ON THE FOUNDATIONAL CONCEPTS OF NORMS AND NORMATIVE SYSTEMS

On the Foundational Concepts of Norms and Normative Systems

A Deontic Logical Approach

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Preface

The ideas and views presented in this work are not new, barring a few exceptions. They are not new in two senses. First, I have discussed most of them earlier in my PhD thesis. Second, they are either articulated or influenced by scholars whose works I have read with deep interest. In particular, I owe the most to G.H. von Wright whose vocabularies and insights I have borrowed unreservedly. A careful reader of von Wright will see traces — explicit or implicit — of his influence throughout this book. That said, not everything in this book can be traced back to or reducible to the works of thinkers whose influence has shaped my thinking. With a reasonable degree of confidence, I can claim that there is some originality and novelty in the present work.

The fourth chapter of this book, which contains the model (D-model) I proposed during my doctoral study, has undergone substantial revision in terms of the definitions of basic categories of deontic logic. I realized that my definitions were unconsciously influenced by the Andersonian reduction schema of deontic logic into alethic logic, an attempt which I have found to be unconvincing, then and now. In the present work, I dropped the alethic modalities in my definitions. Also, unlike the earlier version where deontic modalities were defined in relation to propositions, I defined them in relation to actions in the present work. In the light of this revision and also relevant discourses in the recent time, chapters one and

two (largely taken from my PhD thesis) have been reworked. The third chapter is an adventurous attempt at critiquing the Kripkean semantic model for deontic logic. This chapter serves as a preparatory ground to understand the departures I am taking from the standard discourses on the subject and also to appreciate the perspectives that I offer in the present work. P.T. Geach's criticism of possible worlds (1982) has provided me with the hunch that it might be better to ground deontic logic in the concept of action than in the idea of the possible worlds. In other words, this work is an attempt to stay true to von Wright's seminal work of 1951 though the Standard Deontic Logic has chosen propositions over act-categories as the 'content' of norms. Working through this shift has helped me to understand and articulate better the gap that exists between the logic of *seinsollen* (ought to be) and the logic of *tunsollen* (ought to do).

On a broader perspective, I have tried to make a point that a formal system like deontic logic needs to be 'articulated' against the larger philosophical study of norms. I argue that much of the technical problems involving reduction of deontic logic into alethic logic are, among others, due to unexamined philosophical assumptions. Thoughts in this direction have required me to go beyond discourses in deontic logic to venture into the domains of moral and legal studies. In a nutshell, I have attempted the following in general: (i) to capture the formal structures of deontic categories with the help of D-model and to show how they are intricately related to axiological and praxeological concepts, yet another cue I picked up from von Wright (ii) to place permission on the same ontological level with obligation and prohibition which otherwise has been regarded even by some notable philosophers as secondary or derivative, and (iii) to conceptualize and categorize different kinds of deontic worlds; among them is a unique world I termed as Deontic Heaven.

The Indian Institute of Advanced Study (IIAS), Shimla, took me as a fellow for one year (2020-2021) to work on this book. I am thankful to the Institute for the opportunity to revisit, revise and reinforce the fundamental ideas in my PhD work. It was lying dormant for over a decade. My fellowship year was hit hard by the global pandemic and things have been rather difficult for me, too. I lost my mother and a cherished childhood friend during the period. A sense of personal loss took its toll on me. I was unable to make the most of my short time at the Institute. However, I have found much comfort in God's gift of a daughter to me during the same period, the same month (August 2020) my mother left for her eternal home. The wonderful people at the Institute, both the fellows and the staff, made my experience there enjoyable and memorable despite the challenges. I am grateful to one and all. I must make a mention of two persons in particular, a couple actually, to express my gratitude – Prof. Sharad Deshpande and his wife Prof. Medha Deshapande – at the risk of making them and myself uncomfortable. Despite the higher risk of being exposed to the virus, they were always ready to welcome me to their home for tea and meaningful discussions. Prof. Sharad Deshapande's perspectives on and insights into the works of von Wright have benefitted me much. I wish my time at the Institute has been free of the global gloom that brought personal grief and loss to millions of people including me, and I had done a better job with it to match my gratitude to everyone I am indebted to. All I can do now is pray and hope the journey of ideas which traversed here would go beyond the pages of this book. Somehow, I get this feeling that I would be exploring the world of permission in the many years to come.

May 2022 Venusa Tinyi

Introduction

"... [A philosopher] moves in a field of concepts."

(von Wright 1963a: 6)

Introduction

Norms have always been an integral part of human civilizations. Even ancient societies and tribes had norms. The situation has not changed much even today though norms and the whole system dealing with norms have become more subtle and complex. Around the idea of norms, many interesting questions can be raised: Why do societies and states have norms?[1] Who creates norms and why? Is the idea of norm consistent with the ideas of freedom and rights? More fundamental questions can be raised: What is norm? What makes norm a norm? Are all norms prescriptive in nature? One can also in the meantime raise technical and formal questions involving norms such as: What are the logical principles of normative reasoning? Are there logical structures underlying normative expressions? Does it make sense to talk about truth-values of norms? What is this thing called 'deontic logic' (DL) or 'logic of norms'*?* Is DL

1 In this work, the term "norm" is being generally used in its broadest sense to include notions such as laws, prescriptions, rules, directives, orders and related concepts. Often norms and prescriptions are used interchangeably.

simply an extension of the first order logic (FOL) which can be reduced to 'alethic logic' (AL) or is it an independent branch of modal logic? Many more interesting questions concerning norms can be raised. Though all these questions will not be addressed in the present work, we will engage with some of them directly and some others will be at the back of our minds. To put the present work in its proper perspective, our primary task will be to explore a conceptual foundation for understanding the basic categories of DL, namely, permission, obligation and prohibition.

It may suffice to point out presently that though logic of norms and DL are not same, permission, obligation and prohibition constitute the basic categories for both the systems and so very often we will use them inter-changeably. The reason is that we are not committed to systemic studies but conceptual studies of the basic categories. However, an important objective of the present work is to examine if DL as a formal system captures the essence of norms and if it can be considered a logic of norms in the strict sense of the term. Context of discussion will clarify whether we are using the terms 'DL' and 'logic of norms' in the broad sense or in the strict sense. These categories are not limited to the study of the logic of norms and therefore we will deliberately trespass the logical boundaries of DL to borrow insights and ideas from other branches of normative study.

Compared to other standard systems of modern logic, DL suffers from many difficulties though deontic logicians have proposed a standardized system. The nature and scope of deontic logic are still a matter of much contestations and conjectures. For instance, N. Rescher (1966) is of the view that virtually there is no consensus to even a simple issue in DL and similar idea was conveyed by J. Wolenski (1990). Georg Henrik von Wright, the founder of modern deontic logic[2],

2 von Wright published a seminar article titled "deontic logic" in

has this to say, "I would maintain that 'deontic logic' is an uncontroversial pursuit. I am, moreover, convinced that in all its presently-known forms it suffers from grave insufficiencies and, it may be, from errors" (von Wright 1963c: 8). Logicians and philosophers are yet to come up with either substantial solution to the problems in deontic studies or agree upon as to the exact nature of the problems themselves though the problems are more or less reasonably identified.

Although the focus of the present work is not directed towards addressing specific issues faced in DL, it helps to classify the kind of issues that we encounter in deontic studies for convenience. First, *intra-deontic issues*: these are formal in nature and they deal with issues such as validity of deontic reasoning, truth-values of deontic expression, meta-theorems of deontic logic, etc. They are internal to the system of deontic logic. In contrast, the focus of the present study is directed towards what may be termed as *meta-deontic issues* or deonto-philosophical issues. The kinds of question that we encounter in this type are as follows: What is the nature of deontic modalities or concepts? What are the grounds on which deontic modalities stand? What are the philosophical presuppositions underlying deontic concepts and expressions? What is the nature of their relationship with other related philosophical and logical concepts? How are deontic studies related to axiological and praxeological studies?

Our main task would be to analyse and understand the basic concepts of deontic logic, viz., permission, obligation and prohibition. We will try to understand the foundational grounds on the basis of which the use of deontic concepts becomes not only possible but also plausible. We will employ both formal and philosophical tools to conceptualize them. Ideas and definitions involving the basic categories are best

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Mind, 1951. Interest in the study of modern deontic logic started with this work. Hereafter, this article will be referred to as his 1951 work.

treated as tentative or proposed throughout. The idea is to avoid associating deontic categories to a specific context of discussion. Instead, our desire is that we try to grasp the concepts reflectively and holistically. Though a quasi-formal model (termed as D-model) is being proposed to capture and explain the basic deontic modalities, we treat the model as a metaphorical model rather than a theoretical-formal model.

The assumption that there are universal laws which can be used to describe the structure of reality is received with due skepticism today and rightly so. Even the so-called *laws of logic* or *laws of thought* which are alleged to underscore the basic idea of rationality and to which all laws and theories must conform to is being subject to considerable criticism. Subsequently, big claims and tall promises about discovery of laws are increasingly growing out of fashion. For this reason and more, we treat our model as metaphorical and proposal. The kind of questions we undertake to investigate in the present work will be primarily philosophical or conceptual in nature. Although perspectives gained from such discussions are tentative or suggestive in nature, they cannot be ignored. They are so fundamental that one would avoid them only to face unpleasant consequences later on. In a sense, the present work is an attempt to make this point. Besides, it is also hoped that the perspectives that we gain here will have fruitful implications both within and outside the domain of deontic logical studies.

An integrated approach to DL

DL, as the logic of norms, is defined as a formal inquiry into normative concepts and normative reasoning. While such an approach to the study of norms is possible, even desirable and effective in some respect, it faces certain difficulties as well. Unlike other standard logical systems, a model theoretic

approach to provide semantics of DL poses certain difficulties and challenges which are unique to DL. For instance, a straightforward reading of Kripke's model in DL has raised doubts regarding the derivability of 'ought' from 'is' or what is known as 'naturalistic fallacy' in moral philosophy (Castaneda 1960). It appears as though norms resist to be reduced to naturalist terms. Noting the above difficulties, the present study seeks to understand norms in relation to concepts outside the strict domains of DL and standard logical systems. For instance, central to the thesis of the present work is that without the notion of desirability, the basic deontic categories on deeper analysis would fail to make sense.

von Wright has been an advocate of integrated approach to the study of norms. In a way, the present study can be seen as an exploration of the idea put forward by von Wright (von Wright 1963a, 1963b). He is of the view that evaluative concepts and normative concepts cannot make much sense without the help of each other; both are significantly related to or derivative of social 'facts'. He is even of the view that the moral notion of good needs to be explained in terms of non-moral use of the word (von Wright 1963a). Consequently, he remarks that the tendency to maintain a distinction between norms and values is 'artificial'. Besides, these two domains of studies should be undertaken in relation to what he calls 'anthropological' or 'praxeological,' a branch of philosophical study that deals with such concepts as 'need and want, decision and choice, motive, end and action' (von Wright 1963c: 7). Understanding of praxeological concepts is crucial, either as a preliminary to or preparation for the study of norms. It is possible to conceive of a meeting point for all these three branches in 'moral philosophy' defined in the widest sense. However, our present interest in not in the direction of moral philosophy though we are interested in all the three. Our primary interest is in the analysis of norms, normative concepts to be more precise,

though we will not hesitate to venture into other domains, praxeology or axiology, whenever the need arises. The quasi-formal model (D-model) that is being proposed in this work is intended to reflect in a very strong sense how these three branches of study are intricately related to each other. In doing so, we basically take the advice of von Wright who stresses that the philosopher's approach to the study of concept should be such that "he moves in a field of concepts. This makes him on the whole more interested in the distinctions and connections between parts of the field than in the definition of local spots in it" (von Wright 1963a: 6).

From this perspective, it may be correct to say that D-model is being worked out against this intuition of von Wright. From another perspective, D-model also functions as a meeting point for Earnst Mally's *deontik* logic (1926) and von Wright's classical deontic logic of 1951. While the former system may be identified with the logic of *seinsollen* (ought to be), the latter is identified with the logic of *tunsollen* (ought to do); the former system is based on the concept of *willing* while the latter system is based on action or *act-categories*. The foundational elements of both the systems find expressions in the model though in different linguistic terminologies and symbols. It may be noted, however, that D-model is not a formal-theoretical model for a logical system but a conceptual model to map the structures of deontic categories.

Tracing deontic thoughts in legal and moral discourses

One of the central assumptions of the present study is that the formal study of norms and normative concepts cannot be done in isolation as expressed above. One whole chapter, Chapter 2 – is devoted, in a way, to the elucidation and justification of this thesis. In DL, the reduction of DL into AL has been attempted

by logicians like Stig Kanger (1957) and Alan Ross Anderson (1958). The basic assumption behind this reductive schema is that DL need not be seen as an independent branch of modal logic and so with introduction of a suitable propositional constant, it is possible to reduce DL into the more established system of AL.

However, this reduction was not equally welcomed by everyone. For instance, von Wright himself raised some important problems involved in the schema. Attempt is made to probe deeper into the debate between von Wright and Anderson in the context of the reduction. Picking cues from their discussions of the issue, we will analyse certain key concepts involved in the reduction schema and proceed further to explain how deontic concepts are inherently and intricately linked to other normative concepts. We will show how certain legal concepts like 'punishment', 'sanction', 'gap', 'immunity' or 'liability' find their way into their discourses (von Wright 1969). In addition, we will discuss the conceptual problems of 'necessity' and 'permission' following this reductive attempt. We will try to argue that certain theoretic assumptions in legal studies have crept into the definitions of modal concepts. The point of doing this is not to show that this assumption is unwelcome but that the assumption is problematic even in legal studies. Accordingly, we try to undo the problematic assumption and also to employ certain insights from legal philosophy, especially from H.L.A. Hart, to argue the conceptual relations of norms across disciplines. In doing so, we will try to show the connection of formal studies with non-formal studies of norms. Understanding the complex issues involved in this debate has helped us to develop D-model to capture the formal structures of deontic categories. It may be noted that inbuilt into D-model are the basic thoughts and ideas from other branches of normative studies viz., legal and ethical studies. For this reason, the model provides us with

explanatory tools to understand and map the conceptual relations holding among key terms in moral and legal theories as well.

A model for deontic modalities

In the foregoing paragraphs, the difficulty of defining deontic modalities is being hinted. The present work therefore attempts to construct a model, D-model, which would help us to understand the structure and function of deontic modalities. In modal logic, we are familiar with Kripkean semantic model commonly known as possible worlds semantics. The basic idea of Kripke's model is adopted even in DL. It is used to assign truth values to deontic expressions. However, it is still a matter of dilemma whether or not Kripke's model is adequate for deontic logic and if truth values can be considered as values of norms (Geach 1982; Cataneda 1972). Part of the present work is directed towards problematizing the possible worlds semantics.

It is beyond doubt that the idea of the possible worlds has become a very powerful tool both in logic and philosophy. The concept of possible worlds can be used to do many different things. Kripke uses it to provide a formal semantics to AL including DL and this has found widespread acceptance. However, using Kripke's model in DL raises some uneasy and unsettling questions. Do norms have or require truth-values? Is it possible to use Kripke's model to account for the semantics of both *seinsollen* (ought to be) and *tunsollen* (ought to do) logics? Is the idea of deontic alternative worlds or ideal worlds well defined? These and related questions are being examined in this work. Our purpose, in part, is to argue that Kripke's model is a poor model for understanding the logic of norms or the logic of *tunsollen* though it may be adequate for what is being termed as the logic of norm-propositions or the

logic of *seinsollen*. It lacks the explanatory power to account for nuances of *actual* normative thoughts and practices.

Following many logicians and philosophers, we also use the idea of the possible worlds to develop D-model.[3] Possible worlds in the context of D-model can be termed as deontic possible worlds or simply deontic worlds for short. However, unlike the standard Kripke's model for deontic logic (referred to as 'the best possible worlds' or 'perfect worlds' or 'ideal worlds' or 'deontic alternative worlds') which has no mechanism to classify possible worlds, D-model enables us to classify possible worlds into desirable worlds, undesirable worlds and deontic worlds. The former two are subsets of the latter. Within deontic worlds, we can also talk about two unique worlds, namely, *deontic heaven* and *deontic hell*. The classification is useful to capture and explain various structures of deontic modalities and expressions. In this sense, D-model has rich explanatory power. Though D-model is not intended to be a formal model, a proper understanding of the structure of expression would be useful for understanding any formal model for DL. To cite a point in case, Russell's analysis of *definite description* has helped us to understand the logical structure of propositions involving definite descriptions and this in turn has better equipped us in terms of valuation of propositions (propositions in the broad sense which include quantificational sentences involving equality predicate) and logical reasoning.

Inbuilt into D-model is the notion of desirability which is taken as a basic or undefined. The fact that the idea of desirability is inbuilt into the model makes a philosophical point that a pure formal study of norms is bound to be problematic or bound to fail even. Without presupposing axiological and praxeological ideas, norms will fail to make

3 'D' used as a prefix for naming the model stands for desirability.

sense. The stronger move undertaken in this work vis-à-vis D-model is that the notion of desirability is not external to the definition of a norm; rather, it shares semantic relations with norms. As a conceptual model, D-model attempts to capture and represent the basic elements or features needed for formulating deontic thoughts or concepts.

D-model employs certain formal tools for its construction. In this sense, it is a quasi-formal model. It uses, for instance, the mathematical structure of Cartesian co-ordinates to represent possible worlds, deontic possible worlds to be more precise. Each point in the Cartesian plane represents a deontic world. The catchword of this model is *deontic gap*. With the introduction of deontic gap as a propositional constant, we represent the structure of deontic modalities and expressions. The ability to represent different kinds of worlds in D-model enables us to understand the nature of deontic modalities better. An interesting aspect and a significant departure of the present study is that D-model is construed as a metaphorical model and not as a theoretical model.

Permission as the focal point

The concept of obligation or duty has always occupied the central focus of normative studies. The systematic and formal study of norms in the modern time was also driven by the desire to understand the formal structure of obligation or "ought".[4] Even the term 'deontic' is derived from the Greek word '*deon'* which means *duty* or *binding*; some interprets it as '*as it should be*' or '*duly*'.[5] For this reason, deontic logic

4 Ernst Mally, one of the earliest persons to attempt a formal study of deontic logic, titles his book (which can be translated in English as) '*The Basic Laws of Ought: Elements of the Logic of Willing*,' 1926.

5 As interpreted by Hilpinen, see p.xv, 1981. The term 'deontic logic' has been made popular by von Wright following his 1951 work.

is generally associated with the logical study of 'ought' or 'obligation.' However, von Wright is more open in his approach to the study of deontic logic; he defines DL as "the formal study of ideas which are commonly expressed by the words 'ought' and 'may'" (von Wright 1969: 103). It is interesting to point out that unlike his predecessors who usually take obligation as primitive, von Wright treats permission as primitive and use it to define obligation and prohibition. A similar stance in favour of permission has been taken by Johan Gustafsson (2020) when he argues that permission can be taken as a primitive.

In this work, permission will be given special attention without ignoring the other two concepts, viz., obligation and prohibition. Building on the intuitions of others – some of which are von Wright (von Wright 1963b, 1983), D. Mackinson and L. van der Torre (2000, 2001), G. Boella and L. van der Torre (2003b, 2003c), D. Nute (1985) – who gave importance to the concept of permission and grappled with the issues involving the concept, the present work goes deeper, in some respect, into the concept itself.[6] From this perspective, the present focus has a significant departure: it is not simply highlighting the technical issues or problems involving the concept of permission but essentially seeks to provide a philosophical foundation on the basis of which the concept of permission can be given an equal ontological footing with obligation and prohibition. Accordingly, D-Model is constructed to provide relative independent status to each of the deontic concepts, unlike the traditional approaches where the concept of permission is usually relegated to a 'derivative' or 'subsidiary'

The term was suggested to him by C.D. broad; See the preface von Wright 1963: v.

6 Actually, the attempt is not new in that the model was developed by me during my PhD study. In this work, I intend to explore the model in greater details and examine the possible implications of this model on normative and related studies.

idea. The model helps us to identify more shades or types of permission beyond the usual practice of categorizing the concept of permission into weak permission and strong permission; they are:

(i) Close permission
(ii) Open permission
(iii) Simple permission
(iv) Deep permission

A philosophical point of view

The nature of the present study may be termed as deontic philosophical logic. It can be conveniently categorized as philosophy if we choose to adopt the classification of A.C. Grayling (1997). It is not even philosophy of logic as it has no desire to conceptually discuss the formal properties of logic such as theorems or meta-theorems, symmetry or transitivity, etc. In this work, we are interested in the philosophical analysis of terms and perspectives in DL somewhat in the fashion by which Kripke and von Wright respectively wrote *Naming and Necessity* (1981) and *Norms and Action* (1963b) to philosophically reflect on their formal systems. It attempts to provide a kind of philosophical overview within which DL can be discussed and understood or explained. Though certain technical and formal tools occur in our discussion, they are basically for reasons of convenience – economy and simplicity. D-model is a metaphorical model. Therefore, it is not subject to empirical or theoretical evaluation; it is not falsifiable, to use a Popperian locution. Its main function is to illuminate or express our intuitive thinking about norms. Like any metaphor, it can be discarded if it has outlived its purpose of illumination.

It may be noted that a sacrosanct distinction regarding the nature of this study is not maintained however. It freely

engages with any issue or problem that crops up since problems and issues in DL are closely intertwined. For instance, the kind of problems that arose while reducing DL into AL is connected to debates in legal philosophy. Earlier, we noted that the kind of issues we will be dealing with mostly in this work is categorized as meta-deontic issues. Other than the issues of this kind, problems in deontic studies may be categorized either as *intra-deontic* problems or *extra-deontic* problems. More will be said in the next chapter regarding the classification of problems in DL. However, to seriously probe into the nature as well as classification of these problems is not our concern. The preliminary classification is made merely to isolate and prioritize problems that are of interest to this study.

Meta-deontic problems are typically philosophical in nature. It inquires into the presuppositions or assumptions that underscore deontic thoughts. Perhaps, a passage from von Wright regarding the idea of "meta-thinking" in deontic studies is helpful at this point though the context of discussion is related to studies in ethics:

> They [philosophers] would maintain that there is a philosophical study of moral concepts and judgment, which is distinct both from normative ethics and from the empirical study of moral phenomena. For this type of study of morals the term meta-ethics has recently become fashionable. On the further question of the nature of meta-ethics opinions are not settled. Some would call meta-ethics a conceptual or logical study of morals. And some would wish to add that a conceptual study of moral is essentially a logical study of the language of morals. Meta-ethics – this seems to be agreed – does not aim at telling what things are good and bad and what are our moral duties. It aims at a better understanding of what 'good' and 'bad' and 'duty' *mean* (von Wright 1963a: 3).

Though DL concerns itself with certain moral expressions and concepts, it need not be confused either with meta-ethics

or with moral reasoning. Though DL is at times defined as the logic of norms, we will insist on their distinction and critically evaluate why it is so. For this, we will try to explain the basic intuitions and presuppositions that constitute our understanding of what 'ought to be' and what 'ought to be done'. Going further, we will use D-model to explore and represent the intricate and complex notions that underlie their commonalities and differences.

CHAPTER 1

The Formal Analysis of Norms

Introduction

In this chapter, preliminary attempt is made not only to understand the logic of norms but also to locate it in the wider context of logical and normative studies. It is preliminary in the sense that though an aspect of the logic of norms which goes by the name 'deontic logic' is reasonably well established or formalized, there is hardly an aspect of the logic of norms which is without a problem, either formal or philosophical. It is neither wise nor possible to adequately address all the problems for a work of the present nature. Our objective here is to provide a bird's eye view of DL. This will enable us to identify and discuss some important problems that are specific to DL. We will selectively consider some relevant difficulties involved in understanding the nature and limit of DL. This is done with a view to prepare us towards engaging with a model that will be proposed in the present work. Emphasis throughout will be more on the conceptual nature of deontic studies than on the formal or historical ones. Put it differently, the main objective of this chapter is to articulate how logicians and philosophers have grappled with some of the fundamental questions and problems in constructing and understanding the language of DL from a philosophical point of view.

Conceptualizing a logic of norms

DL in its widest sense can be defined as the logic of norms.[1] The main categories of DL are obligation, prohibition and permission, somewhat analogous to the categories of necessity, impossibility and possibility of AL. However, it is not confined to these categories. In the more recent time, deontic logicians and philosophers are also interested in other relevant terms such as omissible, optional, supererogatory, indifferent, claim, immunity, responsibility, etc.[2] von Wright maintains that 'norms are to the effect that acts of a certain category or kind ought to (may, must not) be done' (von Wright 1983: 69). Hans Kelsen writes, "By 'norms' we mean that something **ought** to be or **ought** to happen, especially that a human being ought to behave in a specific way. This is the meaning of certain acts directed towards the behaviour of others." (Kelsen 1978: 4)

Generally, norms are understood as directives which individuals and groups obey in a society. They are meant to maintain law and order situation in a society. In a restricted sense, norms that regulate human actions and activities are termed as prescriptions. Though in DL, the focus of study is essentially formal or theoretical in nature, its practical consideration cannot be ignored owing to the fact that deontic

1 von Wright identifies different kinds and also aspects of norms in his book *Norms and Action* (1963), especially see the first and the fifth chapters. More than half of the book is devoted to studying the very concept of norms. He admits that the concept of norms is so vague and so heterogeneous that it would be extremely futile to attempt a General Theory of Norms covering the whole field. Strictly speaking, a distinction is maintained between logic of norms and deontic logic. Part of the present work is directed towards articulating and appreciating their differences.

2 Omissible and optional can be defined with the basic categories of classical system. Hence, our present study will be directed towards the explication of the basic three categories of the classical/standard system.

concepts are borrowed from ordinary language and cannot have meanings which are unrelated to life. The concepts of deontic logic are directly connected to topics of practical significance in areas such as ethics, jurisprudence, social behaviour and institutions, etc. Said that, deontic logic as a formal system is not interested in the content and purpose of norms; it is also not interested in action though norms are applied to action. It is primarily concerned with the formal structure of normative expressions and their inter-relationships. For instance, given any permitted (deontic) sentence p, logicians are interested to analyse its formal structure and also its relation with other deontic expressions involving obligation and prohibition. The attempt to formalize the concept of permission, for instance, is inherently connected to other issues such as inter-definability thesis of deontic modal operators, independence of deontic categories, reduction of deontic logic into alethic logic, etc. von Wright talks about three main aspects of prescription, viz., commands, rules and directives.[3] Because of intricacies related to each aspect of norm or prescription, it has become extremely challenging to develop a theory of prescription. This problem has also percolated into the formal aspect of deontic logical studies as well.

von Wright defines DL as the formal logical study of normative concepts and discourses (von Wright 1969: 89) and this definition has been widely accepted among the deontic logicians. For instance, Hilpinen views deontic logic as the

3 von Wright talks about three aspects of prescription as *commands*, *rules* and *practical necessities*. Examples for the three aspects of prescription can be respectively shown as follows: (i) Open the window (ii) You *ought* to open the window and (iii) You *must* open the window with your hand (von Wright 163a). However, the same classification is not being maintained in his *Norms and Action* **(**1963b). What is being termed as practical necessities in his former work (1963a), he calls it 'technical norms' or 'directives' in his latter work (1963b).

formal treatment of normative system (Hilpinen 1981: 16).[4] By normative system as a study of DL, we basically mean a set of normative sentences closed under deduction. C.E. Alchourron (1969) and Alchourron and E. Bulygin (1971) and also von Wright (1963b) treat DL as the logic of norm-propositions. A norm-proposition is a descriptive sentence, as opposed to its prescriptive function, which informs about the existence or non-existence of a certain norm. von Wright writes, "Token of the same sentence are used to enunciate a prescription (i.e., to enjoin, permit, or prohibit a certain action) sometimes again to express a proposition to the effect that *there is* a prescription enjoining or permitting or prohibiting a certain"(von Wright 1963b: viii). Let us consider an example: "You may park car here". Descriptively interpreted it means that there is a norm which permits the parking of a car at that place. Someone is reporting the existence of a traffic rule (norm). It is an answer to a question if one can park a car a particular place. Prescriptively interpreted, it is an act of granting permission to park a car.[5] While a norm-proposition has truth-values, prescription or prescriptive function of a norm lacks truth values. Classical DL associated with von Wright's system is primarily termed as the logic of norm-propositions. It can be seen from the above that DL is treated as a descriptive approach to norms rather than the prescriptive approach.

Going back to the history of DL, it is not surprising to note that Aristotle, the 'Father of Syllogistic Logic,' already identified and outlined the basic features of deontic reasoning.

4 For him, DL is synonymous with logic of norms or logic of normative concepts (Hilpinen 1981: xii).

5 In some technical context, the act of granting permission by a competent authority is also termed as promulgation. Alcourron terms it as norming; see https://plato.stanford.edu/entries/logic-deontic/ (accessed: 30th April 2022)

He termed it as practical syllogism however.[6] Let us take a look at one example:

All sweet things ought to be tasted.
That thing is sweet.
∴ That thing ought to be tasted.

For Aristotle, the conclusion of the practical inference must lead to an action unless it is forbidden or one is lacking the ability to perform it. von Wright reframed it in the language of the *means* and the *end* and calls it a *technical norm*. For him, the object of desire or intention is the *end* and the action required to bring about the end is the *means*. He writes: "An action is being related as 'conclusion' to an aim or end of a given agent and an opinion of his concerning the means to its attainment as 'premisses'" (von Wright 1983: vii). He offers an example (von Wright 1983: 2):

One wants to make the hut habitable.
Unless the hut is heated, it will not become habitable.
Therefore, the hut must be heated.

The first premise is called a *want-sentence*. The second premise is a statement of natural necessity or *causal necessity*. It is treated as 'purely objective.' And the conclusion is termed as *practical necessity.* It is a practical necessity in the sense that it is the *means* mentioned in the second premise that must be performed or undertaken in order to attain the *end* mentioned

6 He made a distinction between what can be called as theoretical inference and practical syllogisms. It can be said safely that what Aristotle calls practical syllogism is a prelude to our modern day DL. He grappled with some of the features of practical syllogism in his book "*Ethica Nicomachea,*" or in popular interpretation, *"Nicomachean Ethics,"* especially the third chapter of the seventh book. In the modern times, through the collective works of von Wright, Anscombe (1957) and few others, Aristotelian syllogism is being studied under a broad name 'Practical Reason;' and it has come to form a very important aspect of deontic studies.

in the first premise. For von Wright, a practical syllogism is one in which one normative and one factual premise each yields a normative conclusion. The form of practical syllogism is very similar to that of deontic reasoning; let us consider a form of deontic reasoning (von Wright 1963a: 162):

It is permitted to do p.
One must not leave q undone, if one does p.
∴ It is permitted to do q.

von Wright maintains that all these variants of inference can be relegated into the broader study of DL.[7]

In addition to practical syllogism, Aristotle also thought about modal sentences involving categories such as necessary, possible, impossible and permitted.[8] A systematic treatment

7 It is pertinent to note that von Wright in his introduction to *Practical Reason* (1983) remarked that he has a point of departure from his earlier views in *Varieties of Goodness* (1963a). My own hunch is that DL as a branch of logical study has undergone serious change in its perspective following the detection of several paradoxes and more importantly the Andersonian reduction of DL into alethic logic. Again, there are ambiguities regarding the manner in which the conclusion is derived from the premises in certain aspect of practical syllogism; for instance, in the legal domain. For example: Ought everybody do 'x' ∴ You ought to do 'x.' This is not being treated as a 'logical' inference by some thinkers (see von Wright 1983: 204). In the same passage, he referred to O. Weinberger (1982), wherein it was suggested by Weinberger that even Hans Kelsen towards the end of his life came to subscribe an *expressivist* view, a view which denies any logical relations amongst norms. According to von Wright, Axel Hagerstrom (1917) was probably the first person to notice this point (von Wright 1983: 204). All this seems to suggest that the conclusion is rather taken as a creation of a norm rather than a logical derivation from premises (or existing norms); we may say that a 'new norm' has been rationally 'issued' in consistent with the corpus of law.

8 In his *De Interpretatione,* he devoted two chapters namely, 12 and 13, to the study of these categories and the logical interconnections amongst them.

of syllogism involving modal expressions was also attempted by him.[9] During the Middle Ages, similarities between the concepts of obligation and necessity, on the one hand, and the logical behaviour of the concept of permission and that of the possibility on the other were also noted and studied with keen interest by some scholastic philosophers. This was pointed out by Simo Knuuttila in his seminal work, "The Emergence of Deontic Logic in 14th century" (1981).

