

DEONTIC LOGIC: INTRODUCTORY AND SYSTEMATIC READINGS

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DEONTIC LOGIC:
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SYSTEMATIC READINGS

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PREFACE TO
THE SECOND IMPRESSION

This second impression of *Deontic Logic: Introductory and Systematic Readings* is published simultaneously with a companion volume entitled *New Studies in Deontic Logic* (D. Reidel Publishing Company, Dordrecht 1981). The papers published in the present collection outline the 'basic' or 'standard' system of deontic logic, discuss its applications to moral philosophy, and analyse the concepts of commitment and conditional obligation. *New Studies* contains ten previously unpublished papers on the philosophical foundations and various special topics of the logic of norms: the foundations of deontic logic and action theory, problems of normative conflict, the interrelations between normative and temporal notions, and the history of deontic logic. The two volumes together form a comprehensive survey of the main problems and results of contemporary deontic logic.

The present impression contains a new Introduction which discusses the relationship of the papers published here to some new developments in the field; otherwise the book is reprinted (apart from the correction of some misprints) in the original form.

PREFACE TO THE FIRST EDITION

In its modern form deontic logic, or the logic of normative concepts, has been studied for about twenty years. The relevant literature consists mainly of papers in various journals and publications, many of which are not easily accessible to students of philosophy. Introductory textbooks have so far been missing. This volume has a two-fold purpose: first, it brings together some important contributions to deontic logic, and secondly, the papers published here have been selected in such a way that they jointly can serve as an introduction to the problems and methods of deontic logic. The essays by Føllesdal and Hilpinen, Hintikka (partly), and Segerberg were written specifically for this book; the others have been published before. Some of these papers appear here in a revised form. Most papers require some familiarity with elementary logic.

In the study of deontic logic, as well as other branches of what is now commonly called 'philosophical logic', we can distinguish between two main aspects. On one hand, deontic logicians have constructed formal theories of various normative concepts, and on the other, they have tested the adequacy of these theories by applying them to analysis of ethical discussion. These applications may also involve criticism of ethical or meta-ethical views. In this book, the former aspect is emphasized in Kanger's paper, and the latter, e.g., in Hintikka's essay. A characteristic feature of this book is the prevalence of semantical methods. These methods are most likely to lead to significant further developments, not only in deontic logic, but in philosophical logic and analysis in general.

All the papers included in this volume are by Scandinavian authors. This book reflects the strength of interest in deontic logic and related subjects in Scandinavia. In fact, Scandinavian philosophers have done a great deal of the pioneering work in this field. The modern development of deontic logic was initiated in the early 1950's by G.H. von Wright, whose work stimulated most of the subsequent discussion of the subject. Semantical theories of deontic notions were also presented first by Scandinavian philosophers, Jaakko Hintikka and Stig Kanger (1957).

I wish to express my thanks to all contributors to this volume for their collaboration, and especially to Professor Jaakko Hintikka, Editor of *Synthese Library*, for his help in editing this book.

THE EDITOR

INTRODUCTION TO THE SECOND IMPRESSION

The articles included in this collection represent what may be called the *standard modal approach* to deontic logic (the logic of normative concepts), in which deontic logic is treated as a branch of modal logic, and the normative concepts of *obligation*, *permission* (*permissibility*) and *prohibition* are regarded as analogous to the ‘alethic’ modalities *necessity*, *possibility* and *impossibility*. In his recent paper [16] Simo Knuuttila has shown that this approach can be traced back to late medieval philosophy. Several 14th century philosophers observed the analogies between deontic and alethic modalities and discussed the deontic interpretations of various laws of modal logic. A relatively simple deontic system of this kind (called the system *D* or *KD*; cf. Lemmon and Scott [17], pp. 50–51, Chellas [10], p. 131) is obtained by adding to propositional logic two deontic axioms (or axiom schemata),

$$(K) \quad O(A \supset B) \supset (OA \supset OB)$$

and

$$(D) \quad OA \supset \sim O \sim A,$$

where ‘*O*’ is the obligation operator, and the deontic variant of the ‘rule of necessitation’

$$(O) \quad \text{From } A, \text{ to infer } OA.$$

This system is closely related to the familiar alethic system *T*: the latter is obtained from *D* by replacing ‘*O*’ by its alethic counterpart ‘ \Box ’ and by strengthening the schema (D) into

$$(T) \quad \Box A \supset A.$$

The system *D* is often called ‘the standard system of deontic logic’. (The standard system can be formulated in different ways; cf. pp. 13 and 127–128 of this volume.) More generally, any deontic system which includes the system *D* may be termed a ‘standard system’.

