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Author(s): Robert Nozick and Richard Routley

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## ESCAPING THE GOOD SAMARITAN PARADOX

### I

WE shall examine two recent formulations of deontic logic, discussing issues we believe not yet satisfactorily resolved. Our discussion leads us to the formulation of a deontic logic adequate for the proof of the statements usually desired in such a system, in which the paradox of the Good Samaritan does not arise.

#### *The D-operator*

Prior<sup>1</sup> terms his axioms "a plausible set of postulates" for deontic logic, yet despite his enviable lucidity we find them difficult to understand. It is not clear whether the variables of the axioms stand for statements or actions. If for statements (in the proof of 27 Prior substitutes the statement COpp for a variable), then one wonders what it means to say a statement is obligatory, or forbidden. Or, if one is able to make some sense of this ("You shouldn't have said that, Coriolanus"), then it is plain that things other than statements may be obligatory. Apart from the substitution, Prior is committed to claiming that statements may be obligatory, for the first 'O' in his axiom O1 ranges over the statement COpp. Prior reads his axiom O1, OCOpp, as "It is obligatory that what is obligatory be done" or, expanding this, 'It is obligatory that if p is obligatory then p be done (or, p is done)'. Since actions, and not statements are done, Prior is therefore committed to substituting both actions and statements for the variables. But furthermore, is Prior's reading warranted by his notation? He reads the first 'p' as 'p', and the second as 'p is done'; a shift which appears incompatible with the rigour Prior sets as his goal.

It seems to us desirable for clarity within the deontic calculus to have as obligatory either actions or statements, but not both. Since actions are intuitively the sort of things which may be obligatory, and statements, if at all, only in a derivative sense (the action of uttering the statement is obligatory; e.g. "You shouldn't have said that, Coriolanus"), we shall restrict the range of the deontic predicates to actions. We also introduce a new operator, the D-operator (axioms for which are presented in section II), which ranges over actions. 'Da' is to be read 'action a is done' or "action a is performed".

What then becomes of Prior's axioms? O1, OCOpp, is dropped for it either becomes COpOp and is not necessary as a special deontic axiom, or COpDp which is false. It is important to note that it cannot become COpODp, for here the second 'O' ranges over a statement, 'Dp'. Whatever plausibility this statement has can be

<sup>1</sup> "Escapism: The Logical Basis of Ethics" in Melden, *Essays in Moral Philosophy*.

accounted for by pointing out that the malformed 'ODp', 'It is obligatory that p is done', if it means anything means 'Op', 'Action p is obligatory'. But then we have returned to the unnecessary 'COpOp'. Prior's O2, 'COpPp', remains intact, but O3, 'COCpqCOpOq', presents a slight difficulty. The first 'O' ranges over the statement Cpq, but as we have seen 'O' properly ranges only over actions. We may avoid this difficulty by interpreting 'Cpq' as 'ANpq', a complex action. Thus 'OCpq' is read 'The action not-p or q is obligatory'. (Prior, in reading O3, also reads 'Cpq' as an action and not a statement.) But now Prior's O4, 'CLCpqCOpOq', presents a problem, for if 'Cpq' is, despite appearances, a complex action and not a statement, then the modal operator 'L' ranges over the action Cpq, and it is not evident what this could mean. With the aid of the D-operator, however, the statement becomes clear: O4 is transformed into 'CLCDpDqCOpOq'.

### *The Paradox of the Good Samaritan*

We now turn to the paradox of the Good Samaritan, which can briefly be stated as follows. 'CLCDpDqFqFp', 'If 'p is done' strictly implies 'q is done' then if q is forbidden then p is forbidden', is a theorem of (the modification of) Prior's system, and consequently the following strange result is true as an instance of the theorem: 'If helping a robbery victim implies a person has been robbed then if the robbing is forbidden, helping the robbery victim is forbidden.' The Nowell-Smith Lemmon solution of the paradox<sup>1</sup> depends upon modifying the corresponding statement in the Andersonian system, 'CLCpqCLCqSLCpS', 'If p necessarily implies q then if q necessarily implies the sanction, then p necessarily implies the sanction'. They transform this statement into 'CLCKHxyRzyRzyCLCRzySzLCKHxyRzySz' which is read 'If x's helping y whom z robs necessarily implies that z robs y, then if z's robbing y necessarily implies that z is sanctionable then x's helping y whom z robs necessarily implies that z is sanctionable', and hence the paradox does not arise.<sup>2</sup>

<sup>1</sup> "Escapism: The Logical Basis of Ethics", *MIND*, vol. LXIX, no. 275, July 1960.

