1-1-1975

# An analysis of the stone paradox.

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AN ANALYSIS OF THE STONE PARADOX

A Dissertation Presented

By

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Submitted to the Graduate School of the
University of Massachusetts in partial
fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

June                                    1975

Philosophy

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June 1975

ACKNOWLEDGEMENTS

ABSTRACT

In this dissertation I shall present an analysis of a very old argument which has come to be well known among both philosophers and non-philosophers. The argument is:

1) Either God can create a stone that He cannot lift or God cannot create a stone that He cannot lift.

2) If God can create a stone that He cannot lift, then He is not omnipotent.

3) If God cannot create a stone that He cannot lift, then He is not omnipotent.

4) Therefore, God is not omnipotent.

The argument, which has come to be known as the stone paradox, has often proven to be a frustration to the religious believer and a puzzlement to the philosopher. Despite this fact, the stone paradox has received very little careful analysis from any contemporary philosopher. It has received a fair amount of attention in the contemporary philosophical journals, but the treatment it has been given has generally been rather fascile. In this dissertation I plan to provide an adequate account of the stone paradox. By this I do not mean that I intend to provide an adequate account of all the crucial theological notions that lie behind the stone paradox, nor even that I intend to provide an adequate account of the nature of divine agency. Rather I intend to provide an adequate analysis of the logic of the argument of the stone paradox and a decisive answer to the question of its soundness.

This dissertation falls fairly naturally into three divisions. Chapters I-IV constitute what might be called "the Preparation". Chapter I will consider whether and why the stone paradox is of interest and

will lay out the plan of the dissertation in some detail. Chapter II will deal with the relationship between God and logical truth. Chapter III will settle on a definition of 'omnipotent' and provide some justification for that choice of definition. And Chapter IV will consider whether "God is omnipotent" is either provable or true by definition.

Chapters V-VII give a topical survey of the recent literature on the argument. Chapter V deals with the form of the argument, Chapter VI with the first premise, and Chapter VII with the third premise. There is no chapter on the second premise of the argument, since that premise has received no comment in the recent literature. It has been assumed to be innocuously true.

Finally, Chapters VIII-XI give my own analysis of the argument. In Chapter VIII I develop a formal language, with semantics, which is adequate for the purpose of giving representation to the argument of the paradox in full formality. Chapter IX gives the formal construction of the paradox and a reappraisal of the third premise on the basis of the formal construction. In Chapter X I provide a model of the language developed in Chapter VIII on which the second premise is false. Also in Chapter X, I consider those recent writers on the stone paradox who have supported its soundness, since obviously they and I cannot both be right. Chapter XI considers other possible dilemmas which may appear to grow out of my solution to the traditional stone paradox and shows that they can be handled by the same basic procedures used on the traditional paradox in Chapters IX and X.

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THE STONE PARADOX

Almost every student who has gone through an Introduction to Philo-
sophy course, almost every child who has gone through a few years of
religious education in Church, has at one time or another been bothered
by two very closely related questions: 1) Can God create a stone that He
cannot lift? and 2) Does it follow from either an affirmative or a neg-
ative answer to question 1) that God is not omnipotent? The second
question is clearly troublesome. (The first question is primarily of
interest only insofar as it leads to the second one.) It raises the
question of whether it is logically permissible to accept a fundamental
article of the Christian faith. This problem has come to be known in
philosophical and religious literature as "the stone paradox". While
it has long been the subject of considerable discussion, the stone para-
dox has received very little careful analysis. Where it has been the
subject of philosophical analysis, those analyses, as I shall argue in
later chapters, have been inadequate. It is my intention in this dis-
sertation to provide an adequate analysis of the stone paradox.

The basic paradox is as follows:

A. (1) Either God can create a stone which He cannot lift, or He cannot
   create a stone which He cannot lift.

   (2) If God can create a stone which He cannot lift, then He is not
   omnipotent (since He cannot lift the stone in question).

   (3) If God cannot create a stone which He cannot lift, then He is not
   omnipotent (since He cannot create the stone in question).

   (4) Therefore, God is not omnipotent.

As can be seen, nothing peculiar about God is involved in the argu-

ment. We could substitute any other name in place of 'God' throughout
the argument and obtain a similar result. Thus, while the argument, if
sound, shows that God is not omnipotent, it may be varied to show, again
if anything, that an omnipotent being of any kind is a logical impos-
sibility. However, this need not imply a denial of God's existence.
The minimal conclusion which must be drawn from argument A, if sound, is
that the notion of omnipotence against which the paradox is posed, a no-
tion drawn largely from medieval theology and philosophy, does not apply
to God.

I must note at the outset that the stone paradox is largely irrele-
vant to contemporary theology, especially contemporary protestant theo-
logy. (The situation is somewhat different among Roman Catholic theolo-
gians because of the continuing influence of medieval theology on the
Roman Catholic Church.) Among modern protestant theologians, I am aware
of no one who understands by 'omnipotence' any notion which would have
anything to do with a task of the sort posed by the stone paradox. As
typical of a more modern understanding of 'omnipotence', I cite briefly
from Gustav Aulen's The Faith of the Christian Church:

> From this point of view God's "omnipotence" is not the causality
> of the divine will in relation to everything that happens, but
> the sovereignty of love. ...
> If God's sovereignty has this character, what is then implied
> in the omnipotence of God? It is clear at once that we need not
> be concerned with a number of meaningless questions about God's
> omnipotence which have appeared even within theology. Can God
> do everything? Can he transform a stone into an animal? All
> such questions are beside the point and completely meaningless.
> They have nothing to do with faith. They are based on a con-
> ception of the will of God as entirely capricious, which fails
> to understand that it is here a question about the power of
> love and nothing else.[1]

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[1] Gustav Aulen, The Faith of the Christian Church, trans. by Eric H. Wahl-

This obviously warrants some explanation. Why does not the stone para-dox or some variant prove relevant when we view divine omnipotence as "the sovereignty of love"?

It would be a misunderstanding of this view to think that it leads to a stone-type paradox based on the question "Can God create a power of love so strong that He cannot overcome it?" Aulen's claim is that divine omnipotence does not have to do with "the causality of the divine will". It concerns, rather, the ultimate power of God's love. Perhaps the best way to understand this is by looking at the ways in which we do and do not speak of the power of human love. Imagine a lover uttering the following sentences to his beloved:

1) My love for you is so strong that I would do anything for you.

2) My love for you is so strong that I would climb the highest mountain for you.

3) My love for you is so strong that it can do anything.

4) My love for you is more powerful than a locomotive.

1) and 2) clearly are the sort of thing which a lover might say. 3) and 4) clearly are not. The power of love is not a power that does things, simpliciter. It is rather a power that motivates the lover to do things for the beloved. God's omnipotence, as the "sovereignty of love", is of this nature and not concerned with His general creative and active caus-ality.

Given this interpretation of divine omnipotence, the supreme nature of God's love is perhaps best exhibited in its ability to change the hearts of men and its ability to bring about God's forgiveness of man's

strom and G. Everett Arden, (Philadelphia: The Muhlenberg Press, 1948), pp. 143 and 147.

sins. I should like to illustrate the latter point with a story from
"The Gospel According to Saint Mark".

> He was preaching the word to them when some people came bringing
> him a paralytic carried by four men, but as the crowd made it
> impossible to get the man to him they stripped the roof over the
> place where Jesus was; and when they had made an opening, they
> lowered the stretcher on which the paralytic lay. Seeing their
> faith, Jesus said to the paralytic, "My child, your sins are
> forgiven." Now some scribes were sitting there, and they thought
> to themselves, "How can this man talk like that? He is blaspheming.
> Who can forgive sins but God?" Jesus, inwardly aware that this
> was what they were thinking, said to them, "Why do you have these
> thoughts in your hearts? Which of these is easier: to say to the
> paralytic, 'Your sins are forgiven' or to say 'Get up, pick up
> your stretcher and walk?' But to prove to you that the Son of
> Man has authority on earth to forgive sins," - he said to the
> paralytic - "I order you: get up, pick up your stretcher, and
> go home." And the man got up ... (Mark 2:2-12)

The motivation behind the shift in the notion of omnipotence is a
shift in the notion of divine agency. Since people first thought about
gods there has been a strong tendency to see gods on an anthropomorphic
model, only bigger and better. A part of this has been the tendency to
see divine agency as being of the same kind of causality as human agency.
Thus God has been seen as having unlimited efficient causality over all
possible effects. This view of divine agency is a fairly natural one.
We tend naturally to see God as being like us, only bigger and better.
Such a view is, moreover, reinforced by a literal interpretation of the
biblical myths.

For the theologian who does not view God anthropomorphically, how-
ever, there is not the same motivation to view divine agency as efficient
causality. The point of the above quotation from "Mark" is that God
exercises greater power in forgiving sins than in performing nature
miricles. The power than brings about forgiveness is not a power to
perform, but rather a power to motivate. Perhaps a better model on which

to view divine power is that of final causality.  God's unlimited love motivates reconciliation, of man and man, of man and God.  That is for-giveness.

If divine agency is looked at in this way, it becomes fairly natural to understand omnipotence not as ability to perform any logically possible task, but as the total sovereignty of love, as the possessing of a love so powerful as to bring about even the most difficult reconciliation, the reconciliation of perfection and imperfection.

Many other theologians could be cited to the same point as Aulen's. The details would differ, but the common theme would emerge that creating stones possessing unusual properties has nothing to do with any of the concepts of omnipotence held by most modern theologians.  Yet it remains an interesting question whether argument A is sound, whether it shows what it sets out to show.

The question remains interesting for two reasons: one historical and the other practical.  In the first place, a notion of omnipotence to which the task posed in the stone paradox is relevant was attributed to God by at least some of the Church fathers, by the medieval Christian philosophers and most early modern philosophers.  It is surely of histo-rical interest to determine whether that notion of omnipotence is a self-consistent notion.

