SOME REMARKS ABOUT TWO FAMOUS PARADOXES OF DEONTIC LOGIC (1)

A. SOETEMAN

Introduction

In his article 'Normenlogik anwendbar im Recht' (*Logique et Analyse*, 1970, p. 94 ff) Prof Ota Weinberger attempts to demonstrate the 'formale Eigenheit' of deontic propositions ('Normsätze') as compared to alethic propositions. One of the ways in which he attempts such demonstration consists in reference to paradoxes, which, he thinks, are proper to the following formulas, generally recognised to be deontic law:

(1) $Op \rightarrow O(p \vee q)$
(2) $O(p \& q) \leftrightarrow (Op \& Oq)$

I think Weinberger's argument as to the paradoxical nature of these two formulas is very clear. Therefore, his argument is a good startingpoint for some comments on these two much controverted paradoxes.

Weinberger's arguments

It cannot be denied that one who performs 'Op' performs 'O(p V q)' as well. Nonetheless, (1) is a paradox according to Weinberger. For what is the case when a valid norm 'Op' is not obeyed, as it certainly might not be ? Then 'Op' is valid (premise), '— p' is a fact (second premise), and-if (1) is a law of deontic logic-'O(p V q)' is also valid. The last-mentioned obligation can only be met by performing 'q', since 'p' is not the case (second premise). Ergo: when one does not obey some valid obligation, he is thereby obliged to perform any other action.

The following two theorems are contained by (2), viz:

(3) (Op & Oq) → O(p & q)
(4) O(p & q) → (Op & Oq)

Weinberger's attacks are not aimed at (3) but at (4). Let us suppose, he says, that in some system of norms, the following norms are valid:

(5) O(p & q)
(6) If — p then — q should be.

He is of opinion that (5) and (6) are not incompatible. (5) could f.e. be: «Halte den vorgeschriebenen Wasserstand im Dampfkessel und heize den Kessel», and (6) could be: «Wenn Du den vorgeschriebenen Wasserstand im Kessel nicht eindarfst Du den Kessel nicht heizen».

If, in the presupposed system of norms, 'p' is not performed, then 'O — q' is valid according to (6). But if (4) is a deontic law, then 'Oq' follows as well (from (5)). In a system of norms that is consistent, we find ourselves confronted by an inconsistency through the addition of a fact ('— p') and the application of a supposed deontic law (4). Consequently (4) cannot be a law of deontic logic. (Cf. O. Weinberger, *Rechtslogik*, p. 204).

Weinberger's alternative for (4)

According to Weinberger then, '(Op & Oq)' does not follow from 'O(p & q)'. 'O(p & q)' only entails: 'if p then q also' and 'if q then p also'. However, this suggested alternative leads to new difficulties. Weinberger started from the presupposition that p and q are materially independent with respect to each other and that each of the following combinations: 'p & q', '— p & q', 'p & — q', '— p & — q', can be realized. If 'O(p & q)' is valid, then, according to Weinberger's new thesis, the second and third combination are not permitted. But what is the deontic situation of the fourth combination ? It seems to me that there are only two possibilities: either the fourth combination *is* permitted, which case, because it confronts us with the serious difficulty that '— p & — q' would be compatible with the obligation 'O(p & q)', is to be rejected, or the fourth

combination is *not* permitted. In that case only 'p & q' is permitted. Inescapably, it means that both 'p' and 'q' must be done, so 'p' must be done and 'q' must be done. The conclusion must then be that 'Oq' does follow from 'O(p & q)'.

Are (5) and (6) then incompatible after all ? How must we solve this dilemma between the apparently not so readily refutable deontic law (4), and the, at first sight, appealing compatibility of (5) and (6) ?

Incompatibility between (5) and (6) ?

Incompatibility between two obligations or prohibitions exists, I think, where — at least in certain situations — obedience to the one norm necessarily precludes obedience to the other. Incompatibility between a prohibition (or obligation) and a permission exists when the prohibition (or obligation) precludes the enjoyment of the permission. Incompatibility between two permissions is not possible, it seems to me (cf. G.H. VON WRIGHT, *Norm and Action,* p. 143, 144). The question then is whether there are circumstances where obedience to (5) precludes obedience to (6) and vice versa ?

Before answering this question, it must be realised that (6) allows of twofold formulation, and, consequently, interpretation:

(6') $O(\neg p \rightarrow \neg q)$
(6'') $\neg p \rightarrow O \neg q$

Ad (6'). (6') is equivalent to $O((p \,\&\, q) \vee (p \,\&\, \neg q) \vee (\neg p \,\&\, \neg q))$. When we formulate (6') in this way it is plain that there is no incompatibility between (5) and (6'). When (5) is obeyed, (6') is obeyed also, whereas (6') can be obeyed by obeying (5). No situation is conceivable where obedience to (5) precludes obedience to (6') and vice versa.

I do not think that if follows from (6') and '— p' that the obligation 'O — q' is valid. (6') states that at least one of the following three acts: 'p & q', 'p & — q', '— p & — q', must be permormed. Should we be sure that no other norm respecting the acts 'p' and 'q' exists, then we could conclude that the

subject of the norm may choose from three possible acts. It is well possible, however, that other norms exist which shorten this range of choice-possibilities. The norm 'Op' is a case in point. This norm does not cease to be valid when it is disobeyed; '— p' does not affect the validity of 'Op'. Moreover, the norm 'Oq' may be valid simultaneously with the norm (6'). 'Oq' and (6') together entail 'O(p & q)', because 'p & q' is the only act in keeping with both norms. '— p', therefore, contravenes the system of norms in which 'Oq' and (6') are valid norms. 'O — q' cannot follow from '— p' and (6'), because both 'Op' and 'Oq' follow from the two compatible norms 'Oq' and (6'), which may possibly be valid, and because contravention of the system of norms can neither detract from the validity of any particular norm within that system, nor cause a norm to be which is incompatible with the system of norms. As has been noted, '— p' does not remove the obligation 'Op'. Despite '— p' then, 'O(p & q), remains valid.