<sup>2</sup> We should note that, as it stands, the Nowell-Smith Lemmon discussion of the paradox in the Andersonian system is inadequate. In their discussion  $\phi$  is a predicate in which x occurs free, such as 'x robs y'. 'Fx $\phi$ ' is defined as 'LC $\phi$ Sx', which is read (using the example to make the point clear) "'x robs y' strictly implies 'x is sanctionable'". But 'Fx $\phi$ ', we are told, is read 'x is forbidden to  $\phi$ '. Taking our example of 'x robs y' for  $\phi$ , we get the strange looking 'x is forbidden to x robs y', which we are hard put to understand. It may be that we have erred in considering  $\phi$  an open statement (which becomes a statement when a constant is substituted for x, or when x is bound by a quantifier), but if this is so, it becomes difficult to understand 'LC $\phi$ Sx'. For 'Sx' is read "x is sanctionable", and plainly is a statement (open statement), and one would think that only statements strictly imply statements, and therefore " $\phi$ " must be a statement (open statement).

However we should notice that an analogous solution does not suffice for Prior's non-Andersonian system. In this system the paradoxical system would become, modifying it along the lines of the Nowell-Smith Lemmon solution: 'CLCD $x$ aDybCFybF $x$ a', which we read, in a temporary notation which will not be used again, "If ' $x$  does  $a$ ' strictly implies ' $y$  does  $b$ ' then if  $y$ 's doing  $b$  is forbidden, then  $x$ 's doing  $a$  is forbidden". But this plausible-looking statement, it is easily seen, embodies the paradox. Hence we conclude that although Nowell-Smith and Lemmon may avoid the paradox in the Andersonian system, they have not got to its heart, for the solution they propose does not solve the analogous paradox deducible in Prior's system. But it is certainly important to solve the paradox in Prior's system since this system is not open to the objection Nowell-Smith and Lemmon so ably make to the Andersonian system; namely having modal operators range over moral statements.

### *The Solution of the Paradox*

The following is, we believe, one important key to the paradox. In the paradoxical statement CLCDpDqCFqFp as applied to the robbery case, it is not the action of helping the victim which entails he has been robbed, but the *description* of the victim which does so. This is easily seen in a case where the action has absolutely nothing to do with the entailment: 'If Macduff looks at a murderer then a murder has been committed, but murder is forbidden, so his looking at a murderer is forbidden.' Plainly in this case it is not the action of looking which entails the murder, but the description of the object of the action. In the robbery example,  $x$ 's doing what he does, does not entail that a robbery has been committed, but ' $x$  helps  $y$  and  $y$  has been robbed' does, and plainly here it is the statement ' $y$  has been robbed' and not the statement about  $x$  which does the entailing.

To clarify the situation we introduce an I-operator, axioms for which are presented in section II, ranging over actions. 'Iab' is to be read 'action  $a$  is included in action  $b$ '. Although this is an undefined primitive operator, we hope the reading will make its meaning plain. As a further extra-systematic explanation we will say that 'Iab' is true if there exists a description of action  $b$  alone such that a description of action  $a$  is thereby given, where  $D$  is a description of  $b$  alone if  $D$  is a description of  $b$ , and no phrase of  $D$  can be eliminated without a less detailed description of  $b$  resulting. (We shall ignore descriptions in which sentences are repeated, and in which consequently some sentence can be eliminated without a less detailed description of  $b$  resulting.)

In the calculus presented in section II, the analogue of the paradoxical statement of Prior's system, 'CLCDpDqCFqFp', is 'CIabCFaFb', 'If action  $a$  is included in action  $b$ , then if  $a$  is

forbidden, *b* is forbidden'. Our claim is the following: The analogous statement in our system covers whatever cases lend Prior's paradoxical statement its plausibility, and excludes the paradoxical cases. For example, the samaritan paradox is no longer present, for robbing is not included in helping a robbery victim, as we have explained 'included'. It might also be thought that statements such as the following, which our theorem obviously does not cover, lend more plausibility to Prior's: If continued preparation for war implies a war will take place, then if war is forbidden, continued preparation for war is forbidden. But of course this statement is not covered by Prior's theorem either, for war is not *strictly* implied by preparation for it. This is not to assert that incorporating 'physically implies' or 'practically implies' into a deontic calculus would not be desirable. On the contrary. But it is not such a calculus we present here.

One final point before proceeding to the systematic development of the calculus. Someone might claim that for any action there are some circumstances under which it is justified, and consequently since no action is unreservedly forbidden, a deontic calculus can have no application. We might avoid this difficulty by saying that implicit in the '*F*' is a context or situation which remains constant throughout a discussion; hence '*a* is forbidden in such and such a context or situation'. (One who believes action *a* to be "absolutely" forbidden could state his position as follows: "*a* is forbidden in every context or situation".)

## II

1. Action Calculus, with action terms *a*, *b*, *c*, . . . . ., and axioms and rules isomorphic with those of the A-N or K-N sentential calculus; *e.g.* Sobocinski's K-N system with definition DA:  $Aab = \text{df. } NKNaNb$ .

2. Sentential Calculus. Results obtained using the sentential calculus are labelled 'S.C.'.

3. Modal Calculus; *e.g.* T or S4.

4. D-I Calculus, employing operators D and I, which map action terms into statements.

### Axioms

- |                 |                   |
|-----------------|-------------------|
| 11. EDNaNDa     | 14. CIAabcAIacIbc |
| 12. CDaCIbaDb   | 15. IaKab         |
| 13. CIabCIbcIac | 16. CINaNbIba     |

### Rules

RI1. Uniform substitution of D and I statements for statements.

