ON THE LOGICAL-SEMANTIC
STRUCTURE OF DIRECTIVES.

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1. The term "directive" (or "directive statement") is used here in a broad sense, comprising norms, commands, requests, exhortations, suggestions, advice, rules (e.g., of games), and the like ([1]). One would be tempted to say that they are are "directive statements", having the same general kind of meaning (the "directive meaning" ([2]). The directives, as we see, are variously termed: a fact testifying to their differentiation. The terms mentioned above are, however, vague, and not apt to build up a proper classification of directives. The classification which would be of interest to us would involve distinguishing, among directives, some groups of statements with peculiar kinds of meaning, constituting the subspecies of directive meaning. This matter, however, is not a simple one ([3]). For our analyses the general concept of directive meaning will suffice, together with roughly pointing to the extensiveness of the range of statements covered by the term "directive" and to their differentiation, to avoid some limitations of the analysis, not infrequently noted in this field ([4]).

([1]) The use of the term "directive" is analogous in A. Ross, *Directives and Norms,* London 1968 (but different as to the relation between directives and norms, par. 20 ff.).

([2]) K. Opałek, The problem of "directive meaning", in *Festkrifft til Professor, Dr. Jur. et Phil. Alf Ross,* Copenhagen 1969.

([3]) Comp. R. Carnap, A. Kaplan on value judgments, in *The philosophy of Rudolf Carnap,* ed. P. A. Schilpp, "The Library of Living Philosophers", v. IX, La Salle-London 1963, pp. 1011 f. (with respect to the larger category of "optative statements", comprising, among others, directives). Comp. the classifications of directives (norms) in G. H. von Wright, *Norm and Action,* London 1963, ch. 1., A. Ross, *o.c.,* par. 10 ff.

([4]) Here we have in mind the ways of analysis frequent in legal theory, concentrating on legal norms only.

2. The identification of directives would present no diffi-
culties if we could point infallibly to certain linguistic for-
mulas which are the bearers of directive meaning, that is to
say, if the syntactic structure of directives were strictly and
distinctly bound to their semantic function ([5]). As we know,
however, in the rich but vague and unprecise ordinary lan-
guage the directives can be expressed in manifold ways, and
it is frequently doubtful if a given form expresses a directive
or a statement of some other kind.

In attempts to answer the question whether we are actually
dealing with a directive, or not, we try to judge on the basis
of some characteristic traits of the linguistic forms typically
associated with directives, these traits being, e.g., the impe-
rative mood, or containing such "deontic words" as "ought",
"obliged to", "forbidden", "permitted", etc. But these traits are
not always to be found in linguistic forms which nevertheless
can be "suspected" of expressing directives. Directives are,
for example, expressed also in the indicative mood, without
resort to the use of "deontic words". In such instances we
identify directives only by the situational context of the utter-
ances in question, or by the fact that a given linguistic ex-
pression belongs to a text of some peculiar sort (e.g., a legal
code). In abstraction from the context such an expression does
not have any traits on the grounds of which we might say that
we are dealing with a directive. In such cases not the (directive)
meaning of the expression, but its pragmatic function, or use,
seems to be the basis for ascribing to it the character of a
directive.

3. Some examples will illustrate the difficulties with which
we are here dealing:
  (1.1.) Peter, shut the door !
  (1.2.) Peter ought to shut the door.
  (1.3.) It is Peter's duty to shut the door.
  (1.4.) Peter is obliged to shut the door.
  (1.5.) Peter will shut the door.

([5]) R. Suszko, *Zarys elementarnej składni logicznej* (*An Outline of the Elementary Logical Syntax*), Warszawa 1957, p. 4.

(1.1.)-(1.4.) are linguistic forms which seem "undoubtedly" to express such directives which are usually called "norms" — though some authors make a distinction between norms and commands (imperatives) ([6]). (1.1.) is the imperative mood, (1.2.)-(1.4.) contain "deontic words". As has been pointed out, however, such expressions as "is obliged to", and even "ought to", are ambiguous, and linguistic forms containing them do not always express directives. Among our examples this is most evident in (1.4.), (if "obliged" is taken to mean "forced to".) ([7])

Attention should be also paid to some characteristic differences between (1.1.), (1.2.), (1.3.), and (1.4.). (1.1.) seems to be "specifically directive" using the imperative mood, and similarly (1.2.) being an "ought-sentence", but (1.3.) and (1.4.), while using "deontic words", are formulated in the indicative mood ("is") and have traits in common with linguistic forms expressing **descriptive statements**.

(1.5.) is of special interest; it can express a directive or not, depending on the context in which it is uttered: it can express the directive of the speaker (e.g., of Peter's father) for Peter, or in another situation prediction that Peter will (surely) shut the door (e.g., because it is cold).

We are able to produce a similar multitude of linguistic forms in the case of directives usually termed "requests", e.g.:

(2.1.) Please, do that for me !
(2.2.) You should do that for me.
(2.3.) Would you do that for me ?
(2.4.) I beg you to do that for me.
(2.5.) You could do that for me.
(2.6.) You will do that for me.

In the case of "requests" an even greater "looseness" of linguistic forms applicable can be observed, so that to decide

([6]) Comp. e.g., C. WELLMAN, The Language of Ethics, Cambridge Mass. 1961, ch. 9, 10, and p. 290; differently O. WEINBERGER, Die Sollsatzproblematik in der modernen Logik, Rozpravy Československé Akademie Ved, 68, 9, 1958, p. 1 f.

([7]) Comp. E. J. LEMMON, Deontic Logic and the Logic of Imperatives, Logique et Analyse, VIII, 29, 1965, pp. 44 ff.

whether they express directives or not is here even more dependent on the situational context in which they are uttered.

5. (1.5.) and (2.6.) are borderline-cases. As ways of expressing directives they are neither marked by the use of the imperative mood, nor by that of "deontic words" (nor even of any words suspected of affinity with the deontic ones, such as "would", or "could"). We encounter such forms frequently in law, e.g.:

(3.) The court passes the verdict.

(4.) The Parliament holds its ordinary sessions twice a year.

(5.) He who kills a man undergoes punishment of death, or of imprisonment for life, or of imprisonment for a period of not less than five years.

It is to be observed that these linguistic forms do contain "deontic words" ("normative names") such as "court", "Parliament", "punishment", but syntactically these words here play the part of names, not of operators. The important problems connected with "normative names' need not, however, be dealt with in the analysis of the logico-semantic structure of direcives (⁸). It is of interest to note that (3.), (4.), and (5.) sometimes express directives, and sometimes descriptive statements. When contained in a legal code, or bill, they usually express directive statements about the competence of a court or Parliament (a competence of a court being fixed not only in (3.) but also in (5.). When contained in a book describing the practice of State organs, they usually express descriptive statements (⁹).

6. There are to be noted attempts at subjecting directives to some sort of reconstruction, in analogy with descriptive statements. In order to do so one has to abstract from the concrete

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(⁸) As for the analogous problem with respect to value statements see R. G. BROWN, I. M. COPI, Don E. DULANEY, W. K. FRANKENA, P. HENLE, Ch. L. STEVENSON, *Language, Thought, and Culture*, Ann Arbor, 1959 (IIth ed.), pp. 149 f. On normative names J. WRÓBLEWSKI, *Zagadnienia teorii wykładni prawa ludowego* (Problems of the theory of interpretation of the Socialist law), Warszawa 1960, part. I.

(⁹) Comp. J. LANDE, *Studia z filozofii prawa* (Studies in legal philosophy), Warszawa 1959, pp. 930 f.

situational contexts of utterances, from their pragmatic functions and/or use. Moreover, efforts should be made to eliminate the multiplicity of linguistic forms, taken vaguely as equivalent in meaning, which are used to express directives. The purpose is to reduce these forms to a formula (set of formulas), connected strictly and distinctly with directive meaning. Such reconstruction by means of semantic analysis would result, on the one hand, in the elucidation of the semantic structure of directives, and, on the other hand, in directive formulas suitable for the purposes of deontic logic as well as for other purposes (as, for instance, to permit the application of cybernetics in law.) [10].

7. There are two main approaches to such a reconstruction. One of them, apparently very promising, consists in the semantic reduction of directives to categorical or modal statements. This approach disposes of the difficult problem of the meaning of directives as well as of the problem of their structure, and at the same time enables us to apply to them an already developed logic. The attempts along these lines, however, have met with severe criticisms which need not be repeated here [11].

The second approach consists in taking as the "ideal" directive formula one of its "specific" formulations, that is to say, either its formulation as imperative or as "ought-sentence". Here one can point to several other constructions of the same kind in analytical ethics as well as in legal theory (the imperative and the *Sollsatz*-theory), and to several systems of the logic of directives which have the form of a logic of imperatives (commands) [12]. It is doubtful, however, if this approach

[10] J. WRÓBLEWSKI, Zagadnienia zastowania maszyn matematycznych w prawcznawstwie (Problems of applying computers to legal science), Studia Prawno-Ekonomiczne (*Legal-Economic Studies*), v. I, Łódź 1968, pp. 50 ff.

[11] Comp. e.g. J. WOLEŃSKI, Spór o "znaczenie normatywne" (Contentention on the subject of "normative meaning"), in *Naturalistyczne i antynaturalistyczne interpretacje humanistyki (The naturalistic and anti-naturalistic interpretations of humanities)*, Poznań 1966, pp. 4 ff.