We may conclude that when (6) is interpreted as (6') there is no trace of the paradox to which Weinberger refers.

Ad (6''). No doubt Weinberger thinks of (6''), not (6') in view of the norm 'if — p then — q must be met'. This is already evident from his very formulation of (6) (although the lingual expressions used to denote a norm are not as such determinative of the norm's structure), yet it is most plainly evident from the fact that he also makes mention of the formula '— p → O — q'. He prefers to avoid the use of this symbolic form, however «wegen der Fraglichkeit, ob es sinnvoll ist, Normsätze als Argumente von Wahrheitsfunktional Konnektoren zusetsen.» (p. 103). In this context I do not much care whether one accepts the symbolic formula (6'') or alternatively substitutes 'if...then...' for the implication-sign, provided that the structure of the whole is clear: subject to the condition that anything is (is not) the case, a certain obligation is valid. For the sake of convenience I shall continue to make use of the implication-sign.

Clearly the problem implicit in (6'') (at least in a norm of the structure which I am attempting to demonstrate by means of formula (6'')) is more difficult to solve than that implied by

the formula (6'). That 'O — q' may be concluded from (6'') and '— p' is indubitable. The question is, however, whether or not norms can have the structure of (6''). To put our query differently: is this interpretation of (6) a possible interpretation? In a general sense the question so posed must certainly be answered affirmatively. There are norms which make the obligation to perform certain actions dependent on the condition that some particular occurrence must (or must not) take place. From norms of this kind together with propositions stating the facts functioning as conditions for these norms, obligations can be concluded. Two examples (chosen at random) to illustrate the point in order are:

a — "You must stop" follows from "when the traffic-light shows red you must stop" coupled with "the traffic-light shows red".

b — "You must pay damages" follows from "when you have not delivered these goods before the 1st of January 1973, you must pay damages" coupled with "you have not delivered these goods before the 1st of January 1973". The question that rises next is whether a norm with the structure of (6'') is possible in each and every case, irrespective of any particular interpretation of 'p' and 'q'. More specifically, is the norm '— p → O — q' possible simultaneously with the norm 'O(p & q)'?

When the answer to this question should be affirmative, then (6'') would be incompatible with a norm 'Oq', since under certain circumstances, namely, when '— p', it is impossible for the norm-adressee to comply with (the implications of) both norms. We cannot solve this incompatibility by saying: "But '— p' is—in that system of norms—not allowed to be the case". For that may be so, but, nevertheless, '— p' is possibly the case. And then (6'') obligates us to perform '— q', while (6') only obligated us to perform '— p → — q'.

So, when the answer to the last question should be affirmative we would be confronted anew by the dilemma which we have already noted: either (5) and (6'') are mutually incompatible, or (4) is not a proper law of deontic logic. The choice facing us then, it seems to me, is like one between death by

drowning or death at the hands of the hangman. Neither option is particularly attractive.

The answer to the question we have put must, I think, be negative. But why then is the norm of the structure of (6'') sometimes impossible while it is possible at other times ? What is the criterium here ?

The solution to paradox (2)

Various legal systems contain a provision according to which in cases of conditional obligations the presence of the conditions may not depend exclusively on the debtor's will (cf. e.g. art. 1292 Ned.B.W.). Pothier has already taught that «la condition qui ferait dépendre l'obligation de la pure volonté de la personne qui s'engage» is not compatible with the proper character of obligations (Obl. no. 205), and rightly so. When my obligation is only valid if I should wish it to be so, then it is not really an obligation.

It seems that Weinberger's paradox can possibly be solved in an analogous manner ,viz. by stipulating that in cases of conditional obligations the power to determine effectuation of the conditions involved may not resort within the norm-addressee's power. Then, in (6''), 'p' would have the following field of interpretation: any for the norm-addressee objective event (fact), which is not within his power to effectuate when he should (subjectively) wish it. However, in (5) it must be within the power of the norm-addressee to effectuate 'p': an obligation to perform something is entirely meaningless if that 'something' is beyond the power of him to whom the obligation has been directed. It turns out then, that the fields of interpretation of 'p' in (5) and in (6'') are disjunct with respect to each other so that both norms cannot be valid within one system of norms at one and the same time: where (5) is valid, 'p' is within the power of the norm-addressee and not an objective event; and again, where (6'') is valid, there 'p' is beyond the power of the norm-addressee, and there it is an objective event.

However, there is another serious objection to be raised against the proposed solution of paradox (2). For it happens

repeatedly — certainty within the scope of law — that a certain act is obligatory while non-performance of that act at once makes another act obligatory. E.g.: "You must deliver these goods before the 1st of January next. If you do not do so you must pay damages". Application-forms issued by banks, offer us an other example: "The holder of the account is obligated to refrain from cashing, by means of cheque, any amount in excess of the positive balance on his account. When, nevertheless, he does so cash a cheque, he is obligated, at first notice of the bank, to deposit the amount necessary to erase a negative balance !"