In the modern time, the first formal system of DL, in the sense of axiomatic approach, was proposed by an Austrian philosopher Ernst Mally in his book,*The Basic Laws of Ought: Elements of the Logic of Willing* (1926). It is interesting to note that his interest to undertake a formal study of deontic categories was enhanced by certain socio-political conditions. He observes:

> In 1919, everybody was using the word self-determination. I wanted to obtain a clear understanding of this word. But then, of course, I immediately stumbled on the difficulties and obscurities surrounding the concept of ought, and the problem changed. The concept of ought is the basic concept of the whole of ethics. It can only serve as a usable foundation for ethics when it is captured in a system of axioms (1926: 1).[10]

Mally's system is known as *Deontik* logic. In his system, the notion of 'ought' is taken as primitive. As is evident in his own words, Mally's interest was not primarily DL in its present sense but to lay the foundation of 'an exact system of pure

9 Syllogistic treatment of the modal sentences was also dealt with in his *Prior Analytics, I, cc.3, 8-22.*

10 Today ethical concerns appear to be more right-centric than duty-centric especially in the public domains. Therefore, in order not to prevent further polarization of duty and right, it is important to understand their relation at a deeper level. The present attempt, indirectly, touches upon this concern through conceptual study of normative concepts vis-à-vis permission and obligation.

ethics'. He was of the view that central to ethical concern is the problem of 'ought' and so he reasoned that the concept 'ought' would be of great use if its intuitive notions can be captured by a purely formal structure, somewhat analogous to classical First Order Logic (FOL). Unlike the standard deontic logic (SDL) which is considered as a branch of modal logic, Mally's deontik logic was based on FOL.

Mally observes that there can be two different kinds of attitudes towards states of affairs, namely, *judging* and *willing*. Accordingly, it is possible to develop two distinct logical systems. While classical logic deals with the 'logic of judgment', that is, the standard propositional logic where a proposition is judged to be true or false, his *Deontik* logic deals with the 'logic of willing'. A person is willing that a given state of affairs, p, be the case may be expressed by sentences of the form: 'it ought to be the case that p'. An example of *deontik* expression in ordinary language is as follows: "It ought to be the case that India is free from corruption". The sentence expresses the *desire* of the speaker that India be free from corruption. For this reason, Mally also reads, therefore, 'ought p' as "p is desirable" or "I want it to be the case that p".[11] Within his logical theory, there is no explicit distinction between *wollen* (willing) and *sollen* (ought to be the case). It may be noted that though his system deals with the notion of ought, his *deontik* expressions are not meant to express a norm, to regulate action.

Mally's work generated considerable interest among some prominent thinkers in the second quarter of the twentieth century till von Wright's DL came into the scene to replace it in 1951. Karl Menger in his work, '*A Logic of the Doubtful: On Optative and Imperative Logic*' (Menger 1939)suggested that such a logical system should be based on three-valued

11 The notion of desire constitutes a central theme of this study. We will pay considerable attention to this concept in Chapter 3 and Chapter 4 of this study.

logic, instead of the two traditional truth-values, the third value being *'doubtful.'* Interesting and significant views on the logic of norms, including the *logic of imperatives* which is also known as the *logic of commands,* were put forward. In their introduction to Hilpinen's work (1981), Follesdal and Hipinen mentioned a number of logicians and philosophers who took much interest and efforts in this domain of study before 1950 such as Kurt Grelling (1939), Albert Hofstadter and John Charles Chinoweth McKinsey (1939), Alf Ross (1941), Rose Rand (1939), etc.

However, it was only with the von Wright's publication of 1951 that DL got standardized as an independent branch of modal logic. Since then, the study of DL received a new direction and widespread philosophical attention in the next (third) quarter of the twentieth century. von Wright's initial interest in the study of the 'logic of norms' was triggered by the observation that the notions of 'ought', 'may', and 'ought not' exhibit a striking similarity with the alethic modal notions of necessity, possibility and impossibility respectively.[12] This observation got more technical impetus on noticing yet another interesting parallel that seems to hold between these two sets of modal notions (deontic and alethic) and the basic concepts of quantificational logic. He exuberantly remarked that '*the above observation kindles a new hope*,' one that is justified, one that can be further used in the study of modalities and quantifiers (von Wright 1968: 14). In the same context, he even remarked this hope has been justified and that DL is developed to stay. A table on their similarity has been provided below (von Wright 1968: 14):

12 Hilpinen (1981) too treats DL as a branch of modal logic where the normative concepts of obligation, permission and prohibition in DL are regarded as analogous to the alethic modalities necessity, possibility and impossibility; see his introduction to the second impression (1981).

∃ /(¬∀¬)	Some	M	Possible	P	Permitted
¬∃ /(∀¬)	No	¬M	Impossible	¬P	Forbidden
¬∃¬/ (∀)	All	¬M¬	Necessary	¬P¬	Obligatory

The standard deontic logic (SDL)

DL is yet another extension of FOL. However, the standard deontic logic (SDL) is based on propositional logic (PL). The extension is done by adding one modal operator, either obligation or permission and then using the negation function to define the other two operators. Before we discuss the syntax and semantics of SDL, it may be worthwhile to mention in passing von Wright's system of 1951. He uses 'permission' as his primitive while other deontic logicians, in general, treat obligation as the primitive. The deontic operators are prefixed before a variable, a variable standing for an act-name or an act-category. von Wright writes, '*deontic modalities are about the mode or way in which we are permitted or not to perform an act*' (von Wright 1968: 36).

The formal language, that is, the syntax, of propositional DL as introduced by von Wright is as given below:[13]

1. A set of variables = {p_1, p_2, p_3,…}
   {unlimited supply of variable representing *name-acts;* instead of indexing variables, for convenience, we can also use p, q, r, etc. as variables for less complex formulas}.
2. A set of truth-connectives = {¬, Λ, V, →, ↔}.
   {They stand for negation, conjunction, disjunction, material implication and material equivalence respectively}.

13 The formal construction of this language is in line with von Wright's work (1968).

3. A deontic monadic operator = P
   {P standing for permission}.

Given the above vocabularies, a well-formed formula is formed by the application of these two rules:

1. An expression of the form Px is well-formed; x stands for any well-formed expression of PL.
2. Truth-functional compounds of well-formed expressions are well-formed.

A quick clarification is in order regarding the rules of well-formed formula before we proceed further. Rule 1 above says that the variable x stands for a well-formed formula of PL. However, we have noted earlier that von Wright applied his deontic operators to act-names. This seems confusing. We intent to look at this point in greater details later but for now, it suffices to point out that the variable x in SDL stands for either a description of a state of affairs or a description of an act. Thus, the expression 'Pp' may be read as 'it is permitted that', for instance, 'she works from home during the pandemic'.

The syntax given above did not include the pair of brackets, '(' and ')', which function as punctuation marks for a formal language. However, they are dispensable if we apply the usual binding *force* of the truth-functional connectives in the following way: negation will be the strongest followed by conjunction, disjunction, material implication and material equivalence in the decreasing order. Thus, a well formed formula "((((¬(p_1) Λ (p_2)) V (p_3)) → (p_4)) ↔ (p_5))" in the language of PL can be rewritten simply as "¬p_1 Λ p_2 V p_3 → p_4 ↔ p_5." For deontic calculus, only three rules of inference are required which are as given below:

1. Substitution
   {formulas of PL to replace the variables}

2. Detachment rule or *Modus ponens*
   {that is, "if p→q and if p, then q"}
3. A rule of extensionality or the principle of intersubstitutivity
   {equivalent formulas of PL are inter-substitutable in the well-formed expressions of deontic calculus}

Taking Permission, P, as primitive or undefined, the other two deontic operators, namely, obligation (O) and prohibition (F), can be defined as follows:

1. $Op =_{df} \neg P\neg p$
2. $Fp =_{df} \neg Pp$

Finally, we have three axioms of the SDL:[14]

1. (D1) $Op \rightarrow \neg O\neg p$
2. (D2) $O(p \wedge q) \leftrightarrow Op \wedge Op$
3. (D3) $O(p \vee \neg p)$

Mere manipulation of symbols with respect to a system hardly contributes to our understanding of norms and normative systems unless symbols and symbolic reasoning are interpreted to give meanings. Meanings [truth or falsity] of expressions are determined by a model. A model is defined as a binary function V(p,**K**), where 'p' is a variable ranging over atomic formulas and 'K' ranges over the members of a given set of possible worlds, **W**. The range (or the value set) of V(p,K) is the set {T,F}. Now, V assigns to each atomic formula a truth-value (T or F) in each world where $\mathbf{K} \in \mathbf{W}$. Given the above, the truth-function (or truth-assignment) for expressions or well-formed formulas can be defined as given below:

1. V(¬p,**K**) = T iff V(p,**K**) = F, otherwise V(¬p,**K**) = F,

14 As stated by Follesdal and Hilpinen (1981:13). This system is popularly known as the system D in modal logical studies.

2. V(p∧q, **K**) = T iff V(p,**K**) = V(q,**K**) = T, otherwise V(p∧q, **K**) = F
3. V(p∨q, **K**) = F iff V(p,**K**) = V(q,**K**) = F, otherwise V(p∨q, **K**) = T
4. V(p→q, **K**) = F iff V(p,**K**) = T and V(q,**K**) = F,
   otherwise V(p→q, **K**) = T
5. V(p↔q, **K**) = T iff V(p,**K**) = V(q,**K**) = T or V(p,**K**) = V(q,**K**) = F,
   otherwise, V(p↔q, **K**) = F

Given the above truth-function, valuation of deontic sentences and evaluation of deontic reasoning are now possible. For instance, we can determine the consistency of a set of sentences in the following way. A set of sentences is said to be consistent if and only if (iff) there is a possible world in which all the members of the set are true. Given a set of norms ***D*** = {Op_1, Op_2, Op_3, …, Op_n, Pq} and the model (possible world semantics), we can describe the consistency of the set in the following way:

If ***D***= {Op_1, Op_2, Op_3, …, Op_n, Pq} *holds* in W, there is a world $W_1 \in$ **W** such that {p_1, p_2, p_3, …, p_n, q} holds in W_1.

It says that all the sentences which ought to or may be the case in W are true sentences in W_1. W stands for the actual world (or referent world) while W_1 stands for some kind of ideal world or perfect world. Hintikka calls W_1 as deontic alternative world to the actual world. W_i is a set of deontic alternatives to W. A relation R can always be defined from any W_i to W by an expression R(W_i, W). With all this, one can now work out the semantics for deontic expressions as follows:

1. V(Pq,W) = T, iff V(q, W_i) = T for some $W_i \in$ **W** such that R(W_i,W).
2. V(Op,W) = T iff V(p, W_i) = T for each $W_i \in$ **W** such that R(W_i,W).

For a detailed semantic theory of DL, formal properties like *reflexive, symmetric, transitive*, etc. are needed to define the relation $R(W_i,W)$ of deontic worlds. However, for the purpose of this study, the above cursory treatment is sufficient.[15]

Varieties of approaches to DL

In addition to the SDL outlined above, one finds a wide range of approaches to the study of DLs today. Among them, some systems are based on propositional logic: von Wright (1951), Kanger (1957), and M. Fisher (1961) while some other upon quantificational logic: J. Hintikka (1957), von Wright (1983); there are those that take AL as their foundation: Anderson (1956). While some, such as Fisher (1961) and Menger (1939), think that DL is better viewed as a three-valued logic, still some other systems try to relativize deontic concepts,[16] for instance, in the works of von Wright (1956, 1967, 1983, 1999), H-N. Castaneda (1981), N. Rescher (1958), P. Geach (1982) and C.R. Kordig (1975). von Wright (1965) incorporates tense-logic into DL. Close to this approach of relativizing DL is relevance deontic logic associated with Anderson (1967), an approach he proposed to deal with some problems of implication – strict implication – which cropped up in the context of reduction of DL into AL. The basic idea of relevance deontic logic was used by E.D. Mares (1992) and L. Goble (1999) to provide some important insights into the classical possible worlds semantics saying that only relevant worlds (normal worlds)

15 In the chapters to follow, we will have occasions to return to some of the problematic features of the formal properties of the possible world semantics.

16 The main purpose of relativizing deontic modalities to situation, time, agent, intention, etc is to overcome paradoxes which have come up in the traditional monadic systems. Relativization of modalities have led to the creation of dyadic system of DL.

are needed to make a deontic expression true. From another angle, some philosopher like Ross (1968) discusses DL in the context of, or in coordination with, imperative logic;[17] still some like J. Jorgensen (1937-8) raises doubt about the whole idea of employing truth-functional approaches to the study of norms which in reality have no truth values. A dilemma known as *Jorgensen's dilemma* has come to be associated with his name. His point is that only truth-functional connectives gives us the idea of entailment relations or 'what follows' but since norms do not have truth values, how are we to reason using truth-functional connectives in normative reasoning? Apart from these standard approaches to the study of DL, J.F. Horty has attempted to study DL from an altogether different perspective, from the point of view of nonmonotonic logic (1977, 1994).

In the more recent time, a few of logicians have come up with a system of DL where we can perform deontic reasoning without worrying about truth values and truth-functional connectives. It can be seen as a computational approach to

17 It may be noted here that deontic logicians led by von Wright dismisses the idea that DL is inclusive of imperative logic (see 1963b: 96-102). In this context, he also rejects the view in meta-ethics, led by Hare and others, which holds that *'Ethics is the logical study of the language of morals.'*(Hare1952: v). He goes on to say that 'prayers,' 'requests' or 'wishes' for instances are often captured in imperative mood but are not considered imperative at all. They are not formulations of norms at all. On the other hand, sometimes a single word-phrase like 'Go' is, though, in the imperative mood (command) yet it is, in fact, a permission given to some agent. von Wright gives an example: "*If when walking along the pavement I arrive at a street corner and the traffic light reads 'Cross now' the norm (prescription) addressed to me with these words is a permission to cross the street and not a command to do so*" (von Wright 1963b: 98). Apart from von Wright, Harrison extensively and rigorously argues that there are essential differences between 'moral judgments' and imperative sentences and formulates 29 reasons to show why they are different (1991).

the study of DL, an approach referred to as *input/output* DL. In part, this approach also helps to tackle tensions between philosophy of norms and formal systems of DL. Founded in a seminal works of van Fraassen (1972, 1973) to address the problems of conditional norms and conflicts of obligations, *input/output* DL has succeeded in generated fresh interest in deontic studies. They include within their studies such features of deontic issues as situation, ethical and practical codes, goals, contingency plans, advice and so on. In this approach, conditional norms are not treated as bearers of truth values and so it does not even employ truth functional connectives. Here, conditional norms are treated as an ordered pairs (a,x) of Boolean formula. In the ordered pair, 'a' stands for an *input* representing specific situation or condition while 'x' stands for an *output;* the *output* represents the norms; taken together, the input/output together informs what is desirable or required for the thing in question in that given situation. A set of logical rules is used in this approach. Leading logicians in this approach include D. Makinson, L. van der Torre, G. Boella and X. Parent; one can see their joint efforts in this direction: Makinson and van der Torre 2000, 2001, 2003; Boella and van der Torre 2003a, 2003b; Parent and van der Torre 2013.

The above survey of a sort is not meant to be exhaustive in any sense.[18] Besides, it excludes recent studies which are interested to study the application of DL in domains other than law and ethics such as artificial intelligence,[19] information

18 Lennart Aqvist (1984) provides a brilliant exposition of almost all the known systems of DL till the publication date of his work. Also for a comparative study of DL, one can refer to the work of Timothy Smiley (1963).

19 There is a series of international conferences being organized on 'Artificial Intelligence and Law' that goes by this name "International Conference on Artificial Intelligence and Law—ICAIL" and the proceedings of the conferences are being published by ACM Press (Amsterdam).

system (McNamara, Paul and Prakken, Henry 1999), religious texts (Agata Ciabattoni, Francesca Gulisano and Bjorn Lellmann, 2021; Elisa Freschi, Agata Ciabattoni, Francesca Gulisano and Bjorn Lellmann, 2017); game and decision theory (Lorini, E 2010; van Hees, M 1996; Bonanno, Giacomo, Wiebe van de Hoek and Michael Wooldridge (Eds.). 2008; Apostle, L. 1960; Tamminga, A. 2013), etc. From a more epistemic and pragmatic point of view, there are issues of representing multi-agents with variable degree of power, ability and knowledge. Technically, such systems demand a much more complicated method of representation with different kinds of operators operating at different levels. Accordingly, there are attempts to introduce more logical symbols standing for agents, time, place, etc. to capture precise or definite meanings of deontic expressions. All these developments have made studies in DL increasingly complex and challenging.

Deontic logic: *tunsollen* or *seinsollen*?

Earlier, we have noted that the modern study of DL was spearheaded first by Mally and followed by von Wright. Both of them attempted to develop their logical systems with the help of modern symbolic logic unlike others before them who also dealt with normative concepts and normative reasoning (Knuuttila 1981b, 1993, 2008). While Mally's system is based on propositional logic, von Wright's system is based on modal logic. Mally's logic is the logic of *desire* or willing while that of von Wright's is the logic of norms. States of affairs are the object or content of Mally's *deontik* expressions while act-names are the object of von Wright's deontic expressions. In this context, a pair of technical terms may be used to highlight and sharpen their differences further, namely, *seinsollen and tunsollen*. They are interpreted respectively as 'what ought to be the case' and 'what ought to be done'. The former is associated with Mally's

deontik system while the latter is associated with von Wright's system. Mally was primarily interested in the deontic status of states of affairs. In contrast, von Wright regards the concept of *tunsollen* as more fundamental, especially in the early part of his works. Though the concepts of *seinsollen* and *tunsollen* are inherently related, they are not reducible into each other.

A cursory reference to the works of Mally and von Wright is sufficient to highlight the foundational issues of DL vis-à-vis the logic of norms. It makes one to speculate if what goes in the name of the DL can capture both the ideas of *seinsollen* and *tunsollen*. Is it possible to accommodate these two concepts within some/same theoretical framework? The answer up until now appears to be negative. This suggests that there exists a deep tension in the understanding and conceptualization of DL. In part, the purpose of the present work is to address this problem. To be more specific, we want to discuss in some details as to why Kripke's model work for the logic of *seinsollen* but not for the logic of *tunsollen*.

It is quite fascinating to note, at this point, that the content of deontic expressions in the SDL is a state of affairs. The deontic formula 'Pp' is read as 'it is permitted that p' where p stands for a description of a state of affairs, or a proposition.[20] Of course, the variable 'p' may also stand for a description of a *doable* state of affairs but it is no longer interpreted to mean "name of an act" or "act-category" like dance or sing. Within this interpretation, a sentence such as "It is permissible that two plus two is equal to four" or "It is obligatory that Delhi is the capital of India" will be considered a legitimate deontic expression. There is some oddity in applying normative concepts to statements, especially tautologous or analytically true sentences. However, we will postpone our discussion of

20 SDL is an extension of propositional logic as noted earlier. So deontic modalities are applied to well-formed formulas of propositional logic in much the same way alethic categories are applied to proposition.

this point to some other time. The present point of discussion is basically to show that *seinsollen* is central to the idea of the SDL; it is a return of some sort to Mally's *deontik* logic.[21]

Originally, von Wright's deontic modalities are applied to act-categories as noted above.[22] But his initial attempts faced certain technical difficulties when he tried to symbolize and interpret his deontic expressions, for instance, if 'A' denotes an act, what does '¬A' mean? Does it signify the not-doing of the thing, the doing of which is symbolized by 'A'? Or does it signify the undoing of 'A', or does it signify the doing of something that brought about some states of affairs other than 'A'? The use of negation to prefix an act-category thus becomes ambiguous. For instance, there are obvious differences in meaning for the following phrases: un-doing, not-doing (or forbearance), wrong-doing and contrary-(or contradictory) doing. All these technical challenges were known to von Wright.[23] It shows that the use of truth-functional connectives of classical propositional logic in DL is not without problem. The reason is that PL essentially deals with a static world. In it, there is no room for change. Propositions describing the world or states of affairs are treated as definitely existent or non-existent

21 This 'comeback' to Mally's *deontik* system is spearheaded by Prior (1955), Stenius (1963) and Anderson (1967). von Wright welcomed this U-turn in order to overcome certain technical problems which have emerged in his 'classical system' of 1951.

22 The act-categories or act-names such as murder, theft, etc. are treated as generic act as distinct from individual acts such as 'murder of Caesar' or 'theft at the museum'. Though the act-categories were treated as 'proposition like entities' i.e. entities on which truth-functional operations can be performed, Follesdal and Hilpinen is of the view that von Wright's system is not, strictly speaking, a logic of propositions; he prefers to call it as a logic of act-names (Hilpinen 1981: 13).

23 There were other problems regarding the use of truth-functional connectives for act-categories. For more details, see von Wright's Norms and Action (1963).

or as definitely true or false, not as now true, then later on false. Thus, it has no tools to represent change or action which brings about a change in the world.

The notion of change is embedded in the notion of action. A state which is not there at a certain time may come into existence at a later time; a state can cease to exist through human intervention; likewise, through human intervention, a state of affairs may be made to continue to exist which would have otherwise disappeared, or suppress a state which would otherwise have come into existence. From the perspective of a purely classical logic, applying truth-connectives meant for proposition (that is, description of state of affairs) is cumbersome for determining the truth values of deontic sentences involving act-categories. Hence, von Wright too admits that norms (prescriptions) cannot have truth-values in the classical logical sense (von Wright 1963b: viii, 131). Having faced all these problems, von Wright admitted to have begun to entertain doubts on practically all issues of importance in his first publication on DL in 1951 (von Wright 1963b: vi). However, he tried to address them by working out a logic of change and a logic of action in his work which presupposes and includes tense logic (von Wright 1968). Through systematic manipulation of symbols and careful interpretation of symbols, he managed to translate description of an act into description of states of affairs.[24] With this development, he thought that he overcame the difficulties and doubts surrounding his classical system of 1951 and succeeded in showing that DL is really a legitimate branch of modal logic.

The tension between these two systems of logic, the logic of *seinsollen* and the logic of *tunsollen*, was perceived by von Wright himself. He writes:

24 With this, he thought that he overcame the difficulties and doubts surrounding his 1951 DL and succeeded in showing that DL is really a legitimate branch of modal logic.

> "The Classical System [1951] was intended to be a logic of the Tun-sollen; the Standard System is by its very nature a logic of the Sein-sollen-type. It follows from what has been said above that only a DL of the second type *can* preserve a perfect analogy with modal logic" (von Wright 1983: 106).

From a formal perspective, von Wright prefers the logic of *seinsollen* over the logic of *tunsollen*. However, he does not discard his system of 1951 as being outmoded or insignificant. Instead, he tries to explain them within their contexts of use: if a norm is given in the forms "so and so ought to – ," the norm thus given is a *Tun-sollen* type; in contrast, if the norm is addressed to everyone and is of the form "it ought to be the case that – ," then the norm is a *Sein-sollen* type (von Wright 1983: 202). It is obvious that the presence and absence of agent(s) in the formulation and promulgation of norm makes one a *tunsollen* type and the other a *seinsollen* type respectively; the former is context dependent while the latter is context free.

Despite the radical transformation and clarification pointed above, the standard approach to DL is being criticized by Hector-Neri Castaneda (1972). He opines that the possible world model for DL proposed by Hintikka, Kanger, and others are not satisfactory theory of the practical concept of "ought-to-do" (*tunsollen*) but concerns only with the concept of "ought-to-be" (*seinsollen*). Failure to bring out the distinction between these two aspects of DL has resulted in the birth of numerous paradoxes in DL (Castaneda 1975, 1981). Besides Castaneda, Peter Geach also maintains that the idea of possible world semantics is not desirable or adequate for capturing the formal semantics of DL (Geach 1982). He writes: "The wrong view of 'ought' as a propositional operator, which I have thus far been expounding and exposing, is sometimes embellished with possible-worlds semantics" (Geach 1982: 45). In contrast, Hilpinenis of the view that the standard possible world semantics of DL faces no real threat and can still be

plausibly interpreted as a theory of the practical concept of ought (Hilpinen 1977). To consider and problematize the theory of possible worlds for DL is one of the important aims of the present work. We will be analysing and evaluating various views in the third chapter.

Some technical challenges in deontic logic

Interpretation of formulas in DL is not straightforward compared to PL and AL which is seen as an extension of PL. For one thing, logic is not just a game of manipulating symbols. One usually takes logic to be a tool, like language, to characterize and manipulate concepts or ideas in a systematic manner involving certain rational principles. The same can be said of DL. Attempts are made at the formalization of a group of concepts whose underlying logical relations are intuitively available. Next, we also have to see if the formal system or the syntactic system admits a sound semantic interpretation that adequately satisfies the deontic requirements. Put it differently, we have to see if the principles of deontic formal system adequately capture our normative intuitions.

Prior to the development of DL, modal logic was synonymous with AL, the logic of possibility and necessity. So when DL was proposed by von Wright as a branch of modal logic, then it became a requirement to check if the rules and assumptions of modal logic (i.e. AL) hold in DL as well. SDL being an extension of PL and operating within the framework of possible worlds semantics, some logicians – Anderson (1956, 1958a) and Kanger (1957)– even tried to reduce SDL into AL. This reductive attempt is interesting and revealing in that it shows how the basic categories of DL are intertwined with key concepts in legal philosophy. Consequently, we are made to inquire into the presuppositions and pre-theoretic ideas of DL. We will discuss this in the next chapter.

DL encountered some technical challenges when projected as a branch of modal logic as certain concepts and issues are unique to DL. Briefly, we will highlight some of them. One problem DL encountered is the 'rule of necessitation,' a valid rule of inference in the AL systems. The rule can be described as follows:

$\vdash \mathbf{p} \rightarrow \vdash \mathbf{Np}$ [N = necessity]

Put it differently, if p is a theorem, then we can derive Np, that is, Np is also a theorem. The task is to see if this rule applies in DL: Is Op derivable from p [O = obligation]? It can be symbolically expressed as given below:

$\vdash \mathbf{p} \rightarrow \vdash \mathbf{Op}$

The above formula says that '*If p is a theorem in a deontic system, then the obligation of p is also a theorem.*' In a world of norms, this reading is problematic. It is tantamount to accepting the view that if any state of affairs is actualized, then it is bounded by obligation. Such a principle denies human freedom. Human intervention for change or reform in the world is ruled out by this principle; we cannot change anything we don't want since what is actual is obligatory; for instance, sickness or sadness. As such, it negates the whole foundation of the logic of norms and the logic of action. Devoid of choice or freewill, the study of human action or norms will become futile.

Next, one of the standard axioms of (that is, AL) is this: "**Np→p"** (necessity implies actuality). It is referred to as *Axiom T* and has the formal property of reflexivity. It says that whatever is necessarily true (or is true in all the possible worlds) is also true in the actual world. This principle when stated in DL would look like this:

Op→p

It says that whatever is obligatory is also at the same time actualized. But in reality this is hardly the case. Actuality is not logically implied by what ought to be the case. People keep violating rules and laws. In other words, this principle is not intuitively true in a normative world. Hence, it has been termed by some as the problem of *precariousness*. This alethic principle or axiom thus fails to hold in deontic logical systems.

A somewhat similar problem is being read in yet another form. In AL, "**p → Mp**" [**M** stands for possibility] is an acceptable theorem. It says that if p is true, it is possible (actuality implies possibility). But this is a problematic reading in DL as a state of affairs (or an act) need not be permitted even if it is the case or has been actualized. Symbolically put in deontic language, it is this: "**p → Pp**" [**P**: permissible]. These few examples reveal that whatever is intuitively true in AL need not hold in DL.

SDL is an extension of PL as noted earlier. In other words, whatever principles hold in PL should also hold in DL. However, we encounter some problems when we do that. A well known problem in DL is called 'Ross Paradox' (also called by some as 'Inheritance Problem'). The paradox arises when we apply one of the standard inference rules of PL in DL. The inference rule is as given below:

p ⊢ p V q (Rule of addition)

It says that given p is true (p for a sentential variable), one can logically derive, p or q. Keeping the rule as it is, we can replace the sentences of PL by deontic sentences as given below:

Op ⊢ Op V Oq (O stands for obligatory)

It can be read as follows: If it is obligatory for an agent to perform an act, p, then it also becomes for that person either it is obligatory to perform p or it is obligatory to perform q. Let's give some content to the above form of inference: an agent

ought to either post the letter or ought to burn the letter if the agent is asked (obligated) to post a letter. This reading is extremely counter-intuitive. There are other variants of this paradox, for instance, the *paradox of derived obligation* and more.[25] However, the above example is sufficient to indicate the kind of challenges one might face in DL while trying to apply standard logical rules and principles.

Is deontic logic really a logic of norms?

Formulation of deontic expression is as difficult as interpretation of it. This is because deontic expression can be read descriptively as well as prescriptively. In other words, one and the same expression may be used both prescriptively to enunciate a norm and descriptively for stating or informing that there *is* such and such a norm. In this regard, von Wright identifies DL with the latter. He writes, "Deontic logic is a theory of descriptively interpreted [deontic] expressions" (von Wright 1963b: 134). Simply put, as a theory, it explains that, for instance, there *is* a norm which says that we can (or cannot) do this or that. However, he also maintains that DL is a logical theory of prescriptively interpreted expression of obligation and permission. This is because the laws or principles of DL are uniquely formulated to capture the logical properties of the norms themselves. In short, DL is concerned with the logical analysis of prescriptively interpreted formalized norm-formulations. However, something remains problematic about the whole undertaking – that is, the laws or principles that are

25 The 'paradox of derived obligation' is associated with Prior (von Wright 1983: 150). von Wright is of the view that many paradoxes in DL are variants of Ross Paradox itself. It may be noted that substantial attempt has been undertaken by some to address the paradoxes in DL, especially Cataneda (1975, 1981), R.M. Chisholm (1974) and A. al-Hibri (1978).

peculiar to this logic concerns logical properties of the norms themselves and so truth values meant for proposition will have to be reinterpreted and appropriated to fit into deontic context. This makes the applications of truth connectives and certain meta-logical notions such as entailment, consistency, and contradiction more challenging, if not controversial.

The difficulty of interpreting deontic expression seen above is one of the reasons von Wright accepted the suggestion to move on from his *tunsollen* system to *seinsollen* system of DL. In his original or classical system of 1951 (*tunsollen*), the contents of norms are thought of as actions and that resulted in the difficulty of reading norm-formulations of higher order or iterated modal formulas. For instance, Op or Pp is not an act-name and so Op → OPp will not be considered a well-formed formula. In contrast, in the SDL, the contents of deontic expressions are thought of as generic state of affairs and so expressions of higher order may be regarded as well formed. However, formulas involving iteration of modal operators suffer from the problem of interpretation. For instance, POp can be interpreted both descriptively and prescriptively. Descriptively, it can be read as the state of affairs that obtains when there is a norm which makes it *obligatory that 'p'* is itself a permitted state. Let us consider a concrete example: 'There *is* a permission to make Right to information a *must*.' Prescriptively, it gives a permission to create a normative state, for instance, a permission that a higher authority gives to a subordinate one to make certain things obligatory. For example, "You may (are permitted to) ban (or require) smoking in the department of Philosophy".

It can be noted from the above that a distinction between descriptive and prescriptive interpretation of norms can be drawn as follows: the first obeys the rules of logic and, hence, possesses truth-values but the latter has no truth-value and, therefore, it is uncertain whether or not the standard rules

of logic will be applicable. By the truth-value of the former, we simply mean that corresponding to the descriptive interpretation of norm or norm-proposition, it can be verified whether or not there is (exists) an actual norm or a written norm. But since prescriptive interpretation of deontic expression lacks a truth-value, we may have to appeal to certain other rational principles such as the notions of transitivity, coherence or *consistency*. Besides, it is a presupposition of any normative study that norms cannot require impossible state of affairs. Deontic sentences or normative statements are, as a matter of fact, always directed towards possible states of affairs that can be brought about. It is precisely for this reason that von Wright has to rework his DL of 1951 to make states of affairs the contents of deontic expressions. He did it by incorporating the notions of change and actions in a complex proposition describing states of affairs.

The question at hand, ultimately, is this: Is DL really a logic of norms? The descriptive reading of norms or norm-propositions makes norms a part of the world. However, the fact that the logic of description is unable to capture or describe accurately normative *facts* or states of affairs, take for instance, the problem of "Op → p", strongly suggests the limitations of classical logic or the uniqueness of our thinking about norms. What makes the reading of "Op → p" problematic? It is not only because it fails to describe the world but also because it is not compatible with the way we understand and use norms. Norms are to regulate human actions and activities and not for describing the world. It is true that norms are describable in the same way rules of a chess game are describable. However, it is quite unlikely that descriptive norms express propositions in the way descriptive sentences express propositions. On the contrary, norms seem to express intentions or goals and desires. It seems reasonable to say that while the meaning of a prescriptive norm is primarily

linked to the *intention* of the norm-giver (norm-authority), the logical meaning of a descriptive sentence is primarily linked to the *fact* which it claims to describe. It is from this perspective of intention that the above Ross Paradox arises. Castaneda echoes a similar view when he maintains that intention is first person imperative (Castandeda 1975). Such issues and problems in DL which are related to the problems of intention are considered to hyperintensional logic. In his recent studies, Kit Fine (2017, 2018a, 2018b) employed what is termed as 'truthmaker semantics' as the semantics for hyperintesional logic. In this approach, 'action' plays the role of a truth-function or truth-maker. The performance or forbearance (omission) of an action is what provides values/semantics to deontic expressions or imperatives.