On the practical side, the paradox remains interesting because theology tends to reach more upward than outward.  While notions of omni-potence to which the stone paradox is relevant are ascribed to God by almost no one in the modern theological community, such notions are ascribed to God by a fair number of lay Christians.  The stone paradox,

being a much publicized problem, has long been a cause of concern to many

such laypersons, from fifth-grade Sunday School students to far older

and more sophisticated laypersons. To such persons, an answer to the

question of the stone paradox's soundness is of practical religious in-

terest. If argument A is sound, then their notion of omnipotence must be

abandoned or revised. If the argument is unsound, then they can turn

their attention to other and more serious questions of faith.

Finally, for whatever reason, there has been a fair amount of dis-

cussion of the stone paradox and its more general cousin, the paradox

of omnipotence –

1) Either God can make things which He cannot fully control or God can-
not make things which He cannot fully control.

2) If God can make things which He cannot fully control, then He is not
omnipotent.

3) If God cannot make things which He cannot fully control, then He is
not omnipotent.

4) Therefore, God is not omnipotent. –

in various philosophical journals over the past twenty years. While this

is, in itself, no sign that the paradox is an interesting issue, a survey

of that literature will show that the paradox does warrant a more com-

plete analysis than has heretofore been given.

In the remainder of this dissertation I shall show that argument A

is unsound, that the appearance of necessity which attaches to the con-

clusion dissolves when the paradox is given adequate formal representation.

My basic procedure will be to examine the crucial preliminary issues:

survey the contemporary literature on the stone paradox; develop a formal

language adequate to the expression of the paradox and see what solution

issues forth from the formalization of the argument.

The second, third and fourth chapters will be devoted to examining the crucial preliminary issues. Chapter II will be a largely historical analysis of the problem of the relationship between God and the truths of logic. It might seem initially that there should be no problem here, that we should be able to carry out logical discussion and argument about God just as we do about any other being. Descartes, however, made the peculiar claim that the eternal truths, including the truths of logic, are free-will creations of God, and that God could equally well have made it the case that all contradictions are true. This claim must be faced seriously, if for no other reason, simply because it was seriously held by a philosopher of such great stature as Descartes. It might be argued on the basis of Descartes' position that the stone paradox is irrelevant since God can bring about logically impossible states of affairs.

Two questions arise in connection with Descartes' claim: 1) What does it mean? Does it follow from what Descartes said that God is not bound by the truths of logic even after their creation? 2) Is Descartes' claim at all plausible?

In Chapter III I shall consider what is meant by 'omnipotent' in the context of the stone paradox. Because of the context, I shall not even mention any modern theological discussion on omnipotence, but shall limit myself to two notions of omnipotence which have been put forward in the literature on the stone paradox: one analyzes omnipotence in terms of degrees of power; the other analyzes omnipotence in terms of the ability to perform tasks. While the former notion seems to make the stone

paradox less paradoxical, on a closer analysis it is not sufficiently well-defined, for the present context, to be at all useful. I then attempt to develop the latter notion of omnipotence into its most clear and perspicuous form.

Chapter IV deals with the matter of whether God is, if omnipotent at all, necessarily omnipotent. A number of recent writers on the stone paradox have offered solutions to the stone paradox on the tacit assumption that God is necessarily omnipotent. To my knowledge, that assumption has never been supported or even explicitly faced in any of the recent literature on the stone paradox. Yet, as we shall see, it is absolutely crucial to an adequate consideration of the paradox.

In response to the need for such a consideration, I shall consider what might be offered in support of the claim that God is necessarily omnipotent. In the end, the answer must rest on linguistic intuitions, presumably with some basis of support from the traditional Christian understandings of the word 'God'. For this reason, I shall give a brief survey of what several important medieval Christian philosophers have said about the meaning of 'God'.

Also, I shall informally show the very simple solution to which the stone paradox is susceptible if one goes beyond the minimal Christian tradition to the point of assuming that God is necessarily omnipotent.

The remainder of this dissertation will take it for granted that if God is omnipotent it is at least not a necessary truth that God is omnipotent.

Chapters V-VII will present a survey of the contemporary literature on the stone paradox. In particular, Chapter V will deal with some lit-

erature on the form of the argument of the stone paradox.  It will be
noted that the form of argument A is that of a constructive dilemma.  It
has been claimed that no stone-type argument can disprove God's omnipo-
tence unless it starts from the assumption of God's omnipotence and de-
rives a contradiction.  This view is certainly puzzling.  Its basis may
lie in the fact that argument A is not, strictly speaking, a paradox.
While we certainly do use the word 'paradox' in everyday, informal lan-
guage to characterize a result which is merely surprising,[2] we have a
paradox in the strict sense, or a logical paradox, "whenever we seem to
have two incompatible propositions both of which, for certain reasons,
would, if appearances were correct, be true."[3]  A paradox is a case in
which we are confronted with an apparent contradiction.  For an argu-
ment to be a paradox, then, it must be a reductio ad absurdum argument.
While it may be legitimate to conclude on this basis that the form of
argument A is not properly that of a paradox, it is surely not legiti-
mate to conclude that the form of A is not a valid argument form.  If
anything, the constructive dilemma is a more widely accepted form of
proof than the reductio ad absurdum, given the objections of intuition-
istic logicians to the latter form.

Chapter VI looks briefly at A(1).  A(1) looks like a straight-for-
ward tautology.  Despite some protest from George Englebretsen, which I
examine in this chapter, it is.

In Chapter VII I present an analysis  of the third premise of the

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[2] James D. Carney and Richard K. Scheer, Fundamentals of Logic, (New York:
The Macmillan Company, 1964), p. 175.

[3] C.I. Lewis and C.H. Langford, Symbolic Logic, (New York: Dover Publica-
tions, Incorporated, n.d.), p. 438.

stone paradox:

A(3) If God cannot create a stone which He cannot lift, then He is not omnipotent.

Most of the writers who have attacked the stone paradox have attacked this premise. A(3) has been criticized through the use of more or less formal constructions of the argument. These criticisms fail because, in every case, the formalization of the argument is either faulty or inadequate. A(3) has also been criticized on the basis of purported analogies between the argument of the stone paradox and various other arguments which obviously fail in ways which suggest that A(3) is faulty. The analogies also fail. Finally, A(3) has been criticized on the basis of various interesting, if at times bizarre, analyses of liftability. The only criticisms which are at all damaging to A(3) are those which operate on the assumption that God is necessarily omnipotent. Yet that assumption is explicitly not in effect in Chapter VII. A(3) emerges from Chapter VII unscathed. What does become obvious from Chapter VII is the desirability of an adequate formal construction of argument A.

It may puzzle the reader that there is no chapter on the literature on the second premise, A(2). The reason is that there is no such literature. A(2) has been accepted as innocuous by everyone who has written on the stone paradox, as far as I can tell. This is surprising, as it turns out in Chapter X that the second premise is precisely the point where the argument of the stone paradox in fact fails.

Chapters VIII-X present a fully formal analysis of the stone paradox. In Chapter VII some of the difficulties of formalizing the argument emerge. There are three difficulties which must be met by any at-

tempted formalization of the argument. The first problem is in formal-
izing the 'can' in the argument. It cannot be captured by any standard
use of our normal modalities, at least on any reasonably standard inter-
pretation. The 'can' in the stone paradox is a very restrictive notion.
The 'can' of the paradox must be so restrictive that a lack of ability
of any kind will be excluded. The second difficulty is less problematic.
It becomes evident in Chapter VII that there are problems involved in
using the existential quantifier in connection with the predicate 'create'.
This can presumably be taken care of by the use of standard alethic modal-
ities. In this way we can speak of possible, but uncreated, hence un-
actual, objects.

The third difficulty is that of giving a precise and formal notion
of what a task is. This is important because the notion of task is in-
dispensible in giving the notion of omnipotence. In a formalization of
the argument, we need to show that God lacks some ability, that that
ability is the ability to perform some task, and that that task is logic-
ally possible. In order to do this, we need to have a clear and perspic-
uous notion of task. (Actually, this notion of task comes in Chapter III,
but it is developed there in response to the demands that will be made
of it in Chapter VIII.)

The surface logic of the argument is very simple. Its form is:
A'. (1) A or not-A.

(2) If A, then not-O.

(3) If not-A, then not-O.

(4) Therefore, not-O.

To get beyond this, into the deeper logical structure of the argument,

involves us in a fairly complicated logic. Chapter VIII will involve the development of such a logic. It will be a two-sorted, second-order logic with two sets of modalities. It must be two-sorted in order to make the distinction between agents and other objects in the universe. This is necessary in order to provide an adequate formalization of the notion 'can'. It must be second-order only in so far as it provides a means of quantifying over well-formed formulae of its own language. This is needed in order to give a precise analysis of the notion of omnipotence. Finally, it must have two sets of modalities: a set of praxiological modalities to capture the notion of ability which is so central to the paradox; and a set of standard alethic modalities, since logical possibility plays a role in the analysis of omnipotence, and since we will wish to be able to speak of possible, but non-actual, objects. The logic will be presented by means of a language of the appropriate sort and order with a Kripke-type semantics.

In Chapter IX I shall give the formalization of argument A along with an informal proof in the metalanguage that the third premise is true simply by virtue of the logic and semantics of the problem.

Chapter X provides the actual solution to the stone paradox. It does this by presenting a model for our formal language which satisfies the semantics given in Chapter VIII such that on that model there is a possible world in which the formal construction of the second premise of the stone paradox is false. This shows that that premise is not true simply by virtue of logic and semantics and therefore that it will not serve to carry us through to the conclusion of the stone paradox.

The stone paradox has, of course, received support as well as crit-

icism in the various philosophical journals. In particular, J.L. Cowan has written a very fine article in defense of the stone paradox.[4] Cowan presents a formal construction of the argument which appears to be sound. This leads to the conclusion that there is something wrong either with Cowan's construction or with mine. For this reason, I go on in Chapter X to examine and criticize Cowan's formalization of the argument, drawing not only on Cowan's article, but on some correspondence which I have been carrying on with Prof. Cowan over the past few months.