Norms of this kind are not to be written as 'Op' and 'O(— p → q)', for, as we have noted above, then we should never be able to conclude to 'Oq' from '— p', while the second norm in both of the examples presented clearly states that disobedience of the first norm 'Op' (that is: the performance of '— p') signifies that the condition for the validity of the obligation entailed by the second norm has been met. In these examples we can deduce 'Oq' from disobedience of the first norm. So we cannot but denote the second norm as '— p → Oq'. However, whether or not '— p' is the case here depends on the exercise of the norm-addressee's power.

In other words: the solution which I have suggested is logically correct, certainly, but the resultant deontic system falters, because we cannot express norms in it which make an obligation dependent upon the normperformance of another obligation.

However another solution to paradox (2) can possibly be found by refining the solution suggested above and by making an alternation in our system of deontic logic. This new solution is also based on disjunction of the fields of interpretation proper to 'p' in (5) and in (6") respectively. I propose that in (5) 'p'-and generally: that in deontic formulas the variables within the scope of a deontic operator-should represent not a proposition but the circumscription of a certain act. E.g. "delivering goods prior to a certain date", "cashing a certain amount by means of a cheque under certain conditions", etc., etc. Undoubtedly we may often best describe such an act by

mention of the consequence which it effectuates, as is very often done in penal law, but this doesn't detract from the validity of the principle in any way: not the consequence as such is prohibited, nor are the circumstances that are outlined in the description prohibited, but — in my proposal — the act which takes place subject to these definite conditions, through which the intended consequence sets in. Circumstances and consequences then, in so far as they are part of the material norm-content of the description, serve to enable one to distinguish acts from one another, but they in no way replace the act.

When we focus our attention on 'p' in norms like (6''), where 'p' (or '— p') is conditional for the validity of a certain obligation, we see that 'p' cannot represent the description of an act. 'p' there represents a proposition, possibly one describing the occurrence of an act. In the ordinary language formulation this is not necessarily plain in every case; however, it is so that we must pay damages not if the act-description 'we not delivering the goods before the date agreed upon' has become true — an act-description never can be 'true' — but if the proposition asserting that we do not deliver before the said date has become true. Not if 'we cashing the amount on the cheque under certain conditions' are we obligated to deposit the amount lacking but if the act described in that phrase has occurred. The obligation 'Oq' does not find its validity to be in effect until non-performance of the norm 'Op' (which non-performance is conditional for the validity of 'Oq') has become a plain fact which can be stated in a proposition.

In (5) therefore, 'p' represents a class-description of an act, while in (6'') it represents a proposition describing a factual situation (which situation is possibly the occurrence of an act). The fields of interpretation of 'p' in (5) and (6'') respectively are disjunct with respect to each other so that both norms cannot be simultaneously valid within one and the same system: either 'p' is the description of some act, in which case (6'') can have no meaning, or 'p' is the description of a factual situation (perhaps the occurrence of an act), in which case (5) is meaningless.

When one accepts my proposal one has to express the difference between variables within the scope of a deontic operator and other variables by a difference in the symbols which are used respectively. It is possible, for instance, to write act-descriptions as 'p°', 'q°', ..., 'p' and 'q' being the propositions asserting that the acts concerned have occurred.

Weinberger's paradox (2) clearly vanishes when we do not consider the variables within the scope of a deontic operator to be descriptions of factual situations but act-descriptions instead. Whenever we meet up with a norm which is grammatically formulated like (6) we have to determine whether the condition lies within the scope of the deontic verb and, consequently, is part of the act-description concerned, or whether, instead, (being some proposition) it lies outside that scope, the norm in question having the structure of (6') or of (6'') respectively. It needs saying, that it is often anything but clear in the language of everyday (non-theoretical) experience in which case an act-description, and in which case, instead, a proposition concerning some act is intended. Weinberger's example, mentioned at the outset in this article, is a case in point. It seems to refer to an act-description, but the other interpretation is not excluded. We can add to this observation that in everyday (non-theoretical) experience it is not usually to make our distinction; but it is necessary for the deontological system.

My conception implies that there is a relevant difference in logical structure between the following norms :

(7) When you turn right, you must use your signal-light

(8) When it is dark you must turn on your lights

(Both norms are directed to car-driving individuals).

(7) is of the logical structure:

(7') $O(p^\circ \rightarrow q^\circ)$, while (8) is of the logical structure:

(8') $p \rightarrow Oq^\circ$.

We can illustrate the difference by pointing to the fact that even a categorical prohibition forbidding the use of signal-lights can never be incompatible with (7) as it stands. Such a prohibition would only imply that we may not turn right. But a categorical prohibition forbidding us to turn on the

lights is incompatible with (8) in case of darkness. (Note well: from this prohibition we may not conclude to a prohibition forbidding us to drive a car; the normative determination was limited to the logical universe of car-drivers). To say that it may not be dark, is to speak nonsense here.

'Oq°' can never follow from (7') coupled with 'p' or 'p°': (7') is consistent with the norm 'O — q_0'. But 'Oq°' does indeed follow from (8') coupled with 'p': (8') is not consistent with 'O — q°'.

The solution to paradox (1)

The solution to paradox (1) can no longer presents us with any difficulties. Even in the deontological system that is discussed by Weinberger — where the variables within the scope of a deontic operator are propositional variables — this paradox can easily be solved. For 'p ∨ q' written in the perfect disjunctive normal form is '(p & q) ∨ (p & — q) ∨ (— p & q)'. This is compatible with 'O — p' as well as with 'O — q' (but not with 'O(— p & — q)'). So it is not possible to deduce 'Oq' from 'O(p ∨ q)' and some fact (as, for instance, the fact '— p').