[12] Discussed in O. WEINBERGER, *o. c.*, passim; E. J. LEMMON, *o. c.*, 55 ff; G. H. VON WRIGHT, The logic of practical discourse, in *Contemporary philosophy. A Survey*, ed. by R. KLIBANSKY, Firenze 1968 pp. 153 ff.

is justified, since it arbitrarily neglects to take into account the multiplicity of forms expressing directives — forms which are *de facto* used. One cannot be sure whether such a reconstruction is sound, whether it is adequate to these various forms. The doubt is cast already by the competition between the imperative and the *Sollsatz*-theory, both pretending to exclusive truth. The main question is, however, whether we are justified in trying to identify directives on a syntactic-semantic basis since there are evidently many cases when they can be identified only on the pragmatic basis.

8. In order to cope with this difficulty we propose a way of distinguishing, on a uniform basis, the instances in which given linguistic forms can be taken as having directive meaning. Here we have in view the distinction between two kinds of use of directives — the strong and the weak one. The strong use is an act of creating a new directive, while the weak use is an act of referring to a directive already created. In other words, the strong use is a performative, and the weak use a secondary performative, based on the performative already in existence ([13]).

The strong use can adopt different linguistic forms (see 3, 4, 5 above), and the identification of the directive is, in many instances, possible only in a given situational context, on the basis of the pragmatic function and/or use of a given expression. The weak use, on the other hand, can be linked with some determined linguistic forms of the type: "It is obligatory (prescribed) that...", "It is requested that...", "It is forbidden that...", "It is permitted that...", "It is suggested that..." "It is advised that...", etc. ([14]). These forms can be said to be the bearers of directive meaning, and so the identification of directives on a syntactic-semantic basis seems to be possible in the area thus restricted. Even if this is only an

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([13]) The same distinction, based on some conceptions of ordinary language philosophy, was proposed by F. STUDNICKI in a discussion of the problems of "directive meaning" in the Department of Legal Theory of Cracow University, in October 1968.

([14]) These formulas are only provisional; they will be rectified in the course of our analyses (comp. below, 14.4 ff.).

approximation, the arbitrariness of the determination of the directive formulas (as the bearers of directive meaning) is lesser, and the possibility of comparing the structure of directives with that of descriptive statements greater. We shall try to prove this subsequently. First we shall discuss existing attempts at analysing the logic-semantic structure of directives.

9. The attempts start with formulas for categorical or modal sentences, it is with reference to them that the directive formulas are constructed. It is accepted, as a rule, that descriptive statements and directives have a common descriptive, or cognitive meaning component. This component is, according to some authors, itself a descriptive statement, according to others again, it is a cognitive meaning component which is not a statement. The difference between the descriptive statement and the directive would then be either (a) that the directive contains semantically something "in addition" to the descriptive statement (a meaning component transforming such a statement into a directive), or (b) that with a categorical (descriptive) statement is connected a component which is either a modal or a deontic operator, transforming accordingly that statement into a modal statement or into a directive respectively, or (c) that the cognitive meaning component (other than a statement), which is common to the descriptive statement and the directive, together with the operator, different in each case, forms such a statement or directive, or (d) that there is no difference on the semantic level between the descriptive statement and the directive, the difference existing only in the pragmatic function and/or in the use of such a statement ([15]). As to (a)-(c) one has to observe that they are arbitrary when treated as interpretations of the linguistic forms of the strong use of directives; in (d) the difficulties connected with the multiplicity of linguistic forms in the strong use of directives are taken into account. We shall begin by discussing the views (a), (c), and (d), and then pass to a discussion of the views which stress the analogy between modal statements and directives (b).

([15]) The view of I. HEDENIUS, discussed below (10) is related to (d), but more complicated.

10. The views of the type (a) have been discussed critically by O. Weinberger, and partly also by N. Rescher ([16]). Among the views of the type (c) particular attention has to be paid to A. Ross's conception which will be examined in 11 and 12 ([17]). This author discusses the conceptions of the type (d), taking as examples the views expounded by C.H. and M. Langford, R.M. Hare, and I. Hedenius. According to C.H. and M. Langford there is no difference between indicative sentences and directives on the semantic level (the sense of both being p, a proposition). The difference occurs only on the pragmatic level (p can either be asserted or have a directive function.) ([18])

The view of R.M. Hare seems to be somewhat similar to that of C.H. and M. Langford — with the reservation that it is based on a different conceptual framework and type of analysis of ordinary language philosophy. The (indicative) sentence and the directive have, on this view, in common the conceptual content (we use this terminology, hardly acceptable to ordinary language philosophy, in order to facilitate comparison of this view with other views discussed), termed *phrastic*. In addition they have an element termed *neustic*, which is different for indicatives and directives. A. Ross points out that it is not clear, if the *neustic* constitutes a part of the (indicative) sentence, and of the directive, being their meaning component, or if it is a pragmatic element ([19]). Here surely the differences between the conceptions and terminology of the ordinary language philosophy and the reconstructionist philosophy of language are to be taken into account. The *phrastic* corresponds to the (act of) locution which consists in a "neutral" use of a sentence; thus, the *phrastic* cannot here be considered as a part of the sentence (being itself not a sentence). In this case it

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([16]) O. WEINBERGER, *o. c.*, and "Können Sollsätze (Imperative) als wahr bezeichnet werden ?", in the same issue of *Rozpravy...*, pp. 146 ff; N. RESCHER, *The Logic of commands*, London — New York 1966, pp. 38 ff.

([17]) A. Ross, *o. c.*, par. 4,5,9.

([18]) C. H. LANGFORD — M. LANGFORD, Introduction to logic, *Philosophy and Phenomenological Research*, 1953, p. 565, discussed by A. Ross, *o. c.*, pp. 71 f.

([19]) A. Ross, *o. c.*, pp. 14, 17 f., 71 (comp. R. M. HARE, *The language of morals*, Oxford 1952, pp. 18 f).

is out of place to speak about directives and their "cognitive" counterparts. One can speak about them only when analysing another act — the act of illocution in which the *neustic* is added to the *phrastic*. One kind of *neustic* transforms the sentence into a statement (assertoric), another kind of *neustic* into a directive. *Phrastic* and *neustic* can be considered — in the act of illocution — as parts (components), not of a sentence but of this very act, parts which in one case characterize this act as stating something, and in another case as directing (prescribing) something.

A different view is represented by I. Hedenius ([20]) who makes a comparison between a predictive sentence and a command (as it has been said above, it is common to choose commands for such analyses). Here is an example of a predictive sentence:

(6.1.) You will close the door immediately.

The example of a command is:

(6.2.) Close the door !

The transcription of (6.1.) is a follows:

(6.3.) ⊢ that you will close the door immediately.

The transcription of (6.2.) is a follows:

(6.4.) ! your shutting the door immediately.

According to this analysis, (a) the cognitive meaning component is in both cases different: in (6.1.), (6.3.) it is a proposition, in (6.2.), (6.4.) "something neutral", according to A. Ross's conception, which will be discussed below, it is the *idea of topic* expressed by *phrase*, according to some other authors it is the *primary conceptual content*; ([21]) one can speak about a command (directive) only on the pragmatic level; directives correspond to the assertion of the proposition, not to the proposition itself. In each case we deal with a different "factor of publication" (the English term introduced by A. Ross), ⊢

([20]) I. HEDENIUS, Befalningsatser, normer och värdeutsagor (Commands, norms and value — propositions), in *Nordist Sommeruniversitet*; 1954, cf A. Ross, *o. c.*, pp. 72 ff.

([21]) A. Ross, *o. c.*, S 4; H. G. BROWN, I. M. COPI, Don E. DULANEY, W. K. FRANKENA, P. HENLE, Ch. L. STEVENSON, *o. c.*, ch. 5 & 6.

and !, which marks the difference (though the difference in cognitive meaning components is also to be noted).

11. A. Ross, in order to compare the directive with the indicative sentence, makes a parallel reconstruction of their inner structure. On the view of this author, indicative sentences and directives have a common element — the descriptive phrase whose meaning of a "neutral character" is called the *idea of topic* (in the case of directives — the *idea of action*), denoted by *T*. The difference lies in the operator (which also is the (indicative) sentence — or directive — creating functor of the argument T); this operator is in the first case *i*, standing for "so it is" (signifying that the topic is thought of as real), and in the second *d*, standing for the specific directive element "so it ought to be". An example of an indicative sentence would be:

(1.6.) Peter is shutting the door.
An example of a directive is (1.1.) above.
The transcription of (1.6.) is as follows:

(1.7.) (Shutting of the door by Peter) so it is.
The transcription of (1.1.) is a follows:

(1.8.) (Shutting of the door by Peter) so it ought to be.
Symbolically (1.6.) and (1.7.): *i (T)*.
Symbolically (1.1.) and (1.2.), (1.3.), (1.4.): *d (T)*.

12. In the following discussion we are going to concentrate on the conception of A. Ross, laying stress on the common descriptive (or cognitive) element of indicative sentences and directives. The problems connected with the operator will be discussed later. Nor shall we here be considering the problem whether A. Ross's reconstruction is arbitrary when applied to the linguistic forms of the strong use of directives.

12.1. In the syntactic-semantic analysis of a descriptive statement (or a directive), the statement (or directive) (a) is treated as the bearer of a homogeneous meaning — whole, being some type, or kind of thought ([22]) (b) this thought is

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([22]) K. AJDUKIEWICZ, *O znaczeniu wyrażeń* (*On the meaning of linguistic expressions*), Lwów 1931, p. 44.

expressed by a complex of linguistic signs constituting syn-
tactically a coherent whole; (c) the relation between the struc-
ture of this thought and the syntactic structure of the state-
ment is being examined; (d) for this purpose the role of each
sign in the construction of the syntactic whole is investigated,
and so is the role of the meaning of these signs in the building-
up of the semantic whole; (e) further, the relations between
the syntactic positions of signs and the semantic positions
of their meanings are considered; (f) finally, some regulating
operations are made, which aim at a transcription of the state-
ment (formulated in the ordinary language) so that its syntac-
tic structure is strictly and distinctly bound to its semantic
function.