The above discussion takes us deeper into the question of the nature of logic itself. Must all forms and types of logic be based on proposition which expresses matters of truth? What is the business of logic with norms if norms are without truth values? On this, von Wright's own view is that logic "*has a wider reach than truth*" (von Wright 1957: vii) and that DL gets part of its philosophic significance from the fact that norms and valuation of norms are equally subject to logical laws though they may be alleged to be lacking 'truth-values'. In response to this, Alchourron remarks:

> If logic has a wider reach than truth and if one can establish relational connections between norms, why not admit that there may be a logic of norms directly built on a logic of norm-propositions which is concerned with the states of affairs in conformity with a set of norms (Alchourron 1969: 245).

One may wonder if it is better to replace truth values by something else like validity as we normally say that this or that piece of legislation or law is valid or invalid. However, against such a suggestion, Kelsen (1965) holds a contrary

view. He maintains that the truth of a proposition certainly exists and it is amenable for everyone alike, while the validity of a norm may be debatable. He makes his point by saying that one judge may accept a claim over the validity of a given norm but another may refuse the same. Often the validity of a legal norm is affected by its content and so coupling or substituting "validity" with "truth" would create confusion between the validity of the norm and the truth of its content. But what exactly is meant by "truth of its content" is not clear; it can be quite misleading too in the sense that, strictly speaking in logic, only the content of a proposition can be associated with a truth-value.

On the question regarding the relation of norms with truth and other logical terms such as validity, logical consequences, consistency, etc., thinkers like Jorgensen (1937-8) and Ross (1941) are of the view that they are not applicable to imperatives (prescriptions) as they deal only with descriptive sentences which presuppose truth-values. Though not all imperatives express norms or prescriptions as noted earlier, in general they do express norms. In other words, logic of norms cannot be truth-functional in nature. Despite such a view, one can have definite intuitions about the consistency or inconsistency of normative expressions and so, logicians like Erik Stenius (1963) and Bengt Hansson (1969), among others, have tried to address this doubt. They did so by treating deontic sentences as descriptive sentences, sentences describing the moral (deontic) status of possible states of affairs.

Instead of trying to fit DL within the framework and language of classical logic, it may be good idea to see norms as having a logic of their own, one that need not be governed by laws of propositional logic (i.e. truth-function). Such a view need not be rejected easily. Recent approaches to DL like hyperintensional logic and truthmaker semantics look promising. Even if deontic logicians do not agree on

the relation between norms and truth, everyone seems to maintain that norms constitute a subject matter of logic and that certain logical intuitions of consistency are applicable to norms as well. Accordingly, they believe that a logic of norms is possible. Norms can be seen as the product of rationality and since logic cannot be separated from rational principles, as von Wright reasons, instead of limiting norms by truth-functional logic, one can widen our understanding of logic by approaching the logic of norms through the eye of rationality or commitment to rationality (von Wright 1963: 151-53; von Wright 1982: 4-5).

In a sense, the whole idea of developing a logic of norms is to enable us to represent norms in a systematic and manipulative manner so that we can perform normative reasoning of human behaviour by the use of such concepts as obligation, permission and prohibition. Such a study will enable us to perform certain task effectively. For instance, when the norms of an organization or a society are identified and represented in a system of logic, it will help us to plan and collaborate with others in performing coordinated actions. As the norms are understood, captured and represented in the form of logical systems, DL may be used even for programming intelligent agents or information system to perform many regular normative activities.

Concluding remarks

From the above discussions, we have highlighted some of the fundamental problems in DL, problems related to the definition of the DL itself to interpretations of formulas and applicability of standard principles of logic to DL. We have also highlighted in brief the development of DL, from Mally's system to von Wright's system of 1951 and finally to SDL. Central to the conceptualization of DL is the question if DL

can be truly seen as a logic of norms. Existing literature seems to suggest that SDL is identifiable with the logic of *seinsollen*. If our observations are correct, then modern deontic logical systems, especially SDL, cannot be said to be a logic of norms since norms are primarily about doing and not about desiring or willing. SDL as the *logic of descriptively interpreted norms*, or the *logic of descriptive* norms is unlikely to help us understand the logical features of norms.

Since DL is generally identified with the logic of *seinsollen*, what shall we say of the logic of *tunsollen*? Is the logic of *tunsollen* the same as the logic of imperative or practical syllogism? The answer is less certain. von Wright, for one, does not think so. His classical DL of 1951 was not developed as a logic of imperatives, but more as a logic of norm with act-categories as the object of deontic modal operation. In other words, if a logic of norms in the real sense of the term is possible, then the notion of *tunsollen* has to be inbuilt into the system; it must incorporate praxeological and axiological terms. Such a system or an approach is likely to suffer from various formal defects but its defects may be substantiated by its rich explanatory power. In other words, it may have to compromise with the 'purity' of formal logic, and allow, in turn, axiological and praxeological terms to be integral part of the system. Key to developing such a system would be to achieve basic conceptual clarity to lay the foundation of the logic of norms. The present work hopes to clarify some basic normative concepts for the development of such an approach to be possible and plausible.

Before moving on to the next chapter, let us categorize the kinds of problems that we have encountered or are likely to encounter in DL. First, there are semantic problems of how to interpret deontic expressions and assign values to them with the help of a model so that DL can be considered a sound logic of norms or prescription; and then we also encountered some

syntactic problems of how to correctly formalize our intuitive notions of deontic concepts. Problems of this kind are internal to DL and so it may be termed as *intra-deontic problem*. Next, there are pragmatic problems of how DL can be used effectively as logic of norms or imperatives in normative practices. Such queries and concerns come mainly from the pragmatic consideration of legal and ethical discourses. Problems of this kind may be termed as *extra-deontic problem*. Finally, we can identify the third kind of problems, namely, *meta-deontic problems*. This kind of problems is related to the fundamental presuppositions and theoretical assumptions of DL such as the reduction-thesis, inter-definability thesis, independence of deontic modalities, etc. The kinds of problems just categorized are not independent of each other. On the contrary, they are intricately related to each other in such a way that often it becomes difficult to address a problem of any kind in isolation. While trying to address a problem of one kind, it becomes necessary, at times, to look for solution outside the system or domain. It is for this reason that a proper understanding of any logic of norms, including the logic of *seinsollen*, will have to engage with studies related to norms such as praxeology and axiology. In the subsequent chapters, we will be engaging mainly with the problems of the third kind.

CHAPTER 2

Conceptual Challenges of Formalizing Norms

Introduction

The standard deontic logic (SDL) is basically an extension of propositional logic (PL) and so the principles of (PL) are generally considered valid for SDL. Some do not treat DL as a unique or different logical system but treat it as a branch of modal logic (ML) or as an extension of alethic logic (AL) to be more precise. Accordingly, attempts have been undertaken by them to reduce DL into AL. This is not surprising considering the fact that on the one hand, the possible world semantics for AL is used as the model for DL as well and on the other hand, the notion of possibility is one of the unstated presuppositions of DL. It is a principle of DL that norms cannot require *impossible* states of affairs. In chapter one, we presented a partial and selective sketch of DL and also noted some relevant difficulties encountered in the system. In this chapter, we will probe deeper into one of the fundamental pre-theoretic assumptions of DL – conceptualizing the basic deontic categories, namely, obligation, prohibition and permission. We will do so in a round-about manner by way of critically analysing the reduction schema of Anderson and the subsequent debates the reduction has generated.

Anderson's reduction of DL into AL

As noted earlier in the first chapter, owing to commonalities DL share with AL, some logicians, notably A.R. Anderson (1956, 1958a) and S. Kanger (1957), attempted to reduce DL into AL. A.N. Prior (1958) and T. Smiley (1963) are also in favour of this reductionist view. The main person who persistently defended this reduction despite several objections and problems is Anderson. So our focus will be on his reductive schema. Anderson's approach is to establish a strong relation between the deontic expressions such as 'it is obligatory that p' to alethic expressions such as 'it is necessary that p'. Anderson contends:

> [T]hat any system of alethic modal logic (satisfying certain minimal condition) gives rise, by addition of a propositional constant and suitable definitions, to a system of deontic logic…. [D]eontic logic need not be regarded as an autonomous branch of formal logic, but may be viewed simply as a special branch of alethic modal logic (Anderson 1958a: 100).

Accordingly, he proceeds to show the reductive steps in the following manner by observing the two conventional rules:

1. D (D for deontic system) is closed under detachment for material implication, and under a rule allowing intersubstitutability of material equivalents from pc (pc for propositional calculus), and
2. D contains an operator "P" and "Pp" has the interpretation "it is permitted that p" such that the following expressions are theorems of D:

    - Pp V P¬p
    - P(pVq) ↔ (PpVPq)

However, the formulas given below are not theorems of D:

- p→Pp

- $Pp \rightarrow p$

In addition, Anderson takes the following to be the accepted theorems in any *normal* alethic modal system[1] except $Mp \rightarrow p$:

- $p \rightarrow Mp$
- $M(p \vee q) \leftrightarrow (Mp \vee Mq)$
- $\neg M(p \wedge \neg p)$

In the above symbolic expressions, 'M' stands for alethic modal operator 'possible'. To this set of rules and axioms, including theorems, of alethic system, Anderson adds a propositional constant '***S***' which is loosely interpreted as a *sanction.*[2] With these symbols and their interpretations, he defines permission as follows:

- $Pp =_{df} M(p \wedge \neg \boldsymbol{S})$

It says that '*it is permitted that p if and only if it is possible that p and not* ***S***'. Given the above rules, axioms, definitions and interpretations, he goes on to complete his reduction schema with the definitions for obligation and prohibition (or forbidden) in the following way: p is obligatory if and only if its denial *strictly* implies ***S*** and p is forbidden if and only if p strictly implies ***S***.[3] Symbolically put,

1 By normal alethic modal system, he means S2 and S5 and all the intermediate systems of Lewis and Langford (1932).

2 Anderson's constant is ***P*** which can be read as 'bad' state of affairs. The notion of bad is free from theoretical commitment in that irrespective of theoretical commitment, either deontological ethics or teleological ethics, an ethical system or theory will requires some notion of badness. The symbol "***S***" is not used as employed by Anderson. We have conveniently used it to represent his formula "*(*$M\neg \boldsymbol{P} \wedge \boldsymbol{P}$*)* which can be interpreted as a bad state of affairs has occurred which is in principle avoidable.

3 Stig Kanger (1957a) also made a similar attempt in his work. His axiom is as follows: $Op =_{df} N (Q \rightarrow p)$**.** Kanger interprets Q as '*what morality prescribes.*' It is generally accepted that his reduction schema

- $Op =_{df} N(\neg p \rightarrow \boldsymbol{S})$
- $Fp =_{df} N(p \rightarrow \boldsymbol{S})$

With the availability of the propositional constant ***S***, Anderson says that it can be used to formulate an axiom:[4]

- M ¬S

In fact, he goes on to say that with the sole addition of this axiom, *normal* alethic logic can be extended to generate what he calls the *normal* deontic logic. However, he also points out that 'Mp→Pp' is not a theorem of D where D is treated as an extension of *normal* alethic logic.

Having outlined the reduction schema, Anderson then

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is equivalent with that of Anderson's. In the more recent time, Paul McNamara and Frederick Van De Putte have attempted to explain the reduction using a similar constant – d, d = "All (relevant)normative demands are met. So ◊d is read as "It is possible that all normative demands are met"; see Deontic Logic (Stanford Encyclopedia of Philosophy) accessed on 11/03/2022. It is not difficult to see that d = Q (Kanger) and ¬d = ***S*** (Anderson). In the same work, they also gave a proof of the reduction in the following manner (with some relevant changes to fit into the present vocabularies): Consider a proof of a mixed formula Od: By PC, we have d→d as a theorem. Then by rule of necessitation, it follows that □(d→d) which is a logical equivalence of Od (it is obligatory that d). "Op→¬O¬p" is a theorem of SDL. Now applying RAA (reductio principle), we have ¬(Op→¬O¬p). By correct substitutions, we get ¬(□(d→p)→¬□(d→¬p)) and this is a logically equivalent expression of □(d→p)Λ□(d→¬p). By applying relevant rules of modal logic and PC (distribution), we can derive □(d→(pΛ¬p)). From □(d→(pΛ¬p)), ◊d,◊(pΛ¬p)◊d can be derived in the SDL. However, we know that "¬◊(pΛ¬p)" is a theorem of SDL. Hence, we get a contradiction. Hence, the reduction is possible. See footnote 35, Deontic Logic > Notes (Stanford Encyclopedia of Philosophy) accessed on 11/03/2022.

4 A basic assumption (implicit or explicit) in DL includes the principles that norms cannot require impossible state of affairs, an idea which is attributed to Immanuel Kant who says that obligation implies possibility: (Op → ◊p).

proceeds further to suggest that we can do away even with the notion of *sanction* altogether. For instance, one can introduce a propositional constant ***P*** where ***P*** stands for a state of affairs viz., 'a sanction has been incurred' or 'a bad state of affairs has occurred'. ***P*** is used to define ***S =*** (M¬ ***P*** Λ ***P***). In other words, the symbol ***S*** which we have introduced here is actually a complex term, an abbreviated term for (M¬ ***P*** Λ ***P***). Anderson then shows that M(¬(M¬pΛp)) is derivable from any normal alethic system. Given the rule of uniform substitution, we can also derive M(¬(M¬ ***P*** Λ ***P***)) as a theorem. So given the definition of Pp $=_{df}$ M(pΛ¬***S***) above and the uniform substitutions, we can now have Pp $=_{df}$ M(p Λ ¬(M¬ ***P*** Λ ***P***)). Further, by applying the same rule of uniform substitution, we finally arrive at the (apparently value-free) definition of permission[5]:

- Pp =df M(p Λ¬(M¬q Λ q)).
  [p and q are propositional variables]

von Wright and Anderson on the reduction of DL into AL

The above reduction schema was accepted by von Wright, among others, without substantial objection. However, von Wright (1969) raised some doubts concerning the notion of necessity in the schema.[6] He questions:

> Does it not sometimes, perhaps all too often, happen that what should be is not and yet no penalty follows? The sinner escapes punishment. Shall we then conclude that, since the agent neglected to do so that p and was not punished, it was not (cannot have been) his duty to do so that p? Or shall we say

5 Sanction has inbuilt notion of value judgment. Likewise, ***P*** is also not value free since it is interpreted as something bad or undesirable.

6 There are others who raised serious objections to the plausibility of the reduction of DL into AL notably E. J. Lemmon and P. H. Nowell-Smith (1960) and Castaǹeda (1960)

> that 'N', the symbol for necessity in the right member of the equation, is itself deontic, and not alethic? To accept the first answer would be to subscribe to what seems a very odd view of duty (obligation). To accept the second would be to dispute that Anderson's proposal achieves what it was meant to achieve (von Wright 1969: 90).

It is interesting to note that his doubts concerns not so much on the formal aspect but on the philosophical or semantic aspect of it. He also rightly points out that the concept of permission, following Andersonian reductive schema, is too weak. The reading of the symbols "$Pp =_{df} M(p \wedge \neg \boldsymbol{S})$" primarily conveys the idea that it is possible to do the permitted thing and escape sanction. He remarks, "Must it not, however, be as certain that the man who does the permitted is not punished for what he has done as it is that he who neglects his duty is punished?" (von Wright 1969: 90). Accordingly, he proposed an alternative definition for permission. However, before we go into his technical formulation, or rather, reformulation of permission, we will first point out some philosophical presuppositions involved in the reductive schema of Anderson.

von Wright stresses that it is necessary to demolish the realist ontology of norms which underlies Andersonian normative thinking before proposing any modification of the reductive schema at hand.[7] The philosophical issues of DL have to do with the difficulty of answering questions such as 'What is norm? Which is the 'reality' that warrants the truth or falsehood of the statement that a certain norm exists?' He believes that these questions are so fundamental that until one finds answers to these questions, one lacks a standard to test the validity of the laws of DL. At the same time, if one has the answers to these questions, one can also test the

7 Realism in normative studies is a view that holds that the ontological status of norms resides in some empirical facts concerning the behavioral patterns of individual and society.

fruitfulness of DL in such areas as ethics, legal and social systems. Interestingly, von Wright also points out that '***S'*** need not be attributed with any 'axiological tint' as did by Anderson. It may simply be taken as some state of affairs.

Anderson is well aware of the challenges that his reductionist schema might encounter and so he stresses that the objective of formally modelling a normative reasoning should be "to explicate logical relations, not to make moral or ethical commitments" (Anderson 1958b: 85). His response to the doubts expressed by von Wright is worth noting and reflecting. On the question of "the 'reality' that warrants the truth or falsehood of the statement that a certain norm *exists",* he maintains that the question is assimilated to problems concerning the application of DL which he finds it to be an enterprise of a quite different sort.[8] Anderson reminds that the principal point of investigating logic is to find techniques for distinguishing correct from incorrect reasoning and not with how people actually argue or reason. In this way, he undermines the von Wright's example of "the sinner escapes punishment" as irrelevant in much the same way a person having some contradictory views has no bearing on logical laws. Anderson goes on to add that nothing in his formal reduction requires that the 'bad thing' means the punishment of some lawbreaker. The only formalrequirement for his purpose is that somethingbad or unfortunate results if one fails to perform one's obligation and that the bad thing in principle is avoidable. In view of the above, he maintains that he fails "to feel the force of the philosophical criticism raised against the 'reduction' (Anderson 1969: 111). Accordingly, he continues to defend his reduction schema. However, he proposed a (possible) reading of implication for his reduction schema which is neither 'strict implication' nor 'material implication',

8 For von Wright, the reality or existence of any prescription is decided by virtue of its being *in force*.

perhaps, owing to the difficulties and objections pointed out by others. Being an advocate also of *Relevance Logic* (1967), he suggested that the antecedent of an implication should be relevant to the consequent.

Digging deeper into reduction debate

We will now analyse and evaluate the above debate between von Wright and Anderson in order to, first, understand the formal difficulties involved in this reduction and, secondly, to stress and elucidate the philosophical assumptions embedded in deontic concepts and expressions. Discussion in this direction requires one to look outside the formal structure and engage with the assumptions and presuppositions of norms and normative practices. From this perspective, it is fitting on the part of von Wright to worry about the 'reality' that warrants the truth or falsehood of the statement that a certain norm exists. This is essential in testing the validity of deontic principles and axioms.

Formal difficulties in the reduction schema:

From a certain angle, Anderson may be justified in saying that people's contradictory beliefs or the familiar example of "the sinner escapes punishment" may not have any serious bearing on the laws of logic as such. However, he overlooked a serious technical defect that von Wright is pointing at. This difficulty may be explained in relation to the problem of '*precariousness*' we have seen earlier in the first chapter though von Wright himself did not bother to explain the problem in this way. Put it differently, axiom T – necessity implies actuality ($Np \rightarrow p$) – holds in the normal alethic system. However, von Wright seems to be saying that this principle has been rendered invalid. In saying that "The sinner escapes punishment," he is

saying something like this: "Look, here is a counter-example. There are cases in some possible worlds (situations) where a person gets away without sanction or penalty for violating a norm, say a traffic rule, though the reductive schema requires he be *necessarily* punished." As such, the idea of necessity on the right side of the equation is behaving more like a deontic modality of obligation than the alethic necessity. Note that Axiom T or the principle of reflexivity is not an axiom of SDL. This certainly cannot be brushed aside as a problem of application without a philosophical bite.

In his schema, Anderson defines obligations as follows: Op = N($\neg p \rightarrow \boldsymbol{S}$). He takes $\boldsymbol{S}$ as a sanction. Though he maintains that it is not necessary to interpret $\boldsymbol{P}$ (the constituent of $\boldsymbol{S}$) as punishment, he does admit that *liability* for punishment can be seen as something bad. He writes:

> And of course there is no reason why liability for punishment should not be taken as an interpretation of the 'bad thing'. … But the only formal requirement for logical purposes is that something unfortunate attend failure to fulfill an obligation, and that that thing be in principle avoidable (Anderson 1969: 111).

Let us take a closer look at the notion of sanction employed for defining the deontic modalities, viz., permission, obligation and prohibition. Sanction generally means a kind of penalty or punishment imposed for breaking some law or rule. If one takes such an account of sanction, then it is obvious that despite the fact that Anderson claims that there is no indication that the propositional constant "$\boldsymbol{P}$" in the unabbreviated formula "(M$\neg \boldsymbol{P} \wedge \boldsymbol{P}$)" be read as a punishment, it has the possibility of being interpreted as a sanction or penalty by his own admittance. In this context, the notion of sanction may be loosely interpreted to cover all varieties of hostile reaction as a consequent of some action that violates a norm. A passage from Anderson's work is apt to make this point:

> Nothing in the formal reduction requires that the 'bad thing', occasioned by an agent's bringing about a forbidden state-of-affairs, be the punishment of the agent. May be the 'bad thing' is that he was not doing his *Willing* in the way Kant thought should; or may be the 'bad thing' is that decent man remark it and are moved in tears; or that the agent was not promoting the greatest good for the greatest number; or that God does not like it (Anderson 1969: 111).

However, what is to be noted here is the idea that sanction is normally understood as a consequent-event in relation to some prior cause or incident. It is not a natural consequence of some event but a result for violation of some norm or the other. As such, it has to be understood in relation to a set of norms in a society. To quote von Wright, (though from a different context):

> (I)t is obvious that the notion of a sanction (punishment) presupposes the notion of a delict which in its turn can be said to presuppose the notion of prohibition ("primary norms" in our terminology). This is so notwithstanding the fact that the prohibition need not be "expressly stated" but may remain "tacitly" understood (von Wright 1983: 159).

From the foregoing account, it is apparent that the notion of obligation is 'contained' in the notion of sanction. Anderson's equation/definition [i.e., $\mathrm{Op} =_{df} \mathrm{N}(\neg p \rightarrow \boldsymbol{S})$] is, therefore, circular in nature. The function of the alethic modality 'N' on the right side of the equation thereby becomes extraneous or redundant.[9] What about the question of 'axiological tint' raised by von Wright? It is one thing to consider DL as an extension of AL. However, to reduce DL into AL is quite another thing. For

9 Perhaps, realizing the futility of this approach, he gave up the idea of trying to define obligation with strict implication – that is, the idea of necessity. Also, he eventually stopped justifying his definition of ought in terms of sanction. Instead, he started using 'relevant implication' to continue defending and working on his reductive schema. See his 1967.

instance, how do we read away the propositional constant of DL, ***S***, seen as an extension of AL? It is a value loaded expression and such a reading is irrelevant or undesirable in alethic logic. This difficulty was considered by both Anderson and von Wright. As noted above, Anderson tried to show that '***S'*** is a complex sentence which can be further analysed into simpler parts and the parts can be treated as a description of some value-qualified state of affairs. But by appealing to the rule of intersubstitutivity of equivalent expressions and a theorem of AL, the 'axiological tint' is made to disappear. In principle, both von Wright and Anderson agreed that axiological reading of ***S*** is inessential for the reduction enterprise. Perhaps, they are right in so far as alethic logic is concerned. In alethic logic, the issue of intended meaning or intention of expression does not arise while manipulating a symbol. However, in deontic logic, intended interpretation of expression is inevitable.[10] Had it not been so, even von Wright's problem of "sinners escape punishments" would not arise. Thus, to read away intended meaning or 'axiological tint' through manipulation of symbols is not quite convincing.[11]

Let us return to the derived formula wherein the 'axiological tint' is eliminated for the definition of permission:

i. $Pp = Mp \wedge \neg(M\neg q \wedge q)$

How do we read this formula in the context of alethic logic? Let us say that 'p' stands for 'The Prime Minister of India tells the truth' and 'q' stands for 'Delhi is the capital of India'. Accordingly, the equation may be read as follows:

10 We have noted above that intention, at least in some cases, forms part of the meaning of imperative or normative expression.

11 While engaging with the issue of reduction of DL into AL and defending the same, Charles F. Keilkopf (1974) referred to a model known as 'Dowson Modelling' where in he tries to show a method of eliminating the axiological reading of the propositional constant ***P.***

ii. It is permissible that the Prime Minister of India tells the truth if and only if it is possible that the Prime Minister of India tells the truth and it is not the case that possibly it is not the case that Delhi is the capital of India and Delhi is the capital of India.
iii. With some interpretation, it reads: It is permissible that the Prime Minister of India tells the truth *is definitionally the same thing as* the Prime Minister of India tells the truth and it is not the case that possibly Delhi might not have been the capital of India and yet Delhi is in fact the capital of India.

The rules of logic have succeeded in eliminating the 'axiological tint' in deontic expression when it is translated (reduced) into the language of alethic language. However, the alethic reading of the formula does not give us any sense of permission even though the right hand side and the left hand side of the equation are logically equivalent expressions. Suppose, we want to retain the sentential form ***P***, that is, it stands for something bad. We can do so by another sentence q = "Humpty Dumpty had a great fall". But the definition of permission would still look awkward even if we replace the earlier sentence – "Delhi is the capital of India" – by this one, assuming Humpty's fall to be something bad. Moreover, if this form ***P*** is retained, then we have not succeeded in eliminating the 'axiological tint'. It may be noted that von Wright later on admits and also points out that Andersonian reduction is applicable to one aspect of 'ought' called the technical ought (von Wright 1969: 94-5), a notion we will revisit briefly in this chapter. Despite the fact that both von Wright and Anderson have changed their views on this reduction thesis, it is interesting to note that Charles Kielkopf, by using some method known as "Dowson Modelling", attempted to defend the reduction of DL into AL[12]. He writes:

12 His main attempt is to show a way to eliminate the constant

> Still, as interesting as these new developments are, I shall restrict my attention to Anderson's early strict implication analysis of deontic operators. My aim is to show how Anderson's development of deontic logic, based on use of strict implication, can be reduced completely to alethic logic and to draw some consequences about iteration of deontic and alethic operators (Kielkopf 1974: 403).

In his paper, the substantial questions which have been raised here have been left unaddressed and more emphasis has been given to technical reading and manipulations of the formulas from a formal point of view.

Philosophical assumptions and issues in the reduction schema:

Let us now direct our attention to certain philosophical assumptions and issues involved with the concepts of prescription in the Andersonian framework. It is a fact as noted above that the concept of punishment cannot be understood without presupposing the 'existence' of norms. However, if one goes on to hold a stronger view that punishment or liability to punishment is constitutive to the meaning of norms, then one is subscribing to or advocating a certain school of thought in jurisprudence or legal philosophy – *normative realism*. In other words, it can be shown that though punishment or liability to punishment is implied by norms, the reverse implication

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P. However we will not look into this reduction schema for the obvious reason that our problem is not primarily formal in nature but conceptual in nature; our interest is basically with the idea of sanction. In the meantime, Kielkopf made this significant observation: "I grant that Anderson is correct in noting that for formal manipulations we do not need to pay attention to the intended interpretation of B. Still, we can see B when we do deontic logic but not when we do plain alethic logic. And from a formal point of view what we can and cannot see is extremely significant" (Kielkopf 1974: 104).

cannot be maintained in a *strict* sense.[13] Given the above line of argument, the reduction enterprise of Anderson becomes philosophically problematic as well. We will analyse this view in greater details since it is not only relevant for a critical appraisal of Andersonion kind of normative thinking but also it is basic to the conceptualization of prescriptive concepts, viz., obligation, prohibition and permission.

The main question to grapple with is this: Is the notion of sanction a defining feature of prescription?[14] It may be remarked that the above assumption of Anderson regarding norms is very similar to Kelsen's theory of what he calls '*pure* theory of law' (1978).[15] It is doubtful if such a broad view of 'bad thing' or what Kelsen's calls it 'sanction' will work at the definitional level in the strictest sense. Perhaps, a passage from von Wright will give us some direction of thought. He writes:

> Prohibition and obligation are somehow ontologically more "basic" or "real", it would seem, than permissions. This presumably is connected with the fact that neglecting obligations and breaking prohibitions is normally connected with "sanctions" of one form or another such as legal punishment or moral reprobation (von Wright 1983:136).

13 By reverse implication I mean the meta-logical equation that holds between obligation and the idea of sanction and not the 'first order implication' between a state of affair '¬p' and punishment or liability for punishment or something bad.

14 Here, I will be using the ideas of sanction, punishment and penalty interchangeably. In saying this, I don't mean to deny the nuances associated with each term, but we only want to say that formally they all can be treated as a consequence of some antecedent action which yields hostile reaction following some breach of norms.

15 Kelsen even introduces the idea of transcendental notion of sanction, something like the ideas of heaven and hell, to accommodate his broad view of sanction.

The above remark of von Wright is significant. Among others probably, let us consider two reasons, both of which are related:

i. Obligation and prohibition are ontologically more basic permission.
ii. The reason for the difference in ontology is sanction.

Though von Wright seems to be committed to the above view only half-heartedly, it reveals something deeper, that is, how we commonly perceive the relationship of norms with sanction. It suggests that the ontological status of norms are decided by the nature and degree of sanction associated with norms.[16] Also it gives the impression that despite his minor criticism of Anderson's reduction on the ground of 'axiological tint', von Wright seems to be fascinated by the idea of sanction too. He stresses that norms are 'associated with a thread of punishment in case of disobedience' and that sanction is an essential feature of a norm (von Wright 1963a). Following the Andersonian schema, he even attempted a reformulation of permission, something which we will take it up for consideration towards the end of the chapter.

From the immediately preceding paragraphs, it is quite apparent that not only Anderson but even von Wright recognizes the close connection of norms with sanction. They understand norms against the backdrop of legal practice or legal philosophy. This is not surprising considering the fact that normative practices are usually carried out in relation to punishment or sanction. However, the point to be examined is the nature of relation holding between the two: Does the relation of norms and sanction go beyond the level of practice to the conceptual and theoretical level as well? Is it *really*

16 For convenience, I will be treating the notions of prescriptions and norms synonymously to basically refer to the three deontic categories, viz., obligation, prohibition and permission.

possible to capture their relation at the formal level as well? Their answer seems to be in the positive.

Ideally speaking, one needs to first understand and define prescription in order to understand the nature and scope of sanction. However, by using the idea of sanction[17] to define prescriptive concepts as did by Anderson, one will encounter the problem of vicious circle. Besides, one will only end up blurring the distinction between legal and deontic categories. Though sanction certainly possesses heuristic importance towards making norms effective, and is used perhaps even to define legal practices and concepts, in what follows, our main focus will be to argue that the notion of sanction need not be used to formally construct or define deontic concepts. Accordingly, we will try to argue that sanction is *external* to the concepts of deontic logic. Prescriptions are more basic and it is only in relation to prescriptions that sanctions are proposed and recognized to ensure or safeguard the sanctity of prescriptions.[18]

Hart's critic of Austinian theory of norms

J. Austin stresses, "It is only by conditional evil, that duties are sanctioned or enforced. It is the power and the purpose of inflicting eventual evil, and not the power and the purpose of imparting eventual good, which gives to the expression of a wish the name of a command" (Austin 1832: 24).[19] He goes

17 Both von Wright and Anderson take the idea of penalty or punishment or sanction as *given* (that is, undefined) and apply them in their analysis of deontic concepts.

18 However, it is quite possible that in certain situation, sanctions come prior to prescription; for instance, during revolt or protest (or even war), 'rebels' or 'protesters' when caught may be first given punishment (sanction) and afterwards, appeals may be made to certain moral principles (or other principles of law) to justify their punishment.

19 Evil is explained in relation to sanction. He writes, "The evil

on to maintain that laws or rules are species of commands. The point he is driving home is this: a law to be a law must be backed by a threat to incur pain upon the delict. Kelsen echoes similar ideas on the relation between norms and sanction:

> One shall not steal; if somebody steals, he shall be punished … Law is the primary norm which stipulates the sanction… Only the organ can, strictly speaking, 'obey' or 'disobey' the legal norm, by executing or not executing the legal sanction (Kelsen 1945: 61).

The above views of Austin and Kelsen are significant in that they sum up what is termed as *predictive theory* in jurisprudence though their views are not same. This theory expresses the central idea that failure to obey law invites high probability or likelihood of suffering some punishment or threat at the hands of the norm authority. The theory rules out any inherent moral law in human beings that can be discovered by reason; it denies the existence of such laws which drive or determine our action on the basis of which human actions and activities can be explained or justified.[20] Despite its apparent

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which will probably be incurred in case a command be disobeyed or (to use an equivalent expression) in case a duty be broken, is frequently called a sanction, or an enforcement of obedience. Or (varying the phrase) the command or the duty is said to be sanctioned or enforced by the chance of incurring the evil" (Austin 1832: lecture 1, 22).