In the present volume, the papers by Stig Kanger and Jaakko Hintikka outline the basic semantics of deontic statements, and Jaakko Hintikka also shows how deontic logic can be brought to bear on various problems and issues of moral philosophy, e.g. the is-ought question, the 'sollen-können' principle, and the distinction between absolute obligations and *prima facie* obligations. Georg Henrik von Wright (in 'A New System of Deontic Logic'), Bengt Hansson, and Krister Segerberg discuss the problems of *conditional obligation* and *commitment*: in their contributions they develop systems of *dyadic* deontic logic, in which the dependence of the normative status of an act on the circumstances in which it is performed or on the agent's earlier acts is expressed in terms of a dyadic obligation operator (*O*-operator). In his second paper ('Deontic Logic and the Theory of Conditions'), Georg Henrik von Wright suggests that deontic logic can be construed as a fragment of the modal logic of (necessary and sufficient) conditions, and argues that this way of looking at deontic logic leads to **illuminating analyses of the concepts of commitment and strong (disjunctive) permission.**

Much of the recent work on the logic of norms has centered on certain 'paradoxes', that is, arguments and examples which seem to conflict with the basic principles of the standard approach. For example, Georg Henrik von Wright's and Bengt Hansson's work on conditional obligation (reported in the present volume) has been motivated by the 'paradoxes of commitment' (see Føllesdal and Hilpinen's paper in this volume, pp. 23–24) and by Roderick M. Chisholm's 'paradox of contrary-to-duty obligation' (see pp. 24–25, 105 and 132–133). Chisholm's example is one of a group involving *conflicting* obligations. The schema (D) or the *principle of consistency* of the standard system excludes the possibility of genuine normative conflicts; thus examples involving seemingly conflicting obligations present a problem for the standard approach. In the case of Chisholm's example, von Wright and Hansson solve the problem by relativising the concept of obligation to circumstances: they assume that mutually incompatible obligations are relative to different conditions or circumstances. In the 1970's the logic of conditional obligation has been studied by Bas C. van Fraassen [25], David Lewis ([18], pp. 96–104, [19]), and by Azizah al-Hibri, whose monograph [3] contains a survey of various deontic paradoxes and a critical review of the theories of conditional obligation proposed by von Wright, Hansson, van Fraassen, Lewis, and others. Brian F.

Chellas ([9] and [10], pp. 275–276) and Peter Mott [21] have presented especially perspicuous analyses of conditional obligation in which the ideas of obligation and conditionality are separated from each other, and conditional obligations are defined in terms of the standard (monadic) obligation operator and a dyadic conditional operator. Such an analysis resembles that presented by Krister Segerberg in the present volume, except that the conditional connective employed by Chellas and Mott is not a *strict* or *necessary* conditional, but a *variably strict* conditional (in the sense of David Lewis [18]; see p. 13), and consequently the concept of conditional obligation defined by Chellas and Mott does not satisfy the (objectionable) augmentation principle

$$(A \text{ com } C) \supset ((A \ \& \ B) \text{ com } C)$$

(where ‘com’ stands for the concept of commitment) entailed by Segerberg’s analysis (see p. 156 below).

Some philosophers have tried to reconcile apparent moral conflicts with the consistency principle by relativising the concept of obligation to *time*: it has been suggested that mutually incompatible obligations can only concern an agent at different times. For example, Chisholm’s ‘contrary-to-duty obligations’ are actualized only after the agent has failed to comply with his primary duties – or after his failure to fulfil his primary obligations has become *unavoidable* (see Patricia Greenspan [11], pp. 265–267). Moral conflicts are not the only reason for studying the interrelations of deontic and temporal modalities. If deontic sentences are used for the purpose of directing and regulating people’s conduct, they are essentially ‘forward-looking’: deontic sentences about the past can be used only for *judging* the agent and his actions. Richmond H. Thomason ([23] and [24]) has distinguished between the *deliberative* and the *judgmental* use of deontic sentences, and discussed the relevance of the temporal relativity of obligations (and ought-sentences) to moral deliberation. Systems of deontic tense logic have also been developed by Brian F. Chellas ([8]; [10], pp. 198–200) and by Lennart Åqvist and Jaap Hoepelman [4] (among others).