When we reconstruct the descriptive statement and the
directive in the way proposed by A Ross, distinguishing in
both expressions the common phrase whose meaning is the
idea of topic, and the operator which is different in each
case ("so it is, "so it ought to be"), we do not carry out an
analysis of the above kind. The descriptive statement and the
directive are not conceived of as homogeneous meaning-
wholes, but as combinations of two types, or kinds of thought.
One of them is the "neutral" thought — the picture of some
topic. The second is the thought of the reality (or of actually
being the case) of this topic, and of its *Sein-sollen* respectively.
It is impossible to "add" to the thought of the type T the
thought of the type i or d, and thus obtain the meaning of the
descriptive statement, or of the directive. In the thought of
the type T there can be only T, and similarly with the thoughts
of the types i and d; i and d can be predicated only of some-
thing thought of as actually being the case, and as *sein-sollend*
respectively, but not of T as it is defined. The expressions
(1.7.) and (1.8.) as combinations i (T) and d (T) are meaningless.
In order to transform them into meaningful expressions it
must be decided whether they are of the type T, or of the type
i or d. The adding of either i or d to T contradicts the fact that
T is a "neutral" thought and implies either that T be replaced
by thought of the same type as i or d, or that i and d be re-
moved.

12.2. The idea of a "neutral" conceptual substratum common for directives (norms) and descriptive statements has often in the past been propounded. The views of H. Kelsen are worth mentioning here: they are, however, connected with the acceptance of some specific ontological and epistemological theses. The existence of two categories of objects — *Sein* and *Sollen* — is admitted, to which correspond the two kinds of cognition-sensory and ideal-normative. The connecting link between *Sein* and *Sollen* is the same "neutral" conceptual substratum. It would also be an object of a certain category, and would then be thought of in a *Denkform*. There are not, however, other forms of thought than those appropriate for *Sein* and *Sollen*; beyond these forms there can be nothing thought of. And what is thought of as *Sein* cannot be thought of as *Sollen*, and v i c e v e r s a. This conception of Kelsens' has been penetratingly criticized by A. Ross ([23]). The conception of the idea of topic meets — to some extent — with similar objection though it is not linked with the specific philosophical theses presented above.

12.3. What we said in 12.1. can be illustrated by the analysis of (1.7.) and (1.8.). So let us consider

(1.7.) (Shutting of the door by Peter) so it is, and

(1.8.) (Shutting of the door by Peter) so it ought to be.

The word "so" used in both operators is significant. It could be interpreted to mean that the conceptual content of the expression in brackets is thought as determined by the operator, that is to say, as real (being the case) or obligatory, and not thought "neutrally". Now, if in connection with "so it is" it will be asked: "how is it ?", the meaningful answer will be only:

(1.9.) It is so that Peter is shutting the door, and not

(1.10.) It is so that shutting of the door by Peter.

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[23] Comp. H. KELSEN, *Das Problem der Souveränität und die Theorie des Völkerrechts. Beitrag zu einer reinen Rechtslehre*, Tübingen 1920, p. 99; A. Ross, *Kritik der sogenannten praktischen Erkenntnis. Zugleich prolegomena zu einer Kritik der Rechtwissenschaft*, Kopenhagen — Leipzig 1933, pp. 52 ff., and *Towards a realistic jurisprudence. A criticism of the dualism in law*, Copenhagen 1946, pp. 39 ff.

When we ask analogously, with respect to (1.8.): "how ought it to be ?", the meaningful answer will not be:

(1.11.) It ought to be so that shutting of the door by Peter, but instead the following answers are to be considered:

(1.12.) It ought to be so that Peter ought to be shutting the door,

(1.13.) It ought to be so that Peter is shutting the door.
There is a possibility of yet another answer which will be introduced later, after the operator has been analysed. It will suffice now to note that (1.11.) is unacceptable.

12.4. At the risk of being somewhat pedantic, we shall now consider a further transcription which intuitively seems more convenient for the conception under discussion:

(1.14). (Shutting of the door by Peter) is the case. Admittedly, one can repeat here the reservation that it is not easy to see how "is the case" or "ought to be the case" can be predicated of something which is not itself thought of as being the case or obligatory. But the answer to the questions: "what is the case ?" and "what ought to be the case ?", identical in both instances: "shutting of the door by Peter", would seem meaningful. It is, however, only apparently so, thanks to the abbreviations used in ordinary language in this instance and in similar ones. These abbreviations are (in a given context) satisfactory as far as the process of communication is concerned, but they have to be reformulated in the semantic analysis in the following way:

(1.16) (Peter is shutting the door) is the case, is reformulated as

(1.17) It is the case that Peter is shutting the door.

(1.18) (Peter ought to be shutting the door) ought to be the case, is reformulated as

(1.19) It ought to be the case that Peter ought to be shutting the door.

(1.20.) (Peter is shutting the door) ought to be the case, finally, is reformulated as

(1.21.) It ought to be the case that Peter is shutting the door.
As to another reformulation (comp. 12.3) see below (14.4).

12.5. There is doubt about the semantic category to which

phrases (meaning ideas of topics) belong. They stand close to names. Such a construction was sometimes adopted in modal and deontic logic, but it involves various difficulties ([24]). If T were a name, the formula i (T) would be unacceptable, because T as a name would not have the semantic function of truth — falsity, and the component i predicates truth of T ("so it is"). The formula i (T) could express only an assertoric statement, but the assertion i can refer only to a sentence, as having the appropriate semantic function, and not to a name. And analogously in the case of directives ([25]).

The view according to which the phrase, meaning the idea of topic, is a "neutral" component common to the descriptive statement and the directive, though apparently plausible, is misleading. Upon considering what would constitute a "neutral" part of the statement it turns out that this can only be a statement. This is probably the reason why the difference between the descriptive statement and the directive is often sought for "beyond" this statement — not on the semantic, but on the pragmatic level. It is expressed in the view that the content both of the indicative sentence and of the directive is a proposition, and that they differ only in their pragmatic function. The last is also the opinion of I. Hedenius who, however, has a different view of the question of the semantic properties of the directive. His view is possibly connected with the standpoint, shared by many authors, that directives do not have the semantic function of the descriptive statements.

13. In 12.3. we came to the conclusion that the directive, in analogy with the descriptive statement, cannot be represented by d (T), as shown in (1.11.) and ff. On the other hand there is no doubt that the directive does contain some cognitive component. As does the descriptive statement, so also the directive in our example tells us something about the shutting of the door by Peter. Like *is* in the descriptive statement, *ought to be*

([24]) G. H. von Wright, An essay in deontic logic and the general theory of action, *Acta Philosophica Fennica*, XXI, Amsterdam 1968, p. 16.

([25]) *d* ("so it ought to be") can also be predicated only of a sentence, not of a name.

in the directive is the (main) operator of two arguments (Peter, shutting of the door) which are names ([26]). The syntactic structure of this directive is quite similar to that of the descriptive statement, and similarly produces a meaningful linguistic expression. Since d (T) is not an acceptable analysis, the question arises if a reconstruction of the directives is possible, such that it contains a descriptive statement as a component.

13.1. The first solution which occurs to us is to "reduce" the directive to a descriptive statement. We do not think such a "reduction" possible ([27]). The "reduction" to statements in the present or past tense respectively ([28]) could be accepted only for some forms of the strong use; there would then, however, be a difference in the pragmatic function. One could further consider for the "reduction" in question indicative sentences in the future tense (e.g., "Peter will shut the door"). They could be interpreted in a twofold way. Firstly, they might be regarded as expressions with a strong use (and the difference in pragmatic function); secondly, they may be considered as answering to a version of the view called the *prediction theory (threat theory)*. In the second case "Peter ought to shut the door" would be understood in the sense of "Peter will shut the door (because of his fear of sanction)". We could also consider the "reduction" of the directive to some statements about the experiences of the giver of the directive, or of its addressee (e.g., the directive "Peter ought to shut the door" would be replaced by "X wants Peter to shut the door" or "Peter feels obliged to shut the door"). Other types of "reduction" might

([26]) Comp. K. AJDUKIEWICZ, "Związki składniowe między członami zdań oznajmujących" ("Syntactical relations between the components of indicative sentences"), in *Język i poznanie* (Language and Cognition), v. II, Warszawa 1965, pp. 345 ff.

([27]) Comp. J. WOLEŃSKI o. c., and J. WRÓBLEWSKI, The problem of the meaning of the legal norm, *Österreichische Zeitschrift für öffentliches Recht,* XIV, 3-4, 1964, pp. 254 ff.

([28]) Here we have in mind the problem connected with customary rules, e.g., customary law: according to some views, the obligation to do something can be inferred from the fact that members of the group used to do it regularly in previous times.

also come into play. They are all unacceptable, in the light of
the critical litterature ([29]), with the exception, however, of the
instances where we deal with some forms of the strong use of
directives; in such instances the difference between the direc-
tive and descriptive statement is limited to the pragmatic
function.

13.2. Similarly, such reconstructions of directives cannot be
accepted which replace them by "conjunctions" of a directive
and a descriptive statement (e.g., "Peter ought to shut the
door and Peter shuts (will shut) the door") because there is no
logical relation between he components of this "conjunction",
and they can be only factually associated ([30]). The same can
be said about reconstructing the directive as a "conjunction"
of a value statement and a descriptive statement, which besides
would lead to some additional complications ([31]). In connection
with the discussion of the problem of "ought entails can" one
must also draw attention to the reconstruction of "Peter ought
to shut the door" as "Peter ought to shut the door and Peter
can shut the door". In our opinion, these statements could only
be factually associated; and even if the thesis of "ought entails
can" were to be accepted, "Peter can shut the door" would be
a necessary but not a sufficient condition of "Peter ought to
shut the door" ([32]).

