This «*p*» is a «proposition-like» entity which represents «some arbitrary state of affairs, such as that

it is raining or that a certain window is shut» (pp. 13-14). This is a quite simple notion as is clear from Von Wright's examples. But what needs to be pointed out about «*p*» is that it *always* stands for some *particular* state of affairs in Von Wright's writings. Well, you might ask, what else is a variable supposed to stand for if not ultimately such a particular? And you would be right. But then why not introduce quantified variables in place of mere propositional variables in order to spell out this intended generality, as Hintikka has urged (*). We could then easily speak of all (or of some) intended states of affairs. If we wished to specify a given individual act, we could appeal to the use of propositional variables for purposes of simplicity (*). What I wish to emphasize, however, is Von Wright's failure to appeal to quantification in his *Essay*. Strictly speaking, he did not need quantification for his purposes in the *Essay*. But it is precisely his purposes that are at issue.

One particularly noteworthy instance of Von Wright's bent toward particularization is his proposed solution of the problem of so-called contrary-to-duty imperatives first brought to light by Chisholm. Von Wright's solution involves the introduction of the auxiliary symbol «/» to a basic monadic system of deontic logic. «/» is used for the pairing of expressions of the propositional calculus; so the result of its introduction is a dyadic system of deontic logic. For the interpretation of expressions using «/» Von Wright proposes: 'For the symbol «*P(p/q)*» we suggest the following reading: «it is permitted that *p*, given that *q*». Instead of «given that» we can also say «on condition that» or «relative to that» or «in the circumstances when» (p. 23). The function of the dyadic operator is stated clearly by Von Wright in the following passage:

Thus in order to express that, after a «fall», a certain thing as distinct from certain other things is obligatory, permitted or forbidden, we need the notion of a dyadic deontic operator. If we moved only within permitted lives, i.e., if we could always safely assume that the acting-situations themselves are permitted, then the use of the dyadic operator would really be superfluous. The main

function of the dyadic operator may therefore be said to be to *connect* normative orders beyond a point of a life-tree where a «fall» takes place with the normative order(s) which prevailed before the fall. (p. 76)

The dyadic operator is said to connect normative orders. What Von Wright has in mind here is presumably a system of higher order norms, precisely the issue for which he sees the desirability of admitting iterated modalities. Now a permitted life is a morally ideal life, one which, as Von Wright notes, would have no need for a dyadic operator for its representation. Such a life would be the life of a saint (and perhaps not even then if we believe Augustine's *Confessions*). Most lives would certainly need dyadic operators for their representation. And herein lies the problem. In an ideal life there would be no pressing need to look to the particular circumstances of a person's actions since, under *no matter what* circumstances you may choose, the saint will live the moral life. In a less than ideal life it is the particular circumstances which are of prime importance on Von Wright's account. For it is only by looking to the particular circumstances of a person's life that we can distinguish between whether he has lived an ideal life or not.

This emphasis upon particular circumstances presents a difficulty. Von Wright has no way of *generalizing* contrary-to-duty imperatives and so has no way of connecting individual lives with a system of normative orders. A fairly basic (less than ideal) normative system would include directives of a *prima facie* sort together with secondary directives (contrary-to-duty imperatives) in the event that the *prima facie* directives were either neglected or outwardly violated. And these directives would hold under *all* circumstances regardless of whether the *prima facie* directives were observed. But on Von Wright's account, the most we can do is look to a *given individual's* circumstances to determine what he is to do according to a system of norms. Such an appeal to circumstances to determine whether or not an individual is acting morally or immorally presupposes an ordered system of norms without

in any way accounting for the existence of that ordered system of norms.

Returning to the main argument concerning quantification, Von Wright's reluctance to introduce quantifiers into deontic contexts is even more understandable when we consider the «*Pp*» of «*OPp*». As we have seen, «*Pp*» is a state of affairs that a certain *norm* exists. It is the result of normative activity. Someone in authority issued the statement «it is permitted to see to it that *p*» and the statement is binding (valid) in view of the speakers authority. Now since the «*p*» of «*Pp*» stands for a particular state of affairs, the «*Pp*» must stand for a particular issuance of permission. Quantification over a particular issuance of permission would be pointless. Yet it is a fact that, in a representative democracy, a legislator is obligated at all times to propose and/or accept legislation permitting a man to speak his mind. So that, though a law be passed only once, it is reaffirmed by each legislator in each succeeding generation (*). Under these circumstances quantification is not only helpful but necessary (*).