While this concludes the treatment of the paradox in the form of argument A, one leaves Chapter X, I think, with a feeling that while this form of the paradox may not work, nevertheless some extension or revision of it surely will. In Chapter XI I look at some other arguments: revisions of the stone paradox which suggest themselves in light of the natue of the solution given to the standard version of the paradox; and other, more general versions of the paradox of omnipotence. While I do not deal with these other arguments in full formality, I do indicate clearly in what direction a solution lies. In those cases where it is possible, I show how the argument can be formalized and solved by means of the language and semantics of Chapter VIII. Where that is not possible, I indicate roughly how the formal language must be extended in order to give adequate expression to the argument.

In the end, it is apparent that neither the traditional stone paradox nor any of its likely revisions or extensions prove that God is not omnipotent. We are left not knowing whether God is omnipotent, in the

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[4] J.L. Cowan, "The Paradox of Omnipotence Revisited", Canadian Journal of Philosophy, Vol. III, No. 3, (March 1974), pp. 35-45.

appropriate sense of 'omnipotent'. We really don't even know that there is not, lurking in the bushes, some other proof to the conclusion that God is not omnipotent. What we do know is that one type of argument will not lead to that conclusion. Yet because of the generality of the solution it seems <u>likely</u> that there is no disproof of God's omnipotence to be had in another quarter.

# C H A P T E R  I I

## GOD AND LOGICAL TRUTH

In a very brief article, "The Logic of Omnipotence", Harry Frankfort suggests that the paradox of omnipotence may be disolved by accepting the principle, which Frankfort claims is put forward by Descartes, that God's power is not limited to the logically possible.  Frankfort solves the paradox as follows:

> Suppose, then, that God's omnipotence enables Him to do even what is logically impossible and that He actually creates a stone too heavy for Him to lift. The critic of the notion of divine omnipotence is quite mistaken if he thinks that this supposition plays into his hands. ... But if God is supposed capable of performing one task whose description is self-contradictory - that of creating the problematic stone in the first place - why should He not be supposed capable of performing another - that of lifting the stone? After all, is there any greater trick in performing two logically impossible tasks than there is in performing one?[1]

Frankfort's proposed solution raises a number of interesting questions both concerning the relationship between God and logical truth, and concerning the history of philosophy.  In this chapter I shall explore some of these questions.  First, I shall consider whether Frankfort's principle is intelligible and whether Descartes did accept such a position.  As it turns out that Descartes did not accept such a position, I shall try to determine, by means of the relevent Cartesian texts, what Descartes did maintain concerning the relationship between God and logical truth.  Because of the radical nature of Descartes' position it

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[1] Harry G. Frankfort, "The Logic of Omnipotence", _Philosophical Review_, LXXIII (1964), p. 263. Frankfort is writing in response to George Mavrodes, "Some Puzzles Concerning Omnipotence", _Philosophical Review_, LXXII (1963), pp. 221-223. Mavrodes' main claim is that the paradox of omnipotence presents no problem since a stone that God cannot lift is not a logically possible object, and omnipotence is only the ability to do anything that is logically possible.

is of interest to look into the background against which Descartes saw
the issue of God's relationship to logical truth. What is the basic
motivation behind Descartes' position?

Because Frankfort's principle is much stronger than anything implied
by the Cartesian position, as I shall show presently, and because, un-
like Descartes, Frankfort offers no defense for his view, I shall spend
very little time dealing with Frankfort's principle per se. It can be
shown easily that Frankfort's principle leads to a manifest absurdity.

Frankfort's principle claims the total subordination of logic to
something else (God). Perhaps the principle's clearest statement is:
"God's omnipotence enables Him to do even what is logically impossible."
To show that this subordination leads to logical absurdities of a cer-
tain sort is not a refutation, but merely a reiteration of that subor-
dination. Yet this reiteration may itself constitute a refutation of
sorts. I cannot, without begging the question, argue to the falsity of
Frankfort's principle, for that would require appealing to the laws of
logic as universally and without exception true in order to show that
the laws of logic circumscribe even the power of God. Such a procedure
would obviously be circular. Yet I can illustrate the unintelligibility
of Frankfort's principle.

Consider the following sentences:

1) God can swear by some being greater than Himself.

2) God can create a being greater than Himself and yet remain God.

3) God can make it the case that God $\neq$ God.

According to Frankfort's principle, 1)-3) are all true. On the assump-
tion that God is by definition greater than any other actual being, 1)-3)

all claim that God can perform some logically impossible task. Let us look just for a moment at 3), because it is the most striking. 3) claims not only that God can make a formal contradiction true, but, given the particular contradiction involved, that God can cease being identical with Himself. This is completely unintelligible.

How then can Frankfort maintain the truth of 3)? It would seem that Frankfort would have to say that sentences about God, or at least sentences about God's power, are not governed by any rules of logic. This seems to be merely a restatement of his earlier principle. It has lost, however, the earlier principle's appearance of innocence. If sentences about God's power are not governed by any rules of logic, then we have no basis for making inferences about God's power. We have no basis for saying about any sentence concerning God's power that any other sentence follows from it. With the loss of the ability to make inferences concerning God's power all rational discourse concerning God's power loses its basis. There can be no theology of God's power. This is where Frankfort's principle comes back against itself.

Frankfort's principle that God's power is not limited to the logically possible is itself discourse concerning God's power. Yet it leads to the result that language about God's power has no logic. If a language has no logic it is presumably unintelligible, in so far as no reasoning can be carried out in it. Frankfort's principle, therefore, claims, among other things, its own unintelligibility.

As I mentioned above, Frankfort seems to claim support for his principle from Descartes. Frankfort claims that support on the basis of Descartes' letters to Mersenne of April 15 and May 27, 1630; his letter

to Arnauld of July 29, 1648; and his letter to Mesland of May 2, 1644.[2]
If we look carefully at the Cartesian texts, however, we shall see that
only one of the cited texts, the letter to Arnauld, offers any support
for Frankfort's principle. Another of the texts, the first letter to
Mersenne, along with a number of other Cartesian texts, directly contra-
dicts Frankfort's principle. The parts of the two letters to Mersenne
and the letter to Mesland cited by Frankfort claim only that God need
not have created the eternal truths of logic as He did. He could equally
well have created the world in such a way that all contradictions should
have been true. This much is, of course, quite compatible with what
Frankfort says. Frankfort's principle, however, goes on to claim that
God is not bound by the truths of logic even after their creation as
eternal truths. Descartes, with the possible exception of his statement
in the letter to Arnauld, flatly denies this.

Let us first look at Descartes' letter to Mersenne of April 15, 1630.
Descartes does say, as Frankfort notes,

> The truths of mathematics ... were established by God and entirely
> depend on Him, as much as do all the rest of His creatures. ...
> You will be told that if God established these truths He would be
> able to change them, as a king does his laws; to which it is nec-
> essary to reply that this is correct.[3]

Frankfort seems to do a bit of fortuitous editing here, for the text of
the second sentence quoted above, according to Kenny's translation of
Descartes' letters, continues to give quite a different impression of
Descartes' position. It reads:

It will be said that if God had established these truths He could

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change them as a king changes his laws. To this the answer is:
'Yes he can, if his will can change.' 'But I understand them to
be eternal and unchangeable.' - 'I make the same judgment about
God.' 'But His will is free.' - 'Yes, but His power is incompre-
hensible.'[4]

Thus filled out, this becomes a very tricky bit of text.

Descartes' point, in this text, is less clear than one might hope.
The partial text cited by Frankfort claims that God can change "these
truths" (including the truths of logic). In the full text Descartes
claims that God can change them if His will can change. The 'if' is very
important. The imagined interlocutor replies that he takes the truths
to be eternal and unchangeable. For Descartes, this poses no problem,
for God is, Himself, eternal and unchangeable. This means that His will
is unchangeable. Since God can change the eternal truths if and only if
God's will can change, (Although the "and only if" is not included in
this text it is obvious that God can change the laws of logic only if
His will can change, since He created them by an act of His will.) it
follows that those truths are also eternal and unchangeable.

Now the imagined interlocutor raises the real problem. He points
out that God's will is free. How can God's will be both free and un-
changeable? The reply - "Yes, but his power is incomprehensible." We
cannot really understand.

While the problem of the freedom of God's will is a crucial one for
Descartes, as we shall see later, what is important at this point is to

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4
Rene Descartes, _Philosophical Letters_, trans. and ed. by Anthony Kenny,
(Oxford: 1970), pp. 11f. While Frankfort's translation is slightly more
literal, as far as it goes, it does conclude in mid-sentence. In the
original French, the sentence with which Frankfort concludes continues,
as it does in Kenny's translation: "a quoy il faut respondre qu'ouy, si
sa volonté peut changer." See Descartes, _Oevres_, Vol. I, ed. by Charles
Adam and Paul Tannery, (Paris: Leopold Cerf, 1897), pp. 145f.

have shown that the letter to Mersenne of April 15, 1630 gives no support
to Frankfort's principle.

Frankfort's second citation, from Descartes' letter to Mersenne of
May 27, 1630, reads:

> God was as free to make it false that all the radii of a circle
> are equal as to refrain from creating the world.[5]

There is no claim here that God could now make it fail to be the case
that all the radii of a circle are equal, only that He could have done
so (instead of making it to be the case that all of a circle's radii are
equal). This passage does not support Frankfort's extreme position.

Frankfort's citation from the letter to Mesland makes precisely the
same claim.

The one text which Frankfort cites which does give me some difficul-
ty is from the letter to Arnauld of July 29, 1648.

> I would not even dare to say that God cannot arrange that ...
> one and two should not make three; but I only say that He has
> given me a mind of such a nature that I cannot conceive ... a
> sum of one and two which would not be three, and so on, and that
> such things imply contradictions in my conception.[6]

The problem here is that Descartes uses the present tense, "cannot".[7] I
suggest that Descartes' concern here is very similar to that expressed
in his first letter to Mersenne. Descartes does not want to say that
God cannot arrange it that one and two should make something other than
three because that would claim some limitation on God's power. On the
other hand, Descartes does not say that God can arrange it that one and

[5] This is cited in Frankfort, Op. Cit., p. 263.