20 The theory of prediction in the legal domain has been made popular mostly by the legal positivists. They develop this theory in order to challenge and replace what is called Doctrine of Natural Law in philosophy of law. Hart elucidates the Doctrine of Natural Law lucidly in the following way: "*The doctrine of Natural Law is part of an older conception of nature in which the observable world is not merely a scene of such regularities, and knowledge of nature is not merely knowledge of them. Instead, on this older outlook every nameable kind of existing thing, human, animates, and inanimate, is conceived not only as tending to maintain itself in existence but as proceeding towards a definite optimum state which is the specific good – or the end appropriate for it.*" (Hart 1978: 184).

usefulness to have such a belief, belief in inherent moral laws within, they maintain that it is just an illusion; beyond the clear ascertainable facts of group behaviour and predictable reaction to deviation from norm, there is nothing; there is only our powerful feeling of compulsion to act in accordance with the rule and to react negatively against those who do not. Simply put, this theory is characterized by the doctrine that the notions of 'threat' and 'obedience' are the defining features of law or prescription.[21] The idea of sanction may vary from one society to another but without it, the possibility of establishing a social order or normative system is denied by it. Kelsen observes:

> It is therefore doubtful whether a distinction between social orders with and without sanction is possible. The only relevant difference between social orders is not that some prescribe sanction and the others do not, but that they prescribe different types of sanction (Kelsen 1934: 28).[22]

The above view, call it Austinian philosophy of law, was found to be problematic by Hart. He does not deny the relation of rules or norms with sanction altogether though. Rather, he is even of the view that norms are conceived and

21 Here I will treat the notion of prescription synonymously with the notions of rule or law.

22 His view of sanction is synonymous with the principle of retribution. He writes, "*The principle, to react upon a certain human behavior with reward or punishment, is the principle of retribution. Reward and punishment may be called 'sanctions'*" (Kelsen 1934: 24); in this way, he takes the practice of social approval or disapproval also to be some form of sanction. If such a view of sanction as this is taken, then a problem of significance arises – that is, every human action, regulated or unregulated, is liable to become prescription of some sort because they are capable of being either approved or disapproved. However, he did also mention that legal notion of sanction or punishment has more specific connotation – it must be to the disadvantage of the person to whom the sanction has been imposed.

promulgated with intent to demand general conformity and to insist social pressure upon those who deviate or threaten to deviate. Sanction in the form of social pressures is 'necessary' to maintain social order. However, he is of the view that not everything can be explained in terms of the observable predictive behaviours of individuals or groups in a society as maintained by the predictivists. He delineates legal and moral norms based on the nature of sanction or social reaction in the following way:

> When social normative pressure can be linked with a feeling of shame, remorse or guilt, then it may be spoken of as moral obligation. But if the pressure is of physical one, like sanction or corporeal punishment, the tendency is to classify (such rule) it as primitive or rudimentary form of law. Sometimes, the pressure is blurred and we failed to identify if the pressure we are confronted with is one of morality or rudimentary law (Hart 1978: 84).

Hart puts up his reason for rejecting predictive theory in the following way:

> The fundamental objection is that the predictive interpretation obscures the fact that, where rules exist, deviations from them are not merely grounds for a prediction that hostile reactions will follow or that a court will apply sanctions to these who break them, but are also a reason or justification for such reaction and for applying the sanctions (Hart 1978: 82).

One of the main difficulties in accepting this Austinain view[23] is that this view overlooks the fact that because there is norm in the first place that we can insist obedience to norm with or under a threat. If there is no norm, there would be no sanction. So to use the observable behaviours of members

23 The Austaninian view of law may be broadly interpreted to include legal positivism, predictive theory and normative realism which are all reaction to naturalism in legal philosophy.

of a society to characterize and define norm is to put the cart before the horse. "Sanctions are therefore required", according to Hart, "not as the normal motive for obedience, but as a *guarantee* that those who would voluntarily obey shall not be sacrificed to those who would not" (Hart 1978: 193). One can understand from this that sanction's primary function is, therefore, to serve as a tool for protection or implementation of law, or for efficacy or effectiveness of law; it is not the inherent or internal feature of law. It wrongly essentializes law as something that demands action under threat of sanction. It tells us that the only reason for someone to obey the law is the fear of the consequence (sanction). Hart calls this 'habit of obedience' the 'end product' of the legal system; this is not to be confused with the essential or defining feature of norms.

Fundamentally, Austinain account also ignores a very important aspect of human civilizational culture, that is, respect and reverence for law in Kantian locution; it ignores the internal reality of human understanding of norms. It leaves no space for a person to think of oneself (or for that matter anyone else) as having an obligation to perform an action. It denies an important goal of education – to inform and form citizens who respect and value the laws of a country, not for fear of punishment but for desire to uphold the values that are essential for pursuit of happiness or goodness and realization of the self. For an educated enlightened person, a duty or an obligation may not entail any form of *pressure* or threat or fear of punishment; for instance, such a person may happily pay her tax without linking it to penalty, or if such person is a teacher, she will be performing her duty as a way of self realization. For such a teacher, even if there is a kind of fear attached to failure to perform her duty, it will be primarily the fear of losing herself rather than the fear of punishment.

Besides, Hart points out that there are varieties of norms which are not directly concerned with regulation of actions

but with conferring or delegating powers (by superior authority to subordinates), with cases of disobedience of rules, with modification or adjudication of rules, with creation or derivation of rules, etc. All this serves as a limiting case for Austinian theory. Also Hart (1978: Chapter X) points out that there are certain types of law, like international law, which lacks a centrally organized effective system of sanctions. All this serves to undermine the core of Austinian doctrine of law. We can even think of an example unique to our Indian Constitution: The chapter of the Directive Principles of State Policy is not justiciable. It does not come with a threat or sanction if a state chooses not to implement the principles incorporated in this chapter.

Internal and external aspects of norms and action

Hart

Earlier, we noted that sanction is *external* to the concepts of deontic logic. Taking help from Hart and von Wright, we will now elucidate this point. Hart stresses that the failure to bring out the distinction between what he terms as the *internal* and *external* statements of law or rule has resulted in creating confusion in legal discourses, especially in Austinain legal doctrine. Hart is of the view that while validity and reason characterize the internal statement of rule, observability and efficacy characterize the external aspect of rule. He outlines the features of external statement of rule as follows (Hart 1978: 244):[24]

(i) Regularities of behaviour (and hence predictive) on the part of those who comply with the rules as if they were mere habits

24 For a more detailed study on this, see Wedberg (1951) and Hart (1955).

(ii) Regular hostile reaction to deviation from the usual pattern of behaviour as something habitual

(iii) One may record not only such observable regularities of behaviour and reactions but also *the fact that* members of the society accept certain rules as standards of behaviour, and that the observable behaviour and reaction, are regarded by *them* as required or justified by the rules.

In point (ii), we can clearly see that punishment or liability for punishment is external to the essential definition of rules. Using an illustration, Hart explains the predictive interpretation of law in relation to internal and external aspects of a norm: for an external observer, the relation between obligation and punishment is like the stopping of a car at the traffic red-light signal. But for the insider or an educated citizen of a society, red light is both the sign and the *reason* for the car to stop in conformity to rules. He reasons that for an observer who may also be an outsider to the normative system, any deviation by a member of the group from the normal behaviour will be nothing more than a sign that hostile reaction is likely to follow. In contrast, for a member or a citizen, norms are not only a guide to the conduct of social order but they also serve as the basis for claims, criticism, protest, or punishment. Therefore, violation of a norm for her is the reason for the hostility of reaction, and not a mere predictive behaviour.

Within a social system, a member accepts a rule, for instance, while watching a football game and cries out "goal" or "fault," and directly *applies* it to recognize some fact as *valid*.[25] By valid or validity in a normative context, we simply

25 Such a view is also articulated and defended by Charles Taylor in his "History and Philosophy" in *Philosophy in History: Essays on the Historiography of Philosophy* edited by Richard Rorty, J.W. Schneewind and Quinton Skinner, Cambridge University Press, Cambridge, 1984, pp. 22-24.

mean that the rule in existence is being correctly applied to the situation. It is an appeal to plausibility or appropriateness or fittingness. The internal point of view provides the foundation of legal system according to Hart. He states:

> … it [internal statement] manifests the internal point of view and is naturally used by one who, accepting the rule of recognition and without stating the fact that it is accepted, applies the rule in recognizing some particular rule of the system as valid (Hart 1978: 99).

When a judge says that a rule is valid, his statement is understood internally within the context of a normative system. She recognizes the fact that the rule in question satisfies some legal criteria. As such, her act is not a predictive interpretation of a rule but constitutes a part of the *reason* for her judgment. The problem of the predictive theory, according to Hart, consists 'in connecting the special character of the internal statement and treating it as an external statement about official action' (Hart 1978: 102).

von Wright

von Wright's interest in the notions of internal and external elements is not directly related to norms but to action.[26] However, it has bearings on norms, especially on the issue that we are trying to grabble with and so we will briefly take a look at these two notions. von Wright's interest is to explain the

26 von Wright has devoted so much study to the understanding of human action. Almost as opposed to Davidsonian kind of extensional move towards explaining human action, he takes an intensional approach for understanding the nature of human action. Apart from his works (1963b, 1983), a very fruitful and detailed discussion on the nature of action and its relation with intention and institution is being worked out critically in two of his works – *Freedom and Determination* (1971) and *Explanation and Understanding* (1980).

causal *determinants* of human action. He writes, "Similarly, we can divide the determinants of action into internal and external ones. Intentions and epistemic attitudes are of the former, symbolic challenges of the latter kind" (von Wright 1983: 38). He goes on to note that participation in an institutionalized or community practices and behavioural conformity with rules or customs including codes of morality and good manners are forms of responses to symbolic challenge.

It is evident from his classification of internal and external determinants of action that legal institution is also at the back of his mind. An example of institutionalized practice or behaviour is as follows: A person is habituated to park her car in a specific area. On asking why she parks her car only there and not elsewhere, her reply is, "It is not allowed." Here, traffic rule is functioning as a determinant of the agent's behaviour; however, obedience to rule is, though an intentional action, externally determined. von Wrights further stresses that even the idea of reward, when seen merely as an alternative to punishment in making people conform to rules, is an external determinant of human action. In short, anticipation of reward (and also fear of punishment) does not constitute what can be termed as the internal determinant of intentional action. In the meantime, von Wright also talks about the possibility and process of *internalization* of external determinant of human action:

> Therefore, it is a further feature essentially connected with the institutionalization of behaviour that the reason for conforming to the set pattern should, on the whole, not be the impact of normative pressure, but simply acceptance of the rule. When rules function in this way, they are said to be **internalized** with the members of the society in question (Von Wright 1983: 39).

From the above observation of von Wright, we can see normative pressure, or sanction in our vocabulary, has no *essential* connection with institutionalization of behaviour, or

obedience to rule. On the contrary, he goes on to emphasize that rational 'acceptance of the rule' has essential connection with norms and actions in a society. He believes that people do not merely and usually conform to rule only in order to escape unpleasant consequences of non-conformity. The point of his argument is that the relation between action and norms is possible without including the idea of external pressure or sanction. Subsequently, he also rejects the prediction theory of norms. From them, we can see that the notion of sanction (even in the broadest sense as suggested by Anderson) is not only external to norms but also to action.

A note on Permission in the Andersonian reduction schema

It is interesting to note that while most logicians take obligation as basic or primitive in their deontic systems, von Wright and Anderson prefer to take permission as basic. Irrespective of whichever deontic modality one takes, however, in the deontic systems, the inter-definability thesis is accepted. In the Andersonian reduction schema, von Wright points out some interesting observation regarding permission. Anderson defines permission as follows:

- $Pp =_{df} M(p \wedge \neg \boldsymbol{S})$

The symbolic expression may be read "it is permissible that p if and only if it is possible that p and there is no sanction". Read it differently, permission according to this definition says that one does the permitted thing and yet it is possible to escape punishment. von Wright has problem with this definition and rightly so. On the one hand, it suggests that one may do the permitted thing and yet there is no guarantee that one will not be punished and on the other, it appears that the reason for doing the permitted thing is to avoid punishment.

This is quite odd. For this reason, von Wright alleges that Anderson's definition of permission is *weak*. One difficulty of trying to define prescriptions, deontic modalities in the present context, with sanction is this: Though it is reasonable to think or say that one expects to avoid punishment by performing one's duty, it is quite another thing, even unintuitive, to say that she does the permitted thing to avoid punishment. For instance, we exercise our franchise not to avoid punishment but something more fundamental. We do that, among others, for civilizational and democratic purposes.

von Wright, instead of thinking of an alternative way of defining deontic categories on noting this difficulty, uses the Andersonian schema itself to redefine deontic modalities. He reformulates the concept of permission as follows, "I shall say that there is a strong permission to do an action, if and only if, commission of this action is a sufficient condition of immunity to punishment for it" (von Wright 1969: 95). In other words, doing the permitted act in question is a *sufficient condition of immunity* to punishment for it. This obviously is closer to our intuition of permission – one does not expect any punishment for doing a permitted thing. Usually, the act of granting permission is considered as an act of providing security against possible punishment. There is something else in the definition of strong permission worthy of note – it suggests that there is a notion of *weak* permission as well. Indeed, von Wright earlier had formulated and classified permission into weak permission and strong permission. He writes, "An act will be permitted in the weak sense if it is not forbidden; and it will be said to be permitted in the strong sense if it is not forbidden but subject to norm" (von Wright 1963b: 86).

In the above definitions, the defining feature of permission as a prescription is associated with the idea of prohibition and the *existence* of normative system. Strong permission is legally binding or *in force*. However, the notion of being *in force*

does not apply to *weak* permission; as such, it has no reality or existence as a norm. It only implies the mere absence of a corresponding obligation. In comparison to his earlier formulation, von Wright incorporates the notion of *punishment* to (re)define permission. Perhaps, being influenced by Anderson, he now attempts to capture the formal essence of permission – both weak and strong – in relation to certain legal terms viz., immunity and punishment:

> **May**-statements, which are denials of statements of necessary conditionship, can also be cast in the form of need-not-statements. An agent may omit doing a certain thing, when he need not do this thing in order to be immune to punishment, to attain some end, or to qualify as such and such. In the case of legal norms, this **may** which can also be expressed as a need not signifies what we called a **weak permission**… Sufficient conditions for the attainment of ends or for qualifying under concepts have a structure corresponding to what, on the legal side, we called **strong** permissions (von Wright 1969: 103).

From here, he goes on to point out that since the weak *may* is a *need not* category, it can be defined in terms of the categories of *ought* and logical negation; it is entailed by the strong *may*. However, he also points out that the strong *may* is not definable in terms of *ought* and negation alone. This point is important and we will pick it up for discussion at a suitable time later on.[27] Within this framework of thinking, von Wright defines obligation in the following words: "that it is obligatory to do t, the suggestion now goes, means that doing t is a necessary condition of immunity to punishment in some legal order or other norm community" (von Wright 1969: 93).

27 The dichotomous distinction between weak and strong permission may not hold in some normative context, for instance, closed normative system. In such a system the principle of '*nullum crimen sine lege*' is applicable. It says that whatever is not prohibited is permitted. This is being brought to our notice by von Wright himself (1969: 96).

The definitions of permission and obligation have been given symbolic expressions respectively:

- **Pp =** $_{\mathbf{df}}$ **N(*p*→ *I*)**
- **Op =** $_{\mathbf{df}}$ **N(*I*→*p*)**
  [***I*** stands for immunity in the above formulas]

von Wright claims that his definition of obligation, that is, "Op $=_{df}$ N(I→p)" is formally equivalent to the Andersonian definition of obligation. As a matter of fact, von Wright's schema is very close to that of Kanger: "Op $=_{df}$N(Q→p)" where Q is taken as 'what morality prescribes'. Apart from this passing remark, we will not inquire into the formal analysis of the systems at hand. It is obvious from the above discussion that von Wright's new definitions of obligation and permission are deeply influenced by Anderson's reductive schema.[28] However, he stresses that the present schema or enterprise should be understood in the context; it is not to be misunderstood as an attempt to theorize the nature of prescription. Instead, he suggests that this ontological view of prescription can be called, in a somewhat restricted sense, a *theory of obligation and permission*.

Some reflections on the reduction thesis

From the foregoing account, we have seen some difficulties involved in reducing DL into AL. However, we also noted that not only Anderson but also von Wright found ways to reduce DL into AL in some restricted sense. A common approach

28 The influenced is not only in terms of using alethic operator in the reduction schema but also the use of immunity in the definition of deontic modalities. It may be noted that immunity is immunity against sanction. In other words, the notion of sanction is implicit in the reduction schema. It is interesting to note that even Prior (1958) employs the notion of sanction in his reductionist schema.

accepted by them is through the use of *technical norm*, a concept we have introduced in the first chapter. It is also referred to as *technical ought* (von Wright, 1983: 155). von Wright defines technical norms as that type of norms which are 'concerned with the *means* to be used for the sake of attaining some specific *end*' (von Wright 1933b: 9). Technical norms are a kind of conditional norms in which there exists a necessary relation between the antecedent and the consequent. It is a statement of causal necessity in an objective manner. In the antecedent, one mentions the *goal* that one wants to attain and in the consequent one mentions the *means* that must be done in order to attain the goal. It is interesting to note that desire or intention or goal is part of the formulation of a technical norm; it is termed as *want-sentence*. Equally interesting is the idea of action which occur in the conclusion of a practical reason; it is termed as *practical necessity* – "the practical necessity of using the means mentioned in the second premise in order to attain the end mentioned in the first premise". Let us revisit an example we have seen earlier to refresh our memory (von Wright 1983: 2):

> *One wants to make the hut habitable.*
> *Unless the hut is heated, it will not become habitable.*
> *Therefore the hut must be heated.*

A statement of natural or causal necessity which is usually formulated in conditional form is also termed as *anankastic* proposition. It is clear that the notion of necessity is inbuilt or embedded in this type of sentence. An example of technical ought is this: "If you *want* to freeze the water, then you *ought* [must] to lower the temperature to zero degree." [29]

29 There are conditional sentences which look like a technical norm but are not strictly accepted as technical norms; for instance, "If a couple wants to have children, then they ought to first get married". For one, it is not an objective statement of natural fact; it is subsumed

The interest of the present discussion on reduction thesis is not primarily about the technical details involving it (which is reasonably established now); rather, our primary interest lies in the kind of concepts or terms employed in the reduction process as well as the philosophical assumptions involved in the reduction. Earlier, we noted that deontic logic is about the logic of *seinsollen* rather than the logic of *tunsollen.* The latter is found to be problematic though modern DL associated with von Wright was originally grounded in the idea of *tunsollen*. A question one might want to ask in the present context therefore is this: Is technical 'ought' to be identified with *seinsollen* or *tunsollen*? Such a question is a legitimate one because technical ought is used in the context of action; for instance, in the example given above, 'you *ought* (must) to lower the temperature to zero degree'. This technical ought is not a norm-proposition, but an instance of *applying* a norm to affect an action.[30] Moreover, this ought is not taken in isolation but as part of a conditional sentence where the antecedent is a want-statement. In the context of a practical inference, the ought-statement which is found in the conclusion is directed towards the performance of an action. In short, action is the content and focus of reasoning. Coming back to our question, it appears that technical norm has incorporated both the notions of *seinsollen* and *tunsollen* in a very interesting manner.

Is it possible to 'derive' ought-sentence from want-sentence? Is the conclusion of the practical reason, as exemplified above, logically derived from the premises? What exactly is the nature of relation between the antecedent

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under other norm(s) which requires sanction in the event of delict or violation; for more details, see von Wright (1983: 155ff).

30 In the SDL, deontic modality applied to an act-category is not a well-formed formula. However, von Wright thinks that he resolved this problem by carefully incorporating the logic of tense and logic of change to translate action sentences into states of affairs; see his 1968.

and the consequent of a technical norm? As important and relevant as the questions are, there can be no direct or straight answers. We will try to engage these questions in a roundabout manner however. One thing is sure that had there been no want-sentence, the meaning of the ought-sentence will be very different. Is this peculiar to only technical norm? What about other conditional sentences such as

If you want to marry her, then you ought to propose her.

In the above sentence, there is a strong relation between the antecedent and the consequent. It is clear that the relation is one of intention but there is no necessary relation between the content of the antecedent and the content of the consequent unlike the technical ought. In the case of technical norm, we have seen that causal necessity constitutes the content of the conditional sentence. Irrespective of whoever the agent is or whatever the context is, the causal relation in the technical norm holds good. However, in this case, it cannot be said that irrespective of whether or not anyone wants to marry her, it is necessary to propose a woman for marriage. A marriage can be forced or arranged. Also it is not generally expected of a married man (or woman) to propose a woman just like that. Context matters. Let us consider another type of ought-sentence which is not conditional:

You ought to love your neighbour

Do unconditional ought-sentences presuppose desire in any sense? This is still harder to answer and yet our attempt would be to provide a positive answer. von Wright defines technical norms in terms of desire or goal or intention; that the action which ought to be performed is a *means* to an *end*. An important task of the present work is to argue that norms in general are directional or goal-oriented; hence, they presuppose a desire whether or not the goal or desire

is explicitly stated as is the case with technical norm. We would appeal to the idea of the "deontic alternative worlds" for this.[31] The idea of possible world semantics for SDL seems to presuppose the idea of desirability implicitly. The fact that technical norms are about actions and that they are reducible to AL provides us a clue towards exploring certain formal relation between the logic of *seinsollen* and the logic of *tunsollen*. This is what we would be suggesting in the subsequent chapters.

There is one more point that needs attention before we wind up the present chapter. von Wright appears to be inconsistent in his philosophical take on norms. Sometimes, he attacks Austinian doctrine of law and at other times, he seems to be unconsciously incorporating certain Austinian ideas, especially the reduction schema, in his thinking. He attacks it while critiquing Anderson's reduction thesis and he allows it to enter into his reformulation of deontic expressions. Though he was not using the word "sanction", he employs the concept of *immunity* which presupposes the notion of sanction and cannot be explained without the idea of sanction. He admits that his definitions of deontic expressions are equivalent to that of Anderson's. In other words, most of the charges against Andersonian reductive schema will also be applicable to him. We have noted that the notion of sanction determines the ontological status of prescription in Austinian legal theory and such a view was found to be "an utterly mistaken view of the nature of norms – legal or other" according to von Wright (von Wright 1983: 69-70). The irony is that von Wright uses this schema and related ideas to define permission and related categories. Though von Wright's ontology of and approach to norms are different from that of Anderson's or Austin's, he is

31 Chapter 4 would be dedicated entirely to the exploration and examination of this concept.

equally guilty of trying to problematize axiological factor in norms and then trying to bring in the same from the backdoor when he redefines the deontic categories of obligation and permission along Anderson's line of thought.

Concluding remarks

The focus of the present chapter on the reduction schema or thesis of Anderson is to examine how the deontic categories are being conceptualized or how the deontic concepts play out in the reduction schema. In the process, the idea that sanction constitutes the defining or characteristic feature of prescription is being challenged and rejected, a view which was spearheaded by Austin and found followers from the legal positivists. The views of Hart and partly of von Wright are used to articulate such a stance and direction of thought. Also at the same time, we observed how von Wright erred when he tried to (re)define deontic categories using certain legal terms like immunity, liability, punishment, etc. This makes us to speculate if it is possible to get rid of the 'axiological tint' in deontic logic. Our intuition and position is in the negative. The discussion on the internal and external aspects of norms suggests that deontic logic, being an intensional logic, cannot be defined purely from external aspects or observable aspects. In other words, extensional approach to DL is bound to encounter certain fundamental challenges. Therefore, we need to consider the contents of deontic expressions for developing or providing an adequate formal analysis of norms. This consideration is intricately linked to certain axiological and praxeological issues, a direction of thought which we intend to examine in the next chapter.

Central to defending the above stance – that axiological and praxeological connotations are inherently linked to norms – is the idea that norms exist to influence action of

agents in a society. It is to maintain 'law and order' in a state, to say the least. As such, goal or teleology is inbuilt into the thought process involving norms. If this is granted, then the formal study of norms, like an axiomatic method where axioms are proposed and then we proceed to derive theorems using certain formal rules of inference, can be very limited, or even misleading in some context. Interpretations of symbols are not limited to forms but, in an important sense, include the contents or meanings of expressions in intensional logic. Formal tools are primarily employed to organize our thought structure around some well-defined objects. However, in the case of deontic logic, the logical objects – norms – are not rigorously defined as seen above. From this perspective, Anderson is not altogether free from the criticism of von Wright. The kind of problems raised by von Wright cannot be seen merely as problems of application of DL as alleged by Anderson; they have serious philosophical bearings though they may be treated, as opined rightly by Anderson, as an enterprise of a different sort. Even if this is granted to Anderson, it follows from the above discussion that norms cannot be understood or studied in isolation. Even if deontic logic is considered a system by itself, our foregoing discussion shows that problems are inter-related and that at least some of them cannot be resolved from within the system itself.

CHAPTER 3

Possible Worlds: Problems and Prospects

Introduction

The primary focus of this chapter is directed towards analysing and evaluating the concept of possible worlds in the context of deontic logic. For using it as a semantic tool in DL, logicians have coined and employed the term "deontic alternative worlds". (It is also called by different names such as 'ideal worlds' or 'perfect worlds' or 'permitted worlds' and unless stated, we will freely use the terms interchangeably). After a brief introduction of the concepts of possible worlds and deontic alternative worlds, we critically evaluate the very concept of the best possible worlds itself. We try to show that the concept is not well defined; instead of achieving the desired logical clarity and precision, it seems to operate under vagueness and ambiguity. In addition, we also discuss several issues and challenges that confront the use of the possible world model for DL. We argue that the employment of a semantic tool meant for proposition (descriptive expression) to determine the value of a deontic sentence (prescriptive expression) is problematic.

Possible worlds

In chapter one, we have briefly introduced the idea of the possible worlds as a semantic model for DL. The model was

originally developed for AL and not for DL. However, since DL is generally considered as an extension of AL, the model has been conveniently employed, with minor modifications, as a semantic model for DL as well. The concept of possible worlds is fundamental to our understanding of modal logical systems. So it is important to critically evaluate it from various possible aspects, formal and philosophical including practical. We will do so against the backdrop of DL with special emphasis on the philosophical aspect though appeals will be made to formal and practical aspects as and when required.

Human beings have this wonderful creative ability to imagine life in various ways. We often imagine or wish that life would have been wonderful if history had been otherwise or if such and such things happen in life in the future. Sometimes, we wish to change the present situation and say, "I wish there is no corruption in the country". Such alternative or hypothetical or imaginative world is very close to the idea of what has come to be known as possible worlds semantics in modal logic. Prior to the formal study of possible worlds model in formal logic, the basic philosophical ideas have been explored and expounded by Leibniz.[1] In the modern times, Carnap (1947) and Wittgenstein (1922) have dwelled on the notions of possible worlds. However, the idea of possible worlds as a semantic tool has been advanced greatly by logicians like Lewis (1973), Kripke (1956, 1963a, 1963b), Hintikka (1957), Kanger (1957), etc. It was Kripke who gave the last stroke of perfection to the concept of possible worlds to be used as a formal tool.

1 It is interesting to note that many logicians acknowledged depth of insight gained from Leibniz on the the idea of the possible worlds namely Carnap (1947), Kripke (1963a), Lewis (1968). Hide Ishiguro (1972) also gave a reasonable account of Leibniz's idea of possible worlds.

The idea of possible worlds has two basic assumptions, viz., (a) That things could have happened in many different ways other than what actually happened and (b) that in principle it is possible to know everything about how the world would be simply by knowing the theories about the objects of the world. Within this framework of thinking, the actual world, or the history of the world, is just one of the possible worlds or histories. Graeme Forbes defines possible worlds in the following words: "A possible world is a *complete way* things might have been - a total alternative history" (Forbes 1985: 8). For formal reasons, possible worlds may be understood as a consistent set of sentences. Put it differently, possible worlds are made up by the same categories or concepts with which we define or describe the actual world. Hide Ishiguro explains the relation of concepts with possible worlds as follows:

> However, we are made to realize that we can only describe a possible world by using concepts that are available to us. The identity of these concepts is determined by the way they contribute towards the truth-conditions of the propositions we state in this world, and, it seems, also by the truth-values we attach to conditionals, including counter-factual conditionals… And so the entailments that hold of *our* concepts hold in any possible world we describe by using our concepts (Ishiguro 1972: 64-5).

Kripke (1981: 16-7) uses an apt analogy from the probability theory to explain the idea of possible worlds. We can use the same analogy to explain possible worlds. Suppose we have two dice at hand, A and B; for each die, there are six possible outcomes and if we throw two dice, any two random numbers between 1 and 6 will show up. Let us assume that any two same numbers that show up is akin to the actual world. However, we want our history or actuality to be any of six pairs of numbers - 1-1, 2-2, 3-3, 4-4, 5-5, 6-6. The probability is 6/36 = 1/6. If we want our historical moment

(or event) to be 1-1, then the probability would be 1/36. Note that possible states or outcomes in both the examples are same = 36. That is, there are 36 possible worlds given two dice with 6 possible states each. This analogy explains basically a possible state given the objects (two dice) of the world. But if we want to explain alternative histories of the world, then we can illustrate further as follows: Imagine that our actual (linear) history is 1,2,3,4,5,6, what is the probability that we can get this sequence in six throws with one die?

i. $$\frac{1}{6}\times\frac{1}{6}\times\frac{1}{6}\times\frac{1}{6}\times\frac{1}{6}\times\frac{1}{6}=\frac{1}{46{,}656}$$

In the above example, we are trying to explain our history with only one object which has six possible states. Our history is one out of the 46,656 possibilities.[2] Suppose we have two objects, that is, two dice, and we want our history to be 1-1, 2-2, 3-3, 4-4, 5-5, 6-6 in six throws, what will be the probability? It is 1/2,176,782,336. The number is too big already. Given the objects of the world, the sample space is too big to calculate all possible states of affairs to explain possible worlds or alternative histories of the world. But that is not our concern. What is important to note here is that if we possess the theoretical tools to explain any outcome, it is sufficient. The same assumption applies to the use of possible worlds semantics.

So how do we employ the idea of possible worlds as a semantic tool in modal logic? A set of propositions is read as a possible world and the set of all collections of sentences is simply treated as the set of all possible worlds. To refer to the analogy above, 1-1 is a possible world (some also terms it as a possible situation) and the set of all possible outcomes – 36 – the set of all possible worlds. Any true proposition describes

2 The same result can be obtained by throwing 6 dice simultaneously, that is, at the same time.

a state of affairs in some possible worlds. Given this basic idea, now we can determine the truth value of modal (alethic) sentences. A sentence of the form 'it is possible that p' will be true if it is true in at least one of the possible worlds, actual world included, and a sentence of the form 'it is necessary that p' will be true iff it is true in all the possible worlds. Let us take some concrete examples:

1. It is necessary that the sum of the angles of a triangle is 180.
2. It is possible that the sum of the angles of a triangle is 200.
3. It is possible that IIAS is not at Summer Hill in Shimla.
4. It is necessary that IIAS is at Summer Hill in Shimla.

The truth values of the above sentences can be evaluated and explained as follows:

i. This sentence is true because the sentence is true in all possible worlds (or situations given Euclidean geometry).
ii. This sentence is false (Euclidian geometry) because in none of the possible worlds, the sentence is true.
iii. This sentence is true because if the Indian history was different, then IIAS could have been in another place (or it may not even exist).
iv. This sentence is false because though IIAS is realized in the actual world (one of the possible worlds), we can imagine n-possible worlds where IIAS is not located at Summer Hill (It could have been located at Prospect Hill, Shimla, or even at another city in India). In other words, it is not true in all possible situations or worlds.

The above explication is not enough of course. Fundamental to the assignment of a truth-value to a given modal sentence is the idea of what is termed as *accessibility* relation of

worlds. A set of possible worlds can be explained in terms of certain formal properties such as reflexivity, symmetry, transitivity, etc. For instance, we can ask: 'How are the worlds in a given set related to each other?' If one assumes that the accessibility relation R between two worlds is symmetric, it means that if any possible world, say A, is accessible from, say our actual world, then the actual world is also accessible from A. A set of possible worlds where the accessibility relation is compromised of reflexive, symmetric and transitive properties is known as S5(system 5). In this way, different modal systems may be obtained by making different assumption about the relation of accessibility R. With the above idea of possible worlds at the back of our mind, we will now proceed towards the analysis of possible world model in DL. Another way to explicate the idea of accessibility relation is to say that the building blocks of the actual world and the laws governing this world are the same for all possible worlds.

a. Possible worlds in DL

The basic framework of Kripkean semantic model – possible worlds – is adopted for the semantics of DL. Some of the important works on model theory for DL includes Kanger (1957a, 1981), Hintikka (1957), Montague (1960) and Kripke (1963a). It may be noted that Hintikka's model set and Kripke's possible worlds have the same semantic function. A detailed study of possible worlds semantics have been undertaken by W. Hanson (1965) and J. Wolenski (1990). However, in DL, instead of calling it possible worlds, it is called best possible worlds.[3] The use of the possible worlds semantics in DL has been beautifully described by Hansson as follows:

3 The idea of best possible world was first used by Leibnitz (1710). However, his use of the concept is different from the present use. He

> The obligations and permissions of SDL may be explained like this: Certain possible worlds are ideal. You shall always try to make the real world an ideal world.[4] Some formulas are true in every ideal world. Therefore you have to make these formulas true if the world is to become ideal. These formulas are called obligatory. Formulas which are true in at least one ideal world (though not necessarily in all of them) are called permitted and you may make them come true if you want that ideal world to come true. Permitted formulas are in general not obligatory because you may just as well pick another ideal world as the one you want to realize. You shall not make true formulas which are false in every ideal world because then no ideal world can be realized. Such formulas are called forbidden (Hansson 1969: 395).