13.3. Finally, with reference to what was said about the
forms of the weak use (comp. 8), such as "it is obligatory that..."
"it is forbidden that...", "it is permitted that...", etc., we ought
to consider the possibility that the directive consists of an
operator (directive, normative, deontic — the last term will
be used further on) and a descriptive statement connected by
the expression *that*; thus the directive would be analogous

([29]) Comp.

([30]) R. CARNAP, *o. c.*, p. 1002.

([31]) It seems hardly justified to speak about the "conjunction" of a value
statement and a descriptive statement; the meaning of directives seems to
consist in something different from the meaning of value statements.

([32]) Comp. the discussion on *ought entails can* in G. H. VON WRIGHT, *Norm
and action*, cit. above, ch. VII; E. J. LEMMON, *o. c.*, pp. 47 ff.; R. M. HARE, *Free-
dom and reason*, Oxford 1963, pp. 51 ff.

to a modal statement. Both would have the same component p, and would differ in operators. This view is accepted by quite a number of authors; the expression p is then characterized, e.g., as "sentence radical" which describes the "descriptive content" of sentences composed of p and the operator ([33], or as "proposition-like entity", or "schematic sentence which expresses a proposition (possible state of affairs)" ([34]). An analogous structure (treating the cognitive component as a descriptive statement) is sometimes ascribed to directives and similar satements also in semantic analyses which do not deal with the comparison of these statements with modal ones (e.g., in R. Carnap's formula of "optative statements": "U(tinam) p") ([35]).

14. There are some profound grounds for reconstructing the directives in analogy with modal statements. There is a striking similarity between the modal concepts of possibility, impossibility and necessity, and the directive concepts of permission (right), prohibition (negative duty), and obligation (positive duty). Modal concepts, along with the directive ones, are further similar to the triad of quantifiers: some, no, all. Permission is a peculiar "directive possibility", and is analogous to "some". Prohibition is "directive impossibility" — there is no instance in which the forbidden behaviour is permitted, hence the analogy with "no". Obligation again is "directive necessity" — there is no instance in which the behaviour contrary to the prescribed one is permitted, hence the analogy to "all". On this far-reaching analogy are based the applications of the well-developed logic of quantifiers and of modal logic in the building-up of deontic logic ([36]).

([33]) E. STENIUS, The principles of a logic of normative systems, in *Acta Philosophica Fennica*, XVI, 1963, *Proceedings of a Colloquium on Modal and Many-valued Logics*, Helsinki, 23-26 August, 1962, p. 248.

([34]) G. H. VON WRIGHT, *An essay...*, cit above, pp. 14, 16 (and similarly A. R. ANDERSON and A. N. PRIOR, cit. there). Compare on this subject G. KALINOWSKI, Introduction à la logique juridique, *Bibliothèque de Philosophie du Droit*, v. VIII, Paris 1965, pp. 82 ff.

([35]) R. CARNAP, *o. c.*, p. 1004 ff.

([36]) Cf. C. H. VON WRIGHT, *The logic of practical discourse*, cit. above pp. 144 ff.; *An essay...*, cit. above, pp. 13 f; Deontic logic, *Mind*, 60, 1951, and Deontic logics, *American Philosophical Quarterly* 4, 1967.

14.1. For directives, we adopt tentatively the formulas: P(p), F(p), and O(p), in analogy to the formulas of modal statements M(p), I(p), and N(p). The directive concepts P, F, O can be defined in the terms of any one of them (and negation), and so we reach the formulas, e.g., P(p), -P(p), -P(-p), again in analogy to the formulas of modal statements, M(p), -M(p), -M(-p). Analogously the quantifiers can be defined (E, -E, -E-). (We shall henceforth use the deontic operator P) ([37]).

14.2. These analogies are undoubtedly promising for deontic logic. In this paper, however, we are interested to know how far these analogies reach, where they end. It would certainly not be justified simply to introduce the formulas (P(p), -P(p), -P(-p) in the place of M(p), -M(p), -M(-p), and operate on them with the aid of an analogous vocabulary of truth-connectives and additional symbols, thus getting a system of deontic logic strictly corresponding to the system of modal logic. Supplementary devices and modifications which as a rule are introduced in deontic logic systems certainly pay attention to the peculiarities of the expressions in question. They are introduced as a consequence of examining in detail, in the course of forming those systems, to what extent the theses of deontic logic can intuively be said to conform to the theses of modal logic, and which of the theses of the latter can not be accepted in deontic logic. We propose in this paper to consider a matter which — in our opinion — is prior to these operations. We want to estalish the syntactic and semantic differences between the expressions P(p), -P(p), -P(-p) on the one hand and M(p), -M(p), -M(-p) on the other hand.

14.3. For the sake of this comparison one has to consider the kinds of meaning we meet in these two series of formulas, starting with some examples. Let us introduce the following modal statements:

(7). It is possible that (it is the case that) life exists not only on the earth, but also on some other planets.

([37]) Sometimes O ($\square$) is used as basic, permission being defined as $(- O -) - \square -, \diamond)$; cf. e.g., E. J. LEMMON, o. c., p. 40; on the relations between P-concepts and O-concepts cf. G. H. VON WRIGHT, *An essay...*, cit. above, pp. 22 ff., 34 ff.

(8). It is impossible that (it is the case that) life exists on the moon.

(9). It is necessary that (it is the case that) life exists on the earth.

And here are the examples of directives, analogously formulated:

(10). It is permitted that (it is the case that) the creditor sues the debtor who does not pay his debt in due time (?).

(11). It is forbidden that (it is the case that) a man kills another man (?).

(12). It is obligatory (prescribed) that (it is the case that) the owner of a car registers it (?).

(10), (11) and (12) are provided with question-marks. These express our doubts whether the meaning of the expressions with respect to (a) the meaning of the operator, (b) the way of its connection with p, and hence (c) the meaning of p, really corresponds, as suggested, to (7), (8) and (9). We are here not interested in comparing the range of statements, which can be connected with deontic operator, with the range of statements which can be connected with the modal operator ([38]).

What do our doubts consist in ? Modal statements, with respect to their relation to reality express qualified propositions about something being or not being the case; these statements as to their meaning constitute coherent wholes. On the other hand, the expressions (10), (11), and (12) are composed of two parts, each of which express — from the point of view of its relation to reality — a thought of a different kind: the first part (the operator) expresses the thought about the oughtness of some conduct, whereas the second part expresses the thought about such conduct being the case. From the point of view of the directive the thought about being the case of what is directed is quite immaterial, as much as from the point of view of the thought about something being the case the directive thought is out of place. The combination of the two parts in question can be reconstructed into a meaningful whole which, however, will be not a directive but a value statement,

([38]) Cf. E. J. LEMMON, o. c., pp. 43 f.

e.g., "The owner of a car registers it in accordance with his duty". Anyhow, on this interpretation (10), (11) and (12) would not constitute proper analyses of the directives.

On the other hand, one can claim that the expressions (10), (11), and (12) mean that the states of affairs described in the parts following the operators belong to the classes of the states of affairs permitted, forbidden, or prescribed. On such view, however, one is faced with the problem of the ontology of "normative states of affairs", while accepting a different from empiric existence of the states of affairs described in (10), (11), and (12).

14.4 We claim that the meaning of P(p), -P(p) and -P(-p) is different from that presented in the examples (10), (11), and (12). It is as follows:

(10 a). It is permitted that (it would be the case that) the creditor sues the debter who does not pay his debt.

(10 b). It is forbidden that (it would be the case that) a man kills another man.

(10 c). It is obligatory (prescribed) that (it would be the case that) the owner of the a registers it.

The operators P, -P, -P-, having directive meaning, differ from the operators M, -M, -M-, in that they are connected with sentences (p, q, r ...), *not* by means of the expression: "that it is the case that...", but by means of the expression: "that it *were* the case that...". These sentences are, accordingly, in the subjunctive, and not in the indicative mood. Attention is to be paid to the fact that this feature of the sentences is partly veiled by the deficiencies of the (ordinary) languages which we use in the analysis of the expressions. There is virtually one word, "that", at our disposal (and analogously the "que" in French and the "dass" in German). The proper candidate for their places in directives is the Latin "ut" [39].

There is another clue to this specific meaning of directives.

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[39] The *ut* comes close to "utinam" in optative statements, cf. R. CARNAP, *o. c.*, pp. 1004 f; Optative statements have to some extent been analysed by K. MENGER, A Logic of the doubtful. On optative and imperative logic, *Ergebnisse eines mathematischen Kolloquiums*, S. II, 1, 1939.

The word "ought", so frequently used as deontic operator, can be classified with the words characteristic of expressing the subjunctive mood, along with such words as "could", "would", "might", "should". Hence the directive in its typical "natural" form, such as: "Peter ought to shut the door", is not an indicative sentence but a peculiar subjunctive one. It can be seen more distinctly from the reconstructions (10 a), (11 a), and (12 a). There the deontic operators are connected with sentences in the subjunctive mood by means of *ut*, which is a subjunctive, non-truth-functional connective. In this way statements are formed which are meaningful non-truth-functional compounds.

It is to be noted that in ordinary language the *ut*-compounds are regularly substituted for by the infinitive form of the verb which stands for the permitted, forbidden or prescribed behaviour, e.g.:

(10 b). The creditor is permitted to (can) sue the debtor who does not pay his debt in due time.