RI2.  $AKabKNaNb \rightarrow CIacIbc, CIcaIcb$ , where *a*, *b*, and *c* are syntactical action variables.

Definition: ( $a = b$ ) = *df.* KIabIba

5. Deontic Calculus, employing operator  $P$ , which maps action terms into statements.

### *Axioms*

- P1.  $CLDaPa$   
 P2.  $CIabCPbPa$

### *Rules*

RP1. Uniform substitution of  $P$  statements for statements, provided that the statements substituted for are not bound or operated upon by 'L' or 'LC'.

RP2. Restriction on the application of the rule RL,  $p \rightarrow Lp$ , to exclude the form  $LPa$ .

### *Definitions*

- DP1.  $Oa = \text{df. } NPNa$   
 DP2.  $Fa = \text{df. } NPa$

### *Some Sample Theorems*

- T1.  $CIbaCDaDb$  I2, S.C.
- T2.  $C(a = b) EDaDb$   
 1.  $CKCpqCrCKprKqs$  S.C.  
 2.  $CKIbaIabKCDaDbCDbDa$  1,  $p/Iba$ ,  $q/CDaDB$ ,  $r/Iab$ ,  $s/CDbDa$ , T1.
- T3.  $C(a = b) EPaPb$  Similarly, with P2 replacing T1, P replacing D
- T4.  $CIKabcKIacIbc$   
 1.  $CIKabcIac$  I3,  $b/Kab$ , I5  
 2.  $CIKabcIKbac$  RI2  
 3.  $CIKabcIbc$  1,  $a/b$ ,  $b/a$ , result by 2, S.C.
- T5.  $IAaba$   
 1.  $INaNNKNaNb$  I5,  $a/Na$ ,  $b/Nb$ , RI2  
 2.  $IAaba$  1, DA, I6, S.C.
- T6.  $CAIacIbcIAabc$   
 1.  $CIacIAabc$  I3,  $a/Aab$ ,  $b/a$ , T5  
 2.  $TIbcIAabc$  I3,  $a/Aab$ , T5, result by 1, S.C.
- T7.  $Iaa$  I5,  $b/a$ , RI2
- T8.  $IaAaa$   
 1.  $CINaNaINNKNaNNaNa$  RI1  
 2.  $INAaaNa$  T7, 1, DA, result by I6
- T9.  $CIbaINaNb$  I6,  $a/Nb$ ,  $b/Na$ , RI2
- T10.  $CIaAbcAIabIac$   
 1.  $CINaNKbcIKbca$  I6,  $b/Kbc$   
 2.  $CINaNKbcKIbaIca$  1, T4, S.C.  
 3.  $CINNNaNKNbNcKINbNaINcNa$   $a/Na$ ,  $b/Nb$ ,  $c/Nc$   
 4.  $CIaAbcKIabIac$  DA, I6, result by S.C.

T11. CADaDbDAab

1. AIAabaIAabb T10, a/Aab, b/a, c/b, T7
2. ACDAaAbCDbDAab 1, T1, S.C., result by S.C.

T12. CAPaPbPAab similarly, replacing D by P in T11, and using P2.

T13. CDAabADaDb

1. AIaAabIbAab I4, c/Aab, T7
2. ACDAabDaCDAabDb T1, S.C., 1, result by S.C.

T14. CPAabAPaPb similarly, using P2

T15. CLiabCObPa

1. CLiabLCDbDa T1, Fey's T, RL
2. CLiabLDANba 1, S.C., II
3. CLiabPANba 2, S.C., P1, result by T12, T14, S.C., DP1

T16. COaPa

1. CLDAaNaPAaNa P1, a/AaNa
2. ADaNDa S.C., p/Da
3. LDAaNa 2, RL, II, T11
4. APaPNa 1, 3, T14
5. CNPNaPa 4, S.C., result by DP1

T17. COaMDa

1. CLDNaPNa P1, a/Na
2. CNPNaNLNDa 1, S.C., II, result by DP1 and T

T18. CKOaNPKaNbOb

1. IANaNBnNb I5, S.C.
2. IANaKaNBnNb 1, RI2
3. CPNbPANaKaNB 2, P2
4. CPNbAPNaPKaNB 3, T14
5. CKNPNaNPKaNBnNPnNb 4, S.C., result by DP1

T19. CIabCFaFb P2, S.C., DP2

Note that 'CLDaOa', which is derivable in (the modification of) Prior's system, is not derivable in this system.

Since this was written we have discovered some counter examples to our explanation of one action's being included in another. The simplest one is the case where the time at which action b is performed is specified by saying 'b occurs two hours after —', where the blank is filled in by a detailed description of some other action. Consequently the explanation given in the text requires modification.

ROBERT NOZICK  
RICHARD ROUTLEY

*Princeton University*