Ideal worlds are accessible from the actual worlds. The idea of accessibility of possible worlds in DL may be somewhat explained like this: that what is the case (or true) in the ideal world is acceptable or desirable in the actual world. Actually, there is more than one ideal world; it is a set of ideal worlds and a state of affairs which is true in all the ideal worlds will be desirable or acceptable in the actual world. Technically put, this desirable state of affairs is considered or made obligatory in the actual world. In other words, with the help of possible worlds we can assign truth values to deontic expressions just like we do to alethic sentences. For instance, 'Pp' is true iff it is true in some deontic alternative world (minus the actual world unlike Krikpe's model for AL which is inclusive of the actual world). 'Pp' is the abbreviated form of 'it is permitted that p'. We may consider a concrete example of a deontic sentence involving obligation:

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developed this concept to argue that the actual world is the best of all possible worlds.

4 This is an unstated assumption of possible worlds semantics for DL. Without this assumption, implicit or explicit, possible ideal worlds would cease to have any significant relation with norms.

It is obligatory that the Prime Minister of India tells the truth.

Interpretation: This sentence is true iff the sentence is true in all the deontic alternative worlds. In other word, the Prime Minister of India does not tell a lie in any deontic alternative world. If she does, then she cannot be a member of the ideal world obviously. We can quickly recapitulate what we sketched in chapter one regarding semantics of DL. Suppose there is a set of norms (***N***) in our actual world, ***N*** = {Op_1, Op_2, Op_3, …, Op_n, $Pp_{i,}$ $Pp_{ii,...}$ Pp_n} then, we can explain its semantics using the possible world model in the following way:

A set of norms ***N***= {Op_1, Op_2, Op_3, …, Op_n, $Pp_{i,...}$ Pp_n } *holds* in W iff there is a world $W_1 \in$ ***W*** (***W*** stands for a set of deontic alternative worlds) such that {p_1, p_2, p_3, …, p_n, $p_{i,...}$ p_n } *holds* in W_1.

Interpretation: It says that all the deontic sentences which ought to be or may be the case in W are true sentences in W_1. W stands for the actual world (or referent world) while W_1 stands for some kind of ideal or alternative world which is accessible from W. By accessibility, we mean an accessible relation R which is defined from any W_i to W by an expression R(W_i, W). For the present purpose, the above explication is sufficient to deliberate on the problems and prospects of Kripkean model for DL.

Issues and Challenges of Possible Worlds Semantics in DL

a. Norms and values:

We will begin by asking a few questions. Is pursuit of truth the aim of norms? What difference does it make in our understanding of norms and normative reasoning if deontic sentences are assigned truth-values? What is the relation of truth and norms after all? These questions are not meant to

be answered or tackled head on; we will prefer to keep them at the back of our mind. Given an indicative sentence p, we can ask, "Is the sentence p just true or necessarily true or possibly true?" If one claims that p is necessarily true, we further ask, "What is it that makes it necessarily true?" some may reply saying that that it is so because there is no counter-example or there is no circumstance under which p is false. What is being suggested through this little dialogue is this: A modal sentence of the form 'it is possible that p' can also be read as 'p is possibly true' without much loss of meaning. Analogously, can we say the same for the deontic sentences? For instance, by employing the possible worlds model, can we maintain that the meaning of the expressions 'it is permitted that p' (assuming it is true) is the same as 'p is permitted to be true' or 'p is permissibly true'? It does not appear to be so; 'p is permissibly true' is not a normal expression of natural language.[5] It gives a strange suggestion that truth needs our permission. As such, there is certainly some oddity in ascribing truth values to deontic expressions. Let us consider a deontic sentence:

5 Rather, we may say that 'Pp' or 'it is permitted that p' is possibly true. The phrase 'possibly true' has more of epistemic connotation. In normative practices, the fact that something is not prohibited does not tantamount to permission in some cases. Take for instance the sentence given below – 'It is permitted that the President of India works from home'. There may not be any law (rule or norm) which permits or prohibits the President of India to work from home. Working from home may be desirable not only for the President of India but probably for many citizens. But working from home is not a substitute to working from office. If one wants to work from home instead of the officially designated space, then a normative act is in order. In other words, in actual practice, mere absence of prohibition is not the same thing as permission. In the language of von Wright, it is only a weak permission. A weak permission has no legal or normative status. To acquire a legal status, a norm authority is required to make it into a strong permission.

i. "It is permitted that the President of India works from home."

There are two ways to look at this sentence from the perspective of assignment of truth values:

a. *Norm-proposition*: If we want to assign a truth value to this sentence, then it could be considered as a norm-proposition. In such a case, all that one needs to do is to look up at some corpus of norms and check: Is there a norm that allows the President of India to work from home?
   i. If YES, then it is *true*.
   ii. If NO, then it is *false*.
b. *Possible worlds semantics*: The other way is to appeal to the possible worlds semantics. We consider possible situations or deontic alternative worlds and ask, "Is there an instance at any deontic alternative worlds in which the President of India works from home?"
   i. If YES, then it is *true*.
   ii. If NO, then it is *false*.

Case (a) has informative or epistemic function. Since the question is information seeking question, assignment of truth value to the given sentence is intuitive or expected. However, it has no explicit prescriptive function in that it is not used in the prescriptive sense. In other words, it is not being used as a norm. In the other case, (b), one may maintain that it has neither informative function nor prescriptive function since we are basically looking at the form, the theoretical form, and not the actual world to give cognitive content to the expression. The truth of the expression (that such a state of affair is possible and desirable) does not carry any normative content or intent to interfere with the actual world. From the fact that something is possible or desirable, it does not follow that, therefore, it has to be brought about. The President of

India cannot appeal to a possible desirable world to justify his absence from office. In Kripkean model approach, the appeal is made to a set of *ideal* worlds. The model does not tell us anything about norms (in force) in the actual/empirical world. In that sense, it is pure or formal. The difficulty is, therefore, one of applying what is ideal to a given context. Just because something is ideal, it does not become a law, or a norm *in force*. For that, some intervention on the part of a norm-authority is needed. An act of *promulgation* is required. This leaves us with a gap between some ideal world and the actual world. The deontic operator 'permitted' in the given sentence entirely lacks a normative force. It is likely to make better sense if 'permitted' is replaced by 'desirable'.

From the foregoing account, it is clear that the model theoretic approach does not tell us what it is that makes a deontic sentence a normative expression unlike its counterpart AL which provides insight towards natural language semantics as well. Possible worlds semantics helps us to understand the basic (formal) features of a modal alethic expression. At least, that is the impression we get from our brief discussion of possible worlds model for AL. However, in the present case, we are unable to distinguish a desirable sentence from a permissible sentence. It is not surprising that Hanson calls his model "permitted worlds" (1965).[6] Unlike its counterpart (AL), possible world model in DL does not tell us anything about the features that constitute a norm. At best, it may be

6 If possible worlds model for DL is termed as permissible worlds, we will not have the 'gap' between the actual world and the alternative worlds. Moreover, it has the advantage of conceptualizing the relation of accessibility amongst deontic worlds – that all the ideals worlds are consistent with the actualization of norms, norms which are 'in force' in the actual world. However, it fails to provide us with any insight about the structures of prescriptions. This is in contrast with the possible worlds model in AL which at least gives us some insights into what the natural meaning of the modalities are like.

said that the model helps us to identify the normative status of a state of affairs (in the actual world) in terms of *what* is there in the ideal worlds. However, the question of 'what is there in the ideal world' or 'what is there in deontic alternative world' is not straightforward. It is inevitably connected to the question of interpretation of norms. In some case, interpretation may be straightforward, like breaking traffic rules. However, cases involving the application of sedition laws, for instance, are usually not simple. A number of cases may be chargesheeted but not all cases are successfully convicted. To acquit or convict an accused, for instance, is more than a simple case of weighing evidence. It is needless to say that there are more forces at play. The question is 'why'. It appears that there is no readily available worlds, deontic alternatives worlds, to help us with the identification of a normative status of the act at hand; that is to check and see if the norm in question applies to a given act or state of affairs. Rather, creation of deontic alternative worlds, or possible situations, is done with the help of norms.[7] When there is a conflict of interpretations, what apparently is happening is this: some are saying that this possible world is permissible (ideal) while others are questioning the acceptability of such a world. Though 'facts' are the building blocks of ideal worlds (just like the possible worlds of AL), not every fact becomes a part of some ideal world by default. Facts are filtered by values in order to become a part of the ideal world. In other words, ideal worlds have value commitment. And so the question of membership criteria of ideal worlds can get thorny. The question is not about if 'p' is true in some ideal world but about what kind of logical or rational criteria 'p' satisfies in order to be a part of some ideal world assuming that 'p' is permitted. Is it because it is permitted in the ideal

7 In saying this, I am in agreement with the position of legal expressivism that we noted earlier in Chapter 1.

world (following Hanson)? If so, who or what permits it? Now one cannot appeal to the norms (or authority) in the actual world because to do so would be to negate the very idea of the ideal world. Note that the actual world is not an ideal world; Brian F. Chellas in fact terms our world as the worst world (1980, 194) for the simple reason that it lacks reflexive property. If we look at the problem carefully, then we are faced with a peculiar situation: it gives us the impression that the ideal worlds are constructed by interpreting the norms in the actual world. This is in direct opposition to the ideal of models because models are supposed to be more basic and are there to help us understand the norms, their structures, relations and values. Unless we tackle this problem we have a problem in applying truth values to deontic expressions. Unlike possible worlds which can be explained in terms of causal or formal relations, ideal worlds cannot be explained in terms of causal relations alone. One can choose to undermine this question by saying that it is not a concern of logicians or philosophers. But then someone might response saying that if the model does not help us to understand how norms work or behave in the actual world, then what is this model about in the first place and why should normative studies be concerned with possible worlds? Next, if membership (criteria) is not relevant for model building, then on the same assumption can we develop yet a branch of modal logic for aesthetics whereby we propose aesthetic worlds and determine the truth of aesthetic expressions? (Note that we can use the same building blocks (facts) to construct aesthetic worlds. But the difficult part would be to decide what is beautiful to become a member of some beautiful world). Perhaps, it can be done but not without a radical transformation of what goes by the name logic. To reiterate, something is fundamentally misplaced in the way we use possible worlds approach for the semantics of deontic expressions. It is not a straight case of finding a deontic

alternative world where p is true; rather it appears that we create a world, a circumstance, to make p true whenever there is a norm, say Pp or Op.

Given this way of looking at norms, it is odd to say that Pp is true. And given the complex example of applying sedition rule to an act or series of acts, it looks like truth is being constructed through interpretation, through creation of a (permissible/desirable) world. This would result in creation of n-ideal worlds where 'p' can be shown to be true in some worlds and false in some other worlds. This raises a unique problem peculiar to DL because interpretation is given on the *same* act or fact. In other words, truth is a problematic value for norms unlike alethic sentences where the idea of a set of possible worlds is well established. One cannot explain away this problem by saying that the notion of truth in DL is different from its counter-part in AL without giving up the reduction thesis.

Considering the above challenges, it may be better to give up truth values for norms and adopt validity in its place. When we apply validity to norms, we are not informing the existence of a norm (as is the case with norm-proposition), but we are actually *using* the corpus of norms as a whole to evaluate an act in question. As noted in the earlier chapter, the notion of *validity* when used in a normative context tells us that a given rule or norm is applied to an act aptly or correctly. Kripke's model presumes that the question of semantics of DL is merely a matter of finding a world in which p is true given Pp. However, it appears that this way of looking at norms is not only problematic but also not in sync with how things work in the domain of normative practices. It suffers from oversimplification by ignoring the nature and purpose of norms (including actual practices involving interpretations of norms, promulgation of norms, etc).[8]

8 It would be silly to say that normative practices are irrelevant for

b. Seinsollen and tunsollen again

We have just noted some difficulty with regard to assignment of truth values to deontic sentences involving Kripkean model. We pointed out, at the same time, some difficulty in naming the possible worlds model for DL. Irrespective of this difficulty, one thing is common – that the models are better than the actual world; that the possible worlds are assumed to be desirable. This reminds us of Mally's *seinsollen* system. Mally maintains that his logic of willing can be treated as a logic of desire. If this account is accurate, or close to being accurate even, then we are back to Mally's *deontik* logic. The main difference between Mally's *deontik* system and modern deontic system is this: While the former is grounded in FOL, the latter is grounded in modal logic. If we ground Mally's system in modal logic with appropriate modifications, then we have the modern deontic logic. However, if this is granted, the modern deontic logic would become a logic of willing (or desire) and not a logic of norm. Logic of norms is to be grounded in the logic of *tunsollen*. *Tunsollen* is concerned with actions unlike *seinsollen* which is concerned with states of affairs.[9] What are the implications of this reading of DL as the logic of *seinsollen* associated with

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DL. The simple reason is that logical reasoning should have the minimal function to inform us what a correct or valid form of reasoning is. That is what, for instance, syllogism does. However, as of now, the possible world model has not been a great help in this aspect of normative reasoning.

9 Von Wright, 1983, p. 202 entertains a flexible relation between the notions of *Tun-sollen* and *Sein-sollen.* He says that when a norm is given in the forms "so and so ought to – ", the norm thus given is a *Tun-sollen* type. But when the norm is addressed to everyone and is of the form "it ought to be the case that – ", then the norm is a *Sein-sollen* type. In this regard, the presence and absence of agent(s) in the formulation and promulgation of norm makes it a *Tun-sollen* type and *Sein-sollen* type respectively.

Mally's system? We will have the following readings of deontic sentences:

i. Pp = p is true in some desirable worlds
ii. Op = p is true in all desirable worlds
iii. Fp = p is true in none of the desirable worlds

It might be even possible to treat desirable as a modal operator if we qualify it with quantificational logic. Such a logic would go by a different name more in tune with Mally's *deontik* logic and which in turn would never be confused as a logic of norm. It may be alleged that we are reading too much into Mally's system. However, such a suggestive reading is not without basis. We get a clue from his axiom (A6) which says that "*a state of affairs is obligatory if and only if it is required in every state of affairs*".[10] Thus, the difference between obligation and permission is one of quantity and not quality if we take this model theoretic approach. Does this capture our ordinary understanding of norms? The answer is not obvious. However, we will postpone our discussion of this point. The simplicity or advantage of reading norms from the perspective of desirability is that it becomes easier to assign truth values to the deontic sentences. Since the set of desirable worlds is a subset of possible worlds in that the objects of deontic sentences are states of affairs, we can judge whether a given deontic sentence is true or false in the same way alethic sentences are judged or evaluated. While assigning truth value

10 The use of the term "required" is vague. If it is used to mean 'necessary' then, Mally's system may be reduced into alethic logic and the distinction between obligatory and necessity would be difficult to maintain. However, if it is used to mean "desired", then reduction will not be possible. If it is used in the latter sense, then the difference between obligation and permission would become a matter of quantity just like the difference between necessity and possibility.

to a deontic sentence, what we are doing is precisely this: "*Look, there is a desirable world in which p is the case and so p is true.*"

If the above line of reasoning is plausible, then what we have at hand is a logic of *willing,* not very different from Mally's *deontik* system. In Mally's system, the notion of ought is freely interchangeable with the notion of willing or desire; a person's willing that a given state of affairs, p, be the case may be expressed by sentences of the form: 'p ought to be the case' or 'ought p' or 'it ought to be the case that p'. Read this way, the notion of ought lacks normative force. However, if we prefer DL to be a logic of norms rather than a logic of desire (willing), then we face another question – how can we justify the assignment of truth values to deontic expressions from desirables worlds? In the case of AL, no justification of this sort is needed since we assign truth values to alethic expressions from possible worlds and since actual (referent) world is considered one of the possible worlds. Is it the case that if something is desired in all the ideal worlds, it becomes obligatory (with the normative force or intent) in the actual world? Such a position is tenable only if one holds that norms are derived from values (goodness). Otherwise, the gap between ought and good (ideal) remains unexplained. Perhaps, sensing this gap, Hanson (as noted above) prefers to call his model permitted worlds. This appears to be less problematic but then it is not entirely so as it assumes that the difference between permission and obligation is simply one of number (just like the difference between possibility and necessity). Such a move is, perhaps, possible. Nonetheless, the present study, as we will see in the next chapter, has something very different to say. We will show that there is a fundamental difference in the structure and purpose between what is permissible and what is obligatory.

In some domain of human activity, where the activity

is well defined and closed under implication, like a chess game, certainly a logic of norm is possible. In a closed normative system, even inter-definability of modal operators is possible. A closed system is such that whatever is not prohibited is permitted and conversely whatever is not permitted is prohibited. Such a view is being aptly stated by J. Raz, "According to every momentary legal system, every act-situation which is not prohibited by a specific law of the system is permitted" (Raz 1980: 170). Every act can be directly related with a norm or every norm directly corresponds to an act. In such a system, there is no *gap* or grey area that requires critical interpretation, for instance, a chess game. In a closed system, the classification of permission into weak and strong is not possible. There is yet another type of human activity where logic of norms of some kind is possible. For this, let us go back to von Wright. He initially challenged the reduction of DL into AL. However, he confessed that a restricted domain of norms termed as 'technical norms' by him is reducible to AL. We have seen that what goes by the name 'technical norms' is grounded in *necessary* relation of things. It is employed in a type of reasoning called 'practical reasoning' which involves reasoning from a *means* to an *end.* The means is a necessary condition at a given context for attaining a particular goal. So strictly speaking, technical norm is a variant of *seinsollen* logic and not a form of *tunsollen* logic. It is grounded in causal relation of things and not with actions.

It is reasonable to hold that the two forms or types of normative systems exemplified above (chess and technical norms) can be explained in relation to the possible worlds model. Even their reduction into AL is convincing. The reason is that the notion of 'ought' or 'may' is derivable from states of affairs or facts. What *is* – the features constituting the reality of an activity – determines what *ought* to be (done). The reality that constitutes the activity is, in principle, totally and

objectively describable.[11] To question the rules of the game is to question the very ontology of the game because the rule is constitutive of the game (state of affairs) itself. For our present purpose, we may categorize this type of norms as *descriptive norms*. In contrast, norms that are applied to act-categories are not descriptive or objective in the sense in which laws of nature or rules of a chess game are. Human actions require interpretations before norms are applied to them. They involve axiological and praxeological elements. We have noted above that theories of actions determine naming of actions. For instance, even if we can accurately describe the action of a person, it is the theories of norms and actions that will determine whether the act in question is an act of sedition or not (to refer to our earlier example). It is quite possible for two lawyers to arrive at two opposite categorization of an act in question. Accordingly, one may judge the act as guilty of sedition while the other may declare 'not-guilty'. Still another lawyer may show that the same series of acts are not amounting to an act of sedition but a humanitarian act instead and so insist that the accused be rewarded accordingly with due recognition.

Realizing that there are several challenges in applying norms to action in the context of developing a formal system of DL, von Wright too changed his approach as noted in chapter one. Taking suggestions and cues from Prior (1955), Stenius (1963) and Anderson (1967), he gave up his logic of *tunsollen*, the classical DL developed in 1951, in favour of the logic of *seinsollen*. After facing several technical challenges to work out a logic of action for his classical system of DL in his work

11 von Wright brings to our attention the fact that if we totally describe the chess game, we understand the rules of the chess game and conversely, if we prescribe all the rules of the game, we can understand the game.

(1963), he explored a logic of change with the help of tense logic to describe action in terms of states of affairs (1968).[12] He even discarded the notion of forbearance in favour of omission or not-doing *simpliciter* saying that forbearance is a value loaded term (1968). In the same work (1968), he redefined the notion of *occasion* which is central for defining categories of action, viz., performance and forbearance, and it became almost indistinguishable with the notion of situation. Situation is explained in terms of states of affairs. This point is being brilliantly discussed by Sharade Deshpande (1987). The underlying idea is that if an action is described in terms of a state of affairs, p, then $p \in W$ and it thus becomes convenient to apply truth-functional connectives to determine the truth values of action sentences and deontic sentences. Note that every well-formed formula of PL prefixed by a deontic operator is a well formed formula. Formally, the approach is perspicuous and laudable. However, it ignores the fact that norms is as much concerned with the *means* of bringing about a state of affairs as it is concerned with the *end*-state (state of affairs) of an action. It is often the case that the end-state, a state of affairs, is prescribed depending on the 'occasion' involved in it. For instance, X brought about the state of affairs which caused the dead of Y. If X did it as part of his duty as a policeman in thwarting a murder or if X did it as part of self-defence against a possible murder, then X is permitted to cause the death of Y. Otherwise, bringing about a state of affairs which resulted in the death of Y is prohibited. The notion of 'bringing about' is crucial for development of his ideas in this direction. It seeks to replace act-categories with states of affairs by relegating action into the background. At

12 He thinks that he has successfully overcome the problems that he encountered in 1963 work through his 1968 work and accordingly, he says that DL is secured as a branch of modal logic.

first glance, this move seems promising in that prescriptions get stronger connection with states of affairs which make is easier to apply possible worlds semantics to DL. Given any p where p is a state of affairs, we can identify whether or not $p \in W$ where W is a deontic alternative world. Accordingly, we can use the standard technique of semantics to determine the truth-value of any given deontic expression. However, the question of membership criteria of ideal worlds remains unresolved as argued above.

It might be said that jurisprudence and ethics constitute the heart of normative studies. And actions, it may be argued, constitute the heart of ethics and jurisprudence. Norms in these two domains of normative studies may be termed as *prescriptive norms* as opposed to *descriptive norms* (or norm-propositions). The logic of *tunsollen* can be associated with these two types of norm. It is not grounded in facts and defies reduction into AL. Let us consider some examples:

i. Do not tell a lie.
ii. Love your neighbour.

These two sentences may be loosely and respectively, in the language of deontic logic, read as:

i' We ought not to tell a lie
i'' You ought to love your neighbour.

We will begin with the analysis of the second sentence. Love is an expressive term which cannot be described accurately in terms of state of affairs. Also it cannot be explained by applying necessary and sufficient condition to an action. For instance, what is considered an act of love may become equally an act of betrayal, for instance, the proverbial *Judas kiss* that betrayed his master Jesus Christ. There is no action, a single act in isolation, by which one's love can be proven or tested conclusively. There is some problem in this example

though. Though 'love' in the given example occurs as a verb, it is not an act-category like driving (a car). Coming to the first, the concept of lie is not simple. It requires a lot of elucidation, interpretation and explanation. Without going too deep into philosophical problems, we can immediately encounter the problem of defining the concept of lie in art forms and genres such as movie, poetry, drama, cartoon, stories, etc. They thrive on exaggeration. Many social norms, pleasantries or practices such as politeness or compliment or greeting, etc. are not really expressions of sincerity. Gossips are not committed to truth and often fall short of truth-telling and yet they constitute an important fabric of a community life. In short, without involving critical interpretation in relation to values and norms of a society, there cannot be accurate descriptions of acts such as 'love' or 'lie'.

A significant difference, among others, between an act and a state of affairs is that while the former has to be understood minimally in relation to a wider historical and cultural context, the latter can be generally understood in isolation, or at least that is the assumption of science. Given any fact or state of affairs, it can be analyzed in terms of its constituents, the elementary objects. This is the assumption of logic (*logical atomism)*. In contrast, an action is often complex and cannot be analysed in terms of basic elements or observable objects. In other words, actions cannot be reduced to objects of nature. Take, for instance, an action-sentence, "I am building a house". So many things are involved in building a house some of which are not, strictly speaking, my physical acts at all. I may not even have any idea of what is going on at the construction site. In short, actions are intentional and teleological in nature which cannot be totally explained in terms of observable facts that made up a possible world.

Let us consider another example – sex. Shall we say that performance of sexual act is permitted or obligatory or prohibited in the ideal worlds? The answer cannot be obtained

without providing a context. A sexual act has to be located in a context before we prescribe it. It is to be understood in relation to many other acts or practices including values. For instance, sex outside marriage is usually not permitted but with one's wedded spouse, an obligation even. We have noted above that something as undesirable as killing is also permitted when done in the line of duty or self-defence. Simply put, what is permitted or prohibited is not simply a matter of being a member of some ideal worlds even if we are able to describe action in terms of a process (bringing about), from initial state to end-state which is a state of affairs. If at all, we have to appeal to some ideal world to evaluate a prescriptive expression, we have to map the whole context of the ideal world to the actual world. If we try to evaluate without the context, then we face the difficulty of having to permit or prohibit sex depending on whether or not there is sex in ideal world. Of course, one might say that ideal worlds or alternative worlds are 'acceptable' with respective to the norms in the actual worlds, that they are consistent with norms in the actual world. Such a move is possible but then it suffers from another more challenging problem as pointed out above. To summarize the above discussion, we have argued that a possible world approach in the present shape is inadequate to provide a semantics for DL, DL considered as a logic of norms.

c. Ideal worlds versus actual world versus modalities

Earlier in the second chapter, we noted some problem with the reduction thesis of DL into AL in connection to the propositional constant *S* vis-a-vis *P*. The constant was introduced without definition and later on, it was found to be wanting.[13] One of the contentions of the present work is

13 It took the reduction thesis to a new direction of thinking, drastically modifying the original claim and limiting itself to a small area

that a similar mistake has happened regarding the notion of the deontic alternative worlds or the best possible worlds. The notion has been introduced without rigorous definition or discussion. In the foregoing accounts, we have already encountered some difficulties involving ideal worlds. Among others, we made some speculations regarding *desirable worlds* (along the line of Mally's *deontik* logic) and *permitted worlds* (parallel to the idea of possible worlds).

We repeated few times that modern deontic logic was proposed in early 1950s by von Wright. Not long after, attempts were undertaken to reduce it into the standard modal logic (alethic logic). When Kripke's possible worlds semantics for modal logic was standardized, logicians proposed deontic alternative worlds for DL as noted above. However, the concept itself has hardly generated any significant discussion till date. In the context of deontic studies, we are yet to have a book like Kripke's "*Naming and Necessity*" which provided an in-depth philosophical analysis of model theoretic concepts for alethic logic. One of the reasons could be that deontic logicians relied on the literatures on possible worlds which succeeded in giving sufficient clarity of the concept. Conveniently, deontic alternative worlds can be treated as a subset of the possible worlds. Another could be that the parallel between the modalities of AL and the modalities of DL has been taken for granted in general, especially the inter-definability of modal operators. On the ontology of possible worlds semantics for DL, Wolenski remarks:

> This is commonly known that there are serious philosophical, especially ontological, problems concerning possible words semantics. Are possible worlds really or imagined entities? Deontic logic shares these problems to some extent. However,

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of norms, call it *descriptive norms*, and also forcing Anderson to appeal to relevance logic for his defence of the thesis (see Anderson 1967).

> the ontological situation in possible worlds semantics for deontic logic seems to be simpler than in the case of alethic modal logic. The standpoint that deontic alternatives to the real world are our mental constructs is quite admissible in ontology of deontic frames (Wolenski 1990: 281).

However, Wolenski's view is to be taken in a context. The idea that possible worlds of DL is a construct and so simpler need qualification. We have partly dealt with this idea of construction vis-à-vis interpretation and so we will refrain from entering into this discussion again. Modalities behave like quantifiers. They range over possible worlds in much the same way quantifiers range over possible objects in FOL. For instance, if Pp is true, then we are saying that there *is* at least one alternative world, say w_1 (or more), where p is true. In other words, possible worlds semantics has *existential* commitment of some sort and from this perspective, it is metaphysical in nature. What we want to look at or rather grapple with is the idea of deontic alternative worlds (or best worlds or ideal worlds). The concept of the best or ideal or alternative is a value loaded term. Therefore, if one uses any of these terms to define possible worlds, then one is assuming that norms are derived from (moral) values. Such a view may not be compatible with Kantian deontological ethics. For a Kantian philosopher, an action is good only if one performs it in accordance with the moral law or duty. Accordingly, the *good* is derived from the *ought*. If it is maintained that the possible worlds of DL are permitted or permissible worlds instead, then a possible objection from the Kantians may be averted. However, it leaves us with a dilemma – if the difference between permission and obligation is just a number game as noted earlier.

Next, if we read these possible worlds of DL as a set of ideal worlds which is a proper subset of Kripke's possible worlds, it may still suffer from some problem. It will obliterate the

difference between necessity and obligation. Let us explore this point now. '*Op is true iff p is there in every ideal worlds.*' In other words, actuality of p in all the worlds is both necessary and sufficient condition for Op to be true. That is, if p is in every world then, p becomes obligatory and if p if obligatory, then it is in every world. By virtue of definition, if p is necessarily true, then it is in all the worlds including the perfect worlds; that is, by relation of accessibility and also subset relation between ideal worlds and possible worlds. This shows that whatever is necessary is also obligatory. For instance, if p = 2+2 =4, then since it is the case that Np, it follows that Op. Since laws of nature holds in all the ideal worlds as well, all laws of nature (propositions) will also be obligatory. In other words, Op is indistinguishable from Np and they will be treated on par with each other which is quite counter-intuitive to our understanding of norms. But in the absence of a well defined criterion by which we distinguish one from the other, we are compelled to treat them the same. Instead of saying 'It is necessary that the atomic number of gold is 79', we might as well say 'It is obligatory that the atomic number of gold is 79'. This problem was anticipated by von Wright himself. So in his 1951 work, he prefers to apply modalities to contingent statements (not logical statements). Another implication of this point is this: the allegation that the use of possible worlds semantics for DL commits the 'fallacy of naturalism' (Castaneda 1960) become more obscure in that 'what ought to be' equally implies 'what is'.[14] The foregoing examples (i.e., addition and gold) are not a novel problem that we forcefully

14 In any case, it appears that the allegation of 'naturalistic fallacy' is partly misplaced because possible worlds are not simply states of affairs but desirable states of affairs or morally perfect worlds. So, strictly speaking, one is deriving norms (ought) from states of affairs which are laden with axiological values.

read into DL. It follows also from the axiom of SDL = O(p V ¬ p). The axiom says that what is tautologous (formally or logically true) is also obligatory.

Various problems tried to address this and related problems. As noted above, von Wright is of the view that a necessary proposition does not express a genuine prescription in that the ability to violate a norm is what makes norm a norm (von Wright 1963, pp. 152-4). Necessary propositions are such that human actions are irrelevant and so it would be odd to require it in much the same way it is odd to require someone to do bring about what is impossible. A. al-Hibri (1978) rejects Kripkean model for AL for this and similar reason. He argues that a logic of norms is better off without propositions, especially necessary propositions. Along the line of von Wright, necessary propositions have been rejected in the recent time by Andrew Jones and Ingmar Porn (1985) stressing that violability is essential characteristic of a logic of norms.

The above point – that the notions of necessity and obligatory are inter-changeable – is counter-intuitive to our thinking about norms. Perhaps, this can be given more clarity with the help of an example. Death is inevitable for human beings. This is true for every human individual in all possible worlds. Therefore, given the above line of argument, we can say that death is obligatory. However, in reality, norms in general exist to ensure security of life or to enhance life. Of course, by positing *ad hoc* explanations or justifications, this tension can perhaps be mitigated. But the fact remains that any search for immortality, spiritual or scientific, is contrary to the obligation to die. Any attempt to prolong life or cure sickness, etc. may even be treated as acts of delict. Here, it may be noted that we are talking about Kripke's possible world model and not about magical worlds or heavens when we talk about ideal worlds or perfect worlds. Now if someone objects to this line

of reasoning and say that we don't desire death or that death cannot be a part of the best possible worlds (ideal worlds), then we face another problem – the problem of accessibility relation which is fundamental to Kripke's model. Such an ideal world would become inaccessible to our world and so such a world would be as good or bad as mythical or magical world, a world which is devoid of cognitive content or one in which sentences which cannot be verified to be true or false and hence, they would become truth-functionally meaningless. [15]

Are sicknesses or epidemics and natural calamities like floods or volcanoes or cyclones excluded from the ideal worlds? How about man-made accidents and mistakes or human failures and frustrations? Of course, one might point out that it is possible to have worlds free from those 'defects' and so ideal worlds are precisely those 'defectless' worlds. But then given the cosmology of the world and the possibility of stars collapsing into dead stars and finally to black hole which are not known to support life (except in movies) on the one hand and on the other, the reality of evil with apparently no cure for it basing on human history and human condition, we are made to speculate if this concept of ideal worlds in DL is anything more than the creation of an imaginative mind with no scientific basis to serve as plausible semantic model for DL. This is not to reject *in toto* the idea of possible worlds model and its relation to norms. Norms cannot be separated from the idea of possibility and subsequently the idea of possible worlds. However, reducing DL into AL, or to explain norms in terms of state of affairs, is riddled with problems which appear insurmountable at the moment.