But what does it mean for a legislator to reaffirm an issuance of permission on Von Wright's account? Assuming that a legislator is a competent authority in Von Wright's sense, then to reaffirm an issuance of permission will be a second issuance of permission, either vocally or tacitly. But a vocal reaffirmation is needless; and a tacit reaffirmation makes a legislator lax in his duties since, on Von Wright's account, he ought to *see to it that Pp*.

This brings us to a second presupposition regarding competent authority. At first sight it appears that Von Wright lapses into the mistake of supposing that, because a normative statement is issued by a person in authority, it is thereby binding. That this is not right can be seen from the following passage:

«*Pp* → *PPp*» says that if there is a permission, then the act of giving it was also permitted; and «*Op* → *POp*» says that if there is an obligation, it was permitted to impose it. But cannot a person give permissions, or im-

pose obligations, without being permitted to do so?
Does this not in fact happen very often? (p. 94).

But what distinguishes a competent authority from one who is not is not clear on Von Wright's account. Indeed his presentation of a norm-authority as one «who gives a norm which is, as given by him, valid, will be said to have normative *competence* to give this norm» is less than helpful. For a legislator whose duty it is to reaffirm an existing law will not qualify as normatively competent.

The second presupposition, then, is that there is always someone qualified to issue a normative statement. Note that Von Wright equates the supreme norm authority with a «sovereign». Yet our legislator reaffirms a law acting in accordance with a principle. To suggest that he is acting according to the dictates of a sovereign of some sort would not only be somewhat offensive to his integrity but also plainly false.

The emphasis upon a competent authority brings us to a third presupposition. Because Von Wright believes that all normative systems issue from competent authority, but also that the creation of a system involving iterated modalities is problematic, he is able to say that not all systems of norms contain norms regulating normative activity. That is, there are systems of norms which exist without iterated modalities and hence somehow exist without being issued by competent authority. This is obviously a confusion but one not without importance. Von Wright considers systems of deontic logic as arbitrary creations of a logician's mind, complete with axioms that are formulated against close scrutiny. And no doubt he is right that this is the way that deontic systems are constructed and articulated. But deontic logic is directed toward the end of formalizing normative discourse *as it actually exists*. Though the notion of competent authority has its difficulties, the notion of normative activity is very valuable in that it points to the desirability of introducing iterated modalities into systems of deontic logic in order to adequately express the scope and extent of systems of normative discourse (*). The moment we lose sight of this end, deontic logic

becomes a pointless activity — an interesting one in itself, to be sure, but one which is out of touch with its underlying purpose.

However, there is one insurmountable problem with iterated modalities. Take, for instance, the S4 theorem $\langle Lp \leftrightarrow LLp \rangle$. What this equivalence says is that, whenever you have $\langle LLp \rangle$, you can reduce it to $\langle Lp \rangle$. Now if we invoke the parallel between deontic and modal logics, $\langle Lp \leftrightarrow LLp \rangle$ becomes $\langle Op \leftrightarrow OOp \rangle$. In virtue of this equivalence, every instance of $\langle OOp \rangle$ is reducible to $\langle Op \rangle$ with the result that the iterated modality becomes redundant. Other such reductions are possible in virtue of theorems derived in S4 and even more are possible in other modal systems (though, of course, not *all* such theorems are reducible). This means that every system of deontic iterated modalities is reducible in large part to a system without iterated modalities. The fact that not all theorems are reducible in the way that $\langle Op \leftrightarrow OOp \rangle$ lends itself to reduction does not help the situation. For $\langle Op \leftrightarrow OOp \rangle$ and other reducible theorems are crucial for a working system of deontic logic.

The consequences should be obvious. If every system of deontic iterated modalities is reducible in large part to a system without iterated modalities, then in practice we need not concern ourselves with iterated modalities but rather concentrate on systems without iterated modalities. Further, if systems of deontic iterated modalities are needless in practice, then Von Wright's notion of normative activity evaporates with the systems meant to incorporate it.

In contrast to this last inference, we have argued for retaining the notion of normative activity in some form or other (not necessarily that of issuance by a competent authority). Put bluntly, *if* we are to retain the notion of normative activity, then the parallel between deontic and modal logics must be scrapped.

There are further reasons for repudiating the parallel. Let us suppose that we have a deontic system of iterated modalities parallel with S4. Then $\langle Op \leftrightarrow OOp \rangle$ would be a theorem of the system. Now let us suppose, in keeping with the spirit

of Von Wright's initial hopes for iterated modalities, that $\langle Op \rightarrow OOp \rangle$ expressed a logical relation between two orders of normative statements. That is, a first-order norm ($\langle Op \rangle$) strictly implies a second-order norm ($\langle OOp \rangle$). So far so good. But the other half of the equivalence $\langle OOp \rightarrow Op \rangle$ would not be what is wanted. For it says that a second-order norm ($\langle OOp \rangle$) strictly implies a first-order norm ($\langle Op \rangle$). Thus, on this proposal of $\langle \text{orderedness} \rangle$, the parallel between our deontic system and modal system S4 breaks down. For the fact that a second-order directive to the effect that Op ought to be does not imply that there is a first-order obligation to do p .