But also when one does not agree with this reasoning one has to admit that in the system of deontic logic as I propose it the paradox clearly vanishes. Weinberger accepts both that 'Op' is a valid norm and that '— p' is a fact. But in my system this cannot be. If 'Op' is a valid norm, then 'p' is a variable representing an act-description, in which description an action-idea is being expressed. Then 'p' cannot simultaneously be a proposition describing some factual situation. In my system, one has to write 'Op°' and 'p — p'; it is impossible that a norm 'Op' and a proposition '— p' should both be present in one system of norms (²).

Conclusion

The paradoxes which are discussed by Weinberger will admit of solution when the variables within the scope of a deontic operator are interpreted not as propositional variables

but as variables representing act-descriptions. The problems concerning the conditional norms cannot be solved in another way, as far as I see now. I think my proposal means a return the the system which was developped by G.H. von Wright in 1951 (3).

A. SOETEMAN

NOTES

(1) I am indebted to Mr. P. Brouwer for the translation of the original manuscript.

(2) It should be remembered that A. Ross, the father of the paradox here discussed, uses another argument as Weinberger does. He is of the opinion that 'O(p v q)' says that the norm-adressee may choose between p and q (or both). Cf. *Directives and norms*, p. 159 ff. In that interpretation 'O(p v q)' is of course incompatible with 'Op', this last norm taking away the freedom of choice. I cannot discuss this argument here; I will only remark that I don't see why 'O(p v q)' should entail such a freedom of choice. I agree that the freedom is present when there is no other norm concerning 'p' and 'q', but that does not preclude the possibility that this freedom is limited by such a norm.

(3) G. H. VON WRIGHT, Deontic Logic, *Mind* 1951, p. 1 ff. I think Weinberger makes a mistake when he suggests on p. 102 of his article that the paradox of Ross could be an argument against the 1951-system of von Wright. In that system it is impossible to deduce 'OB' from 'OAvB' and '-A', 'A' and 'B' being act-descriptions (here I use von Wright's symbols).

ERWIDERUNG AUF A. SOETEMANS KRITIK UND SEINE REFORMVERSUCHE DER DEONTISCHEN LOGIK

O. WEINBERGER

Meine Replik auf A. Soetemans «Some Remarks about Two Famous Paradoxes of Deontic Logic» ([1]) stellt sich zwei Aufgaben: 1. Ich möchte einige Bemerkungen zu seiner Kritik an meinem Aufsatz «Normenlogik anwendbar in Recht» ([2]) machen und 2. seine Reformvorschläge für den Aufbau einer deontischen Logik kritisch prüfen.

In dem von Soeteman untersuchten Teil meines Aufsatzes wollte ich an der Analyse zweier Folgerungsschemen, die in den meisten deontologischen Systemen gelten, zeigen, daß die diesen Systemen zugrunde liegende Semantik für die Normenlogik nicht adäquat ist, weil die Möglichkeit der Nicht-Erfüllung nicht berücksichtigt wird. ([3]) Die Begründung des normenlogischen Folgerns wird üblicherweise auf die Idee der deontisch perfekten Welten gestützt, die mit den als Prämissen gesetzten Normen verträglich sind. Wegen der Möglichkeit der Nicht-Erfüllung von Normen kann diese Idee meines Erachtens nicht als Begründung und Gültigkeitskriterium der normenlogischen Inferenz angesehen werden.

Es scheint mir, daß Soeteman diesen Kern meiner Analysen nicht erfaßt hat.

Soweit er versucht, eine Umgestaltung der von mir diskutierten geläufigen deontologischen Systeme durchzuführen, ist dies zwar nicht als Kritik meiner Darlegungen anzusehen, dennoch werde ich einige kritische Bemerkungen zu seinen Vorschlägen machen.

Um das Problem der undefinierten oder mangelhaft definierten Anwendung des '$\rightarrow$' mit normativen Argumenten zu vermeiden, diskutierte ich Folgerungsregeln, nicht Theoreme, doch ist das für unsere heutige Diskussion nur von geringer Relevanz. Ich vermeide es auch grundsätzlich, Normsätze als

Argumente von wahrheitsfunktionalen Konnektoren zu setzen, da dies begrifflich als unerlaubt erscheint.

Die Folge der das Ross'sche Paradox bildenden deontologischen Folgerungsregel (resp. des Theorems '$Op \rightarrow O(p \vee q)$') ist nicht bloß, daß jemand, der irgendeine seiner Pflichten nicht erfüllt, hierdurch verpflichtet wird, andere Handlungen zu vollbringen (dies könnte man gegebenenfalss als Sühnehandlungen verstehen), sondern er — und jeder andere — hätte die Pflicht, jede Handlung, inklusive alles Unmöglichen, zu vollbringen, denn für 'q' kann jeder richtig geformte erfüllungsfunktionale Ausdruck (z.B. auch '$r \,\&\, \sim r$' und die Pflicht eines beliebigen Subjekts) eingesetzt werden.

Aus Soetemans Text könnte man herauslesen, daß ich die Erlaubnis '$P(\sim p \,\&\, \sim q)$' mit dem Gebot '$O(p \,\&\, q)$' für kompatibel halte. Aus meinen Ausführungen ist jedoch klar ersichtlich, daß die Erlaubtheit von $(\sim p \,\&\, \sim q)$ mit dem Gebot '$O(p \,\&\, q)$' nicht verträglich ist.

Meine Überlegung fußt auf der wohl unbestreitbaren These, daß es möglich ist, daß ein komplexes Gebot des Inhalts $(p \,\&\, q)$ nicht erfüllt wird, z.B. dadurch, daß $\sim p$ eintritt. Für diesen Fall muß gefragt werden, ob dann trotzdem q (d.h. der andere Teil des komplexen Gebotes) geboten ist. Sind die Teile des komplexen Gebotes in jedem Fall als logische Folgen dieses Gebotes geboten, auch wenn ein anderer Teil des komplexen Gebotes nicht erfüllt wird?