For the sake of argument if it is insisted that the ideal worlds are free from defects, then we are likely to encounter

15 However, if it can be scientifically established that immortality is possible, the example of the death would become ineffective.

another issue – the collapse of deontic modalities. Anything desirable is actualized in the ideal worlds. Permissible actions are desirable and so they will be actualized. But once they are actualized in all the ideal worlds, will they cease to be permissible and become obligatory instead? For instance, in all the ideal worlds, people exercise their rights, say voting rights. If so, then voting will cease to be a permissive norm but an obligatory norm. Suppose it is maintained that a permissible act will not be allowed to actualize in all the ideal worlds to distinguish it from obligatory act, then someone will be forced to renounce his or her rights. And this certainly is not desirable at all. We can now recall a point that we mentioned earlier – Is the distinction between permission and obligation only a matter of quantity? The answer is in the positive if we go by the possible worlds model. This conclusion is unintuitive and this is significant a reason to doubt the idea of distinguishing permission and obligation simply on numerical ground, a fallout of possible worlds model. Some more will be said in the next chapter.

Next, 'Pp' is defined as the 'absence of prohibition' in the standard systems of DL. In the context of the possible worlds model, anything which exists as a state of affairs in any ideal worlds is permitted. In any ideal worlds, if not in some, things like mountains, rivers, flowers, rains, etc are likely to be there (they must be there as a matter of fact). And following the necessary and sufficient conditions for assignment of truth-values to Pp, the notion of possibility would coincide with the notion of permissibility. And yet it is an unusual expression in ordinary language to say that, for instance, 'it is permitted that the sunrays are hotter in summer' or 'it is permitted that the flowers are blooming'. One of the presuppositions of norms is that an impossible state of affairs cannot be required. It does not make sense to permit or prohibit things which are beyond the capacity of humans to control or manipulate.

It is not within our ability or choice to make sun rise in the East or make flowers bloom in spring or make water flows in the stream. In ordinary life, normative practices presuppose choice or freewill and the ability to choose to obey or disobey a given norm. However, all this normal presuppositions are suspended or bracketed by the possible world model for DL in certain context as shown above. Consequently, it generates queer meanings for deontic expressions unlike its counterpart in alethic logic. Does it really make sense to say that "it is permitted that a tiger is chasing a deer in the forest"?

From the perspective of jurisprudence, permission is generally considered as an exception to norms. For instance, consumption of certain drugs is made illegal (prohibited) but for medicinal purpose, permission is given as an exception to use it. As a teacher, I have a duty to take class every day but I can avail leave and skip my class. Both the cases of permission are examples of exceptions to obligations. How do we explain this aspect of permissive norm by appealing to the possible worlds model? The model simply cannot handle it.

As noted earlier, von Wright is of the opinion that as a formal system, the logic of *Tun-sollen* is much poorer that the logic of *Sein-sollen.* Though subsequent deontic logicians changed their viewpoint regarding the application of deontic operators to act-categories, there are some who think that the twist is a mistake. Geach basically wants to point out that the wrong view of 'ought' as a propositional operator, is due to its embellishment with the notion of possible-worlds semantics and so argues:

> that various well-known paradoxes of deontic logic have puzzled people only because of two simple mistakes: thinking of Sein-sollen instead of the obligation of agents, and forgetting that obligations arise and are extinguished in time. These errors have been made hard to detect by the use of an unsuitable formal system (he is referring to the systems which are using the possible worlds semantics) (Geach 1982: 44).

To apply deontic operators to propositions, according to Geach, is to fall back on the error of Mally and comparable to the logical blunder committed by Aristotle when he failed to recognize the categorical distinction between 'names' and 'predicables' and merged them into the common category of 'terms' (1982).[16] For him, the problem is not merely applying norms to states of affairs or act-categories; it is about using modalities as sentential operators. Accordingly, he stresses that the way to salvage DL is by rigorously and systematically incorporating the element of quantifiers, agent, time etc. He writes, "'O' will be an operator whose sense is completable by adding the name of an agent under obligation and a predicable for an obligatory action" (Geach, 1982: 39). It is clear that Geach is favouring the logic of *tunsollen* over the logic of *seinsollen*. When we treat deontic logic from the perspective of the logic of *tunsollen,* we are actually presupposing the notion of agency since the notion of action is inbuilt into human agency and since prescriptions are applied to human action in relation to an agent.

Geach summarizes the idea of perfect possible world in the following way:

> Among the possible worlds, there will be a deontically perfect world (at least one), in which whatever ought to be done is done, and nothing that ought not to be done; and what N.N. ought to do is simply what N.N. does in such a deontically perfect world (Geach 1982: 45).

Given the above picture of the ideal world, we can imagine that only the just and the good people are going to be there. There won't be cheaters or dishonest people in the

16 Hilpinen and Follesdal in their introduction to Hilpinen's work (1981) point out that Mally's system got entangled in so many logical paradoxes which hindered its further development. For Geach (1982), the errors can be attributed to the fact that deontic operators were applied to propositions.

ideal world. So there will not be any crime or war or injustice. Consequently, it would be a public waste of money and other resources to maintain regular army, justice system and police force and all kinds of warheads. Since it is undesirable to waste public money and resources, they would not be there in the ideal worlds. The implication of this is tremendous on the possible world model: justice system and state forces like police, army, etc. should be prohibited in the actual world since any description involving them is absent in the ideal worlds. Taking a jibe on the idea of the ideal world, Geach (1982) points out that our ancestors have made so many mistakes in the past, and that any individual with such tainted ancestry must be absent from a deontically perfect world. Therefore, it is absurd to use perfect world as a guide to perform their duties in this world because justice system and forces of the state are the very symbols of norms in the actual world. In other words, if morally perfect people are the only ones inhabiting the ideal worlds, the structure of the ideal worlds would be very different then and deriving norms from them would become a challenge of a different sort as just noted. The idealism of the ideal worlds, therefore, requires a more rigorous definition and explanation to be relevant to normative studies.

Concluding remarks

In this chapter, we have considered the possibilities and challenges of employing the standard possible worlds semantic of Kripke for DL. In the process, we noted that Kripke's model might work out for the logic of *seinsollen* or modified version of Mally's logic of desire/willing but it is inadequate for the logic of *tunsollen*. Unlike the state of affairs, act-categories, with which the logic of *tunsollen* is concerned, requires interpretation within a context; mere description of states of affairs is insufficient for application of norms. And for

interpretation, we need a set of basic values, aims or principles to make the interpretation coherent and rational. This makes us to realize significantly that theories of norms (along with axiological and praxeological theories) actually determine the idea of deontic worlds and in that sense, it is a mistake to think or hold that the idea of possible worlds can provide semantics for norms. In other words, theories of norms and actions help us to recognize or name an action and that actions, unlike states of affairs, are not independent of theories. We need norms, names of acts and states of affairs to develop deontic alternative worlds. From this perspective, we have noted that von Wright's attempt to bar or filter axiological ideas in the description of act-categories or action sentences to develop DL as a branch of modal logic is problematic. Moreover, ideal worlds are created through interpretations (at least in some case like the case of sedition) and so the same 'fact' can be shown to be false in some interpretation (world) and true in some other (world). This is serious in so far as truth function in logic is concerned.

The importance of conceptual clarity cannot be overstated in logical studies. We have seen it in the previous chapter and we have seen it again in this chapter while coining the name of the model for DL. Of course, much of the foregoing discussions may not have direct bearing or significance on DL (DL as symbolic logic or derivative system). Formal derivations can take place independent of how we reason with norms. However, reasoning in DL is not simply a game of rules like chess. It is deeply connected to how we think and live. And our discussion has shown that not only is the philosophical understanding of the model inadequate but that there is a serious lack of literature on this theme in deontic philosophical logic.

CHAPTER 4

Towards Modelling the Basic Categories of Norms

Introduction

The idea of possible worlds is a powerful tool in logical studies. Though we have problematized the concept as a semantic model for deontic logic, we will use it for a very different purpose in this chapter. We will use it to construct a model termed as D-model and then use the said model to define and explain the basic features of deontic categories. We will maintain that the model is not only relevant for deontic logic but also for other branches of normative studies such as ethics and jurisprudence. In other words, the model throws insights on the conceptual relations of prescriptive concepts across normative studies. This is in line with the philosophical assumption of the present study that norms cannot be studied and understood in isolation. Accordingly, we explore the significance of this model to understand the relationship of deontic categories with axiological and praxeological categories. In this chapter, we show that the model has, within its structure, the inbuilt capacity to represent and talk about different kinds of deontic possible worlds. Deontic Heaven is one such world. Conceptualizing deontic heaven has interesting implications on how norms are inherently and intricately related to values and praxeological ideas like action, desires, agency, intention, etc. Besides, the model can be used

to understand some of the perennial issues and problems in deontic logic such as inter-definability thesis, reduction thesis, the gap between the logic of *tunsollen* and the logic of *seinsollen*, etc.

D-Model for DL

We have discussed at considerable length certain difficulties involving Kripke's possible worlds model for DL. In this section of the chapter, we will propose a quasi-formal model, termed as *D-Model*, for modelling the formal structure of deontic expressions in relation to prohibition, obligation and permission. Its primary function is to describe the basic features that constitute deontic expressions. In doing so, we also capture the conditions that distinguishes one norm from the other. Let us take an analogy yet from another branch of logic, FOL, to explain this point. For this, we will take Russell's classic example:

i. *Sentence*: "The present King of France is bald."
ii. *Abbreviation*:
    a. Present King of France = P
    b. Bald: B
iii. *Formalization*: $\exists x(Px \Lambda \forall y\ (Py \rightarrow y = x) \Lambda\ Bx)$
iv. *Interpretation*: "There exist an (entity) x such that x is P and for any y, if y is P then y is identical with x and x is bald."

Note that the above is basically an attempt to capture the formal structure of a sentence involving definite description. It is quite another thing, though dependent on the formal analysis of a sentence, to ascribe a truth value to a sentence. Our present attempt is similar. We are interested to capture the formal structure of deontic expression. How do we go about with it? We have just argued that modified Kripke's possible worlds model for DL – deontic alternative worlds

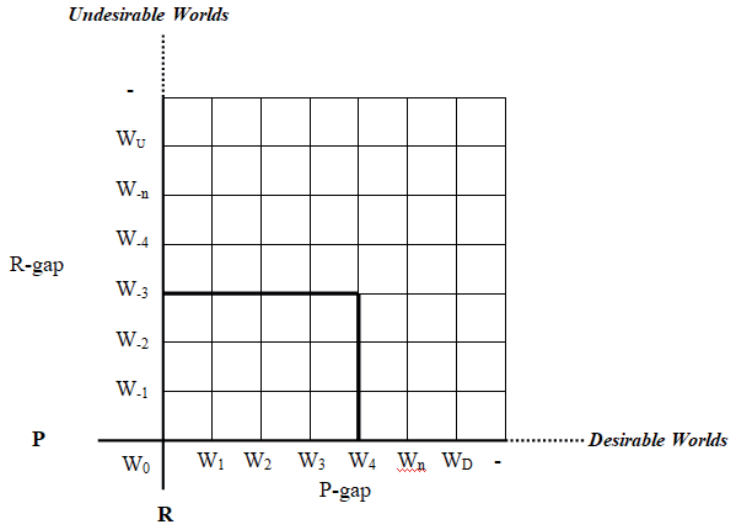
– is laden with problems. However, deontic expressions are modal sentences and since possible worlds model is a powerful tool for explaining modal sentences, we will employ the idea of possible worlds for our purpose with appropriate modifications.

D-Model is constituted by a set of possible worlds. The basic idea of possible worlds is no different from that of Kripke's. However, for the present purpose, we will term it as *deontic possible worlds*, or *deontic worlds* for short. Unlike the standard Kripke's model which is characterized by only one type of worlds, the ideal worlds, we can broadly classify the deontic worlds into three types:

i. *Desirable worlds*
ii. *Undesirable worlds*
iii. *Normative worlds*

The notion of desirability is taken as primitive. What is undesirable is the negation of what is desirable. In this model, nothing is both desirable and undesirable. Accordingly, the set of desirable worlds and the set of undesirable worlds are exclusive of each other and so the intersection of any two worlds, one each from desirable and undesirable worlds, would generate an empty set. The union of desirable worlds and the undesirable worlds does not exhaust the possible worlds. However, we will not bother to explicate them since they have no significant function to play in the model. Going further, we can talk about a third kind of worlds in the model – the normative worlds. Normative worlds constitute the set of worlds which are neither totally desirable nor totally undesirable. In other words, they are worlds where we find both desirable things and undesirable things. Our actual world can be understood as a member of this set. Norms exist in these worlds to regulate human actions towards actualizing desirable worlds and avoiding undesirable worlds. The

classification of deontic worlds can be explained with the help of Cartesian coordinate system.



(W_4, W_{-3}) represents the actual or the referent world[1]

The figure given above can be explained as follows: any point in the Cartesian plane represents a possible world, to be more precise a normative world; it is an ordered pair (x,y) such that x ∈ P and y ∈ R. Any point on the horizontal line P represents a desirable world with the most desirable world at the end. (Note: Desirable worlds are somewhat comparable to ideal worlds of the Kripkean model for DL). The most desirable

1 This is the same diagram I used in my PhD thesis (Tinyi 2007). Here, W_2 is preferred to W_1 because W_2 has more permissible states of affairs than W_1; each W_n can be taken as a set of sets. For instance, In W_2, there will be many worlds but each world will have the same number of permissible states of affairs though the states of affairs need not be necessarily same; in other words, they are equivalent sets.

world at the end of the line is termed as *Deontic Heaven*, a world where all the desirable states of affairs are actualized and no undesirable state of affairs exists.[2] Similarly, any point on vertical line R represents an undesirable world with the most undesirable world at the end. This undesirable world at the end of the line is the *deontic hell* where all the undesirable states of affairs are realized and no desirable state of affairs is actualized. Both line P and line R have the possibility of n-extension and so the notions of Deontic Heaven and Deontic Hell are relative to time and context with respect to the actual world or referent world. In the figure given above, (W_4, W_{-3}) represents the actual world or the referent world. In addition to these three particular worlds viz., Deontic Heaven, Deontic Hell and actual world representing a world each from the three different types of worlds, viz., desirable worlds, undesirable worlds and normative worlds, there is one more unique world which is represented by the ordered pair (W_0, W_0,); it is the world of objects without norms or values.

Someone may rightly ask, "What is so radical or different about this model? Look, the deontic worlds are not really different from those of Kripke's possible worlds model for DL. So, the objections raised against the ideal worlds model will also be applicable to deontic possible worlds of D-model." This hypothetical objection is legitimate and so attempts will be undertaken to address this point. Fundamental to the understanding of D-Model is the concept of *deontic gap*. It is with this concept that we define our deontic modalities.

a. The deontic gap

Any point on the Cartesain plane excluding the vertical and

2 In my PhD thesis (2007), this unique desirable world was termed as logical heaven. However, the same concept is being renamed as 'Deontic Heaven' in the present work.

the horizontal lines is a normative world. Normative worlds are imperfect worlds and are characterized by the existence of norms and hence the name. Now let us perform a little imaginative exercise on D-Model. Identify any world from the set of normative worlds and also any world from the set of desirable worlds and compare them. The normative world that we identify is technically termed as the actual world (the referent world). In the context of formal language, what we are doing is this: defining one-to-one onto function from the desirable world to the normative world. The objects of comparison are descriptive sentences. However, we know that the desirable world is not the same as the actual or referent world. Analogically speaking, the actual world is not the photo-copy of the desirable world and so technically speaking, we cannot perform an identity function between the two worlds. There are differences. Some states of affairs which are there in the desirable worlds are not there in the actual worlds and vice-versa. However, our key interest is this: there is at least one thing in the desirable which is absent in the actual world and that absence or the difference is termed as a *deontic gap.* In the language of set theory, when a particular argument (from a desirable world) of a function fails to pick out a value, the same element in the value set (from the actual world), we say that there is a gap. Perhaps, an example would be of some help. Take a sentence p = "*The Prime Ministers of India does Yoga every morning*". Suppose 'p' is true in the desirable world, the one with which we are comparing the actual world, and it is false in the actual world, then we have an instance of a gap.

We can also talk about the size of the gap: the number of arguments that fail to pick out values would determine the size of the gap. The purpose of norms is to reduce the gap between the normative worlds and the desirable worlds. Put it differently, norms exist to regulate our actions towards realizing desirable world. Performance of a good act with a desire to bring about a desirable state of affairs is like defining

a function from the desirable world to the actual world.[3] The ultimate aim of norms is to eliminate the gap and actualize all the desirable states of affairs in the actual world. It is to define an identity function between the actual world and the desirable world. In relation to the figure above, we can understand the deontic status of the actual world by looking at the ordered pair, that is, (W_4, W_{-3}): it says that four desirable states of affairs are actualized and three undesirable states of affairs are actualized. Simply put, there are four similarities and three differences between the desirable world and the actual world.

Taking this ordered pair, (W_4, W_{-3}) as an example, we will explore further the idea of deontic gap in D-Model. The ordered pair not only informs the similarities and differences between the two worlds but also tells us something about the nature or type of gap between the two worlds. We noted above that norms are to regulate our actions towards reaching a desirable world, more precisely the Deontic Heaven – (W_D, W_0). Given any normative world, there are n-gaps between it and any desirable world. The gap between a normative world and a desirable world, or between any two desirable worlds, is termed as *P-gap* while the gap between a desirable world (including normative world) and an undesirable world is termed as *R-gap*. From this perspective, *a desirable world is defined as a deontic world without any R-gap.* Performance of an action may either take us closer towards a desirable world or further away from it; some may not have any bearing, that is, neither closer to a desirable world nor farther away from it.

3 The above method by which I have generated the notion of gap is an over simplified version. In reality when we want to do bring about some desirable state of affairs, what we are doing at the level of formalism is creating a situation which would allow one to define a function from the model world to the actual (referent) world.

The actual world represented by the ordered pair, (W_4, W_{-3}), says that four desirable states of affairs have been actualized while three undesirable states of affairs have been brought about. In other words, four P-gaps have been bridged and three R-gaps have been created. Technically put, four identity functions from the desirable world to the actual world are successful and ordered pairs couldn't be defined or generated with three states of affairs in the value set.

In ordinary parlance, we may say that an action that succeeds in bridging a gap is development or progress. It is praiseworthy. Conversely any action which results in creating a gap is regression or declination. It is blameworthy. The notions of *p*rogress and *r*egress are, thus, related to *P-gap* and *R-gap* respectively. We call P-gap as *progre*ssive gap and R-gap as *regressive* gap**.** P-gaps are conceptualized in relation to the Deontic Heaven and *bridging* of P-gaps brings a normative world closer to the Deontic Heaven. On the other hand, R-gaps are conceptualized in relation to the Deontic Hell and creating of R-gaps takes a normative world closer to the Deontic Hell. It may also be noted that R-gaps can also be bridged to bring a normative world closer to any desirable world on the horizontal line. In the light of the above, the purpose of norms can be defined as follows: to *bridge* P-gap and R-gap on the one hand and on the other, to *block* R-gap.

The whole framework of D-model seems to be an exact echo of von Wright's idea. In the context of explaining his ethical point of view in relation to what is beneficial (good) and harmful (bad), he writes:

> There are two principal ways in which something can be causally favourable to the attainment of an end. Either this thing is favourably relevant to the end by taking us metaphorically speaking nearer or even up to this end. Or it is favourably relevant by preventing us metaphorically speaking from being taken farther away from the end. We have already (p. 42) coined

> the terms promotive and protective for these two forms of favourable causal relevance to ends (von Wright 1963a: 47).[4]

b. Alternative definitions of norms in relation to D-Model

Using D-Model, we will make an attempt to (re)define the three fundamental categories of deontic logic – prohibition, obligation and permission. Any act, either performance or forbearance, that creates R-gap is *prohibited***.** Any act, either performance or forbearance, to block the creation of R-gap will be termed as *obligatory*. Thus, prohibition and obligation are meant to keep the gap or distance between a desirable world and a normative world from increasing**.** Acts or act-categories for the application of obligatory and prohibitory norms are well identified and well definedand their consequences reasonably calculated or anticipated.[5] These two norms are associated

4 He is committed to a version of utilitarianism. He defines good and bad in relation to what is beneficial and what is harmful respectively on the one hand and on the other, he tries to make sense of these pair of ethical values in relation to the attainment of some end. Most of the key ideas I have employed to build D-model are similar to terms used by him to explain his view such as metaphor, farther, nearer, promotive, protective, end, etc. This is uncanny as if he anticipated D-model. Though I could recall reading his *Varieties of Goodness* (1963) at the time of pursuing my PhD program, his ethical views were not obvious to me then and so D-model was conceptualized independent of his views. When I read his work again for the present purpose of writing a book and also as part of the course I am teaching – *Topics in Ethics* – for PhD course work, the similarities got my attention in a refreshing and revealing manner.

5 Normative categories are thus directly related to the knowledge of the possible worlds. In other words, the knowledge of what constitutes the world and the theories about the world shape and regulate the nature of the norms. In short, knowledge of causal relations of things plays a major role in determining the *force* of prescription. But apart from this casual remark, I will not study the nature of their relationship in this work.

with R-gap. Finally, we have permissive norms: Any act, performance or forbearance, which does not create R-gap is defined as *permissible* or *permitted***.** This is a *passive* definition of permission. In contrast, an act that bridges P-gap is defined as permission. This is an *active* definition of permission. It may be noted that traditionally, permission has been defined as the *'absence of prohibition'.* This classical definition is similar to passive permission in that it can be defined in relation to obligation or prohibition vis-à-vis R-gap. However, in D-Model, permission enjoys a relatively independent ontological status. It is defined in relation to P-gap as opposed to obligatory or prohibitory norms which are defined in relation to R-gap. This is a radical departure from all the traditional viewpoints. The rationale and ontology for the definitions of normative concepts are entirely different from the traditional ones.

We noted above that desirable worlds are comparable to ideal worlds of Kripke's model. In D-model, all the deontic worlds that fall on the horizontal line P are desirable worlds. A question may be asked regarding the difference between any two desirable worlds, say W_1 and W_3. The answer is this: while W_1 has bridged one P-gap by performance of a permitted act, W_3 has succeeded in bridging three P-gaps by performance of permitted acts. $W_{D,}$ in the meantime, has succeeded in bridging the maximal number of P-gaps. Conversely, W_U brought about the maximal number of R-gaps and so it is the most undesirable world. All the undesirable worlds are in the vertical line.

c. The four fold classification of permission[6]

Broadly, we have defined permission in relation to acts which

6 I thank Prof. S. Hegde, Department of Sociology, University of Hyderabad, who suggested to me that the traditional classification of permission into weak and strong may be replaced by simple and deep permissions. However, the definitions for both these two notions along

are neither obligatory nor prohibitory. However, technically speaking, permission may be classified into four types. They are as follows:

i. *Close Permission,*
ii. *Deep Permission,*
iii. *Simple Permission and*
iv. *Open Permission.*

Close permission is defined by the dual function of bridging P-gap and preventing R-gap. The principle of permission – (Pp V P¬p) – is not applicable to close permission. As such, an act in question cannot be forborne and so it is closed with respect to choice. Obligation always, as a rule, limits the freedom of choice. An example of close permission could be 'right to life'. It is both a duty and right. We do not have a choice to give up life. To give up is to create R-gap. Though, it is not clear as to how this right bridges P-gap, it is definitely the case that it is the foundation of all other rights which bridges P-gap. In other words, without it, P-gaps cannot be bridged. Perhaps, we may also say that life in itself is inherently or intrinsically good and so being alive is as good as bridging p-gap. Perhaps, another example would be instructive. As a teacher, I have a duty and a right to teach. Failure to teach will create R-gap and performing my duty will bridge P-gap.

Deep permission is defined in relation to an act, the performance of which is needed to bridge P-gap. Such an action is not only permissible but also commendable. Pursuit of happiness or goodness or desirable world is what characterizes deep permission. Though it is committed to bridging P-gap, forbearance of acts under this category does not create R-gap unlike close permission. So, one has the freedom either to perform them or to omit them (though a

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with the other two notions of permission viz., - open permission and close permission, are entirely mine and so the usual disclaimer follows.

morally perfect agent may treat them as obligations, a point we will take it up later). The forbearance of these acts does not make a person ignoble or immoral. Deep permission is somewhat comparable with the traditional notion of strong permission. Acts under this type of permission are generally identified and recognized by norm-authority.

Simple permission is such that acts under this category of permission have no normative status, or not subject to norms. In other words, they are outside the domain of norms and are often without names. Note that prescriptions are normally applied to acts which have names like cheating or teaching. Performance or non-performance of a simple permissible act neither bridges P-gap nor prevents R-gap nor creates R-gap. It has no direct legal or moral bearing. Playing chess game *with my left hand* is an instance of simple permission; playing chess with my left hand does not determine whether I will win or lose the game. It is insignificant. Notice that in the given example, the clause in italics is a description and not an act name. It is somewhat comparable to von Wright's notion of *weak permission* which is defined as 'absence of prohibition'. However, they may have some differences because certain acts under weak permission may be praiseworthy; for example, morning walk. It is a good habit and good for health but not prescribed in general. Given this way of characterizing morning walk, it is a desirable action and therefore it may easily be categorized under deep permission. Strictly speaking, simple permission is not a norm at all since it has no function either to bridge or create gaps.

Open permission is not known to represent any norms or normative practices. It is, so to say, occasioned by the formal analysis of norms in relation to D-model. However, we may define it by its potential either to bridge P-gap or create R-gap. It is essentially concerned with performance of acts and not with forbearance. Performance of acts under this category is not a sufficient condition to bridge P-gap unlike

deep permission or close permission. However, unlike simple permission, open permission has normative consequences due to its potential of bridging P-gap or creating R-gap. In this sense, open permission is not trivial though they may not be subject to norm in the strong sense like deep permission or close permission. Acts under this type of permission can be associated with human activities which operate in grey areas of life; for instance, experimenting with hypotheses in scientific researches like vaccine trials or space exploration, etc.

d. Formal structures of norms in D-model[7]

We have noted a possible objection that D-model is no different from Kripke's possible worlds model since it deals with desirable worlds. In order to remedy this, we have introduced the notion of gap along with the need for action to bridge or create a gap. In other words, action is now inbuilt into the formal structure of norms. So D-model is equipped to provide the formal structure for the logic of *tunsollen* or the logic of norms. In this section, we will undertake to formalize the deontic modalities. Before that we will abbreviate and symbolize some terms that we have introduced.

i. Close permission = $P_{(c)}$
ii. Deep permission = $P_{(d)}$
iii. Simple permission = $P_{(s)}$
iv. Open permission = $P_{(o)}$

7 Formalization of norms in the present work has important departures with the ones I undertook in my PhD thesis (Tinyi 2007). In my PhD work, I formalized with the help of the alethic operator 'necessity' and the deontic operators are applied to propositions. In this work, I discarded the necessary operator and deontic operators are applied to actions. In addition, formalization of open permission has been revised in the present work.

v. P-gap = G^P
vi. R-gap = G^R
vii. Bridged P-gap = G^{P+}
viii. Bridged R-gap = G^{R+}

One may also note below that while other deontic modalities are defined in terms of necessary condition or sufficient condition, open permission has been defined in relation to conjunctive and disjunctive connectives. In our formal structure, a prescriptive (deontic) category is applied to an act-category, a, and not to states of affairs (proposition). In this sense, prescriptions are not meant to be read as modal operators but more like a predicate. Thus, "Smoking is prohibited" or "It is prohibited to smoke" may be symbolized as "Fs". In the meantime, 'a' without the deontic predicate may be read simply as "a is performed".[8] In the symbolizations given below, the categories vis-à-vis deontic sentences are introduced without a context, i.e., world. This is deliberate in order to keep the symbols to the minimum. However, for analyzing a problem, a context (world) can be introduced by way of indexing worlds in the usual fashion.

1. Obligation:
   $Oa =_{df} (\neg a \rightarrow G^R)$
2. Prohibition:
   $Fa =_{df} (a \rightarrow G^R)$
3. Close permission:
   $P_{(c)}\, a =_{df} (\neg G^R \wedge G^{P+} \rightarrow a)$
4. Deep permission:
   $P_{(d)}\, a =_{df} (G^{P+} \rightarrow a)$
5. Simple permission:
   $P_{(s)}\, a =_{df} (a \vee \neg a) \rightarrow \neg\, (G^R \vee G^{R+} \vee G^{p+} \vee G^P)$

8 Accordingly, "¬x" will be read as "x is not performed". (It is equivalent expression of omission of x).

6. Open permission:
   $P_{(o)}\ a =_{df} a \wedge (((G^R \vee \neg G^R) \wedge \neg (G^R \wedge \neg G^R)) \vee ((G^{p+} \vee G^P) \wedge \neg (G^{p+} \wedge G^P)))$

The above set of symbolizations looks odd in that deontic categories are applied to act-categories and not to sentences and yet sentential operators are being used to define them. This also gives us an indication that the formalizations need not be taken seriously. As a matter of fact, they are not meant to be used strictly in their standard logical meanings. (We will come to this point later on). Since we are using the notion of gap and the act involved in blocking, bridging and creating of a gap, D-model may be seen appropriately as an explanatory or conceptual model for the logic of *tunsollen*. D-Model is action-centric and so we will attempt a different technique to symbolize the deontic categories. Deontic categories will be treated as values of some action, a, and we will define a function, f, over an action to assign a prescriptive value to it. (Note: $\neg a$ will be interpreted as omission of a while a will be interpreted as performance of a).

1. Obligation:
   $f(a) = O$ = obligatory iff $(\neg a \rightarrow G^R)$
2. Prohibition:
   $f(a) = F$ = prohibited iff $(a \rightarrow G^R)$
3. Close permission:
   $f(a) = P_{(c)}$ = closed permission iff $(\neg G^R \wedge G^{P+} \rightarrow a)$
4. Deep permission:
   $f(a) = P_{(d)}$ = deep permission iff $(G^{P+} \rightarrow a)$
5. Simple permission:
   $f(a) = P_{(s)}$ = simple permission iff $(a \vee \neg a) \rightarrow \neg (G^R \vee G^{R+} \vee G^{p+} \vee G^P)$
6. Open permission:
   $f(a) = P_{(o)}$ = open permission iff $a \wedge (((G^R \vee \neg G^R) \wedge \neg (G^R \wedge \neg G^R)) \vee ((G^{p+} \vee G^P) \wedge \neg (G^{p+} \wedge G^P)))$

In the more recent time, two more deontic modalities have been introduced, namely, optional and omissible.[9] With the help of the basic modals, these two modalities have been defined as follows:

i. Optional p = ¬Op Λ¬O¬p
   [neither obligatory nor prohibited]
ii. Omissible = ¬Op
   [not obligatory]

These two modalities can be given equivalent expressions in our model as well (see below). Note that both these modalities are defined in relation to R-gap.

i. Optional a = ($\neg a \Lambda G^R$) Λ (a Λ $\neg G^R$)
ii. Omissible a = ($\neg a \Lambda G^R$)

Digging deeper into D-model

In this section, we will probe further into deontic categories and examine how they are related to each other on the one hand and on the other, how they are related to other normative ideas and practices. Generally, it is true that obligation implies permission. But in the model, we have defined obligation in relation to R-gap while permission is defined in relation to P-gap. How can we explain their implicational relationship then? The answer is to be found in *close permission*. Note that close permission has dual function of preventing R-gap and bridging P-gap. So the basic ideas of permission and obligations are inbuilt into structure of close permission. Earlier, we exemplified this concept by appealing to the example of 'right to life'. However, we can also cite a common

9 The relations of deontic modalities have been represented in different diagrams, viz., deontic square and deontic hexagon; see https://plato.stanford.edu/entries/logic-deontic/ (accessed: 30th April 2022)

example of a government minister performing her executive responsibilities. It is both her *duty* (obligation) and her *right* (permission) to implement the policies of the government. Failure to perform her duties will result in non-development or a state of anarchy for the department concerned (and in that sense, it is related to R-gap) while performing her duties will achieve both development and maintenance of law and order (and in that sense, it is related to both P-gap and R-gap). In SDL, the relation of obligation is with weak permission. In our model, the relation of implication of obligation is both with the deep permission and the simple permission but the relation does not hold between obligation and deep permission and also between obligation and open permission.

Though obligation and close permission share certain similarity, there are differences between them as well. For instance, obligatory norms lack noble and novel attitude to minimize the P-gap towards realizing ideal worlds; its primary task it to maintain 'law and order' which is associated with preventing R-gap from coming about. As such, we can talk about obligation which does not involve P-gap (This type of obligation can be associated with what it being termed as restorative norms, a concept we will discuss in this chapter). Whenever there is occurrence of R-gap, there is a need to bridge it. In such a case, obligation does not imply permission.[10] For instance, the obligation to deliver justice is *pure* obligation (pure in the sense that it is not related to or mixed with the P-gap). We can consider some deontic expressions: "Promises ought to be kept" or "Laws ought to be obeyed". Assuming that the term "laws" in this context is referring to those which are meant for dealing with 'law and order' situation, failure to

10 Here, we are referring to permission which bridges P-gap. However, obligation will imply permission of a different sort, namely, weak or passive permission. More on this point will be elaborated in a short while.

comply is designed to incur sanction or something undesirable or bad but compliance to order or law is designed to prevent something bad. It is not directly related to achieving something good like development. These are subject to interpretation depending on a given context. However, the primary and minimal meaning is that failure to keep a promise or obey the law will result in R-gap and that is an undesirable state of affairs. Bridging P-gap is neither a necessary condition nor a sufficient condition for the examples at hand. In contrast, the notion of R-gap constitutes the necessary condition for both the given expressions.