[6] This is cited in Ibid., p. 263.

[7] See Descartes, Oevres, Vol. V, (Paris: Leopold Cerf, 1903), p. 224.

two should make something other than three. He cannot say that. Consider the following argument:

1) God can arrange it that one and two does not make three.

2) God has given me a mind of such a nature that I cannot conceive a sum of one and two which would not be three.

3) I cannot conceive a sum of one and two which would not be three.

4) God can arrange it that something is the case which I cannot conceive to be the case.

5) God can be a deceiver.

6) Being a deceiver is contrary to God's immutable essence.

7) God cannot be a deceiver.

8) Therefore, God cannot arrange it that one and two does not make three.

The above argument proves, on the basis of purely Cartesian principles, that God cannot make it the case that one and two does not make three. The only part of the argument that involves something other than what appears in the letter to Arnauld is the part which involves the position that God is essentially non-deceptive. Yet, since the letter to Arnauld was written seven years after the Meditations, it is surely reasonable to assume that Descartes was still aware of his argument in the Meditations for the veracity of clear and distinct perceptions.

This is a familiar dilemma for Descartes. On the one hand, he must assert, for a number of reasons, that God is now subject to the laws of logic, mathematics, etc. On the other hand, Descartes must be reluctant to assert that God is subject to the laws of logic, mathematics, etc., because that seems to imply some limitation on the freedom of God. Again I shall put off fuller discussion of that dilemma and merely note for the present that the Cartesian text does not offer support for Frank-

fort's principle as it appears to on a more casual reading.

In order to reinforce the conclusions which I have reached above concerning Descartes' actual position on the immutability of the truths of logic, I shall briefly cite two more texts: first, from the reply to the fifth set of objections,

> Yet I think that because God so wished it and brought it to pass, they [including the truths of logic] are [emphasis is Descartes'] immutable and eternal. Now whether you think this to have serious consequences or the reverse, to me it is sufficient if it is true.[8]

and, in a different but for Descartes very closely related vein, from the Conversation with Burman,

> O. But then would God have been able to command His creatures to hate Him, and to make goodness consist in that?
> R. He cannot do it anymore; but what He would have been able to do, we do not know. But why would He have not been able to prescribe such a commandment to His creatures?[9]

These two texts both clearly claim that there are certain laws which God might have been able to make differently in the beginning, but which are now immutable, even to the extent that God cannot violate them.

There is one other Cartesian text in which Descartes abandons his usual claim that God could have created completely different eternal truths:

> Further I pointed out [in Le Monde, Descartes' suppressed treatise on Physics] what are the laws of Nature, and without resting my reasons on any other principle than the infinite perfections of God, I tried to demonstrate all those of which one could have any doubt, and to show that they are of such a nature that even if God had created other worlds, He could not have created any in which these laws would fail to be observed.[10]

[8] Descartes, Philosophical Works of Descartes, Vol. II, trans. and ed. by Elizabeth S. Haldane and G.T.R. Ross, (New York: Dover Publications, 1955), p. 226.

[9] Conversation with Burman, Descartes, Oevres, Vol. VII, p. 432.

[10] Descartes, Philosophical Works of Descartes, Vol. I, p. 108.

It is difficult to know what to make of this text. It appears in the Discourse on Method, published in 1637. It reports on Le Monde, never published because it was destroyed or suppressed in 1632 when Descartes learned of the condemnation of Galileo. Presumably it was written between 1630 and 1632. The point of the text is clear. What is puzzling is that its point is precisely the opposite of that made in the part of Descartes' May 27, 1630 letter cited above. It may be that Descartes changed his mind on this matter in 1630, but if so he also resumed his former position again sometime before 1644.

Whatever may be said about the above text, we may now rest certain that Descartes did not support Frankfort's principle. Descartes is generally clear in affirming the claim that once the truths of logic are created they are eternal and immutable. They cannot be changed or violated even by God. Yet Descartes also generally claims that God might perfectly well have created worlds which, according to any of our logics, are logically impossible.

Descartes was obviously aware that his view on this latter point was quite radical, for in his April 15, 1630 letter to Mersenne Descartes asks Mersenne to raise Descartes' position often in conversation in order to get people used to speaking of God in such a manner, but not to mention Descartes' name in connection with this view until Descartes published his view in his treatise on physics.[11] Descartes' position on the relationship between the eternal truths, including the truths of logic, and God stands in marked contrast to the range of positions generally held within the scholastic tradition.

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[11] Descartes, Philosophical Letters, p. 12.

St. Thomas maintains, as does Descartes, that the laws of logic stand inviolable, even by God:

> All confess that God is omnipotent; but it seems difficult to explain in what His omnipotence precisely consists. For there may be a doubt as to the precise meaning of the word "all" when we say that God can do all things. If, however, we consider the matter aright, since power is said in reference to possible things, this phrase, God can do all things, is rightly understood to mean that God can do all things that are possible; ...
> Nor is this contrary to the word of the angel saying: No word shall be impossible with God (Luke 1:37). For whatever implies a contradiction cannot be a word, because no intellect can possibly conceive such a thing.[12]

and again,

> Since the principles of some sciences, such as logic, geometry, and arithmetic are drawn solely from the formal principles which constitute the essences of things, it follows that God cannot do anything which conflicts with these principles: thus, he cannot make a genus not predicable of its species, or bring it about that the radii of a circle are not equal, or that a rectilinear triangle should not have its three angles equal to two right angles.[13]

This last citation may give the impression that St. Thomas would go on further with Descartes to claim that God could have created different truths of logic simply be creating different essences of things or different formal principles which constitute the essences of things. Descartes, after all, believed that essences were creatures of God, which might have been created differently. That impression would, however, be mistaken, since those formal principles, according to St. Thomas, are a part of God's own essence.

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[12] St. Thomas Aquinas, Summa Theologica, Ia, 25, 3, from Anton C. Pegis, ed., Basic Writings of St. Thomas Aquinas, Vol. I, (New York: Random House, 1945), pp. 262f.

[13] Aquinas, Summa contra Gentiles, ch. 25, cited in Anthony Kenny, "The Cartesian Circle and the Eternal Truths", Journal of Philosophy, Vol. 67, (1970), p. 695.

Since therefore the essence of God contains in itself all the per-
fection contained in the essence of any other being, and far more,
God can know all things in Himself with a proper knowledge. For the
nature proper to each thing consists in some particular participation
of the divine perfection. Now God could not be said to know Himself
perfectly unless He knew all the ways in which His own perfection
could be shared by others.[14]

A number of interesting questions arise concerning St. Thomas' posi-

tion in these passages. Their exploration, however, is not the the

present point. Rather we should look to the philosophical position against

which Descartes' view on eternal truths is a direct reaction. T.J. Cronin

claims, very convincingly, that the view to which Descartes was reacting

is the position of Frances Suarez.[15] The textual source of Suarez;s

position is his Disputationes Metaphysicae, the thirty-first Disputation,

in particular.

Whether Cronin is correct or not, two things can be said with cer-

tainty: first, Descartes claims, in the reply to the fourth objection,

to have read the Disputationes quite early in his philosophical career;[16]

and secondly, in the Disputationes, Suarez expresses a view on the re-

lationship between God and eternal truths which is in substantial op-

position to that of Descartes.

In the thirty-first Disputation Suarez claims that it is not the case

that the eternal truths are true because they are known by God, but that,

on the contrary, they are known by God because they are true.[17] He goes

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14 Aquinas, Summa Theologica, Ia, 14, 6, from Pegis, Op. Cit., pp. 144f.

15 T.J. Cronin, S.J., "Eternal Truths in the Thought of Suarez and Des-
cartes", Modern Schoolman, Vol. XXXVIII, (May 1961), pp. 269-288, and
Vol. XXXIX, (November 1961), pp. 23-38.

16 Descartes, Philosophical Works of Descartes, Vol. II, p. 107.

17 Frances Suarez, Disputationes Metaphysicae, 31, 12, 40, cited in
Cronin, Op. Cit., p. 273.

on to say that the necessity of these truths does not have its source in God, since it is necessary that God represent things in accordance with the essences which they do, in fact have.[18] Finally, Suarez claims that these truths are not, in themselves, created by God at all. This is the case because the eternal truths never imply any existential claim. Since the eternal truths do not depend for their truth upon the existence of anything, and since efficient causality is simply the bringing of things into existence, it follows that the eternal truths do not depend for their truth upon any efficient causality. It follows obviously that they do not depend for their truth upon the efficient causality of God.[19]

If the eternal truths are not created, then either they are eternal beings or they are nothing. The former view is unsatisfactory because it would mean that there was something co-eternal with God. That there was something other than God which is eternal and uncreated would seem to impugn the perfection of God. The latter view is also unsatisfactory since the eternal truths at least involve unactualized essences, and these essences are not simply nothing. Suarez tries to run a middle course between the above alternatives.

These unactualized essences are potential being. They are not simply nothing, yet they are nothing real. They are beings of reason, which cannot be created. Since prior to the creation of anything the only intellect is the divine intellect, unactualized essences and, therefore, the eternal truths are beings of divine reason, but nothing in themselves. The eternal truths are not, therefore, dependent on the divine will.

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[18] Suarez, _Disputationes Metaphysicae_, 31, 12, 46, cited in _Ibid._, p. 273.

[19] Suarez, _Disputationes Metaphysicae_, 31, 12, 45, cited in _Ibid._, p. 274.

While a great deal more might be said about Suarez's treatment of essences and eternal truhts, this brief sketch shows the two points which Descartes found objectionable: the view that God's freedom is not wholly unlimited and the view that there is some separation of God's will from His intellect. In seeing how Descartes is driven to his position on the relationship between God and the eternal truths, we must first look at his view of the nature of the eternal truths and then at his, acknowledgedly limited, view of God.