Ich habe keinerlei Zweifel zugelassen, daß zur Erfüllung von '$O(p \,\&\, q)$' p getan werden muß und q getan werden muß. Weil es aber möglich ist, trotzdem p nicht zu tun, kann meiner Meinung nach der andere Teil des komplexen Gebotes, d.h. 'Oq', nicht als logische Folge von '$O(p \,\&\, q)$' angesehen werden, da q allein (ohne p) sogar verboten sein kann. Eine Teilhandlung (p) eines gebotenen Handlungskomplexes $(p \,\&\, q)$ — ohne den restlichen Teil (q) — kann sehr unerwünscht (schädlich) sein, daher unter der Bedingung der Nicht-Erfüllung der einen Teilhandlung $(\sim p)$ verboten sein.

Diesen Einwand gegen die Folgerungsregel 'Aus $O(p \,\&\, q)$ folgt Op; Oq' halte ich für per se überzeugend; die Argumentation, in der ich '$O(p \,\&\, q)$' mit der durch die Nicht-Erfüllung

des Teilgebots bedingte Norm 'Wenn nicht-p, dann soll nicht-q sein' in einem System zusammen bestehen lasse, und zeige, daß dann die Nicht-Erfüllung der Teilpflicht p, d.h. $\sim p$ einem Widerspruch führt, stellt ein zweites Gegenargument dar.

Auf die Kernfrage, was für einen Einfluß die Nicht-Erfüllung eines Teiles eines komplexen Gebotes auf das Gebotensein des Restinhaltes hat, geht Soeteman überhaupt nicht ein.

Ich habe nirgends behauptet, daß '$O(p \,\&\, q)$' und 'Wenn $\sim p$, dann soll $\sim q$ sein' unverträglich seien; im Gegenteil: meine Argumentation gegen die Folgerung 'Aus $O(p \,\&\, q)$ folgt Op (resp. Oq)' beruht auf der Verträglichkeit dieser beiden Sätze als Prämissen, denn gerade dann wird — wenn die strittige Folgerungsregel gilt — durch Nicht-Erfüllung der aus der Prämisse '$O(p \,\&\, q)$' gefolgerten Norm 'Op', d.h. durch Hinzutreten des Aussagesatzes '$\sim p$', das untersuchte Normensystem widerspruchsvoll, weil in ihm sowohl 'Oq' als auch '$O\sim q$' gilt.

Für unsere Auseinandersetzung ist es entscheidend, wie der hypothetische Normsatz «Wenn p, dann soll q sein» logisch analysiert wird. Soeteman zieht nur zwei Möglichkeiten der formalen Strukturabbildung des umgangssprachlichen hypothetischen Normsatzes in Betracht: '$O(p \to q)$' und '$p \to Oq$' [4], nicht aber von Wrights dyadische Form und meine Darstellung [5].

Ich halte es für ganz wesentlich, bei der logischen Analyse der hypothetischen Normsätze folgende Momente zu beachten:

1. Wie bei jedem Bedingungssatz muß so ein Strukturschema vorgelegt werden, welches bei Erfüllung der Bedingung auf das Bedingte zu schließen erlaubt (d.h. es muß eine Art Abtrennungsregel gelten).

2. Es müssen die aussagend und normativ zu verstehenden Bestandteile des hypothetischen Normsatzes in der Struktur des Satzes klar unterscheidbar sein.

3. Der hypothetische Normsatz muß als Normsatz verstanden werden.

'$O(p \to q)$' ist daher als Schema des hypothetischen Normsatzes nicht brauchbar, denn Soeteman sagt mit Recht »I do

not think that it follows from (6') ([6]) and '$\sim$p' that the obligation 'O$\sim$q' is valid.« Außerdem ist in dieser Strukturform nicht erkennbar, ob der bedingte oder der bedingende Teil oder beide normativ verstanden werden. '$O(p \rightarrow q)$' kann gleichermaßen als Schema der Sätze

Wenn p, dann soll q sein.
Wenn p sein soll, dann q.
Wenn p sein soll, dann soll q sein.

gelten, d.h. es drückt den wesentlichen Unterschied zwischen ihnen gar nicht aus.

Soeteman sucht die Entstehung des Widerspruchs, der auftritt, wenn ein Normensystem 'O(p & q)' und gleichzeitig 'Wenn $\sim p$, dann soll $\sim q$ sein' enthält und $\sim p$ eintritt, dadurch zu überwinden, daß er es für unmöglich erklärt, daß dasselbe 'p' als gesollt (als Argument des O-Operators) und als Bedingung des hypothetischen Sollsatzes auftreten kann. Um dies zu erreichen macht er zwei Vorschläge.

Vorerst setzt er fest, daß der hypothetische Normsatz dann und nur dann in der Form '$p \rightarrow Oq$' dargestellt werden soll, wenn 'p' keine Handlung bezeichnet (nicht in der Macht des Normadressaten steht ([7])); dort jedoch, wo die Nicht-Erfüllung (non-performance) einer Handlung Bedingung eines anderen Sollens ist, in der Form '$O(p \rightarrow q)$'. Der Autor bezeichnet diese Lösung zwar als logisch korrekt, meint jedoch, daß dieses deontische System deswegen verfehlt sei, weil es Verpflichtungen, die von der Erfüllung anderer Verpflichtungen abhängig sind, nicht ausdrücken kann. Ein Fall, der — wie er selbst ausführt — im Recht gang und gäbe ist.