It is not obvious that all moral conflicts can be ‘explained away’ in the ways described above: perhaps some of them are genuine and not merely apparent (or *prima facie*) conflicts. To countenance this possibility, some philosophers have developed deontic systems in which the consistency

principle (D) does not hold. The axiom schema (K) implies 'by rule (O) and propositional logic) the *conjunction principle*

$$(C) \quad (OA \ \& \ OB) \supset O(A \ \& \ B),$$

which cannot be regarded as valid if the consistency principle is rejected: perhaps a person can in some situation be subject to mutually incompatible obligations, but *self-contradictory* obligations are clearly impossible. (The standard system does not distinguish the consistency principle from the principle that *ought* implies *can*, which denies the existence of impossible obligations.) Neither (D) nor (C) belongs to what Brian F. Chellas calls 'the minimal deontic logic' ([10], p. 202). Bas C. van Fraassen [26] and P. K. Schotch and R. E. Jennings [22] have presented semantical analyses of ought-statements which do not entail the validity of (D) or (C), and which thus allow the possibility of genuine moral conflicts. The problem of the *resolution* of normative conflicts has been investigated by Carlos Alchourrón and David Makinson [2], who show how a partial ordering of a system of regulations may be used to resolve the inconsistencies within the system.

In the standard approach to deontic logic, the concept permission (permissibility) is defined simply as the absence of prohibition. The feature of the standard system has been criticized on several grounds; for example, it has been argued that the standard definition of permissibility excludes the possibility of incomplete or *open* normative systems, that is, systems which leave the normative status of some acts or states of affairs completely undetermined. (Thus the standard approach cannot explain the distinction between 'closed' and 'open' systems; cf. this volume, p. 166; von Wright [27], Chapter IV; [28], pp. 413–415; and Carlos Alchourrón and Eugenio Bulygin [1], pp. 116–144, for discussions of this issue.) Perhaps the most striking argument against the standard analysis of permissibility is provided by the 'paradox of free choice permission' or the 'paradox of disjunctive permission' (see pp. 21 and 160 of this volume). Usually a disjunctive permission seems to entail the permissibility of both disjuncts, but such an inference is not justified by the standard system, in which '*PA*' entails '*P(A V B)*', but not conversely. (Here '*P*' is the permission operator.) Hans Kamp [14] has presented an illuminating analysis of this problem in which he shows that it is related to the *performative* use of permission sentences, that is, the use of permission sentences for making previously prohibited acts or states of affairs permissible and thus *changing* a normative system. In the

light of Kamp's discussion, the problem of disjunctive permission seems more serious and more interesting that is suggested by Dagfinn Føllesdal and Risto Hilpinen in their contribution to the present volume (pp. 22–23). (This problem is also discussed by Hans Kamp in [15].) In [13], Risto Hilpinen has presented an improved analysis of Georg Henrik von Wright's concept of *strong* permission (cf. the present volume, pp. 160, 164–165), and discussed the relationship of the problem of disjunctive permission to an analogous problem in the logic of subjunctive conditionals ('the problem of disjunctive antecedents'; cf. also Barry Loewer [20]).

Normative concepts are usually applied to human actions: they belong to *practical* discourse, and the logic of action concepts should therefore form an essential part of the logical study of normative statements. The standard approach to deontic logic has been criticized in this respect: for example, Hector-Neri Castañeda ([5], p. 675) has argued that the standard possible worlds semantics of deontic logic developed by Jaakko Hintikka, Stig Kanger, and others is not a satisfactory theory of the practical concept of ought (or the concept of 'ought-to-do'; 'Tunsollen'), but concerns only the concept of 'ought-to-be' ('Seinsollen'). Castañeda's own approach to deontic logic is based on a fundamental semantic distinction between *practitions* and *propositions*, or the distinction between actions *practically* (or *deontically*) considered and the *circumstances* of actions (including actions considered as circumstances or conditions of other actions), and he has argued that this distinction is essential for a satisfactory solution of various deontic paradoxes (cf. Castañeda [6], Chapter 7, and [7]). However, Castañeda seems to have underestimated the interpretational flexibility of the standard approach. In [12] Risto Hilpinen has tried to show how the standard (possible worlds) semantics of deontic logic can be interpreted as a theory of the practical concept of ought, and Jaakko Hintikka's contribution to the present volume is clearly concerned with the logic of *Tunsollen*: the individual variables of his system of quantificational deontic logic are interpreted as variables for *individual acts* (pp. 60–67). A satisfactory comprehensive theory of normative concepts and action concepts remains nevertheless still very much of a *desideratum*. Georg Henrik von Wright has taken interesting new steps towards such a theory in his recent paper [29], in which he discusses different ways of applying normative concepts to actions.

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