In sum, then, the problems are these. (1) We can retain iterated modalities in deontic logic only at the expense of ignoring the relation of strict logical equivalence, so long as we insist on the parallel between deontic and modal logics. (2) If we elect to ignore the spirit of what Von Wright's $\langle \text{normative activity} \rangle$ is intended to import, then we can avoid the problems incurred by introducing iterated modalities into deontic logic, and consequently uphold the parallel between deontic and modal logics. But we must then confine our activities to deontic systems which parallel modal system T (or M), or work with systems reducible in effect to T (or M). (3) If we elect to retain the spirit of what Von Wright's $\langle \text{normative activity} \rangle$ is intended to import, then we cannot restrict ourselves to a deontic system paralleling modal system T (or M), for these systems tell nothing about such normative activity. At the same time, we cannot avail ourselves of the possibilities presented by iterated modalities because of the reducibility of iterated modalities to non-iterated modalities and other unwanted consequences. Thus, if we wish to retain normative activity in some form or other, we find little resource in deontic logic — whether it be with, or without, iterated modalities — as this logic is formulated by deontic logicians, in particular by Von Wright.

I have argued for the desirability of retaining the notion of normative activity in some form or other. The content of this notion has been left deliberately vague because I wished to emphasize its general importance over against Von Wright's

particularism as expressed in the notion of a competent authority. But that it is a viable notion and an important one I think is brought out by two objections we have raised against Von Wright. The first is the necessity of accounting for a higher order system of norms in order to adequately account for contrary-to-duty imperatives. The second is the necessity of accounting for the possibility of reaffirmation of norms down through the generations, of accounting for the permanence of overriding principles. In view of these two objections, it seems that what we need expressed by the notion «normative activity» has been burdened by a misnomer. What needs to be expressed is not *activity* at all. Rather, what is needed is a notion of a *structure* underlying normative discourse not only as it is spoken by individual existing speakers but also as it is written and recorded in books on morality (e.g. religious texts and sources) and in codes of law. It is true that deontic logic as currently conceived attempts to provide a formalization of normative discourse, and in this sense it can be said to be concerned with structure. But we have seen that the structure it deals with is merely the structure of artificial systems and so barely scrapes the surface of the data at hand, namely, everyday normative discourse. The structure which underlies normative discourse is much broader than deontic logic *can* deal with. So it would seem that deontic logic should be rethought and perhaps radically revamped.

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NOTES

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(¹) Weakened in the sense that, e.g., one fundamental axiom of T « $Lp \rightarrow p$ », when translated into deontic terms as « $Op \rightarrow p$ », is not admitted as an intuitively obvious statement in deontic systems since, though an obligation may be fulfilled in fact, yet it need not *always* be fulfilled. Hereafter when we speak of T (or M), it is to be understood that it is the weakened T (or M) that is referred to.

(²) Jaakko Hintikka, «Some Main Problems of Deontic Logic,» in Risto Hilpinen (ed.), *Deontic Logic: Introductory and Systematic Readings*, Dordrecht-Holland, 1971, pp. 59-104.

(³) More appropriate would be the use of, e.g., small case letters *a, b, c*, ... as argument variables coupled with higher case letters *F, G, H*, ... as predicate variables. The small case letters stand for a finite set of objects over which we can quantify, and the higher case letters as classes of objects.

(⁴) Here it is assumed that the legislator is a good one and is so recognized by his constituency, so that he is allowed to continue in his capacity until death or retirement. The point remains unaffected if we view «legislator» as a public office which is vacated by one individual and assumed by another.

(⁵) The reader may wish to object that the introduction of quantifiers into modal contexts is a recent technical development and that Von Wright cannot have been expected to develop a deontic logic and a theory of quantified modal logic relevant to deontic logic in his *Essay*. However I believe the arguments put forth above show why Von Wright could *not* have incorporated quantifiers into his system of deontic logic without altering the fundamentals of the system.

(⁶) Indeed, one wonders how there can be systems of normative discourse on Von Wright's account if we fail to admit iterated modalities into deontic logic. For, as we have seen, the normative validity of a given norm is dependent upon its being permitted to be in a given system.