Man muß meines Erachtens noch tiefere Einwände machen. '$O(p \rightarrow q)$' kommt — wie schon oben angemerkt — als Strukturschema des Bedingungsnormsatzes überhaupt nicht in Frage, da diese Form weder eine Unterscheidung des semantischen Charakters der Satzteile erlaubt, noch eine für diese Sätze charakteristische Folgerung vom Modus-ponens-Typus gestattet. Ferner: Eine Handlung ist eine Tatsache. Die für das Auftreten einer Handlung im Vordersatz des Bedingungsnorm-

satzes vorgesehene Form müßte also ein Spezialfall der allgemeinen Struktur des hypothetischen Normsatzes sein. Es ist befremdlich, daß dies hier nicht der Fall ist, sondern ganz unterschiedliche Strukturen angenommen werden. — Die Bedingungen eines Bedingungsnormsatzes können gleichzeitig sowohl aus Handlungen als auch aus anderen Umständen (z. B. 'Wenn es regnet und du weggehst, nimm einen Regenschirm') bestehen. Für solche Fälle müßten wieder besondere Strukturbestimmungen angegeben werden.

Der zweite Vorschlag, den der Autor als eigentliche Lösung ansieht, wird als Veränderung des deontologischen Systems hingestellt. (Was hier vorgetragen wird, würde demnach meine Darlegungen nicht betreffen, wenn es sich um eine echte Modifikation des Systems handeln würde.) Soeteman führt die Modifikation durch Einführung zweier Variablenarten mit disjunktem Variabilitätsbereich durch: Variable von Handlungsbeschreibungen (act-descriptions): p^o, q^o, ... und von Aussagen (propositions), daß die betreffende Handlung stattgefunden hat: p, q, ...

"When you turn right, you must use your signal-light" hat die Form '$O(p^o \rightarrow q^o)$' — "When it is dark you must turn on your lights" die Form '$p \rightarrow Oq^o$'. Abgesehen von der Verschiedenheit der Variablen — auch dieser Unterschied wird sich als ein nur scheinbarer zeigen — liegt hier genau dasselbe Ergebnis vor. Es ist daher unbegreiflich, daß nun der Autor damit zufrieden ist, daß aus 'When you turn right, you must use your signal-light' und 'You turn right' die Konsequenz 'You must use your signal-light' nicht ableitbar ist, obwohl er gerade aus diesem Grund die Inadäquatheit seines ersten Vorschlags eingesehen hat.

Es gelten hier natürlich alle gegen den ersten Vorschlag angeführten Argumente. Wir müssen aber noch weiter fragen, ob es Soeteman wirklich gelingt, verschiedene Variabilitätsbereiche für seine Variablen einzuführen.

Die mit einem Index versehenen Variablen sind von den indexfreien keineswegs unabhängig; sie sind die Beschreibungen, welche die Handlung dadurch charakterisieren, daß sie angeben, was sein muß (nicht sein darf), damit das Gebot er-

füllt (resp. nicht erfüllt) ist. Diese Zuordnung durch performance-functions besteht in allen deontologischen Systemen der besprochenen Art. Es ist natürlich so, daß das Argument '*p*' des deontischen Operators keine Aussage ist und daß die Aussage '*p*' ein Satz oder Satzteil (soweit sie im Text eines zusammengesetzten Satzes steht) anderer Art ist. Dies haben alle bekannten Normenlogiker gesehen ([8]). Dieselbe Zuordnung besteht gleichermaßen, wenn man diesen Unterschied durch einen Index darstellt, wie wenn man ihn aus der Stellung des 'p' allein erkennen läßt und in der Darlegung des Sprachkonstitutionssystems ausdrückt.

Wie würde Herr Soeteman die Bedingung (oder Behauptung) schreiben, daß 'Op^{o}' erfüllt ist ? Doch wohl '*p*'; und die Bedingung, daß 'Op^{o}' nicht erfüllt ist, wohl '$\sim p$'. Es ist also ersichtlich, daß in Wirklichkeit gar keine Modifikation des deontischen Systems vorliegt, keine Differenzierung der Variablen, sondern nur eine unwesentliche Veränderung der Schreibweise.

Soeteman hat recht, daß '*Oq*' nicht aus '$O(p \vee q)$' folgt, doch hat dies niemand behauptet und berechtigt ihn noch nicht zur These "The solution to paradox (1) ([9]) can no longer presents us with any difficulties." Wenn der Autor '$O(p \vee q)$' als Folgerung von '*Op*' anerkennt, muß er — wenn er zugesteht, daß es möglich ist, daß '*Op*' nicht erfüllt wird, mit anderen Worten, daß $\sim p$ eintreten kann — anerkennen, daß das gefolgerte Gebot nur durch Realisation von *q* erfüllt werden kann, eine Situation, die erfüllungsfunktional von '*Oq*' nicht unterschieden werden kann ([10]).

FUSSNOTEN

([1]) *Logique et analyse,* , S.

([2]) *Logique et analyse,* 1970, S. 94-106.

([3]) Ich bin auf diese Frage in zwei anderen Arbeiten zurückgekommen: «The Concept of Non-Satisfaction and Deontic Logic», Ratio, Vol. 14, No. 1, S. 16-35. «Ideen zur logischen Normensemantik» in: Beiträge zur Meinong-Forschung, Graz 1972, S. 295-311.

([4]) Vgl. seine Sätze (6') und (6").