(11 b). A man is forbidden to (must not) kill another man.

(12 b). The owner of a car is obliged (ought) to register it. The infinitive is a counterpart of the more developed *ut*-form in the directives. At the same time a difference between *ut*-forms and infinitive-forms is visible. In the former the deontic operator is connected with the sentence (in subjunctive mood) which refers to the state of affairs (qualified as permitted, forbidden, or prescribed). In the latter the deontic word plays the role of a predicate in relation to the subject which is the name referring to the person (s) whose accomplishing of a given state of affairs is qualified as permitted, forbidden, or prescribed.

Still another type of forms is in use, namely:

(10 c). The suing of the debtor who does not pay his debt in due time by the creditor is permitted (is a permitted behaviour).

(11 c). The killing of a man by another man is forbidden (is a forbidden behaviour).

(12 c). The registering of a car by its owner is prescribed (is a prescribed behaviour).

Here the deontic word is an adjective referring to the behaviour qualified as permitted, forbidden, or prescribed. These forms show a striking similarity to the formulations of value statements, and are worth examining in the context of the problem of the relations between value statements and directives. This vast and controversial problem, however, cannot be considered in the present paper ([40]).

One has to observe that modal statements can be formulated, not only in the manner of (7), (8), and (9), but also in ways analogous to (10 b, c), 11 b, c), and (12 b, c) ([41]).

15. Taking into account the syntactic-semantic properties of directives, as shown above, one could maintain the view that (a) directive statements are non-truth-functional compounds, although — as in so many other instances of statements of this kind—one can elaborate ways of eliminating them, of replacing them by truth-functional statements serving the same purpose as these non-truth-functional compounds ([42]). — On our view, however, even when adopting the most ingenuous syntactic-semantic devices for the elimination, this would always mean an untenable "reduction" of directives to descriptive statements ([43]). So, on our view, (b) directives are non-truth-functional compounds of a peculiar kind; they cannot be eliminated and replaced by truth-functional statements. Their distinctive features reveal some important linguistic peculiarities of a group of statements, constituting a partner of equal rank to the group of truth-functional statements.

15.1 The author will here refer to his previous paper on directive meaning in its relation to cognitive meaning ([44]). The

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([40]) Comp. J. NOWACKI, O rodzajach ocen ze względu na normę (On the kinds of value statements based on norms), *Zeszyty Naukowe Uniwersytetu Łódzkiego (The Łódź University Review)*, S. I, N° 14, 1959, pp. 20 ff.

([41]) In this connection of R. MONTAGUE, Syntactical treatments of modality, with corollaries on reflexion principles and finite axiomatizability, *Acta Philosophica Fennica*, XVI, 1963, pp. 153 ff.

([42]) W. VAN ORMAN QUINE, *Elementary logic*, rev. ed., Cambridge Mass. 1966, p. 24.

([43]) Cf. notes 28 and 30.

([44]) K. OPAŁEK, *o. c.*, pp. ...; cf. also M. BLACK, The analysis of rules, in

cognitive meaning of truth-functional statements is a sort of "reproductive" meaning, determining what is the case and expressed in a way proper and typical of the indicative mood. The directive meaning is a sort of "productive" meaning, and it is so in a two-fold sense: (a) The directive is "meaning itself" ("self-intensional" and "self-extensional"), that is to say, meaning the verbal act of influencing behaviour; this act being produced just by formulating the directive and coinciding with its meaning; if the formulation of the directive were changed so that its meaning would cease to be the meaning of just this kind, the directive would cease to be such an act. (b) The directive, meaning the verbal act of influencing behaviour, refers to the extra-linguistic reality in a prospective, not in a retrospective manner. It does not describe a state of affairs, that is to say, it does not present it as being the case ("it is so") but is an act of aiming at producing a state affairs ("*ut* it were so"); this state of affairs can be, of course, not only different from the actual one but it can aim at changing as well as at maintaining the actual state of affairs ([45]). Directives express a volitional, not a cognitive relation to extra-linguistic reality. The syntactic components detected in directives by considering the formulas of their weak use, testify to that; they build up a compound which is not truth-functional (cognitive, reproductive) but non-truth-functional (purposive, productive). In this way the use of the subjunctive mood which the analysis shows to be peculiar to directives, is explained (and so is the subjunctive character of the word "ought") and their "purposive", non-truth-functional connective *ut*. *Ut* can be considered as a special directive connective. The purposive, productive, prospective character of the meaning of the directive is expressed also by means of other forms —infinitive and adjective —of. (10 b, c), (11 b, c), (12 b, c). The most developed and enlightening forms are, however, (10 a), (11 a), and (12 a). It may be as-

Models and metaphors. Studies in language and philosophy, Ithaca 1962, p. 100

([45]) Cf. G. H. von WRIGHT on the logic of change in *Norm and action*, cit. above, ch. II, pp. 28 f, and on the relation of act to change, ibid., ch. II, pp. 42 ff.

sumed that (10 b), (11 b), and (12 b) are some sort of abbreviations characteristic of ordinary language, and that (10 c), (11 c), and (12 c) are derivative.

15.2 Thus we reach the conclusion that a directive formula contains—besides the deontic operator — a sentence, but a subjunctive one, beginning with *ut*. This sentence expresses a statement referring to the extra-linguistic reality, but the way of referring is here "prospective" and "suspended", not cognitive. In order to visualise directives of this character it seems advisable to adopt as their formulas O (ut p), F (ut p), P (ut p) or -P (ut -p), -P (ut p), P (ut p). The matter should be given further consideration by deontic logic based on the analogy with modal logic.

15.3 The ut-compounds: "It is prescribed (obligatory) *ut*...", "It is forbidden *ut*...", "It is permitted *ut*..." are still analogous to the triad of modalities, though some essential differences have been established. Among the directives are classed, however (see 1), also statements of the types: "It is requested ut...", "It is recommended *ut*...", "It is advised *ut*...", etc. (here we do not go into the problem of distinguishing between personal and impersonal directives, which although interesting is immaterial for our present considerations) ([46]). Statements of the last-mentioned types seem to undermine the triad — and therewith the analogy of *ut*-compounds to modal statements. One can, however, maintain that statements of recommendation, request, advice, etc., belong to the same group as: "It is prescribed (obligatory) *ut*..." because the sense of all of them consists in that a certain way of behaviour is (positively) ordered. This ordering can be stronger ("obligatory") or weaker ("requested", "advised", "recommended", etc.). Analogous considerations would apply to statements of the types: "It is advised *ut* not...", "It is not advised *ut* not...", and the like, when compared with statements of prohibition and permission ([47]).

([46]) Cf. A. Ross, *Directives and norms*, cit. above, par. 10, 11, 12, and p. 60.

([47]) Attempts have been made in the legal field to discuss "stronger" and "weaker" norms on the basis of a graduation of their pragmatic function, cf. N. BOBBIO, Due variazioni sul tema dell'imperativismo, in *Atti del IV Con-*

15.4 The *ut*-connective can be considered as syntactically-semantically characteristic of all the statements whose meaning is productive, prospective, and purposive. In this connection let us consider the so-called teleological directives of the type: "One ought to do M for the purpose of acquiring P". In our opinion, it would be a mistake to see the directive *ut* in the expression:" for the purpose of..." This expression is a teleological interpretation of the factual connection between M and P (it corresponds rather to: "in order to..."). The directive character of the statement in question is constituted by the *ut*-connective of the word "ought" (reconstructed as "ought *ut*"). The former connective ("in order to...") is not a directive one, as shown by its use in non-directive statements of the type: "The student learns in order to pass the examination", "Man works in order to earn his living", and the like. The above does not purport, however, to deny a general teleological-prospective meaning of the word *ut* (both directive *ut,* and "in order to" *ut*).

15.5 There are further interesting problems relating to the directive operators, associated in meaning either with the factual ("it is prescribed", "forbidden", "permitted", "requested", "recommended", etc.) or with the modal-deontic words and phrases ("can", "must", "ought to", "is obliged to", "is entitled to", etc.). The problems are important already because this duplicity provides the starting-point for two kinds of theory concerning directives (norms) — the naturalistic theories and the normativistic ones which stress the peculiarity of directives. In any case it seems that (a) the first group of the operators is typically bound to the weak use of directives, and the second rather to the strong one; (b) the first group of operators refers to the acts of regulating (of directing conduct), and the second to the addressees of these acts. The operators of

gresso Nazionale di Filosofia del Diritto, Milano 1960; Per una classificazione degli imperativi giuridici, in *Scritti giuridici in memoria di Piero Calamandrei,* v. V, Padova 1956; Comandi e consigli, in *Raccolta dei scritti in onore di Arturo Carlo Jemolo,* v. IV, Milano; Norma giuridica, in *Novissimo Digesto Italiano,* Torino, pp. 19-23.

both groups can be transformed so that they refer to the ways of behaviour; then, as has been said above (comp. 14.4), the directives assume a form akin to value statements.

15.6. Next we have to consider the formulations mentioned in 12.3 as possible ways for reconstructing the directives, namely:

(1.12) It ought to be so that Peter ought to shut the door.

(1.13.) It ought to be so that Peter shuts the door.

Let us start with (1.13). Firstly, reference has to be made here to our objections concerning the formulations (10), (11), and (12) in 14.3. above, these formulations coming very close to (1.). But secondly, it is to be noted specifically with respect to (1.13) as using the operator "it ought to be...", that the key position of the connective *that* is in this formulation only apparent. In order to see this, it is only necessary to reconstruct the much-debated-expression: "It ought to be..." It has been already pointed out (comp. 14.4) that "ought" belongs to the words wihch are characteristic for expressing the subjunctive mood. "It ought to be..." is nothing but a device how to use the infinitive instead of the expressions: "*ut* it were..." The whole expression (1.13) thus uses *ut* to connect the deontic operator with what follows the connective:

(1.22.). It ought *ut* it were the case that Peter shuts the door. In (1.13.) it is formulated in a way which obscures this syntax. This is not the case in (10a), (11a), and (12a).