To determine Descartes' view of eternal truths we must look at two issues: the nature of those truths per se, and why, consequently, they must be created. In looking at the nature of the eternal truths, it is perhaps best to start by noting that Descartes did not view truth as being in any way dependent on proof.[20] This independence fits well with Descartes' preference for the analytic mode of inquiry (Descartes' notion of 'analysis' is highly non-standard; whereas it is best illustrated in the Geometry, Descartes claims that it is also exemplified by the Meditations.) over the synthetic, which is the standard notion of proof. It is perhaps this view of the independence of truth from proof that leads Descartes to lump under the heading of "eternal truths" not only the truths of logic, but the truths of arithmetic, algebra, geometry, astronomy and optics as well.

A second element in Descartes' view of the nature of eternal truths is his rejection of Aristotelian substantial forms. This view is very closely related to that mentioned in the last paragraph and could well

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[20] Much is made of this point in Ian Hacking, "Leibniz and Descartes: Proof and Eternal Truths", read as the Dawes Hicks Lecture on Philosophy, June 6, 1973, (London: 1973), pp. 7f.

have either led to it or followed from it. According to Anthony Kenny, this rejection was the major novelty in the Cartesian physical system. Kenny points out that in Le Monde, Descartes' suppressed treatise on physics which is mentioned, among other places, in the letter to Mersenne of April 15, 1630 and the Discourse on Method, Descartes includes "a sustained polemic against these chimerical entities (AT XI, 3-36, and especially 37)."[21] This rejection of substantial forms leads also to a rejection of the Aristotelian essences, a rejection of the idea that an essence might be an explanatory principle causally affecting the history of the substance.

While Descartes gives up the Aristotelian doctrine of essences, he maintains the terminology of essences. In doing so, of course, Descartes was required to reinterpret that terminology rather considerably. That reinterpretation of the terminology of essences is never very clearly given. There are, throughout the Cartesian corpus, passages which give conflicting impressions of what Descartes thought an essence was. In the May 27, 1630 letter to Mersenne, he says,

> For it is certain that he is no less the author of creatures' essences than he is of their existence; and this essence is nothing other than the eternal truths.[22]

As stated, this is not at all clear. Which essence (Presumably there is no such thing as the essence of all creatures.) is nothing other than the eternal truths? (Or which eternal truths?) A fairly plausible view of what Descartes is saying here is that he claims that, for each creature,

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[21] Anthony Kenny, Op. Cit., p. 698. The "AT" in the parentheses refers to Descartes' Oevres, edited by Adam and Tannery.

[22] Descartes, Philosophical Letters, p. 14.

its essence is identical with all the eternal truths concerning it. This interpretation is called into question, however, by Descartes' methodology of inquiry. If the essence of a thing were <u>all</u> the eternal truths about that thing, then, since this would include all the conjunctive eternal truths of which at least one conjunct was about that thing, simply knowing the essence of one thing would involve knowing the essences of all things. The essence of any other thing would simply be a rearranging of the conjuncts which we already know to be eternally true.

A more modest interpretation would be the claim that the essence of a thing is identical with all the eternal truths concerning it which have a basic propositional form of some sort. This is really no improvement since one can formulate multi-placed predicates which will serve precisely the same function as a conjunctive sentence.

It is pointless, if not futile, to attempt to give a precise characterization of Descartes' notion of essence at this point. In the first place, Descartes said so little about the precise relationship between essences and eternal truths. Secondly, Descartes has not even given us a clearly defined notion of eternal truths. We know some of the things that are included among the eternal truths, but we do not know exactly what additional things are among the eternal truths. This is because we don't know what it means, for Descartes, for something to be an eternal truth, except that eternal truths are eternally true. Moreover, I suggest that, since Descartes has made no precise characterization of eternal truths at the time of his letter to Mersenne, he did not intend the above citation as a precise analysis of essences. Rather Descartes intended merely to indicate what kind of thing the essences are. This

would seem to be a plausible interpretation on the basis of the context of Descartes' letter. Moreover, Descartes three letters to Mersenne, from April 15 to May 27, 1630, constitute an attempt by Descartes to set forth his position on eternal truths and essences in opposition to the scholastic tradition. In this context, the issue of what kind of thing the essences are is an important one.

Given this reinterpretation of the language of essences, it follows that, for Descartes, essences and, a fortiori, eternal truths must be created. David Ross, in his exposition of Aristotle's philosophy, says,

> The point that Aristotle chiefly stresses here [in Metaphysics, Book Z] is that the essence is not to be thought of either as a component existing alongside of the material components, or as itself consisting of material components. If we view it in the former way we shall need a further principle of structure to explain hos it is united with the material components; ...[23]

For Descartes, essences are certainly not material components. Essences are, however, additional components existing alongside of the material components. Let us take as an example the circle and its essence. For Aristotle, the circle is a substance,[24] and,

> We must inquire whether each thing and its essence are the same or different. This is of some use for the inquiry concerning substance; for each thing is thought to be not different from its substance, and the essence is said to be the substance of each thing.[25]

Therefore, the essence of the circle is not some additional thing which must be created along with the circle. It is simply identical with the circle. For Descartes, the case is quite different. God could have made

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[23] William David Ross, Aristotle, (London: Methuen and Company, 1923), p. 172.

[24] Aristotle, Metaphysics, Book D, Ch. 8, in The Basic Works of Aristotle, ed. by Richard McKeon, (New York: Random House, 1968), p. 761.

[25] Aristotle, Metaphysics, Book Z, Ch. 6, in Ibid., p. 789.

it the case that all the radii of a circle were not equal, according to Descartes. This is to say that the circle could have been created with a different essence. The circle and its essence are therefore not the same thing. The essence of the circle is a component, of some sort of other, of the circle. This, as Ross noted, requires some further principle of structure to explain how the essence is united with the other components of the circle. For Descartes, that further principle of structure lies in an appeal to the will of God. The essence of the circle is united with the circle as it is precisely because God willed to so unite them. Given that the essence of the circle is a component of the circle, different from the circle and from its other components, it must be created just as the circle and its other components must be created.

There is a final reason why, for Descartes, the eternal truths must be created. Beatrice Rome, in "Created Truths and Causa Sui in Descartes", brings together an argument which is basically as follows:[26]

1) Incomprehensibility is in the divine essence.[27] (Although we have a clear and distinct idea of God, we do not comprehend the divine essence itself.)[28]

2) What is not a creature must belong to the Creator.[29]

3) Assume that the eternal truths are not created.

4) Therefore, the eternal truths belong to (are in) the Creator.

5) Therefore, the eternal truths are incomprehensible.

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[26] Beatrice Rome, "Created Truths and Causa Sui in Descartes", Philosophy and Phenomenological Research, Vol. XVII, No. 1, (1956), pp. 69f.

[27] Descartes, Philosophical Letters, p. 11.

[28] Ibid., p. 14, and Descartes, Philosophical Works of Descartes, Vol. II, p. 218.

[29] Descartes, reply to Burman, Oevres, Vol. V, p. 166.

6) The eternal truths are comprehensible.

7) Therefore, the eternal truths are created.

It might be objected at this point that the move from 1) and 4) to 5) is not legitimate. It might be claimed that although the divine essence, as a whole, is incomprehensible, parts of that essence, eg. the eternal truths, can remain comprehensible. We do, it seems, comprehend God's existence.

This objection is not well-taken, however. First, Descartes distinguishes among comprehending (comprendre), conceiving (concevoir), and knowing (savoir) as different epistemic states.[30] To say that we know that God exists is quite different from saying that we comprehend His existence. God's incomprehensibility is a part of His essence. We cannot, therefore, comprehend anything about God. We can merely know some things about Him. Secondly, Descartes maintains the radical unity and simplicity of the divine essence. Therefore, the distinction among parts of the divine essence is at most a verbal distinction.

This leads to the other factor influencing Descartes' view of the relationship between God and the eternal truths. In addition to the above considerations on the nature of the eternal truths themselves, Descartes' view of the nature of God lead further to his rejection of Suarez's position on the eternal truths. As I mentioned in the last paragraph, Descartes viewed God as characterized by radical unity. This forced Descartes to reject Suarez's distinction between the divine intellect and the divine will. That distinction did not remain for Descartes, even as a distinction of reason. There was no room for Suarez's position

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[30] See Jean LaPort, La Rationalisme de Descartes, (Paris: 1950), pp. 292f.

that God could know possibilities before creating anything. For Descartes, they must first be created, as possibles. As Descartes wrote to Mesland on May 2, 1644,

> In order to know the immensity of God's power, we ourselves ought not to represent nor should we conceive any preference or priority between His understanding and His will, for the idea which we have of God teaches us that in Him there is but one, sole act which is wholly simple and pure; in God to see and to will are the very same thing.[31]

This view stems from Descartes' doctrine that to be dividible is an imperfection. Therefore, God, who is wholly perfect, is wholly indivisible.

The same doctrine also led Descartes to the view that God's will cannot change. In the doctrine of absolute divine unity, all the divine attributes become identical and indistinguishable.[32] I follows that God's will is identical with, not only His intellect, but His power, existence, etc., as well. From this it follows that if any of these attributes are susceptible to change, they are all subject to change. Clearly some of them, eg. power, existence, are not. Therefore none of them are, and, _a fortiori_, the divine will is not.

At this point the problem of divine freedom must be faced. God's will cannot change. Therefore freedom, for the divine will, must consist in something other than the ability to will something in the future other than what is being willed now. The need to affirm the freedom of the divine will also led Descartes to claim that God could have created eternal truths other than the ones which, in fact, hold. God is, among other things, the efficient cause of the entire created order. It is, moreover, a fundamental principle of the Cartesian project that one can

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[31] Descartes, _Philosophical Letters_, p. 151.

[32] This point is made in Rome, _Op. Cit._, pp. 76f.

move, through analysis, from those of the eternal truths which are given by the natural light to a complete knowledge of the physical sciences. All the facts about the physical world follow from the eternal truths. Therefore, if God were not free to create other eternal truths He would also not have been free to create the world differently. God would have been <u>constrained</u> to create the physical world as He did. Thus, given Descartes' views on the extent of the eternal truths, they must be created freely by God, for if they were not then there would be no freedom to God's causality.