How about prohibition? What is its relation with obligation or permission? When there is a possibility or threat of thwarting or obstructing the task of bridging P-gap, for example, a threat to exercising one's rights, prohibitory norms are called forth. In that sense, prohibition is indirectly related to P-gap vis-à-vis permission. It may be noted that prohibition is a negative function of obligation. It is an obligation *not* to perform something. In general, the domain of operation for obligation and prohibition is well defined and operate on the same set of actions and activities. This is also true of strong permission (classical sense) and deep permission. However, even if we bring together the domains of these norms, viz., obligation, prohibition, strong and deep permissions, they cannot account for a very large chunk of human activities and actions. In the meantime, regular human actions and activities like eating or walking can be conveniently brought under the domain of simple permission, actions and activities which are basic to human living or existence and have no significant moral or legal implications in general. For instance, there is no moral praise or blame for eating or walking in a normal condition. Simple permission is not a first order norm. It is rather absence of norms. It is defined by a negative function, that is, by negating gaps as seen above. It assumes a normative

function only at the second order or meta-level when norms of the first order interfere with the actions and activities in the operational area of simple permission. For instance, when someone, including norm-authority, obstructs me from eating or walking for no reason, then such interference in my life can be declared illegal or unlawful for violating simple permission. Here, the problem is one of applying of norms to actions or activities which are beyond or outside the domain of norms. This is sufficient to declare the law null and void. In some sense or context, this can be even interpreted as an infringement of my right to privacy.

In addition to actions and activities mentioned above, there are those which are neither well-regulated nor unregulated but possess some moral or social significance. We have classified them under the category of open permission. This domain of human actions and activities may be referred to as *grey* areas. At times, we can be very clear about our goals but we may be unsure of the *means* to achieve them or the *consequences* of pursuing such goals. In such a case, a person may exercise her freewill to choose which course of action to pursue and even chooses not to pursue it at all. For instance, I know what I have to do while proposing a lady for marriage but I may not be certain of what course of action is the best way to propose her or what will be the outcome of my proposal. This type of actions has moral implications depending on how one chooses to pursue it. In legal practices, they come under the domain of permission but they are not to be found within the standard classification of weak and strong permissions of von Wright. Within the D-model, we have identified them with open permission. While close and deep permissions are basic and can be classified under primary norms, simple and open permissions can be conveniently categorized under secondary norms. (We will be touching upon these two types of norms briefly in the present chapter itself).

Another important insight yet can be gained on permission in relation to the D-model. In chapter two, we noted that it is quite odd to say that a person performs a permitted action to avoid punishment and yet this is precisely how permission is being formally defined, both by von Wright and Anderson. For instance, it is very odd to say that one exercises one's right to freedom of expression to avoid punishment. von Wright's criticism of Anderson's definition of permission as well as his reformulation of the definition of permission, strong permission, in terms of sufficient condition did not really resolve this issue at hand; permission is still seen as a kind of security measure or guarantee against punishment. The problem has arisen because the idea of punishment is taken as basic and it is used to define the deontic categories. Despite von Wright's classification of permission into weak and strong types, it does not really change the status of permission since he too defined permission in relation to punishment. Though weak permission is not subject to norm, just like simple permission, it is also immune to punishment. For instance, no one can be punished for eating with a spoon or left hand. Eating with left hand is in the domain of weak permission and yet it receives some kind of immunity against possible punishment. While there is some element of truth in his conceptualization of permission, it is inadequate. In addition to providing immunity against punishment, permissive norms are essential for pursuing human and civilizational values. We exercise our rights and privileges, those permitted actions and activities, for self-realization and for the development of our society and not to escape punishment. This point has been almost entirely missed out in the conceptualization of deontic categories. In contrast, the idea of P-gap in D-model is formulated basically to capture this aspect of actions and norms. This point is more basic and it is internal to the idea of permissive norm.

D-model in the wider context of normative studies

Using D-model, we have described the structure of deontic modalities. However, we know that normative studies are not limited to the analysis of deontic modalities or expressions. A pertinent question that may be asked, therefore, is this: Can we use D-model to understand norms in general? We would like to answer this in the positive. However, in the present work, our attention will be given only to two domains, viz., (i) legal norms and (ii) moral norms. We will begin with our analysis of the first. However, a sacrosanct partition between the two will not be maintained. We will freely move from one domain to the other. Context of discussion will make it clear. Before we go into the specific domains of these two normative studies, we can have a broad classification and definitions of norms. From the perspective of D-model, norms may be classified into three categories, namely,[11]

i. *Repressive norms*
ii. *Restorative norms*
iii. *Prospective norms*

We can define *repressive norms* and *restorative norms* in relation to R-gap while *prospective norms* can be defined in relation to P-gap. (Note that norms and prescriptions are used inter-changeably in this work). Any prescription that aims to prevent or block R-gap can be termed as repressive norm. It normally limits our choice regarding the performance or forbearance of an action. Accordingly, obligation and prohibition come under this category of repressive norm. In the case of the former, forbearance of an obligatory action will create R-gap while in the case of the latter, performance of a prohibited action will create R-gap. These are norms meant to

11 The above classification of norms into three kinds is not meant to be exhaustive. The classification is being viewed only from the framework of D-model.

repress or check R-gap from coming about. In the meantime, norms which are committed to bridge P-gap can be termed as *prospective norms*; for instance, permission; however, we know that not all forms of permission bridge P-gap. Simple permission has no commitment to bridge P-gap and so technically speaking, they are not norms in that they are not applied to any nameable actions.[12] We have noted above that the absence of norms with respect to human actions or activities can be identified with simple permission.[13] How about restorative norms? These norms are related to repressive norms somewhat like the relation of action and reaction. Their relation can be explained as follows: Suppose due to certain reason the creation of R-gap could not be prevented, then there is a need to *bridge* it; otherwise, the goal of realizing desirable worlds or Deontic Heaven would not materialize. Any norm that is committed to bridge R-gap can be defined as *restorative norm.* It seeks to restore and rebuilt an undesirable gap and so it may be also referred to as restitutive or retributive norm. One can immediately connect this type of norms with justice system, especially in connection to the general theory of punishment. It may be noted here that R-gap results either by breaking of repressive norms or by obstructing prospective norms.

12 It may be noted that description of action is different from name of action (act-categories). While the former is objective in nature, the latter is value laden. For instance, 'walking' is value free but 'killing' is value-laden. However, bodily activities or movements like walking can be subject to norm under various circumstances. For instance, the activity of walking can be termed as *trespassing* if a person is walking at the restricted area.

13 Simple permission can be considered as having normative force at a meta-level. At this level, simple permission can restrain norms of the first order to interfere or regulate those actions which are not subject to norms. The essence of this meta-norm can be captured by a normative principle: "*Any action which does not harm others is permitted*."

a. Legal norms

The above discussion on restorative norms may be directly connected to a distinction made between primary and secondary norms in legal theories (von Wright 1983; Hart 1978; Austin 1885; Kelsen 1945). The nature and relationship of primary and secondary rules or norms have been sought to be explicated by Hart in the following way:

> Under rules of the one type, which may well be considered the basic or primary type, human beings are required to do or abstain from certain actions, whether they wish to or not. Rules of the other type are in a sense parasitic upon or secondary to the first; for they provide that human beings may by doing or saying certain things introduce new rules of the primary type, extinguish or modify old ones, or in various ways determine their incidence or control their operations. Rules of the first type impose duties; rules of the second type confer power, public or private. Rules of the first type concern actions involving physical movement or changes; rules of the second type provide operations which lead not merely to physical movement or change, but to the creation or variation of duties or obligation (Hart 1978: 78-9).

In the above quote, Hart is silent on the notion of sanction in relation to his enumeration of primary and secondary norms. However, a careful reading of his works can easily link the idea of punishment with secondary rules or norms. More clarity comes from Austin in this regard who says that while primary norms are associated with rights and duties to prescribe the behaviour of the subjects, secondary norms are associated with 'sanctions' which are applied to those who fail to obey the primary norms (Austin 1885**:** Lecture XLV). von Wright's view is similar with that of Austin. He maintains that secondary norms basically do the job of 'criminalization' of certain action or state of affairs (von Wright 1983: 158-9).

This idea of restorative norms may have significant

bearing on jurisprudence. In jurisprudence or legal theories, the concept of sanction (or theories of punishment) is one of the core concerns. As a matter of fact, it is difficult to imagine how justice system will work without involving sanction. From this perspective, the theory of command or what is popularly known as the Austinian theory of law is pertinent. The limitation of Austinian concept of law is that it fails to make a proper distinction between norms as has been done in the present work or by Hart and others. So it mistakenly clubs together all kinds of norms within the same ambit, restorative norm in our locution which can be associated with R-gap. On a similar line, many legal thinkers made the mistake of conceptualizing deontic concepts viz., permission, obligation and prohibition, including early Anderson and von Wright in some respect: they all tried to conceptualize deontic concepts in relation to sanction as we noted in the second chapter. But if D-model is successful in representing our insights about norms, then the reduction thesis of Anderson including von Wright's views on the same are clearly mistaken.[14] As such, the ideas of P-gap and R-gap in the context of D-model may be explored in greater detail to examine and evaluate various concepts and theories in legal studies.

The classification of norms into primary and secondary norms is crucial to understand an aspect of permissive norm. A dominant view in legal studies is to conceptualize permission as an exception to norms or as abolishing norms (Jorg Hansen and van der Torre 2021). In other words, the function of permission is to cancel or restrain obligatory or prohibitory norms which are in operation. Such a view is made clear in the words of Ross (1968) when he argues that permission is useless outside the context of obligations. Bulygin echoes

14 It may be noted that both Anderson and von Wright changed their views in the latter part of their career.

similar thought when he writes that without the notion of permission as exception "there would be no possibility of normative change from acts of authority" (Bulygin 1986: 213). This view can be best summed up by quoting a passage from Ross:

> Telling me what I am permitted to do provide no guide to conduct unless the permission is taken as exception to a norm or an obligation… I know of no permissive legal rule which is not logically an exemption modifying some prohibition, and interpretable as the negation of an obligation (Ross 1968: 122).

This view of permission in the philosophy of law as seen above has substantial differences with our definition of permission. D-model attempts to understand norms at their most basic or foundational level. Put it differently, it is interested in the nature or structure of deontic categories *per se.* In this sense, it has immediate or direct connection with primary norms. In contrast, the above view of permission in the legal context is interested not at the deontic level but in relation to sanction which is within the category of secondary norms. Earlier we noted that secondary norms are concerned with such normative activities or issues as sanction, justice, interpretation of laws, derivation of laws, 'legal gap', etc. So the characterization of permissive norms in the context of secondary norms is functional, and not structural, in nature. It functions not to derogate or cancel or alter obligatory norms or prohibitory norms *per se* but to seek an exception. For instance, permission to smoke does not change the prohibitory norm to smoke *per se* but to escape from legal consequences or liabilities such as sanction. If there is a real alteration or cancellation of norms at the deontic level, then it undergoes a different kind of normative procedures, such as enactment or legislation, or repeal or revoke, etc.

What transpires in judiciary in relation to permissive norms is *transactional*: a norm-subject seeks permission

and a norm-authority grants permission to that effect. In his work (2021), Venusa Tinyi argues that it is misleading to define deontic modalities in relation to sanction since sanction is not a *basic* concept but presupposes norms. For instance, definition of permission as immunity from sanction is problematic because immunity from sanction is associated with an agent or norm-subject and not with action. In other words, there is not much sense in saying that punishment is given to an action though it is indirectly defined in relation to an action; rather we say that a punishment is given to a person, a law breaker. In this way, Tinyi finds fault both with Austinian theory of law (predictive theory) and Anderson-von Wright definitions of norms in relation to sanction. The functions of prescriptions should not be confused with their definitions though they are conceptually related; defining prescriptive functions in relation to sanctions comes under restorative or secondary norms. To sum up the above point of discussion, restorative norms can be connected to secondary norms while the repressive and prospective norms can be connected to primary norms. Therefore, it is fallacious to define primary norms with secondary norms – that is, sanction – as did by Austinian scholars. In doing so, we are only coalescing and confusing the distinction between primary and secondary norms.

Moral norms

Most of what we discussed in the foregoing paragraphs revolves round R-gap in the context of jurisprudence. We will now shift our focus towards another direction, viz., P-gap.[15] Deontic concepts constitute an important branch of ethics. For

15 It may be noted that ethical concerns or issues are not exclusively or totally associated with P-gap. Theories of justice or theories of punishment, for instance, are integral part of ethical studies as well.

Kantian moral philosophers, the concept of duty or obligation is basic and other moral ideas can be defined in relation to it. Irrespective of ontological stances of moral philosophers, it is needless to argue that duty constitute an important and indispensable part of ethics. However, unlike legal philosophy, the notion of sanction is hardly employed to define obligation or duty. This is not to undermine theories of punishment which forms an integral part of ethical studies but to point out the fact that theories of obligation and theories of punishment are generally studied in isolation and not in strict relation to each other. The internal relation holding between them is not sufficiently explored in ethical studies in contrast to legal studies where the relationship is pushed to the definitional level (though mistakenly by some). Various explanations may be provided for these diverse practices in normative studies. We will try to give our own account with the help of the D-model.

Broadly, we can identify two senses or uses of 'ought' in ethics: the moral ought to do good and the moral ought not to do evil or not to allow evil to exist. While the former sense of positive ought can be associated with P-gap, the latter with the negative sense can be associated with R-gap in the context of D-model. The negative ought may be identified with prohibition and obligation; both the performances of prohibitory acts and the omission of obligatory acts will create R-gap. We noted earlier that the purpose of these two norms is to prevent R-gap. Though nobility is rarely credited to actions to prevent R-gap, failure to prevent R-gap is generally considered ignoble and even punishable to whom the task to prevent R-gap is being specifically entrusted such as policemen, lawyers, ministers, etc. As such, prevention of R-gap is needed to avoid harm or evil. It may be said in general that prevention of R-gap is the universal duty of every citizen and failure to do so is, at least, morally blameworthy. In contrast, positive ought is associated

with P-gap and this can be identified with deep permission. Unlike negative ought, the omission of an act to bridge P-gap is not considered as ignoble or unlawful while performance of an act to bridge the same is considered noble and praiseworthy. Such actions are called *supererogatory acts* in ethics. It is noble precisely for the reason that the act in question is motivated to actualize a desirable world. Unlike negative ought where the choice is imposed or forced from outside, the choice in the case of positive ought is internal and voluntary.

Imagine that there is a person who is striving to become morally perfect. Such a person would like to help whenever she sees a needy person. Failure to help a needy person is likely to cause in her a guilty feeling which is not desirable. Therefore, denying help to others whenever she can is morally 'forbidden' or unacceptable for her. Whatever action is morally *significant*, that is, related to either P-gap or R-gap, she will act accordingly; she performs it if it will bridge P-gap and omits it if it will create R-gap. In other words, there are only two prescriptions that guide her action – obligation and prohibition. This is because her action is committed to abolishing gaps, both R-gaps and P-gaps, which exist between the actual world and the desirable worlds. A gap is a gap for her and so not doing what is desirable is the same as doing what is undesirable: the *sin of omission* is as bad as the *sin of commission*. The *sin of omission* can be associated with P-gap while the *sin of commission* can be associated with R-gap. In this sense, for a person striving to become morally perfect, the task of bridging P-gap comes as an obligation. If we can talk about moral progress of individual or society, then it has to be understood in relation to P-gap primarily. Not violating laws or not harming others (that is, creating R-gap) for fear of punishment is not a moral progress even though it may be considered as a legal progress.

From another angle, there is a sense in which positive

ought is considered an 'obligation' of some sort when it has nothing to do with R-gap but everything to do with P-gap. Normally, 'ought' functions to minimize or limit choices unlike 'may' which gives freedom to choose from possible options and also freedom whether or not to perform a given action. When there are choices or options available in relation to an action, say x, it may be odd to say that 'x ought to be done'. However, the sense of ought in this case may be explained in relation to *necessary* and *sufficient* conditions. Desirable worlds cannot be realized by doing nothing; one has to perform actions. Performance of certain action is *necessary* to bridge P-gap. For instance, elimination of poverty or illiteracy requires appropriate actions. To use von Wright's terminology, technical norms underlie performance of some supererogatory act to bridge P-gap. An action is seen as a *means* to an *end* and a causal explanation can be provided in such a case. However, it may be noted that there are other uses of 'ought' for which technical norms cannot be applied. For instance, "Humans ought to be moral" or "Citizens ought to be happy." In such a case, causal explanation is inadequate. No amount of money or power or material success can guarantee happiness for some individuals.

Re-visiting some issues in DL

a. Anderson's reduction thesis

In the immediately preceding paragraph, we have noted the risk of confusion between primary and secondary norms. In the language of D-model, it can be explained in relation to R-gap and P-gap. While this confusion is outside the strict domain of deontic (formal) studies, failure to distinguish between primary and secondary norms also raised some problem in relation to the reduction thesis of Anderson we encountered earlier in the second chapter. Anderson

introduced a propositional constant ***S*** which stands for sanction and used it for his reductionist purpose. (He actually introduced ***P*** and not ***S; S*** is our convenient way of simplifying his complex formula to define sanction). Our present interest is not in the notion of necessity with which von Wright was concerned. Ours is more basic and internal to norms – the relation of repressive and restorative norms. In the foregoing discussion, we gave an analogical explanation that the relation of repressive and restorative norms is like action and reaction. Just like a reaction to an action cannot be used to explain an action, so also sanction cannot be used to explain deontic modalities viz., permission, prohibition and obligation. One of the simple reasons is that an action can be followed by n-reactions or consequences. For instance, helping someone in need; it is quite possible to generate n-reactions, some positive and some negative depending on who is commenting, my friends or my opponents. But defining my action in terms of peoples' reaction is not the best approach. Of course, it may look scientific in that causal relations are studied like that in terms of observable events. However, we have seen Hart's objections to prediction theory of norms or legal positivism in jurisprudence and his arguments are convincing.

The presupposition of D-model is that norms are necessitated by desire or goal. In other words, had there been no desire (or desirable goal), there would be no norms. The purpose of primary norms is primarily to actualize a desirable world. Primary norms are guided by a principle to prevent R-gap and bridge P-gap. In contrast, the purpose of secondary norms, which include sanction or punishment theory, is to ensure that primary norms are safeguarded, among others; that is to say that if there is any occurrence of R-gap or obstruction of P-gap, secondary norms are meant to deal with it; they also help in interpreting primary norms as well as executing primary norms. This shows that the relation

of restorative norms to desirable worlds is indirect; it is underlined by the double use of implication – *If* you want to actualize a desirable world and *if* that is obstructed in some way, then apply restorative norms. Thus, from the perspective of D-model, both Anderson and von Wright can be faulted for their attempt to define primary norms – deontic modalities – with secondary norms.

b. The inter-definability thesis

It is not incorrect to say that the inter-definability thesis of deontic operators is largely influenced by the similarity of operators among the following logical systems (von Wright 1968: 14):

∃ /(¬∀¬)	Some	M	Possible	P	Permitted
¬∃ /(∀¬)	No	¬M	Impossible	¬P	Forbidden
¬∃¬/ (∀)	All	¬M¬	Necessary	¬P¬	Obligatory

The thesis works well with the other two systems. However, it appears that the analogy among the three has been pushed a little too far. While the axiomatic approach to the other two established systems is less problematic, it is more problematic for DL for the simple and obvious reason that DL presupposes values and goals. For instance, the very idea of "ideal worlds" or "best possible worlds" is goal-oriented. While in the axiomatic systems, the meaning or content of the formula or expression is irrelevant for derivation of theorems, in the model theoretic systems, meaning of an expression remains the central focus. What is more important is that both axiomatic system and model theoretic system should inform each other. As such, what happens in a model theoretic system has consequences on the axiomatic system. It is for this reason that attempt is being made here to understand the deontic modalities with hope to throw lights on the inter-definability thesis.

It is true that while possible worlds model is primarily interested in the truth-values of modal sentences, its significance is largely felt in natural language semantics as well, especially with regard to alethic modal sentences. Besides, modal logical systems are essentially considered as intensional logic and so propositional contents or intentions of modal expressions are indispensable for a proper understanding of any system of modal logic. From this perspective, D-model has important contributions to make. It helps us to understand the structure of deontic expressions in much the same way as Russell's analysis of sentences involving definition descriptions, which are part of natural language expressions, played a significant role towards both development and understanding of FOL.

Given the above explanations and assumptions, the inter-definability thesis of deontic operators requires some deeper analysis. It may be noted that the operators are not just symbols but symbols with meanings. So the practice of taking any operator as primitive or undefined and using it to define the others can be subject to examination, especially in DL. Let us elaborate this point: If obligation is taken as a primitive and is used to define permission, we can ask, "Which sense or type of permission is being defined here? Is it the weak or strong permission of von Wright's classification, or one or all types of permission classified with the help of the D-model?" In the standard deontic logic, permission is defined as 'absence of prohibition' which is equivalent to weak permission of von Wright. What is counter-intuitive in this framework of thinking is that weak permission, which is strictly speaking not a norm, is being used to define other deontic categories and vice-versa. In the meantime, strong permission, which actually is a norm, is kept outside the scheme of inter-definability thesis. The reason is that strong permission, in his own admission, cannot be derived from negation and obligation (von Wright 1969: 95). This is the irony of DL which is generally defined as the logic of norms.

If we look at D-model, there is no way we can define (deep) permission with the help of either prohibition or obligation. If a prohibited action is performed or obligated action is not performed, then it results in R-gap, not P-gap; likewise, if a permitted action is not performed, it results in P-gap, not R-gap. Let us consider an instance of inter-definability of deontic operators:

i. Pp = ¬Fp
   Or
ii. Pp = ¬O¬p
   (F = prohibited/forbidden)

(i) says that 'permitted p' means the same thing as 'p is not prohibited' while (ii) says that 'permitted p' means the same thing as 'not p is not obligatory' or 'not obligatory that not p'. Both (i) and (ii) give the same sense – 'absence of prohibition'. Symbolically,

i. Permission: Pp = ¬ Fp

Now let us consider what happens when we translate definitions of modalities into the language of D-model with appropriate modification, for instance replacing p with a. Prohibition may be symbolized as follows:

ii. Fa = $_{df}$ (a → G^R)

Now if we negate prohibition, then we get

¬ Fa = ¬(a → G^R)
Pa = a Λ¬ G^R

The formal structure of permission "a Λ¬ G^R" is akin to Anderson's definition of weak permission without the alethic operator M: (p Λ¬***S***).[16] We can retain the same name here as

16 The original formulation is different. It is symbolized as follows: 'Pp = $_{df}$ M(pΛ¬***S***)'. It says that it is possible that p is the case and yet there

well: *weak permission* = ($a \wedge\neg G^R$). It can be used to define prohibition:

$$Pa = a \wedge\neg G^R$$
$$\neg Pa = Fa = \neg(a \wedge\neg G^R)$$
$$Fa = (a \rightarrow G^R)$$

We can also use either permission or prohibition to define obligation. In other words, inter-definability thesis is possible within D-model as well. However, there is no mechanism by which we can use obligation or prohibition to define deep or open permission. Is it possible to have counter-part of strong permission in the D-model? The answer is far from certain. However, taking clues from von Wright's definition of strong permission, we can define a similar logical structure within the D-model. For instance, we can define a type of permission without the alethic operator N. It will look like this: ($a \rightarrow \boldsymbol{I}$).[17] It may be noted that ($\neg\boldsymbol{S} = \boldsymbol{I}$) and so by substituting '$\neg\boldsymbol{S}$' by '$\neg G^R$' (and there is no reason why it cannot be done so), we can define a permission in the D-model which may be termed as *strong permission*.

iii. Strong permission: $(a \rightarrow \neg G^R)$
$= \neg(a \Lambda G^R)$ [By equivalence]

We cannot use strong permission to define prohibition or obligation. It is obvious from the above that both weak and strong permissions even in our model have no commitment towards bridging P-gap. They are defined in relation to R-gap. This has implication. The concept of permission within SDL is unable to account for every aspect of permissive norms. In contrast, D-model not only accommodates standard definitions

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is no sanction or penalty. Put it differently, 'it is permitted p' means that one may escape punishment by bringing about p.

17 The original formulation of strong permission by von Wright uses strict implication: $N(p \rightarrow \boldsymbol{I})$.

or classical definitions of permission but also gives new categories of permissive norms. We have seen that permission is basically defined in relation to the performance of a to bridge P-gap; (here we are referring to permissive norm, especially deep permission). It is silent on the non-performance or forbearance of *a.* However, by law of transposition, it is clear that forbearance of a implies non-creation of P-gap. Their equivalence can be shown as follows:

iv. $(G^{P+} \rightarrow a) \leftrightarrow (\neg a \rightarrow \neg\, G^{P})$

Weak permission even in our model is different from simple permission though they are defined in relation to R-gap. If we look at their structures from the framework of D-model, their difference is clearly visible (see below):

v. Weak permission: $P_{(w)}$
$P_{(w)}a =_{df} a \wedge \neg\, G^{R}$

vi. Simple permission: $P_{(s)}a$
$=_{df} (a \vee \neg\, a) \rightarrow \neg\, (G^{R} \vee G^{R+} \vee G^{p+} \vee G^{P})$

From the above formula (i.e. simple permission), we can derive the following:

a. $a \rightarrow \neg\, (G^{R} \vee G^{R+} \vee G^{p+} \vee G^{P})$
b. $\neg\, a \rightarrow \neg\, (G^{R} \vee G^{R+} \vee G^{p+} \vee G^{P})$

Neither (v) nor (a) nor (b) is an equivalent expression of weak permission. However, we can show that $a \rightarrow \neg\, (G^{R} \vee G^{R+} \vee G^{p+} \vee G^{P})$ entails $(a \rightarrow \neg G^{R})$. That is, simple permission entails strong permission. The derivation is as given below:

1. $a \rightarrow \neg\, (G^{R} \vee G^{R+} \vee G^{p+} \vee G^{P})$
2. $a \rightarrow (\neg G^{R} \wedge \neg G^{R+} \wedge \neg G^{p+} \wedge \neg G^{P})$ by *de Morgan's* law
3. $\neg(\, a \wedge \neg\, (\neg G^{R} \wedge \neg G^{R+} \wedge \neg G^{p+} \wedge \neg G^{P}))$ by equivalence
4. $\neg\, a \vee \neg\neg(\neg G^{R} \wedge \neg G^{R+} \wedge \neg G^{p+} \wedge \neg G^{P})$ by *de Morgan's* law
5. $\neg\, a \vee (\neg G^{R} \wedge \neg G^{R+} \wedge \neg G^{p+} \wedge \neg G^{P})$ by double negation

6.	$(\neg a \vee \neg G^{R}) \wedge (\neg a \vee \neg G^{R+}) \wedge (\neg a \vee \neg G^{p+}) \wedge (\neg a \vee \neg G^{P})$	by distributive law
7.	$(\neg a \vee \neg G^{R}) \wedge ((\neg a \vee \neg G^{R+}) \wedge (\neg a \vee \neg G^{p+}) \wedge (\neg a \vee \neg G^{P}))$	by associative law
8.	$(\neg a \vee \neg G^{R})$	by simplification law
9.	$a \rightarrow \neg G^{R}$	by (material) equivalence

The foregoing discussion tells us that inter-definability thesis of deontic modalities will not work.

A note on Deontic Heaven: The unique desirable world

In Kripke's possible worlds model for DL, there is no discussion of the unique world that stands out as the best of the bests, though, in principle, it can be assumed that there is such a world. In contrast, in D-model, the structure itself provides us with a language to talk about the unique desirable world – Deontic Heaven (including Deontic Hell which is another unique world). We assume that the highest number of permissible actions is actualized in this world and so there is no P-gap that needs to be bridged from the perspective of Deontic Heaven. This has interesting implications and so we will turn our attention on this point.

We noted earlier that for a person striving to become morally perfect, there will not be any difference between bridging P-gaps and eliminating R-gaps. Both come to her as obligations. A similar thing happens when she becomes a morally perfect person and finds herself in Deontic Heaven. There will be neither R-gap nor P-gap to bridge. Technically speaking, it is true that $(Op \rightarrow p)/(Oa \rightarrow a)$ and $(Pp \rightarrow p)/(Pa \rightarrow a)$. Reflexive property holds for both obligation and permission.

There is no permissible act which is left unrealized in this world. What is more interesting is that there will no longer by any permissive norm since there is no P-gap. There is no P-gap because all the desirable states of affairs are actualized in this world. This is significantly striking in that a similar observation was made by Follesdal and Hilpinen (1981: 2-5) regarding Mally's *deontik* system. From a set of axioms (six in all), it took them twenty one steps to derive this theorem:

$$\vdash Op \leftrightarrow p$$

The theorem expresses the equivalence of 'ought' and 'is'. This finding was considered 'strange' by Mally himself and 'fatal' to Mally's system by Follesdal and Hilpinen (1981: 5).[18] However, viewed from the perspective of D-model, it ceases to be strange or fatal. It ought to be kept in mind that for Mally, 'ought' has the same meaning as willing or desirable: what is desired[19] at every situation may be considered as obligatory in his system. If we assume that his system is meant for those who are striving to become morally perfect people, then in the language of D-model, bridging P-gap is not omissible but obligatory as noted above. In other words, Mally's ought can also be interpreted as permission. If this is allowed, then the above theorem - $Op \leftrightarrow p$ – may also be read as $Pp \leftrightarrow p$. That means, what is permissible and what is actual are equivalent. It may be helpful to note that whatever is there in the desirable worlds is permitted or desirable in the first place. In short,

18 Follesdal and Hipinen are of the view that the 'fatality' occurred due to Mally's failure to distinguish between logical implication and 'if-then' conditional sentence (material implication). He also points out that if this theorem is allowed, then Mally's *deontik* system will be reducible to basic propositional logic; (Ibid. 5).

19 Mally uses the term "required". However, I took the liberty to replace it by "desired" because his logic is a logic of desire and so the central idea of Mally's philosophy remains unchanged.

this particular derivation (theorem) in Mally's system is not as strange as it looks when we look at it from the perspective of Deontic Heaven.

The idea of Deontic Heaven is analogous to Kant's *kingdom of end.* In his moral philosophy (1785), Kant talks about '*holy people*' whose actions are not influenced, regulated or determined by external elements to perform good action or duty. Performance of good action comes naturally and spontaneously out of reverence for law and out of good will as an autonomous agent (*holy will* to be more precise). Similar thing will happen to moral agents in Deontic Heaven. This has implication as well. In this world, the question of punishment and justice will simply be rendered meaningless since they are basically defined in relation to R-gap. Certain theory of social justice which can be explained in relation to P-gap too will become obsolete. The reason is that there is no better world in relation to a referent world (Deontic Heaven) and in relation to which we can conceptualize P-gap. The referent world and the ideal or desirable have become identical. That is, there will not be any difference between the desirable world and the referent world. Leibniz's principle of the *identity of indiscernibles* will be applicable in this case; or to use the language of function, an identity function has been successfully defined from the argument set (desirable world) to the value set (referent/actual world). In this world, it will become meaningless or redundant to use a deontic expression involving permission. We can use an analogy to elucidate this point: It will be like telling a married woman "you *may* get married." To be using certain deontic expressions in Deontic Heaven may even become embarrassing. Perhaps, a Chinese proverb may be more illuminating: "To instruct a wise man is like showing the sun with a torch light."[20]

20 A very similar idea was sketched by von Wright regarding the relation of norms and desires. He even uses the notion of gap that exists

We have seen the equivalence of 'Pp ↔ p' in Deontic Heaven. What about obligation? Can we also claim the equivalence of obligation and actuality: 'Op ↔ p'? The answer is in the negative. How about 'Op → p'? In some extended system of SDL, 'Op → p' can be shown to be valid; that is, the relation amongst the ideal worlds is secondarily reflexive (Chellas 1980: 194). In D-model, reflexive relation holds amongst all the desirable worlds as well. The validity of this axiom can be shown as follows (following Beth's tree method):

1.	$Op \rightarrow p$	{Assumption}
2.	$[Op \rightarrow p]_0$	{ 'Op → p' is in the referent world = 0}
3.	$\forall_w (R_{w0} \rightarrow p \in w) \rightarrow p \in 0$	{quantifying, w is accessible from 0 }
4.	$\neg [\forall_w (R_{w0} \rightarrow p \in x) \rightarrow p \in 0]$	{negation of assumption}
5.	(a) $\forall_w (R_{w0} \rightarrow p \in w)$	{negation of implication, stacking }
	(b) $\neg p \in 0$	{variable renaming}
6.	$R_{00} \rightarrow p \in 0$	{variable renaming, 5a }
	(a) $\neg R_{00}$ (b) $p \in 0$	{implication, branching}
	X	{6b contradicts 5b, branch closed}
7.	$\forall_w R_{ww}$	{reflexive, assumption}
8.	R_{00}	{variable renaming}
	X	{8 contradicts 6a, tree closed}

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between want and must (ought) saying that "the wider the gap between the *must* and the *want to*, the more prominent the *must*; and if there is no gap at all –meaning that we do the act from sheer inclination – then there is no autonomous necessitation of the will either" (von Wright 1963a: 172).