(5) Vgl. VON WRIGHT, G. H., A Note on Deontic Logic and Derived Obligation, *Mind* 65/1956, S. 507-509; ders., *Norm and Action*, London 1963, S. 168 ff.; ders., *An Essay in Deontic Logic and the General Theory of Action*, Acta Philosophica Fennica 1968; WEINBERGER, O., Studie k logice normativních vět (Studien zur Normenlogik): I. Theorie der Folgerungsbeziehungen und der hypothetische Sollsatz, *Rozpravy ČSAV* 1960/Heft 1.

(6) Soetemans Satz (6') lautet:
$O(\sim p \rightarrow \sim q)$.

(7) Ich stütze mich hier auf den Begriff der Handlung, der wohl dem entspricht, was der Autor im Sinn hat. Hierdurch wird der äußerst komplizierte Begriff des In-der-Macht-Stehens aus der Überlegung ausgeklammert, da er für unsere Auseinandersetzung nicht wesentlich ist. (Man bedenke z. B., daß bei allgemeinen Normsätzen die Schwierigkeit besteht, daß für jedes Pflichtsubjekt etwas anderes in seiner Macht steht.)

(8) Vgl. von Wright, G. H., der mit performance-functions arbeitet, Hares Begriff 'Phrastic', Ross' Begriff 'Topic', Opałeks Aufsatz in *Logique et analyse*, 1970, «On the LogicalSemantic Structure of Directives», S. 176 ff., und meine Bemerkungen hierzu S. 202 ff.. Meine symbolische Schreibweise in der oben zitierten Arbeit «Theorie der Folgerungsbeziehungen und der hypothetische Sollsatz» bringt diese Beziehung explizit zum Ausdruck.

(9) Es handelt sich um das Ross'sche Paradox.

(10) Ich habe nirgends behauptet, daß 'Oq' aus '$O(p \vee q)$' ableitbar sei; ich habe nur gezeigt, daß, sobald man die Möglichkeit der Nicht-Erfüllung in Rechnung zieht — was die besprochenen Systeme jedoch nicht tun —, für den gefolgerten Satz wegen der Nicht-Erfüllung der Prämisse 'Op' bei der Schlußfolgerung '$O(p \vee q)$' dieselben Erfüllungsbedingungen bestehen, wie für 'Oq'.

P.S.: Meine Replik hat einiges an Klarheit verloren, da Herr Soeteman den Text, den sie betraf, aufgrund meiner Kritik abgeändert hat. Soetemans Erwiderung auf meine Replik zwingt mich, wenigstens einige schlagwortartige Bemerkungen vorzutragen.

Der Grundirrtum Soetemans liegt darin, daß er die Rolle des Erfüllungsbegriffs in der deontischen Logik nicht erfaßt hat: Er sieht nicht, daß die Erfüllungsbeziehung für die Bestimmung des Inhalts von Normsätzen grundlegend ist (vgl. No. 12 seiner Erwiderung), denn man muß verstehen können, was zu tun ist, um den Sollsatz zu erfüllen. Er kann auch nicht begreifen, daß die tatsächliche Möglichkeit der Nicht-Erfüllung eines Teils eines komplexen Sollens das Gesolltsein des übrigen Teils gegebenenfalls als unbegründet erscheinen läßt. Nicht alles, was zur Erfüllung eines gegebenen Gebots notwendig ist, ist

auf jeden Fall geboten, auch wenn das gesamte Gebot sowieso nicht erfüllt wird.

Wenn er unter No. 7 behauptet, daß ich für die Folgerungsregel 'Aus $O(p \vee q)$ und $\sim p$ folgt Oq' plädiere, hat er mich gar nicht verstanden. Ich wollte nur zeigen, daß man zu paradoxen Ergebnissen kommt, wenn man das normenlogische Folgern erfüllungsfunktional auffaßt, und warum das Ross'sche Paradoxon als paradox erscheint.

Ich zweifle sehr daran, daß Soetemans Lehre eine Rückkehr zu von Wright Konzeption aus Mind 1951 ist; jedenfalls wurde dieses System hauptsächlich deswegen aufgegeben, weil es mit dem Bedingungsnormsatz nicht zurecht kam (vgl. von Wright, Deontic Logic and Derived Obligation, Mind 1956, S. 507 f.).

REPLY TO PROF. WEINBERGER

In the following I would like to reply, as briefly as I can, to Weinberger's comments about my article. In doing so I will confine myself to the main issues in order that the differences between us might appear as plainly as possible.

1. The substance of Weinberger's objection to the deduction of Op and Oq from O(p & q) is plain: despite the validity of O(p & q) it is possible that p is not performed and that q alone, without p, is nonetheless forbidden; therefore one may not simply deduce from O(p & q) that Oq is valid also.

It is curious that, even though I agree entirely with the premise of this argument, I cannot accept its conclusion. The significance of Oq is of decisive importance here. In my opinion Oq cannot mean that one must performe q in conjunction with no matter what other act or omission. An obligation to perform q, for example, does not imply that the performance of q together with, say, an act of manslaughter is not prohibited, nor does it imply that the performance of q without the performance of some concurrent obligation is necessarily permitted. Analogously an obligation of q does not preclude a possible prohibition of the performance of q in conjunction with — p. Oq merely requires the performance of q in a way which is permissible according to other valid norms as well.

Here we note a parallel with propositional logic: q follows from p & q, but this conclusion does not mean that thereby q & — p is possibly true.

My justification for the deduction of Oq from O(p & q) rests on the thesis that in order to obey O(p & q) one has to obey Oq as well and that by performing — q one disobeys the norm O (p & q). If any logical inference exists at all in deontological context, then this inference must have some such significance. What could possibly be the meaning of such a logical inference according to Weinberger ?