The other important facet of Descartes' view of God that is important here is his notion of divine incomprehensibility. This notion of divine incomprehensibility is rooted in two sources. First, it is rooted in Descartes' concern with the radical transcendence of God. Throughout the Cartesian corpus, whenever God is spoken of, He is spoken of as being transcendent in the highest degree.[33] Divine incomprehensibility serves as a guarantor of divine transcendence. As long as we realize that God is incomprehensible there is no temptation to immanentalize God, to soil God through association with the comprehensible created order.

The second root of the Cartesian doctrine of divine incomprehensibility lies in the distinction between divine infinitude and human finitude. If anything is fundamental to Descartes, it is that the human mind is finite.[34] In a sense, Descartes sees the mind as rather like a cooking pot. It will not hold anything of greater magnitude than itself. Thus,

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[33] See Descartes, <u>Philosophical Works of Descartes</u>, Vol. I, pp. 166, 169, 241, Vol. II, p. 73, etc.

[34] See <u>Ibid.</u>, Vol. I, p. 166, Vol. II, p. 241, etc., and <u>Philosophical Letters</u>, pp. 12, 14, 150, and 240.

while the infinite divine mind can comprehend everything, the finite human mind cannot comprehend anything infinite. If God were to be comprehensible, then He would have to be finite, which He clearly is not.

Given the above position with regard to the nature of eternal truths and the nature of God, Descartes could have come to no other position than that the eternal truths were created by God through a free act of His will, but that they stand, once created, as eternal and inviolable, even by their creator.

Descartes' position does have problems, however. As I mentioned above, Descartes does not recognize any dependence of truth upon proof. A proof was, for Descartes, merely of psychological value, helping someone of weaker intellectual vision see what one of stronger vision might simply intuit.[35] This is why the fact that some propositions are provable means nothing, for Descartes, so long as the proof is not directly before the mind, thereby making its various steps and its conclusion indubitable. As Leibniz observed, Descartes "did not know the genuine source of truths nor the general analysis of concepts".[36]

We may be able to focus more clearly on this by means of an example. Imagine a world in which all the axioms of Euclidian geometry were true, all our normal rules of inference were true, and yet the Pythagorean theorem was false.[37] This is a world which we should normally want to say was impossible. Yet, on the Cartesian position, God might have

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[35] See Hacking, Op. Cit., pp. 7f.

[36] This is cited in Ibid., p. 8, from Leibniz's letter to Philip of December 1679, and found in Gerhardt, ed., Die Philosophische Schriften von G.W. Leibniz, Vol. IV, p. 282.

[37] This example is adapted from Ibid., p. 9.

brought about such a world. In such a world, there would have to be at least one right tiangle such that a proposition which is provably true of all right triangles was not true of that right triangle. A normal response would be to say that any figure which lacked the property ascribed to right triangles by the Pythagorean theorem would not be a right triangle.

Descartes wants to maintain that in the world under discussion, there would be such a figure. The important question is, how can Descartes maintain that the figure is a right triangle? The figure would not have the same essence as right triangles in the real world. Yet it would be, according to Descartes, a right triangle nonetheless.

The objection becomes even sharper if we alter the example slightly. Let us suppose that all the normal laws hold concerning geometry except for the law of self-identity concerning triangles. In this case, since being self-identical is certainly a provable property of triangles, we should certainly want to say that anything that was not self-identical was, whatever else it might be, certainly not a triangle. This would be correct on Descartes' account as well. If the law of self-identity did not hold with respect to triangles, then it would not be the case that a triangle is a triangle. Descartes would thereby lose his basis for supposing that he was, after all, talking about a triangle.

While this objection may seem a bit contrived, that appearance springs from the position against which objects rather than from the objection itself. Leibniz is quite correct in thinking that Descartes' position betrays a faulty understanding of the concepts of necessity, contradiction and proof.[38]

In the end, Descartes' position is no better than Frankfort's. If a proper understanding of such notions as truth, contradiction and proof is to be maintained, and if we are committed to making some sense of talk about God's power, then we must hold to the standard position[39] that God's action is limited to the realm of the logically possible. Moreover, it is only on this view that we can maintain a notion of God that does not fade into total transcendence and out of the human picture.

A corollary to the refutation of Frankfort's principle is that the claim that God is omnipotent asserts, at most, God's ability to perform any logically possible task. This follows from the fact that if we take God's omnipotence to be a power to perform even logically impossible tasks, then it follows that if God is omnipotent, then "God is omnipotent" is a piece of language without any logic. It is, in short, nonsense.

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[38] _Ibid._, p. 9.

[39] To illustrate just how standard this view is, it might be pointed out that it was maintained at least as early as the first part of the third century A.D. when it was put forward by the Church father, Origen. See Adolph Harnack, History of Dogma, Vol. II, trans. by Neil Buchanan, (New York: Dover Publications, Inc.. 1961), p. 350.

# C H A P T E R   I I I

## THE NOTION OF OMNIPOTENCE

There are two quite distinct notions of omnipotence which have been brought to play in analyses of the stone paradox. The distinction between them is drawn most clearly in a brief, dialogue-style article by Julian Wolfe, called "Omnipotence".[1] These two notions might be characterized as (1) an analysis of omnipotence in terms of power, and (2) an analysis of omnipotence in terms of capacity to perform. I shall try to formulate these two notions of omnipotence more explicitly:

Def. 1: $x$ is omnipotent $=_{df}$ for any degree of power $y$, if $y$ is required for the performance of some task $z$, then $x$ has $y$.

Def. 2: $x$ is omnipotent $=_{df}$ for any (logically possible) task $y$, $x$ can perform $y$.

The notion of omnipotence expressed in Def. 1 has been held by a number of writers who have attempted to show that the stone paradox does not disprove the omnipotence of God.[2] The notion of omnipotence expressed in Def. 2 has been more widely accepted and has been held by writers on both sides of the stone paradox controversy.

The motivations behind both notions of omnipotence seem fairly clear. In support of (1), we regularly think of power as a measurable quantity. We measure the horse power of our automobile engines. We measure the

[1] Julian Wolfe, "Omnipotence", Canadian Journal of Philosophy, Vol. I No. 2, (December 1971), pp. 245-247.

[2] This approach is taken in Ibid.; G. Wade Savage, "The Paradox of the Stone", Philosophical Review, Vol. LXXVI, No. 1, (January 1967), pp. 74-79; and John King-Farlow's contribution to David Londey, Barry Miller, and John King-Farlow, "God and the Stone Paradox: Three Comments", Sophia, (October 1971), pp. 23-33.

tons of thrust developed by our rockets. We measure the weight that can be lifted by weight lifters. It is natural to extend this model to see an omnipotent being, an all-powerful being, as a being that has an unlimited amount of power.

It has been suggested by Sten Stenson, in _Sense and Nonsense in Religion_,[3] and Ian Ramsey, in "The Paradox of Omnipotence"[4] (and, indirectly, in _Religious Language_[5]), that this notion of omnipotence is a religiously useful one and theologically, although _not_ logically, quite proper. Stenson claims that when we speak of God as "powerful" and "intelligent", as well as "loving", we engage in analogical thought. We begin with a concept of power drawn from experience with automobiles, rockets and men, and the idea of proportionality among these various degrees of power. When we qualify 'powerful' by adding 'infinitely' we make what Ramsey calls "an odd logical claim for the word 'God'".[6]

Ramsey claims that the fact that we predicate 'infinitely powerful' or 'omnipotent' of 'God' gives 'God' a "destinctive logical placing".[7] Ramsey does not specify how this comes about except to say that 'infinitely' qualifies 'powerful' in a way which is logically different from other qualifications. It remains unclear exactly what Ramsey means by

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[3] Sten H. Stenson, _Sense and Nonsense in Religion_, (New York: Abingdon Press, 1969), pp. 107f.

[4] Ian T. Ramsey, "The Paradox of Omnipotence", _Mind_, Vol. LXV, pp. 263-266.

[5] Ramsey, _Religious Language_, (London: S.C.M. Press, 1957), Chapter 2. In this chapter, Ramsey does not deal with infinite power directly, but with infinite wisdom, infinite goodness, etc. The parallel is obvious and appears in the above-mentioned paper.

[6] Ramsey, "The Paradox of Omnipotence", p. 263.

[7] Ramsey, _Religious Language_, p. 66.

all this.

Unless the stone paradox offers us a sound argument, there is surely nothing logically improper about qualifying 'powerful' with 'infinitely'. There are numerous ways of measuring power: n pounds (tons) of thrust, n horsepower, etc., where n is some number. Certainly, for any natural number n, it is logically proper to speak of n power-units (for some unit of power). Similarly, it is equally logically proper to speak of n+1 power-units. To say that x is infinitely powerful is simply to say that, for any natural number m, x can produce m power-units. Whatever other problems this notion of infinite power may have, it is not logically improper.

Perhaps by "logically odd" Ramsey means something less than "logically improper". His minimal claim is that the above qualification gives 'God' a "distinctive logical placing". It is still unclear what Ramsey is trying to say. What Ramsey appears to be saying is that what is in play here is not a standard case of literal predication, but a kind of analogical speaking which is intended to lead to some theological insight. Regardless of the theological worth of Ramsey's claim (I think it is considerable.), there is nothing logically peculiar about this predication. 'God' is a term. Its logical role (I take it that its logical role involves such things as what terms may be substituted for it in certain contexts.) is affected by certain true predications on that term. Yet this is nothing peculiar about 'God' or about 'omnipotent'. Ramsey has shown no _logical_ peculiarity in the first notion of omnipotence.

The notion of omnipotence (1) does have other problems. The definiens of Def. 1 does not capture what one intuitively feels is captured by

the definiendum. There are certain lackings of ability which would seem to count against omnipotence which cannot be accounted for by simply a lack of power. These includes lackings of ability which do not have the "trick" appearance of the task posed in the stone paradox. A being might lack the ability to fly not because of any lack of power, but because of a structural limitation, say not having wings. Similarly, there is nothing logically absurd about supposing that some being can do anything except lift small red stones. (It is surely mistaken to suggest that there is something logically absurd about the claim that x has the power to lift small red stones yet cannot lift them, since I have the power to play the piano, for example, yet I cannot do it.) This inability, one feels, clearly ought to count against that being's being omnipotent. Yet, according to Def. 1, such a being would be omnipotent, at least on the minimal (and highly intuitive) assumption that the degree of power required to lift a small red stone is the same as the degree of power required to lift a green stone of the same size, shape, weight, etc. Yet on our supposition, the being we have imagined can lift the green stone and, therefore, presumably has the degree of power requisite. This would seem to disqualify Def. 1 as an adequate account of 'omnipotent'.