We know that whatever is there in the desirable worlds is permissible. We also know that obligation implies actuality. However, we know that not everything that exists in Deontic Heaven is obligatory. Therefore, 'Op ↔ p' is not valid in D-model or in Deontic Heaven. Theoretically, we can distinguish permissible act from obligatory in Deontic Heaven by using a simple criterion: for any *a*, if *a* is performed in all the desirable worlds, it is obligatory while for any *a* such that it is absent in at least one desirable world, it is permissible but not obligatory. So we know that there is at least one *a* which is true in only Deontic Heaven and not in any other desirable world. This *a* is permissible and not obligatory. As a matter of fact, it is this *a* (in conjunction with other permissible acts if any) which makes a desirable world the unique desirable world.

We have maintained that both obligation and permission imply actuality. We also suggested that it will be odd or strange, and probably even insulting, to use deontic expressions involving obligation and permission in the Deontic Heaven since everyone is morally perfect agents. Everyone does exactly what is desirable and no one does any undesirable thing. What about the status of prohibition or prohibitory norms in Deontic Heaven? Going by D-model, prohibition is relevant. The reason is that even in Deontic Heaven or any desirable worlds, a morally perfect agent or Kant's holy person will be able to conceive undesirable worlds. In other words, as long as we can conceive of undesirable worlds, we can also conceive of R-gap and so prohibition will continue to be relevant even in Deontic Heaven.

Ontological issues of deontic modalities

We raised a question in the previous chapter if the difference of deontic modalities is a matter of quantification in relation

to the possible world – that is, if 'p' is not true in any ideal world, it is prohibited; if true in some worlds, then permitted and if true in all the worlds, then obligatory. We have some problem with this and also partially offered our reasons as well. Moreover, the formal structures of deontic categories that we represented with the help of D-Model clearly bring out the difference. We will revisit this issue for more clarity and for the sake discussion. If we appeal to Kripkean semantic model, then it is correct to say that their difference is one of number essentially. The model works well for alethic logic. In it, the question of intention or goal or value does not arise and so the differences of alethic modalities can be fixed extensionally by looking at the possible worlds – that is, by observing if 'p' upon which alethic modalities are applied is true in any possible world or not and if true, in some or in all the worlds, we can determine the modal status of 'p'.

However, in DL, the answer to the above query is not straightforward. Any straightforward answer would result in committing the *naturalistic fallacy*. Also in the previous chapter, we noted that 'facts' in the deontic worlds need interpretation. So what *is* in the world and what *is not* in the world is subject to interpretation. However, assuming that number determines deontic modalities, let us do a thought experiment: In all the ideal worlds, people would behave well towards their neighbours and so they would be helping one another in times of need. Would that make it obligatory to help one another? Let us try a more concrete one: right to vote. Given an ideal situation in all the ideal worlds, everyone would be exercising their right to vote. Would that make it obligatory? Going by the possible worlds model, this has to be the case. How about health related issues like exercise or healthy diet? Will they too become obligatory?[21] Many more

21 In relation to D-model, they will not be obligatory in that non-performance of exercise will not create R-gap for instance.

examples involving rights and other ethical duties can be cited but that is not the point. We have considered problems related to this in the earlier chapter and so we will not repeat them here.

The above observation is related to another important issue in deontic logic – *the independence of deontic modalities*. Though in the axiomatic system, owing to inter-definability thesis, any deontic operators can be treated as primitive, in the other contexts, the definition of permission as 'absence of prohibition' is being standardized. In other words, it has no independent status. The concept of permission is normally treated as subsidiary or derivative in nature. In DL, the term "deontic" from where this branch of logic derives its name stands to testify the centrality of ought or obligation. The centrality of obligation in deontic studies is aptly captured by Bengt Hansson, "The axioms are formulated in O and one may regard SDL as a system exclusively about obligation if one is not satisfied with the weak senses of permission" (Hansson 1969: 382). Somehow in normative studies, obligation is generally treated as more basic or fundamental. Its synonyms, such as "ought" or "duty" or "imperatives", have occupied the central focus of most ethical systems. For Kant, deontic ethics or deontological ethics is the definition of ethics itself. Such a view in relation to permission is also largely held by legal thinkers in legal studies. For instance, Alf Ross writes:

> Telling me what I am permitted to do provide no guide to conduct unless the permission is taken as exception to a norm or an obligation… I know of no permissive legal rule which is not logically an exemption modifying some prohibition, and interpretable as the negation of an obligation (Ross 1968: 122).

At this point, even the view of von Wright is not very different from the others we have just noted above. The idea of sanction is not only at the back of his mind while defining norms but also, it is used as the basis for determining the normative status of norms. He writes,

> Prohibition and obligation are somehow ontologically more "basic" or "real", it would seem, than permissions. This presumably is connected with the fact that neglecting obligations and breaking prohibitions is normally connected with "sanctions" of one form or another such as legal punishment or moral reprobation (von Wright 1983: 136).

Contrary to the above views, in D-model, the relative independent status of all the basic deontic modalities is maintained. Permission is defined in relation to P-gap unlike the other two which are defined in relation to R-gap. As such, D-model provides a robust foundation to the concept of permission.

A critical appraisal of D-model

The idea of D-model is not entirely novel. Pre-theoretic ideas are already available in the literature. Central to the conceptualization of the D-model is the notions of desirability and in relation to it, we have introduced the notions of undesirable worlds, R-gap and P-gap, including Deontic Heaven and Deontic Hell. From Anderson and other legal thinkers, including von Wright, we got a suggestion that norms are strongly linked to sanction. This insight is used to develop the ideas of R-gap and undesirable worlds. Unlike von Wright and Anderson, we had no qualm in accepting axiological elements in developing the D-model. Anderson is correct in maintaining that "the only formal requirement for logical purposes is that something unfortunate attend failure to fulfill an obligation, and that that thing be in principle avoidable" (Anderson 1969: 111). He writes:

> Nothing in the formal reduction requires that the 'bad thing', occasioned by an agent's bringing about a forbidden state-of-affairs, be the punishment of the agent. May be the 'bad thing' is that he was not doing his *Willing* in the way Kant thought should; or may be the 'bad thing' is that decent man remark it

> and are moved in tears; or that the agent was not promoting the greatest good for the greatest number; or that God does not like it (Anderson 1969: 111).

So fundamental is the idea of sanction for the understanding of norms that Kelsen (1978) even introduces the idea of transcendental notion of sanction, something like the ideas of heaven and hell, to accommodate his broad view of sanction. He develops this idea to advocate his theory of punishment vis-à-vis, retributive theory of punishment. Reward and punishment may be called "sanctions" (Kelsen 1934: 24).

The idea of sanction is logically posterior to the idea of action or norm. As an act or event, sanction has no causal relation with action. However, any action has consequence – desirable or undesirable or indifferent – which is translated in D-model as R-gap or P-gap. These gaps are formal in nature and so any instantiation will require interpretation. Depending on the interpretation, appropriate sanction may be issued. In other words, interpretation is indispensible for understanding the meanings of norms and also administration of justice. To borrow a phrase from Kelsen, "*The norm functions as a scheme of interpretation*" (Kelsen 1934: 4). He goes on to add that 'norm is the meaning of an act by which a certain behaviour is commanded, permitted, or authorized' (Kelsen 1934: 5). This is interesting in that the idea of action is integrated into the conception of norms. To return to our point, the notion of sanction is derivative while that of norms is basic or primary. Also central to the idea of D-model is the fact that action has inevitable consequence which is defined in relation to the notion of deontic gap. The interpretation of deontic gap is inherently and intricately related to axiological and praxeological concepts.

Ideas or ideals alone will not work in logic unless they are captured in the language of logic. von Wright has been a great help in this direction. For instance, he identifies three different

cases of "*ought"* and schematically presents them as follows (von Wright 1969: 101):

i) I ought to do T = unless I does T, he becomes liable to punishment in some normative order of which he is a subject.
ii) I ought to do T = unless I does T, he will fail of some aim of his.
iii) I ought to do (be) T = unless I does T, he does not count (qualify) as an agent of a certain category.

The explanation to the above classification is as follows: "The first means a necessary condition of immunity to punishment; the second a necessary condition of attainment of an aim (end); the third a necessary of falling under a concept" (von Wright 1969: 101). Apart from characterizing and relativizing 'ought' to a context, it can be pointed out that all the three 'oughts' signify relation of *necessary conditionship* in such a way that failure to satisfy the condition will result is some disqualification or failure.

With some modifications, all the three notions of 'ought' can be explained in relation to the D-model. With respect to the first case of ought, it can be said that R-gap will be created unless something is done as a result of which punishment is to be expected. The second is slightly complex. It may be understood either in relation to bridging R-gap or P-gap. Both are required to realize a desirable end. The third case is more ambiguous. However, we can relate it to bridging P-gap since it is not about something bad happening but desiring to become something or to achieve a status. Let us illustrate this point with an example: If some agent wants to marry, for instance, she ought to qualify the minimum age, (prior norms), otherwise she shall not be allowed to marry. Desire for marriage created the necessary criterion of age.

On the other hand, we have von Wright who has this to

say in favor of a desirable world (or undesirable world for something we do not wish or value):

> Saying that something ought to be is often elliptic… The elliptic saying that something ought to be usually also evinces a positive attitude ("pro-attitude") to the end in view. The end is something we value or wish for or are anxious to promote (attain) – and therefore we say of that which is required for the end that it ought to be or be done (von Wright 1983: 199).

The thought articulated in the above passage is arguably the echo of Mally's *deontik* logic, the logic of willing or desire. Though most philosophers (moral philosophers especially) and logicians employed the idea of desirable worlds (ends or goals) to formulate their ideas of obligation or ought (as is evident in the above passage also), we have on the contrary, employed the same concept to articulate our ideas of permission. Our departure is a significant one in that, among others, it justifies the relative independence of deontic modalities as pointed out before. It brought into sharper focus the importance of permissive norms.[22] It is highly possible that the notion of 'ought' is confused with the notion of necessary and sufficient conditions. We have partly seen this confusion in Andersonian reductive schema as well. The fact that something, say p, is necessary condition for something else, say q, does not mean that p is obligatory in the normative sense. At best, it is a technical ought as noted earlier. The

22 Contrary to others who prioritize 'ought' over 'may', D-model can be used to argue that 'may' or 'permission' is more basic and natural. It is related to P-gap which is defined in relation to the desirable worlds. Other norms viz., prohibition and obligation, are there to ensure or secure the realization of desirable worlds. Even sanctions or secondary norms gained their significance in relation to P-gap. It may be noted that rights and privileges, including pursuit of happiness, are directly related to the desirable worlds in relation to which the concept of P-gap is defined.

notions of *necessary* and *sufficient* conditions are not limited to the definitions of obligatory or prohibitory norms. We have used it to define permissive norm in the context of the D-model. To sum up the above points, what D-model hopes to achieve is this: to *uncover* the formal relations that exist amongst values, norms and facts, things which are otherwise generally kept apart and studied in isolation.

Despite its formal appeal, D-model is better understood as a metaphor and not as a theory or as a kind of formal model like Kripke's semantic model. It may be noted that Kripke's possible worlds model is originally meant to provide truth conditions to determine the truth values of alethic sentences; alethic sentences are descriptions of states of affairs in possible worlds and their truth-values can be *verified*, at least in principle. As such, the states of affairs in the possible worlds would determine the truth values of alethic sentences. If we take Kripke's model for DL, then the valuation of deontic sentences would be determined by states of affairs in the *external* possible worlds. The verifiability principle will apply for deontic sentences. However, in deontic context, the verifiability principle suffers a lot of problems because the desirability or undesirability of a state of affairs depends on a number of factors or variables such as agent, occasion, etc. which cannot be fully determined extensionally. In contrast, D-model will not face similar problems when it is treated as a metaphor. A metaphor is judged by its power of illumination. As such, just like any other metaphor, D-model can die a natural death if it has outlived its purpose. Moreover, it is not meant to explain every feature or function of norms being a metaphor. Our use of certain formal concepts or tools is primarily for reasons of economy and clarity.

It follows from the above that the idea of the gap in D-model does not correspond to any specific thing in the world. It is not to be treated like Anderson's notion of sanction (which

we represented it as ***S***) which was introduced to reduce DL into AL. The employment of material implication for the definitions of deontic categories cannot be tested empirically to determine their truth-values or their meanings. Though the idea of the gap and the need to bridge the gap or block the gap through actions, performance or forbearance, are used to define deontic categories, in actuality, there is no method by which we can check if a gap has been successfully bridged or blocked. D-model appeals to our intuitive thinking about norms rather than deriving it from our experience of the world or from formal manipulation of symbols. The central focus of the present endeavour has been to seek conceptual clarity involving deontic concepts and expressions and metaphors can do the same function. So instead of taking the standard approach in DL for the analysis of norms, we borrowed expressions and tools of DL and use them as metaphors to express our thoughts about norms. Definitions using the D-model are not *descriptions* of formal structures underlining deontic expressions but rather *constructions* to express our thought about norms. Put it differently, deontic expressions are not empirically testable. Likewise, deontic gaps do not correspond to anything in particular in the actual world. As such, they are persuasive definitions and not theoretical definitions, like definitions in mathematics, to capture the essence of norms.

Concluding remarks

One of the main objectives of this chapter is to explore the explanatory power of D-model – both from within the formal study of norms and from outside the formal study of norms. From within, we have we have gained interesting perspectives and insights on issues like inter-definability of deontic modalities, reduction thesis of DL into AL and various

issues related to permission. The model enables us to capture not only various structures of permissive norms but also the relative independence of norms. In classical studies of norms, permission is seen as subsidiary or secondary. In the process we also noted that the classical classification of permission into weak and strong permissions is one-sided – it is defined in relation to immunity from sanction or R-gap in the context of D-model. As such, we have noted that it can be quite odd to say that one performs a permitted act in order to avoid punishment. D-model, by defining permission in relation to P-gap, enables us to understand the other aspects of permission. The notion of deep permission cannot be represented in the standard Kripkean model. However, D-model is able to intuitively capture all the deontic modalities of SDL including optional and omissible.

Deeper reflections on D-model will enable us to see the inter-connection of primary norms and secondary norms. While formal studies of norms seem to focus more attention on primary norms, and rightly so, informal studies of norms, especially jurisprudence, seem to focus more on secondary norms. Using D-model to characterize norms into three types, viz., repressive, restorative and prospective, has enabled us to understand the limitations of both formal and informal study of norms and the need to address issues in norms from a more integrated or holistic perspective. D-model has enabled us to understand, for instance, reduction thesis in a new light.

Going further, we have seen how norms in legal studies, especially theories of punishment and ideas of justice, can be associated with R-gaps while moral studies can be associated with P-gap. An attempt is made to explain how moral ought is related to P-gap through necessary and sufficient conditions. Moral ought, in this context, presupposes moral agents who aspire to become morally perfect. Next, we have argued that in Deontic Heaven, permissive norms will become redundant by

justifying the equivalence of 'Pp' and 'p'. Instead of becoming 'strange' or 'fatal', the equivalence appears to reveal something about the nature of norms and desirability – without desirable worlds, norms of certain type will cease to make sense.

Finally, we noted that D-model is not a novel idea in that pre-theoretic ideas related to D-model are anticipated by various philosophers and logicians at difference contexts. We attempted to organize them in a systematic manner. We explained that D-model is not really a formal model in that it is not an attempt to either discover the underlying logical structure of deontic modalities or to describe the structures of norms as such. On the contrary, D-model is presented as a metaphor for understanding the nature and structure of norms using formal tools and insights. It is not a description of the reality underlying norms but a construction to understand norms. D-model appeals to our intuitive thinking about norms (and in that sense, it is foundational) rather than deriving it from experience of the world or from formal manipulation of symbols.

Conclusion

"Logic has a wider reach than truth"

(von Wright 1957: vii)

Introduction

This chapter highlights and reinforces the reason for undertaking a conceptual study. Accordingly, its focus is more on the philosophical assumptions and implications. A recurring theme in all the chapters is to show that the lack of basic conceptual clarity of key concepts has caused avoidable problems in deontic logic. It is mainly against this backdrop that D-model has been developed to understand the structure and function of deontic categories. So we maintain that D-model is primarily a conceptual tool in that it is the result of a philosophical inquiry into the nature of deontic categories. To this extent, we even maintain that D-model is a metaphorical model though it uses formal tools of reasoning and representation. In part, we justify the present study by stressing that a good philosophical perspective of deontic logic is sure to help us gain sharper and deeper understanding of deontic concepts, expressions and reasoning. This is all the more urgent in deontic logic because normative thoughts are concerned with human thinking about action in the world and not primarily to describe the structure of world unlike first

order logic and its extensional systems. In this concluding chapter, we also revisit the main concerns of the present work in different chapters with additional observations and also made some speculations about the significance and limitation of this study.

Understanding and delineating DL

Barely three decades after the publication of von Wright's seminal article in 1951 that gave birth to modern DL, Geach published an article titled, "Whatever has happened to deontic logic?" (1982). This is telling compared to Aristotelian syllogism, for instance, which has survived thousands of years. Of course, DL is not death or outmoded. There are many still working in the areas of DL and there are no indications that it will be done away with anytime soon. The present study reinforces this point. However, there seems to be a catch in the title of Geach's article. One of the central arguments of his article is that DL suffers from many problems due to embellishing deontic modalities with the notion of possible-worlds semantics. He argues:

> "[T]hat various well-known paradoxes of deontic logic have puzzled people only because of two simple mistakes: thinking of Sein-sollen instead of the obligation of agents, and forgetting that obligations arise and are extinguished in time. These errors have been made hard to detect by the use of an unsuitable formal system [i.e., possible worlds semantics] (Geach 1982: 44).

This point resonates well with some basic presuppositions of this study. To problematize possible world semantics has been an important part of this objective too. However, the objective of this work is not to dismiss possible worlds semantics for DL *per se*. Despite some perennial problems, Kripke's semantics in particular and DL in general is here to stay. We have noted that the model can work well for the logic

of *seinsollen* or descriptive norms. Even the axiomatic study of DL has broadened our understanding of how reasoning in normative systems ought to be like. However, when we consider DL as a logic of norms or the logic of *tunsollen*, then Kripke's model theoretic approach becomes problematic as argued in the present work.

If we want to use logic to model how we ought to reason correctly, then it is important to see to it that the basic features or elements of reasoning are represented accurately. However, the contention of the present study is that such a task is found seriously wanting in the context of DL. Much of the problems in DL cropped up because either some basic elements were missing or there was insufficient philosophical discussion to achieve conceptual clarity of the basic concepts of DL. For instance, after his 1951 work, von Wright realized many difficulties in his 1951 system and kept working to resolve the problems in his works, especially works carried out in *Norms and Actions* (1963b), *An Essay in Deontic Logic and The General Theory of Action* (1968) and *Practical Reasoning* (1983). If we carefully examine the kinds of issues undertaken in these works, we will notice that von Wright himself kept vacillating on how to conceptualize DL. On the one hand, he seems to be bringing DL closer to normative practices (*tunsollen*) by considering the nature of human action and desire, legal and moral theories, etc. and on the other hand, he seems to be filtering or doing away these very axiological and praxeological elements to project his DL as a standard logical system (*seinsollen*), a branch of modal logic which can be legitimately considered as a proper extension of FOL. Somehow formal consideration has favoured the descriptive approach (*seinsollen*) to DL and this resulted in ignoring or overlooking some of the basic features of norms like intention, desire, action, authority, etc. Consequently, this approach, with Kripke's model at the centre, has failed to capture or model

normative reasoning adequately. The basic reason being that 'truth' constitutes the chief concern for the model theoretic approach. Consequent upon this approach has created a kind of 'gap' between formalization of deontic reasoning and actual consideration of how reasoning in normative system 'ought' to work. Raz aptly observes, "Much of the work in deontic logic, useful as it is, is of marginal interest to those concerned with practical reasoning because it is altogether oblivious to the problems presented by conflicts of reasons" (Raz 1978: 11). Probably, it is for this reason that DL has failed to make desirable or effective impact on certain section of the logical audience like Geach or Castaneda. Probably, one way of addressing this question of modelling a normative reasoning can be taken up by looking at the logic of *tunsollen* more seriously rather than appropriating it to fit into the logic of *seinsollen*. The gap between the SDL and the reasoning 'practically considered' may be explained by recognizing the gap or difference between the logic of *seinsollen* and the logic of *tunsollen* and then working out a way to bridge them, a wider kind of framework within which we can bring the fundamental ideas of both the systems together. Though, no attempt is undertaken towards this direction in the present work, nonetheless, D-model is constructed with hope to bridge both the kinds of gap we just noted here. Traditionally, this task of bridging gap is understood in relation to description and prescription – the gap between them known as "is-ought" gap. Probably, there is more connection between them than the difference we often emphasize to make our point. For instance, Kelsen comments on their relation, "One says: an *is* conforms to an *ought*, which means that something is as it ought to be; and one says: an *ought* is "directed" toward an is – in other words: something ought to be (Kelsen 1978: 6). In a sense, he sums up beautifully the whole idea and objective of bridging gaps within the framework of D-model. Norms perform this

function. D-model represents this relation between 'ought' and 'is'. We intervene in the world through action to actualize the ought (is: desirable world) and the norms (ought) help us to realize the desirable world (is). (Note that in Deontic Heaven ought (desirable) and is (actuality) collapsed into each other).

D-model and deontic values

We have noted that deontic expressions can be assigned truth values in certain context. This is in part due to the fact that norms also serve informative function as well. However, the general idea associated with norms is not informative function they serve but with what may be termed as 'normative force', the idea that requires or expects an agent to perform or forbear an act in a given situation ideally considered. Norms are there to regulate human behaviour or action and so the logic of norms cannot be reduced to logic of willing or desire; it cannot be reduced to the logic of *seinsollen*. Though these two logical approaches to norms are related, they are not reducible into each other. That is why there is a need to talk about the logic of *tunsollen*. It may be mentioned in passing that there are different approaches to DL and some of them are equipped to address and represent the concerns or issues of the logic of *tunsollen* better; for instance, dyadic logic (von Wright 1956, 1965; Rescher 1958), relevance logic (Anderson 1967), input-output logic (Makinson and van der Torre 2000, 2001; Boella and van der Torre 2003a, 2003b). Some of the systems just referred to do not require truth values for normative reasoning at all.

The concern at hand is not so much about reasoning with deontic expressions but about the structures of deontic expressions. Whether or not we are interested in the semantics of DL, it is important to understand and describe the structures of deontic expressions. The importance of

such a task is akin to the kind of philosophical attention given to understand proposition, especially by modern analytic philosophers. To cite some examples, Russell's "On Denoting" (1905) is a path-breaking work that helps us to understand the structure of proposition involving definite description; likewise, Kripke's *Naming and Necessity* (1981) is another equally significant work to understand the nature and structure of modal sentences. We noted above how von Wright grappled with the similar issues and challenges in the context of deontic expressions in his works following the development of his system in 1951. Somehow, semantics and structure of sentences cannot be separated. And to understand the nature of their relationship, philosophy is needed. In other words, sound formalism is a consequence of sound philosophical analysis. The present work has been inspired and guided by similar thought or objective – to understand the structure of deontic sentences.

The idea of possible worlds is a powerful conceptual tool which can be used for doing many philosophical activities. It is for this reason that we employed the idea of possible worlds to construct D-model. However, D-model is developed not to offer an alternative model to Kripke's semantic model. Our interest is more basic and so it is being developed with the objective of attaining conceptual clarity of deontic modalities essentially. We maintained that the model is a metaphorical model and not a theoretical model. Accordingly, the structures of deontic expressions mapped with the help of D-model are not amenable for empirical verification. In other words, they are not meant to be verified to be true or false literally/empirically. In fact, we even suggested that the model may be used to assign prescriptive values to actions. However, we also pointed out that validity is more suitable to be used as a value of norms. This was also advocated by A. A. Martino (see introduction, 1982). Validity in this context is not about

correct derivation of conclusion from the premises. It has to do with the correct application of norm to a given act or act-category. In chapter one, we noted the objection to this suggestion by Kelsen who thinks that validity can become quite subjective or relative. However, this objection can be significantly suspended if we interpret deontic expression with reference to D-model. Given D-model, we can say that a norm is valid if and only if it is compatible with the realization of a desirable world and invalid if it is otherwise. Specific deontic expression can be assigned appropriate value with reference to its definition; for instance, a permissive norm is valid if it satisfies the conditions of the definition like bridging the gap or not creating a gap. However, this point is merely suggestive or explorative in nature and it is beyond the scope of the present study to examine further this line of thought. But this suggestion may throw some light on the obscure remark of von Wright: "Logic has a wider reach than truth" (Von Wright 1957: vii).

Espousing permissive norm

It has been made clear in the present work that permission needs to be given more attention it deserves. Traditionally, it is not given serious attention in various branches of normative studies such as deontic logic, ethics and jurisprudence. It is seen either as a derivative concept or a subsidiary concept. However, in the modern studies of norms, permission has gained more importance but the nature of permissive norms is far from conspicuous. On the problematic nature of permission, von Wright writes "The independent status of permissive norms is open to debate. The problems in this region are, it seems, more urgent to a theory of prescription than to a theory of other types of norms" (von Wright 1963b: 85). Even after more than three decades of normative studies

(taking the development of DL in 1951), he considers the concept of permission as the *Problem Child* of the philosophy of norms (von Wright 1999: 37).Torre and Boella write, "One of the reasons why deontic logic and legal studies are kept separate is the notorious problem concerning the definition of permission" (Torre and Boella 2003: 1). Though an aspect of permissive norm – human rights – got much attention in the more recent time, there is a tendency, for certain philosophical reasons, to study issues in human rights as opposed to or independent of duties and obligatory norms. Of course, the relation between rights and duties is not symmetric. From the perspective of human rights studies, freedom is more fundamental and obligations are secondary. But such exclusive approaches to the study of norms, despites some advantages, can be misleading and limiting at times.

D-model is an attempt to overcome this problem. It encompasses a wide mental canvass that cuts across disciplinary boundaries. Within this conceptual model, there is no reason why we should prioritize one prescription over the other. Each norm, presented as deontic modalities, has its place and function within D-model. The function and significance of each is defined in relation to deontic gap, P-gap or R-gap. P-gap and R-gap are not inter-definable and so the inter-definable thesis of deontic modalities will not work in this model. In other word, formal study of norms (SDL) which accepts inter-definability thesis is limited. It omits an important aspect of normative thoughts and studies. Ontologically, D-model puts permission on the same level with obligation and prohibition; permission enjoys relative independence much like obligation and prohibition.

In Kripke's model, perfect worlds are defined primarily in relation to obligation and prohibition – these are a set of worlds where there is total absence of prohibitions and total realization of obligations. In other words, these two norms

define perfect worlds and permissive norms are those which may or may not be in these worlds. In contrast, within D-model, the idea of permission enables us to talk about the 'unique desirable world' which we have termed it as Deontic Heaven. In Deontic Heaven, all the permissive norms are actualized and the fact of this actualization makes it better than any other members of the desirable worlds or ideal worlds (in the context of Kripkean model theoretic approach). The ability to conceptualize an ideal world in relation to permission vis-à-vis P-gap enables us to reflect on moral philosophy and moral pursuit. This is almost entirely absent in the standard approaches to deontic studies or normative studies in general.

Desire, norms and deontic worlds

We just noted the importance of permission in normative studies in general and deontic logic in particular. Permission which is defined in terms of P-gap is crucial for identification of Deontic Heaven. Conversely, we can also use it to define Deontic Hell – the undesirable world where no permissible act is actualized. In this world, no obligatory act is actualized and all prohibitory acts are performed. In other words, there is total chaos in Deontic Hell.[1] It has been noted by Chellas (1980: 194) that from the perspective of possible worlds semantics, the actual world is the worst possible world (or model) since obligation lacks reflexivity principle – there exist unfulfilled obligations in the actual world unlike all the deontic alternative worlds. However, from the perspective of D-model, our world (actual world) is not the worst possible world; there are n-deontic worlds which are worse than the actual world.

The above discussion opens up an interesting point with

1 This point reveals an interesting insight that the notion of chaos is a normative concept.

respect to D-model – it provides us with the vocabulary to classify deontic worlds and also to talk about deontic status of each world. Given any two deontic worlds, we can evaluate in principle which of the two is better or worse. This can be done by measuring the number of P-gaps and R-gaps. A related point is that Kripkean model is suitable for understanding norms from the perspective of state and jurisprudence. It revolves round R-gap. In this approach, even permission is defined in its weakest sense in relation to R-gap. Consequently, it is a very weak model when it comes to moral philosophy or ethics. In contrast, D-model can account for both ethics and jurisprudence. In this way, D-model has a rich explanatory power.

Unlike Kripke's possible worlds semantics which tries to keep away axiological and praxeological elements, D-model is constituted by both the elements. Even though, Kripkean possible worlds are qualified by "best" or "perfect", these terms are relevant only for the purpose of valuation. In contrast, D-model makes a much stronger claim that without the notion of desire or desirability, norms cannot be conceptualized. This particular point is made clear when we maintain the equivalence of p and Pp in Deontic Heaven. Since a deontic world better than the Deontic Heaven cannot be conceptualized, therefore, we cannot conceptualize P-gap and without it, permission cannot be defined. In short, norms will not make sense in the absence of certain axiological and praxeological terms. This is a radical departure from the standard approaches to deontic studies wherein praxeology and axiology are considered external to the definition and understanding of deontic modalities.

Towards a philosophy of norms

In the preceding paragraphs on permissive norms, we noted that polarization of norms between rights and duties or

between permission and obligation is commonly encountered in normative studies. Compartmentalization of studies in the name of specialization has its own advantages and limitations. It may even result in projecting complementary things as opposites. How do we reconcile this polarization of norms? Integrated approach to the study of norms may serve as an answer, at least to begin with. But for the integrated study of norms to be possible, we need a larger mental canvass which cannot be provided by any specific approaches or disciplines. And so we need to fall back on philosophy, call it philosophy of norms where we can bring together ethics, jurisprudence and deontic studies and study norms in relation to praxeology and axiology. There are certainly practical difficulties in bringing all these branches of study together under one common umbrella. Even to study one branch is challenging enough for that matter. However, to study norms in isolation can be more harmful and disadvantageous in the long run. We have noted above that there is a big gap between DL and jurisprudence. Besides, the emerging trend to undertake inter-disciplinary approach to addressing specific issue or problem is encouraging and suggestive. The present work is an attempt of some sort in this direction. The conceptualization of the model is made possible because of cross-disciplinary approach where we borrowed insights from jurisprudence, ethics and deontic logic.

Concluding remarks

The present study should not be mistaken as an attempt to undermine the importance of formal study of norms. Although, it has been maintained that the nature of the present study is philosophical in nature, it is undertaken with the same zeal and objective of a logical study – clarity and simplicity. Moreover, the central focus is on the deontic categories. The

underline idea is that conceptual clarity is required to build a formal system. Since discussions on deontic categories in the literature appear to be either too general or too discipline-specific, and often without philosophical depth, D-model is being developed and proposed to provide conceptual clarity of deontic categories across disciplines. The clarity D-model seeks to achieve is akin to illumination through the use of metaphors. It is not a theoretical model of the world (unlike Kripke's model) despite the fact that we use formal tools and the concept of the possible worlds. It is a metaphorical tool primarily to understand and express our intuitive ideas about norms and normative concepts, especially deontic categories, and secondarily to understand conceptual relations of deontic categories with other praxeological and axiological categories.

From the perspective of D-model, the conceptual relation of deontic categories with other categories is not an external one. That is why act-categories are internal to the definitions of deontic categories. The centrality of act-categories in the definition of deontic categories or modalities brings us back to the question of the logic of *tunsollen*. Normative studies, including DL, cannot digress from its concern for human action. It is inherently related with action in such a way that Kelsen even defines a norm as "the meaning of an act by which a certain behavior is commanded, permitted, or authorized" (Kelsen 1978: 5). Viewed from this perspective, D-model absolves itself from possible allegation that it is just a play of formal or philosophical concepts without implication on day today life. Whether it is one of correctly applying a norm to an action or one of creating a new norm, or one of normative reasoning, D-model can play a significant role. And finally, to exaggerate an important point metaphorically, D-model even provides us with a glimpse and an inspiration of what life would be like, for a morally perfect person, in heaven!

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