We now come to (1.12.). This formulation is not a correct analysis of the directive. Without any additions, alone, it is directively meaningless, because "to *be* so" ("*ut* it *were* so") is incompatible with "ought to be", when following the word *that*. Only by supplementing (1.12.) so that it runs (in full) as follows:

(1.23.) It ought *ut* it were prescribed that Peter ought *ut* he would shut the door,

we should get a directively meaningful statement, a directive of higher order. The meaning of this statement would not constitute, of course, an analysis of the directive of the first order.

16. Finally, it has to be added that, in some fields, great stress is laid in the analysis of the structure of directives

(e.g., of legal norms) on the distinction between components which refer to (a) situations in which some way of behaviour is **prescribed** (recommended, etc.), forbidden or permitted, (b) addressees of the prescription, or permission, (c) ways of behaviour prescribed, forbidden, or permitted, and (d) sanctions (negative) connected with behaviour contrary to the prescribed or forbidden one. The last element can be excluded, firstly because it is not to be found in all directives, and secondly because it can be eliminated, as shown by the constructions of chains of norms — the sanctioned and sanctioning ones, and by analogous constructions ([48]). As to the other elements, they are necessary for the formulation of a directive ([49]), and so far we are justified in distinguishing them. But this is not to be understood to mean that it would be "essential" for the directive to determine in a detailed manner the situations, addressees, and ways of behaviour. The directive can refer to "all" situations, "all' persons, and even to "all" ways of behaviour, e.g., it can permit everything. Rather there is a pragmatic necessity, or need, of making these things precise (in various degree with respect to each, and depending on what is aimed at by the directive).

The distinguishing of elements (a), (b), and (c) can be profitable for analytic purposes, but one should avoid seeing in it a canon for the structure of directives (norms). These elements can be reconstructed in various ways (e.g., (a) can be eliminated and consumed by (b) when regarded as properties of the addressee, or by (c) when regarded as properties of the way of behaviour, etc.). All three elements can also be reconstructed as one ("the behaviour B of the addressee A in the situation S" — as prescribed, forbidden, or permitted), corresponding to the sentence beginning with *ut* and providing an argument for the deontic operator. If there were to be talk about a real "canon" for the structure of directives, this would

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([48]) Cf. J. LANDE, *o. c.*, pp. 924 ff.; O. WEINBERGER, Einige Betrachtungen über die Rechtsnorm vom Standpunkt der Logik und der Semantik, *Logique et Analyse*, 28, 1964, p. 230.

([49]) Cf. M. BLACK, *o. c.*, pp. 107 f.

be presented by the formulas: O(ut p), F(ut p), P(ut p). It should be added, moreover, that of the three above-mentioned elements (of the sentence beginning with *ut*) the basic one is the presentation of the behaviour, and the other two are subordinate (they are answers to the question: "Whose behaviour ?", and "In what situation ?" ([50]).

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([50]) Cf. A. Ross, *Directives and norms*, pp. 107 ff.

DISCUSSION

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Let us take the sentence A. I shall write on the blackboard: "The person X acts in accordance with the norm (or rule) N." This seems to me an extremely important sentence and the analysis of this sentence seems to me to be very difficult. Now, I want to begin with a very insufficient attempt, the inadequacies of which I shall point out. Let A mean: "The belief of X in the validity of norm N implies causally the action A and, moreover, there is an isomorphism between the structure of N and the structure of A." I think at least two such parts should be present in the analysis of this sentence, but both parts of this conjunction seem to me to present rather difficult problems.

First, the problem of the belief in laws. The logic of belief is yet in a very insufficient state. How has it to be applied to norms ? Is the belief in a norm the same as the belief in a statement ? What is the belief in the validity of a norm ? Second: can there be a causal implication between a statement about the existence of a belief and an action ? And what is the logic of this causal implication ? Should we not try to have the logic of causal modalities really well-known before we can continue and if there are causal implications and we know their properties, can a belief statement be an adequate antecedent of a causal implication, because it is not perhaps temporally defined ? Does this belief occur during a certain time interval ? The action, does it occur at a certain time point or during a certain time interval ? Third: the concept of Isomorphism is certainly too strong.

But, moreover, what does isomorphism mean here ? It reminds us of Wittgenstein and the identity of structure between proposition and fact and I am rather unhappy about this, but there should be some relation of conformity between the content of the norm and the action. What type of conformity should

it be ? Partial isomorphism ? How can it be well defined, for
I cannot say that a norm and an action have only one structure.
They can be partitioned in many ways. Should I say there is
at least way to analyse the action and the fact, so that there is
a partial isomorphism between these two analyses ?

And here I think about something else concerning the first
part of my attempt at a definition. The belief is surely not
the only cause for the action but it must be a partial cause. So
I shall have to use such a definition of causal implication that
I can talk about partial cause.

Here we have an example of the Galilean method. Our initial
analysis was:

"X acts in accordance with norm N" $=$ $_{Def}$
"(B(X, N) $\rightarrow_c$ A) $\wedge$ [S(N, A)]. We recognise the difficulties of the
analysis, and we try to overcome them, by complexification
The analysis shows (and this is its function) what is presup-
posed (f.i. the logic of causal implication, a partial isomorphism
concept applicable to both actions and propositions with deon-
tic operators (norms), belief logic.)

M. Ch. PERELMAN

I only wish to say that this analysis obliterates an important
distinction made by Kant between acting in conformity to a
norm and acting by respect for a norm. It means that if I act in
conformity to a norm — if, for example, I stop in front of a red
light — it is perhaps only because there is a policeman there
and I am afraid of the sanction. So, it is neither the norm nor
the belief in the norm that is causing my behaviour, but I am
afraid of the sanction. I know the norm and I know it is sanc-
tioned and this is the reason for my action.

It makes a big difference. So it is not the first belief in the
norm that is causing the conformity. What I see, first of all,
is that a person acts in a given way, acts or abstains from act-
ing, in accordance with a norm, but I don't see that he acts
because he wants to respect the norm, that is something else.

So the idea of "in accordance with" is different from the idea of causality, of the action being caused by a belief in the norm.

Of course, in the norm there are different elements: there is the element of obligation and the element of sanction and if you speak of the norm, you don't say what element you refer to. Further, should we say that some belief is a reason to act? Should we identify it with a cause? This is a metaphysical concept. Spinoza identifies "causa" and "ratio", but are we obliged to do that, or wouldn't it be interesting to make a distinction? Anyhow, the only thing I wish to point out is that there should be another element, because the idea of causality here seems insufficient. Suppose somebody acts. Should it be conscious? What I see is the conformity between a behaviour and a norm, that is all. But then I say that he acts. Should I say that he acts, or should I say that he behaves? I don't know but I wouldn't be so rash as to immediately speak of the relation of causality here.

M. L. APOSTEL

I must begin by stating that this was not a final model but a beginning. Certainly, we could put more complex statements in place of N. I think that Mr. Perelman's example could be analyzed as follows: If a person believes that the non-performance (allow me to introduce a performance operator) of the norm implies a sanction, this is a partial cause of the action. Now, this is at least a partial answer to your example: the man who obeys the law because he is afraid of the sanction that will occur if he doesn't.

You say that here one should not have a causal implication but one should have the fact that this belief is a reason for this action. Then, I must ask you what is the logic of "being a reason for"? If you analyze "being a reason for", in the analysis you'll have as a part the causal implication. It will not be sufficient, but if I say that my belief that "2 + 2 is equal to 4" is the *reason* for my belief in the fact that "3 + 3 is equal

to 6", then I say that there is first a logical relation between these two statements and there is second a kind of causal relation between my belief in the first and my belief in the second. So I think that the relation "being a reason for" has to be analysed by means of the causal implication.

M. S. ISSMAN

A propos de la réponse d'Apostel, l'opérateur de la performance ne peut pas être utilisé ici puisque «performer», si je puis dire, a le même sens que «agir et accord». C'est un cercle vicieux.

Mais je crois que l'on peut défendre le point de vue d'Apostel concernant la causalité. La croyance en une norme ne peut pas être une raison. Ce n'est pas parce que je crois que j'agis. C'est un élément qui incite à agir, qui entraîne l'action, c'est un élément causal, Apostel a raison. Donner une raison, dire «je crois que» ... La raison, dans un contexte de ce genre, doit être elle-même une norme: il faut agir d'une certaine façon et on ne peut justifier une norme avec la même norme, de sorte que la croyance est effectivement une raison. Ce que je ne comprends pas c'est l'isomorphisme. Pourquoi faut-il qu'il y ait isomorphisme ? Entre quoi exactement ? L'acte et la norme ? Il faut trouver quelque chose dans la norme qui est réalisé par l'acte, pas nécessairement un isomorphisme. L'isomorphisme complique inutilement. Faut-il absolument définir de manière générale la notion de conformité. Pourquoi ? On ne peut pas analyser toutes les notions d'une manière générale comme la notion de conséquence logique. Agir conformément à une norme, cela peut être détaillé par des exemples.

M. L. APOSTEL

Alors on renonce à la définition !

M. J. WRÓBLEWSKI

I would like to make some comments on the discussion. It seems to me that the discussion partially has got beyond the assumptions I had made for my analysis, and partially it evidently deals with other questions than those I had dealt with.