Def. 2 of 'omnipotent' has the virtue of appearing, on its face, to capture our intuitive notion of omnipotence. It is not subject to any counter-examples as obvious as that made against Def. 1 above. The problem with Def. 2 is rather one of philosophical perspicuity and clarity. Def. 2, as stated above, requires that we have an ontology that includes tasks. For those, like myself, who prefer to keep their ontological

landscapes _fairly_ spartan, the introduction of tasks is an option with very little appeal. Moreover, if tasks are to be introduced into our ontology, we should try to get clear on the issue of precisely what is a task. That issue yields to no simple, readily available solution. Moreover, for Def. 2 to be helpful, we must have a precise notion of what it is for a task to be logically possible.

These two problems must be solved before we can accept Def. 2 (or some emendation of it) as an adequate account of 'omnipotent': 1) Either a clear notion of what a task is must be presented, or 'task' must be eliminated from Def. 2 in favor of some clearer (and perhaps ontologically more austere) notion; and 2) In light of a solution to 1), the notion of 'logical possibility' must be elucidated as it applies to 'task' or whatever notion(s) is (are) substituted for 'task'.

The solution which I shall propose to the first problem, while it is to a degree unintuitive, is both clear and ontologically parsimonious. I propose that for the notion of 'task' we substitute the notion of 'sentence', or, more formally, 'well-formed formula'. For 'x performs (task) y.' we shall substitute 'x makes it the case that p is true.' where p is some sentence, or some wff of the formal language in which the paradox is cast. That this is unintuitive is obvious from a few examples. Some sentences or wffs, most obviously those that are tautological, do not appear to correlate to anything that we would normally call a 'task'. It makes no sense to say, "x makes it the case that it is raining or it is not raining.", since nothing x can do could possibly make "It is raining or it is not raining." fail to be true. No action by x can have any effect on the truth of a tautology. On the other hand, on my solu-

tion the same sentence might correlate to what we would normally think of as two or more quite distinct tasks. Consider "x makes it the case that the window is open." The task performance which this sentence attributes to x might be either opening the window or keeping the window open (preventing someone else from closing the window).[8] This poses no problem for the above solution, however, as will be shown in connection with the solution to the second problem.

It is also to be noted that this solution does not require the introduction into our ontology of any entities more philosophically suspect than sentences and languages. The above solution only requires that the language in which we cast the stone paradox have the capacity to talk about its own wffs. The existence of such wffs is guaranteed simply be virtue of our giving a language. That the language should be able to talk about itself, of course, presents no problems in principle.

The solution to the second problem follows fairly simply. Since the notion of 'task' is reduced to that of 'sentence', a task, we might say, is logically possible if and only if it is logically possible that its associated sentence is true. Thus, creating a round square would not be a possible task since "There is a round square." cannot possibly be true. It is not the case that any being can make it the case that there is a round square.

In light of this, we might give the following as a revision of Def.

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[8] These distinctions can be made by introducing a slightly more complicated way of describing tasks as changes from a situation described by one sentence to that described by another. This is done in G.H. von Wright, Norm and Action, (London: Routledge and Kegan Paul, 1963), and An Essay in Deontic Logic and the General Theory of Action, (Amsterdam: North-Holland Publishing Company, 1968). Such distinctions are not of any use, however, in connection with the present project.

2:

Def. 2': x is omnipotent =$_{df}$ for any sentence (wff) p, if it is logically possible that p is true, then x can make it the case that p is true.

This still contains a problem, however. Suppose that p is of the form 'there exists a q such that x cannot make it the case that a exists'. In this case it is clearly possible that p is true and, just as clearly, x cannot make it the case that p is true. Yet x's inability to make it the case that p is true ought not to count against x's omnipotence in this case. The reason for this is that it is not logically possible that x should make it the case that p is true. The case poses a task that is not logically possible for x. Therefore we revise our definition once more:

Def. 2": x is omnipotent =$_{df}$ for any sentence (wff) p, if it is logically possible that x make it the case that p is true, then x can make it the case that p is true.

Even with this definition, if we simply allow any term of the language to be substituted for 'x' there will be ready counter-examples. If we substitute for 'x', 'a man who can only wiggle his finger', Def. 2" will yield the result that such a man is omnipotent.[9] This can be remedied by allowing only names of individual agents to be substituted for 'x'. Therefore we stipulate that only names, and not descriptions, may be substituted for 'x'.

We are now in possession of a fully satisfactory notion of omnipotence, and in position to face the problem raised by the failure of the notion to accord with certain of our intuitions about tasks. First, we

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[9] This counter example was given by Gareth Matthews of the Department of Philosophy of the University of Massachusetts at Amherst.

shall declare, by fiat, that if p is logically true, then, for any x, "x makes it the case that p is true." and hence "x can make it the case that p is true." shall be true. Similarly, if p is logically false, then, for any x, "x makes it the case that p is true." and hence "x can make it the case that p is true." shall be false. Given this, it is obvious that sentences which are either logically true or logically false have no bearing on the question of omnipotence for any given being. They cancel each other out in the definition. This is as it should be. A being fails to be omnipotent if and only if there is some situation such that it is not logically contradictory to say that that being brought about that situation and yet such that that being is unable, for some reason, to bring about the situation. This accords quite well with what I take to be the most common intuitions about omnipotence.

C H A P T E R  I V

IS "GOD IS OMNIPOTENT" EITHER PROVABLE OR TRUE BY DEFINITION?

In addition to 'omnipotent', the stone paradox involves the use of a second key term, 'God'. If it should turn out, as some philosophers and theologians have suggested, that God is omnipotent by definition, or that "God is omnipotent" is, in some manner, provable, then it follows that there is a very simple solution to the stone paradox.

If "God is omnipotent" is provable, (I take it, here, that a definition constitutes a one-step proof.), then it is logically necessary that "God is omnipotent" is true. If it is logically necessary that God is omnipotent, then it follows that the third premise of the stone paradox,

A(3) If God cannot create a stone that He cannot lift, then He is not omnipotent.,

is false. This can be shown in the following way.

From Def. 2" of Chapter III, we have it that

God is not omnipotent $=_{df}$ there is some sentence p such that it is logically possible that God make it the case that p is true, and God cannot make it the case that p is true.

The sentence p by which we would normally expect that A(3) should be true is "There exists a stone which God cannot lift." However, we can show by means of the following argument that it is not logically possible that "There exists a stone which God cannot lift" is true. On the basis of the conclusion of Chapter II, it follows from this that it is not logically possible that God make it the case that "There exists a stone which God cannot lift" is true, and that that sentence does not allow us to

reach the conclusion of A(3). Here is that proof:

1) For any sentence p, if it is logically possible that God make it the case that p is true, then God can make it the case that p is true. (We are supposing, for the moment, that this is in some way provable.)

2) Let S be any stone.

3) It is logically possible that "S is lifted" is true.

4) It is logically possible that God makes it the case that "S is lifted" is true.

5) God can make it the case that "S is lifted" is true.

6) God can lift any stone.

We now have a proof of "God can lift any stone" involving so prior assumptions. Therefore it is logically necessary that God can lift any stone. From this it follows that it is not logically possible that "There exists a stone which God cannot lift" is true.

This does not, of course, prove that A(3) is false. It merely shows that the consequent of A(3) doesn't follow from the antecedent in the way in which it was expected to. It is very difficult to imagine any other sentence p which would enable the inference of A(3) to go through, however. While I suspect that the reader is perfectly convinced, I do not have the formal tools at this time to prove, with all formality, that A(3) is false if "God is omnipotent" is somehow provable. Since an adequate formalism will be developed in Chapter VIII, however, a perfectly adequate proof of this can be given. While the proof is fairly obvious, I shall include it as an appendix to this dissertation just in case the reader is interested in seeing it.

In later chapters I shall deal with some philosophers who have written on the stone paradox whose purported solutions to the paradox seem

to require the assumption that God is omnipotent by definition.[1] In most
cases, however, that assumption is neither entertained nor supported in
any explicit manner. Rather it seems to be a tacit and/or unrecognized
assumption.

To my knowledge, the issue of whether God is omnipotent by definition
has received no explicit treatment in recent literature on the stone para-
dox - this, despite the fact that this issue is so central to any attempt
to provide an adequate analysis of the stone paradox.

My procedure for the remainder of this chapter will be as follows:
First, I shall look at some definitions which have been put forward as
definitions of the term 'God'. In particular, I shall try to determine
whether these definitions include or imply God's omnipotence. Secondly,
I shall examine some of my own linguistic intuitions concerning the word
'God'. I shall do this by focussing on a pair of constructed possible
worlds whose domains include non-omnipotent beings which seem to me to
satisfy the term 'God'. Thirdly, I shall examine John Duns Scotus' dis-
cussion of the provability of "God is omnipotent" in the forty-second
distinction in his Ordinatio. And finally, I shall attempt to provide
an assessment of these investigations as they bear on the attempt to pro-
vide an adequate analysis of the stone paradox.