Weinberger says that «zur Erfüllung von 'O(p & q)' p getan werden musz und q getan werden musz». Is not that precisely what I defend while he denies it? For after all Weinberger here states in so many words that if O(p & q) is valid p must be done and q must be done, or — stated symbolically — that Op is valid and Oq is valid (1).

2. An act is a fact, says Weinberger, and that is his ground for one of his objections against my proposal. The condition of a conditional deontic proposition after all can, in his opinion, consist of an act and, at the same time, of other circumstances. He suggests now that I make a distinction in logical structure between these two kinds of conditional deontic proposition; if I understand Weinberger correctly this logical structure would be $O(p^{\circ} \rightarrow q^{\circ})$ and $p \rightarrow Oq^{\circ}$ respectively (2).

There must be some misunderstanding here, for in my conception too conditional deontic propositions *always* have the structure $p \rightarrow Oq^{\circ}$. Here, I agree, p is a proposition stating a fact. However — and that is the crucial point — this fact can not be an act. But the *occurrence of* an act can. Conditional obligations with acts (in contrast with occurrences of acts) are in my opinion impossible. I think Weinberger is making some kind of category mistake (3) by classifying acts as a kind of facts.

3. The relevance of the distinction between act-descriptions and propositions, as I have used it, seems to escape Weinberger. Undoubtedly this is partly due to the fact (which I have already noted) that this distinction is not usually found in ordinary language. The illustrations which I have used have therefore not been without some measure of ambiguity. However, in my analysis of «when you turn right, you must use your signal-light» (= 7) it was perfectly clear from the context how I interpreted the phrase "you turn right": as act-description. Perhaps I should have stated that more explicitly.

So I admit that in such an ordinary language norm both interpretations of the phrase in question (as act-description as well as proposition) are possible. Whether one of the two interpretations must be chosen in a concrete case depends on the circumstances. For example where in positive law the obli-

gation to use signal-lights is deduced from a norm such as (7) and from the truth of a proposition "you turn right", there it is clear that the phrase "you turn right" in (7) must to that extent be interpreted as a proposition and that correspondingly (7) has the structure of $p \rightarrow Oq^{\circ}$. This does not preclude the possibility that in positive law the phrase concerned in (7) can also be interpreted (at the same time) as act-description and that to that extent (7) has the structure $O(p^{\circ} \rightarrow p^{\circ}) . (p \rightarrow Oq^{\circ})$ and $O(p^{\circ} \rightarrow q^{\circ})$ do not contradict each other). Should, however, a prohibition to use signal-lights be valid together with (7) then the phrase "you turn right" in (7) could only be interpreted as act-description, since (7) would contradict that prohibition in case of the other interpretation.

Perhaps it is a little less "unbegreiflich" now why I did not have to accept an "Abtrennungsregel" in my analysis of (7). If Weinberger wants to maintain that in ordinary language an "Abtrennungsregel" is used with norms like (7), then I would reply: to the extent that this is true the norms in question must be different from those that I have analysed. My objection to Weinberger's conception was and is that he fails to distinguish between these two meanings.

4. I admit that I would formulate the fact that Op° has been obeyed as p. But it escapes me why this (or something else) must imply that there is no difference between the class-variable p° and the propositional variable p. Why would there be no difference in meaning left between the act-description "John's payment of taxes" and the proposition "John pays taxes" simply because this proposition is needed to state that the act has occurred ?

5. Weinberger denies so emphatically that he has said that Oq follows from $O(p \vee q)$ that one could easily suppose that I had accused him of doing so. This is not true. What Weinberger has stated (and states now again) and I have denied is that it follows from $O(p \vee q)$ *and* $-p$ that q must be done.

My conception is of course largely determined by the distinction between act-descriptions and propositions (4). I will not repeat the argument here; it can be found in my article and Weinberger has not materially contested it.

I wish to make two concluding remarks.

In the first place: Weinberger argues against the deduction of $O(p \vee q)$ from Op by positing that when Op is not obeyed $O(p \vee q)$ can only be obeyed by the performance of qb. He does not see that this argument can be turned against himself. After all it is clear that Op can only be obeyed by the performance of $p \vee q$. If it follows from the validity $O(p \vee q)$ in conjunction with $-p$ that q must be done because there is no other way to obey $O(p \vee q)$, then it follows from the validity of Op that $p \vee q$ must be done because here too there is no other way to obey Op.

Secondly: Weinberger and I do agree that Oq does not follow from $O(p \rightarrow q)$ and p. It seems to me however, that the grounds which Weinberger adduces against the deduction $O(p \vee q)$ from Op (namely: that it follows from $O(p \vee q)$ and $-p$ that q must be done) forces him to accept the inference of Oq from $O(p \rightarrow)q)$ and p, which we both rejected. For, when $O(p \rightarrow q)$ is valid and p is a fact then $O(p \rightarrow q)$ can only be obeyed by the performance of q.

A. SOETEMAN

NOTES

(1) I definitely did state what in my opinion is the influence of disobedience of a norm on the validity of that norm: see p. 276. When the norm is a complex obligation, then too, disobedience has no influence on the validity of that norm nor on the validity of implied norms.

(2) Weinberger does indeed mention this objection in the discussion of my first suggestion — which I have also rejected — but he considers it "natürlich" applicable as well to my final proposal.

(3) cf. G. RYLE, *The concept of mind.*

(4) This — and not what Weinberger posits as such — is the basis for my remark that the solution of paradox (1) can no longer be a problem.