I was discussing the problem when a relational statement of the form "X is consistent with a norm N" can be qualified as true or false. It was assumed that we can agree on the meaning of the terms appearing in the given formula in the language of our discourse. Such simplifying assumption is sufficient for an analysis of relational statements formulated in legal science and in legal practice. Of course one can ask further what kind of relation is designated by the term "consistent with", what "values" can be put for the variables "X" and "N" in my formula in a determined type of language etc. It was, however, not necessary on my level of linguistic analysis.

I think that very interesting problems of "isomorphism" put forth in the formula of prof. Apostel do not influence the results of my analysis; notwithstanding the determination of very controversial characteristics of this "isomorphism", in legal (or metalegal) language one has to assume such kind of relation for which a relational statement has a definite meaning. And this was, in fact, the assumption I have made in my text.

It seems to me, that the main trend of the discussion deals with problems I have not analysed in my paper. I have done a linguistic analysis of relational statements and I have not dealt with the problems of the type "why a person behaves consistently with a norm N". This kind of question is wholly legitimate, of course, but I have not asked it. Hence the formula "X is consistent with a norm N" and the formula given by prof. Apostel are not "inconsistent" (in some very loose meaning of this term), because both of them can be accepted as dealing with different topics, or with one topic discussed on various levels of analysis.

If we are interested in psychological analysis we have to ask the questions why someone behaves in this or that manner, what factors and what relations (e.g. causal, functional etc.)

are relevant here etc. I think that I would agree with prof. Perelman that the reasons for acting in conformity to a norm are various. We can have a belief that the norm is just, we can fear the sanction, we can fear the car crossing the section with the red light would run us over in spite of our right to cross; last but not least, my decision to behave in a manner consistent with norm N might be a result of some kind of calculation: what do I gain if I conduct myself in a way consistent with a norm?

I think that relational statements can be linked with various psychological attitudes, situations, motivations, reasons etc. There are, however, two matters we have to distinguish: the matter of semantical analysis of the kind I tried to do here and the kind of psychological analyses. Analyses on the psychological level can be formalized to a certain extent, but their core is a psychological analysis of motivations, attitudes, beliefs etc.

In my opinion the discussion has evidently demonstrated that with a relatively simple formula of a relational statement are connected various problems of high importance and of a high level of complexity. This was my contention too when I have analyzed one of these problems on a linguistic level of a semantical analysis.

M. O. WEINBERGER

Es ist ein glücklicher Zufall, daß die Referate von Prof. Wróblewski und Prof. Opałek zusammengetroffen sind. Ich möchte zeigen, daß zwischen diesen Beiträgen ein wesentlicher Zusammenhang besteht, und zwar zwischen der von Professor Opałek behandelten Frage des Aufbaues des Normsatzes in Beziehung zu dem ihm inhaltlich entsprechenden Aussagesatz und der hier von Alf Ross vertretenen Konstruktion, welche ein neutrales Element, das «topic», sowohl zum Aufbau des Aussagesatzes als auch des Normsatzes benützt, und der Überlegungen von Prof. Wróblewski über die

Relativaussage ("relational statement"), welche über die Beziehung zwischen einem Verhalten und einer Norm spricht. Fragen wir uns nämlich, was das Motiv der Ross-schen Lehre ist, und was auch andere Denker dazu geführt hat, beim inhaltlichen Aufbau des Normsatzes die Beziehung zum inhaltlich entsprechenden Aussagesatz ins Auge zu fassen.

Ich halte es für ein grundlegendes Konstruktionspostulat der Normenlogik, daß der Inhalt des Normsatzes so zu definieren ist, daß es immer sinnvoll ist, nach der Erfüllung oder Nicht-Erfüllung eines Normsatzes zu fragen. Hierbei bedeutet Erfüllung des Normsatzes 'p soll sein', daß der Aussagesatz desselben Inhaltes, d.h. der Aussagesatz 'p', wahr ist.

Prof. Wróblewski unterstreicht in seinem Beitrag mit vollem Recht, daß relational statements bei allen mit der lenkenden Rolle der Normen zusammenhängenden Problemen auftreten. Ich möchte diese Behauptung noch verstärken, indem ich ausdrücklich die Möglichkeit einer Erfüllungsaussage über die Norm zum Konstruktionspostulat der Normsätze erhebe (¹). De facto, aber nicht oft ausdrücklich durch Hinweis auf die pragmatische Rolle der Normen begründet, wurde diese Forderung von den meisten Normensystemen eingehalten (²).

Soll die Erfüllungsaussage immer sinnvoll sein, dann muß der Aufbau der Normsätze sicherstellen, daß nur das Inhalt eines Normsatzes sein kann, was auch Inhalt eines Aussage-

(¹) Die Erfüllungsaussage über die Norm ist offensichtlich Wróblewskis relational statement verwandt. Der Unterschied zeigt sich bei allgemeinen Normsätzen: Der Erfüllungsatz über die Norm 'Für jedes x gilt: x soll A tuen' ist genau dann wahr, wenn alle x A tuen; sonst ist er unwahr. Das relational statement kann auch von einem bestimmten x_i sprechen, von einem Einzelfall des Verhaltens, und ihn als mit der Norm übereinstimmend oder nicht-übereinstimmend charakterisieren.

(²) Die Theorien, welche die Struktur des Normsatzes mittels des Sanktionsbegriffes explizieren, verletzen das angeführte Konstruktionspostulat. Die Eigenschaft Sanktionzusein kann nicht rein beschreibend bestimmt werden, sondern sie ist nur in Beziehung zu einer verletzten Primärnorm definierbar. Rein indikativ, ohne Bezug auf eine Norm, kann also eine Erfüllungsaussage über eine Norm, welche den Sanktionsbegriff als inhaltliches Element enthält, nicht zu stande gebracht werden. Vgl. O. WEINBERGER, *Rechtslogik*, Wien-New York, 1970, S. 196 ff.

satzes sein kann. Man kann auch sagen, daß zwischen Normsatz-
inhalt und Aussagesatzinhalt so eine Zuordnung bestehen muß,
daß jedem Normsatzinhalt ein Aussagesatz desselben Inhalts
zugeordnet ist, der genau dann wahr ist, wenn der betreffende
Normsatz erfüllt ist. Man kann auch sagen: die inhaltliche
Konstitution des Normsatzes ist so zu gestalten, daß im Norm-
satz keine spezifischen inhaltlichen Elemente auftreten, die
nicht rein beschreibend wären, die also nicht als rein beschrei-
bende Elemente in Aussagesatzinhalten auftreten könnten.

Die Ross'sche Lehre vom Topic verfolgt zwei Ziele: die in-
haltliche Koordination zwischen Aussagesätzen und Normsät-
zen durchzuführen und zu verhindern, daß man annimmt, der
Normsatz enthalte einen Aussagesatz als Bestandteil oder (und)
der Normsatz werde durch eine besondere Operation aus Aus-
sagesätzen gebildet. Beide Ziele werden von dieser Theorie
erreicht. In dieser Beziehung ist die Ross'sche Auffassung ein-
wandfrei.

Gegen die Ross'sche Lehre vom Topic kann jedoch einge-
wendet werden, daß dem Topic keine selbstständige Entität ent-
spricht und daß die Lehre übersieht, daß die Bedeutung des als
Topic auftretenden Sprachausdrucks durch den entsprechende
Aussagesatz bestimmt ist, den Wahrheitsbedingungen dieses
Aussagesatzes entspricht (in einer extensionalen Sprache).

Man kommt ohne den Begriff des Topic aus, wenn man die
begriffliche Bestimmung des Normsatzinhaltes durch funktio-
nale Zuordnung zu den Aussagesätzen gestützt auf den Begriff
der Erfüllung des Normsatzes durchführt. Man kann aber auch
die Ross'sche Konstruktion annehmen, wenn man das Topic
nicht als selbstständige Entität hinstellt, sondern als Abstrak-
tionsbegriff, d.h. als jenes Element, welches dem Aussagesatz
und dem Normsatz gemeinsam ist. In diesem Sinne spricht man
im Deutschen meist vom Inhalt.

Prof. Opałek's Einführung des 'ut' als den Inhalt des Gesoll-
ten einführenden Sprachelements, erreicht zwar das Ziel anzu-
deuten, daß der Normsatz keinen Aussagesatz als Teil enthält,
sondern nur diesem inhaltlich zugeordnet ist; da jedoch dieses
'ut' in jedem Normsatz auftritt, kann es syntaktisch wegge-
lassen werden, es genügt, wenn man versteht, daß der nach dem

deontischen Operator auftretende Ausdruck nicht in aussa-
gender Funktion, sondern als Inhaltsbestimmung des Normsat-
zes angeführt wird. Dies wird durch die Erfüllungsbeziehung
vermittelt.

M. A. PECZENIK

I agree with Professor Opałek's views except for two minor
points.

First, the author assumes the following structure of a direct-
ive: "it ought *ut* it were the case that p". He use this formula
instead "it ought to be the case that p" because he wants to
exclude descriptive elements from the normative discourse.
Therefore, in his formula p stands not for a descriptive state-
ment in indicative mood but for a descriptive statement in sub-
junctive mood. Thus, p seems to be not about an actually exist-
ing state of affairs but about a would-to-be state of affairs.
My question is the following one. Does p really represent a
descriptive statement? If so, then it describes nothing actually
existing but only what would be. It describes this, assumes it
is a part of reality, and therefore assumes a strange ontology
of reality comprising not only what is but also what would be.
If not, then why use the symbol p, traditionally standing for
descriptive statements?

Second, the author is undoubtedly right that a directive can
be expressed in various grammatical forms. But he thinks that
a statement about a directive is normally expressed in some
characteristic way, i.e., includes words like "prescribed", "for-
bidden", "permitted", etc. I think that there is no difference in
this respect between a directive and a statement about direct-
ive, nevertheless. For example, the sentence: "the President
is elected in a secret ballot" can be interpreted as a descriptive
statement that the President actually is elected in such a way,
as a directive that he should be elected so, and, finally, as a
statement that this directive is valid. The difference between
those types of statements is semantical, not grammatical.

M. H. HUBIEN

I would like to ask Professor Opałek whether he does not think there is a very simple argument, drawn from the structure of many, if not all, natural languages, which would support such an analysis as Ross's. I mean that in many languages you can express statements as well as questions and orders by forms of words which differ neither as to their morphological nor as to their syntactical structure, but only as to their intonation. Does not Professor Opałek think that such «supra-segmental» features as intonations are very similar to operators such as I or D ?

M. A. R. ANDERSON

What you say about intonation is entirely correct; perhaps an illustrative example would help: «I never said he stole money». These six words bear a variety of interpretations, depending on the sentence intonation:
   «*I* never said he stole money» (perhaps someone else did).
   «I *never* said he stole money» (not once in my life).
   «I never *said* he stole money» (though I may have suggested it somehow).
   «I never said *he* stole money» (I was talking about someone else).
   «I never said he *stole* money» (he got it by some other illegal means).
   «I never said he stole *money*»... (laughter).

M. H. HUBIEN

All your variations on the same theme are in the same «logical mood»: they are all statements. My point was that you can produce not only *different statements* by using dif-

ferent intonations but also such *different kinds of utterances* as statements, questions and orders. The difference between your variations and mine is that you keep in the same broad category of utterances whereas I pass from one category to another.

M. A. R. ANDERSON

I agree with this too. Grammatical analysis does not in general give us firm clues as to the use to which a sentence is being put; we may use imperative sentences in giving orders, but we may also use declaratives or interrogatives for the same purposes. The force of an utterance is context-dependent in a way in which the grammatical analysis is not.

M. H. HUBIEN

In many natural languages, we use exactly the same form of words to produce different kinds of utterances. For example, if I say to a child of mine: "Now you're going to do your homework !", of course, it is imperative; but how do you see that ? You can, of course, infer it from the fact that it would be silly for me to make such a prediction at such a moment, but I think you will more often proceed by attending to my intonation. Of course, it could be a prediction: the point is that in many natural languages you can state facts, give orders or ask questions by using exactly the same words with different intonations. Now if I wanted a notation to distinguish such homonymous utterances, I think the most natural way would be to write them in phonological notation and then put in from of them intonation marks which would be very similar to operators such as "I" or "D": indeed I could interpret "I" and "D", as intonation marks for, respectively, statements and orders.

M. K. OPAŁEK

1. Considering what Prof. Weinberger has said there seems to be agreement between us. As to his objecting against formulas O(ut p), F(ut p), P(ut p), introduced by me I must stress that they can be treated only as a provisional way of showing the result of my analyses concerning the semantic structure of directives in their weak use as differing from the structure accepted now in deontic logic.

2. Answering Prof. Anderson's and M. Hubien's remarks concerning the role of sentence intonation I must say that this is a problem we are dealing with on the pragmatic level, not on the semantic one. What I have presented here is a semantic analysis, and the formulas introduced are abstractions, idealizations, which is wholly justified in analyses of this sort. I doubt if Prof. Ross himself would accept the "intonational" interpretation of his i-and-d-operators, as proposed by M. Hubien.

3. In answer to Prof. Anderson's objection it has to be explained that my conception does not amount to saying that directive utterances factually (in every instance) do influence behaviour. There is again only the semantic problem of the meaning of directive statements. According to my opinion such statements «mean themselves», that is to say, mean verbal acts of influencing behaviour, these acts being produced just by formulating the directive (compare my paper "The problem of directive meaning" in "Festkrift til Professor, dr. Jur. et Phil. Alf Ross", Kopenhagen 1969.)

4. As to Dr. Peczenik's remarks, I think that they are connected with his conception of directive (normative) meaning which differs from mine. In his paper "Problemy prawoznawstwa a logika norm" ("Problems of the study of law and the logic of norms", "Państwo i Prawo" 7, 1965) he was trying to find directives (norms) an analogon of the extension of the statement in logical sense, saying that while the latter statements are "qualified" with respect to reality (as true or false), norms are statements "qualifying" the reality. In my opinion, the "qualifying" (as "obligatory", or "permitted") is in fact an analogon to intension, as an immanent property of the norm-

content, property independent of the relation of norm to extra-linguistic reality, the ut p-expressions I am speaking about cannot be said to be extensional in such a sense.

M. G. KALINOWSKI

Je me permets d'intervenir dans le petit débat qui oppose M. Peczenik à M. Opałek ([1]). Ce dernier appelle «signification directivale» la signification d'une expression appelée à influencer un comportement. Or M. Peczenik demande de quel comportement il s'agit, d'un comportement déjà existant (s'il existe, on ne peut plus l'influencer) ou d'un comportement qui n'existe pas encore (comment peut-on influencer ce qui n'existe pas ?). Or la direction dans laquelle il convient de chercher l'issue de ce dilemme est indiquée par le principe scolastique dont l'origine remonte à Aristote: *actiones sunt suppositorum.* Ce ne sont pas les actions en tant qu'actions qui sont l'objet de l'influence en question, mais les sujets d'action, *supposita* des actions. Lorsque j'énonce une expression douée d'une signification directivale, j'énonce une expression telle que si sa signification est intellectuellement saisie par la personne à laquelle elle est adressée, cette personne peut passer, sous l'influence de l'expression donnée (à signification directivale, c'est-à-dire de la norme donnée) de l'état E_1 auquel elle se trouve au moment du temps T_1 à l'état E_2 au moment du temps T_2. (M. Perelman: «Le temps ne bouge pas».) Cela ne me gêne pas, car ce qui importe pour cette discussion c'est le comportement du sujet donné d'action. C'est lui qui «bouge» ou ne «bouge» pas selon la signification directivale de l'expression donnée et selon l'attitude d'obéissance ou de désobéissance qu'il

[1] A ce sujet voir mon article *Normes et logique. Sur la catégorie sémantique des foncteurs déontiques,* à paraître, en 1970, dans *Law and Justice.* — C'est seulement après avoir abordé ce sujet dans la présente intervention que j'ai appris que M. Opałek lui avait consacré sa communication *On the logical-semantic structure of directives.* Qu'il veuille bien m'excuser d'avoir, à mon insu, effleuré son sujet.

adopte envers cette expression (norme). Il est admis que $T_1 \neq T_2$, car par la force des choses $T_1 < T_2$. Mais quant à la propriété P_1, propriété du sujet en question de se trouver au moment T_1 dans l'état E_1, et quant à la propriété P_2, propriété de notre sujet d'action de se trouver au moment T_2 dans l'état E_2, nous avons, selon le cas, soit $P_1 = P_2$ (autrement dit $E_1 = E_2$) soit $P_1 \neq P_2$ (autrement dit $E_1 \neq E_2$). Bref, *ce qui compte c'est l'existence du sujet d'action.* En lui adressant une norme, c'est-à-dire une expression douée de signification directivale, nous lui signifions la nécessité (morale, juridique ou autre analogue) du passage de l'Etat E_1 au moment T_1 à l'état E_2 au moment T_2, que E_1 soit ou non identique à E_2 (quant à T_1 et T_2, $T_1 < T_2$). Il n'y a donc pas de problème du point de vue existentiel.

M. A. BAYART

I want to say a few words first on mathematical logic in general, and secondly on deontic logic in particular. I expect however that several among you will disagree with my point of view.

There are ordinary people and there are mathematicians. Ordinary people reason according to some formal rules. These rules and the applications ordinary people make of them are however so elementary that these rules are applied instinctively without any previous learning of mathematical logic. For ordinary people (and from the point of view of logic, lawyers are ordinary people) mathematical logic is useless. Mathematicians are in a different situation. As long as they keep on an elementary level they are in the same situation as ordinary people, and they are able to practise their science without learning mathematical logic. But if they go beyond such an elementary level it becomes necessary for them to be conscious of the formal rules they apply and so they have to know mathematical logic.

Now for deontic logic. I am afraid that for the moment many who are interested in deontic logic are wrong by starting with

what is most difficult, namely legal reasoning. They should start with simple things. For example, when a mother says to her child "I told you to keep your clothes clean, so you should not have played in the mud" the word "so" shows that some deontic reasoning is going on in that case. But in my opinion even such a simple example of deontic reasoning is too difficult a case to be analysed fruitfully in the actual state of deontic logic. Indeed between playing in the mud and spoiling one's clothes there is a relation of causality which is not easy to analyse.

I believe deontic logicians should think about some mechanical games. I think about a machine where successive moves can be made by pushing different keys, and where some manœuvres result in the flashing of a red light. If the rule of the game is that it is forbidden to make the red light flash, the consequence will be that some manœuvres are forbidden. Deontic logicians should try to make a theory about such machines.

Once such a theory will be formulated, it will probably be of great interest, not only for logicians, but also for the theory of computers. It will however, according to me, be of no interest for ordinary people and for lawyers. I admit that the most elementary aspects of that theory will be found to be present in legal reasoning, but they will be so elementary that lawyers will instinctively apply these elementary aspects of deontic logic without having to learn that deontic logic. The opinions I express here are not inspired by some despise for mathematical logic, and they should not indispose the mathematical logicians who are interested in deontic logic. On the contrary. My idea is that deontic logic should be developed in a pure mathematical spirit without worrying about the favourable or unfavourable reactions of lawyers.