In "Proper Names", John Searle claims that:

a proper name may acquire a rigid use without having the verbal

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[1] See my treatments in later chapters of the following articles: George
Mavrodes, "Some Puzzles Concerning Omnipotence", Philosophical Review,
LXXII, (1963), pp. 221-223, in Chapter V, pp. 67-74; Bernard Mayo, "Mr.
Keene on Omnipotence", Mind, Vol. LXX, No. 278, (April 1961), pp. 249-
250, in Chapter VII, pp. 92-94; and the contributions of David Londey
and John King-Farlow to David Londey, et al., "God and the Stone Para-
dox: Three Comments", Sophia (1971), pp. 23-33, in Chapter VII, p. 102
and p. 104, respectively.

form of a description: God is just, omnipotent, omniscient, etc., by definition [the emphasis is Searle's] for believers.[2]

As a claim about what most believers believe, this is, at best, very tenuous. It might well stand if it were, instead, a claim about what most non-believing philosophers believe, or a claim about what most non-believing philosophers believe most believers to believe.[3] While it is true that both the Nicene and Apostolic Creeds begin with "I believe in God, the Father almighty, ...", that credal statement makes no claim that God is almighty or omnipotent by definition, rather it makes the simple claim that God is omnipotent.

To better assess the claim that God is omnipotent by definition, let us start by looking at some definitions of 'God' that have appeared in the history of western philosophy.

Anselm of Canterbury starts out his version of the ontological argument as follows:

'the Fool has said in his heart, there is no God' (Ps. xiii. 1, lii. 1) [This would be Ps. xiv. 1, liii. 1, in any modern Bible. The Psalms have been renumbered since the time of Anselm. What was Ps. ix in the Vulgate Bible has been split into Ps. ix and x.] But surely, when this same Fool hears what I am speaking about, namely, 'something-than-which-nothing-greater-can-be-thought', he understands what he hears, ...[4]

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[2] John Searle, "Proper Names", P.F. Strawson, ed., Philosophical Logic, (London: Oxford University Press, 1967), p. 96.

[3] This certainly does nothing to recommend Searle's claim. Non-believing philosophers generally tend to accept rather suspect notions of 'God'. Non-believing philosophers generally seem to have taken as definitive the model of God held by Nineteenth and Twentieth century fundamentalists, a model that is rejected by many religious believers today and one that is rejected with near unanimity by the theological community. While Searl's claim is not one that would be accepted by fundamentalists in general, neither is it one that would be accepted in general by Christian laymen or theologians of a more traditional approach.

[4] Anselm of Canterbury, Proslogion, Ch. II, Arthur Hyman and James Walsh,

In the second sentence of the above citation, Anselm offers a definition of 'God', namely, 'something-than-which-nothing-greater-can-be-thought'. Let us take this as

Def. 1) God $=_{df}$ something than which nothing greater can be thought.

A somewhat different definition of 'God' comes out of the work of Descartes. Descartes offers two different arguments for the existence of God, both of which start out with a notion of God as "a supremely perfect being".[5] We shall take this, then, as

Def. 2) God $=_{df}$ a supremely perfect being.

Both of these are what might be called strong notions of God. A somewhat more modest notion of God appears in St. Augustine's On Free Will. There Augustine attempts to give a proof of God's existence starting as follows:

> Aug. - If, now, we could find something which you could unhesitatingly recognize not only as existing but also as superior to our reason, would you have any hesitation in calling it, whatever it may be, God? Ev. - Well, I should not without hesitation give the name, God, to anything that I might find better than the best element in my natural composition. I do not wish to say simply that God is that to which my reason is inferior, but that above which there is no superior. ... Aug. - Very well. It will be enough for me to show that there is something of this nature [i.e. greater than our reason] which you will be ready to confess to be God, or if there be something higher still that at least you will allow to be God.[6]

In this passage, Augustine extracts from Evodius, his interlocutor, a confession that anything which would satisfy the following definition would be God:

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eds., Philosophy in the Middle Ages, (New York: Harper and Row, Publishers, 1967), p. 150.

[5] Descartes, Philosophical Works of Descartes, Vol. I, p. 226.

[6] Augustine, On Free Will, Hyman and Walsh, Op. Cit., pp. 37f.

Def. 3) God $=_{df}$ something such that it is superior to our reason and such that there is nothing superior to it.

Finally, I shall draw on some definitions of 'God' given by William of Ockham. There are at least two places in his <u>Quodlibeta Septem</u> where Ockham discusses the meaning of the term 'God'. Ockham observes that God's existence does not simply follow from the proposition, "An infinite being exists", "which is proved both in theology and natural knowledge,"[7]. This is because God is not <u>simply</u> an infinite being. First Ockham says,

> A theologian understands by the term 'God' an infinite being which is nobler than an infinity of beings of a different type; if these were coexistent, it would be nobler than all of them, not only taken separately, but even taken together.[8]

Following this definition of 'God', two other definitions are given which also comes from the <u>Quodlibeta</u>.[9] (I shall use the wording of <u>Quodlibeta</u>, I.)

> I say that the name 'God' can have various descriptions. One of them is: 'God is something more noble and more perfect than anything else besides Him'. Another is: 'God is that than which nothing is more noble and more perfect'.

Ockham has mentioned, here, four different possible definitions for 'God'. Moreover, it is apparent from the texts that Ockham regarded the last three definitions as reasonably adequate and within the range of what might be called standard Christian notions of God. I shall list these definitions as follows:

Def. 4) God $=_{df}$ an infinite being.

Def. 5) God $=_{df}$ an infinite being which is nobler than an infinity of

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[7] William of Ockham, <u>Philosophical Writings</u>, trans. by Philotheus Boehner, (New York: The Bobbs-Merrill Company, Inc., 1957), p. 110.

[8] <u>Ibid</u>., p. 110.

[9] <u>Ibid</u>., p. 112, (<u>Quodlibeta</u>, V, Q. i), and p. 139, (<u>Quodlibeta</u>, I, Q. i).

beings of a different type (finite beings, presumably).

Def. 6) God $=_{df}$ a being which is nobler than anything other than itself.

Def. 7) God $=_{df}$ a being than which nothing is nobler.

None of the above definitions, Def. 1)- Def. 7) include clauses which explicitly say that God is omnipotent. Some of them do, however, imply that God is omnipotent. Let us look at the definitions in order to determine which of them do and which of them do not imply that God is omnipotent.

Def. 1) God $=_{df}$ something than which nothing greater can be thought. It follows very straight-forwardly from Def. 1) that God is omnipotent. Consider the following argument:

1) Assume that God is not omnipotent.

2) God is, by definition, something greater than which nothing greater can be thought.

3) Imagine something just like God in all properties compossible with omnipotence, but which is, unlike God, omnipotent as well.

4) This thing, being omnipotent, is greater than God.

5) We can think of something greater than God.

6) Therefore, God is not something greater than which nothing can be thought.

7) Therefore, by our definition, God is not God.

8) Therefore, God is omnipotent.

The above argument is, of course, an obvious parallel to Anselm's onto-logical argument, which makes use of precisely the same definition in a very similar way.

Def. 2) God $=_{df}$ a supremely perfect being. A supremely perfect being, according to Descartes, is one that possesses every perfection in

the highest degree.[10]  Assuming that the ability to cause things to hap-
pen is a perfection, then that perfection in the highest degree is omni-
potence.  Def. 2), therefore, also implies that God is omnipotent.

Def. 3) God $=_{df}$ something such that it is superior to our reason
and such that there is nothing superior to it.  To show that God's omni-
potence is not implied by Def. 3) we need only look at how Augustine
goes on in On Free Will to argue for the existence of God.  Augustine
proceeds to point out that there is at least one thing which is greater
than our reason.  That is truth.[11]  Therefore, there is a God. If there
are things greater than truth, then the greatest of these things is God.
If there is nothing greater than truth, then it is God.[12]  It is obvious
from this that any number of non-omnipotent things could satisfy Def. 3).
Def. 3) is even satisfiable by some things which lack the kind of agency
to which omnipotence is relevant.  Truth, for example, could satisfy Def.
3), yet lacks the appropriate kind of agency.

Def. 4) God $=_{df}$ an infinite being.  While this definition is not,
on its face, very clear, Ockham's claim that the existence of such a be-
ing is proved in "natural knowledge" makes it quite clear what Ockham
meant by "infinite being".  From the text it becomes clear that the kind
of being meant here is that which was, supposedly, proven to exist by
Aristotle in Metaphysics, Bk. XII.[13]  That being an infinite being in this
sense does not imply being omnipotent will be shown later in this chapter,

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[10] Descartes, Philosophical Works of Descartes, Vol. I, p. 168.

[11] Hyman and Walsh, Op. Cit., p. 47.

[12] Ibid., p. 49.

[13] See Ockham, Op. Cit., p. 110, the second full paragraph.

in connection with Scotus' discussion of the provability of God's omni-potence.

Def. 5) God =df an infinite being which is nobler than an infinity of beings of a different type. Initially, it would seem that what this definition adds to Def. 4) need have nothing to do with power or with ability to cause things to happen. Even if nobility does involve either power or ability to cause things to happen, Def. 5) still does not imply God's omnipotence. If we suppose, on the one hand, that a necessary con-dition for A's being more noble than B is A's having more power than B, it would follow from Def. 5) that the number of power-units that God can produce is non-countably infinite. It was shown in Chapter III, however, that omnipotence is not characterizable in terms of amounts of power. If we suppose, on the other hand, that a necessary condition for A's being more noble than B is A's being able to cause more things to happen that B is able to, then Def. 5) implies only that God can cause to happen anything that any finite being or infinite collection of finite beings can cause to happen and that God can cause at least one more thing to happen. Even on such generous suppositions as that nobility does involve either power or ability to cause things to happen, what is implied by Def. 5) is something far short of omnipotence.

Def. 6) God =df a being which is nobler than anything other than itself. There will be a being satisfying Def. 6) in any non-empty pos-sible world in which there are not two or more things of equal nobility. In any possible world whose domain contains only one being, that being will be God, according to Def. 6). Yet clearly such a being may not only fail to be omnipotent, it may even be completely powerless. Def. 6) cer-

tainly doesn't imply God's omnipotence, but only that God's abilities surpass those of any other creature.

Def. 7) God $=_{df}$ a being than which nothing is nobler. This definition implies even less than Def. 6) since Def. 7) could be simultaneously satisfied by two beings of equal nobility. Since any being that satisfied Def. 6) would also satisfy Def. 7), and since Def. 6) doesn't imply God's omnipotence, obviously Def. 7) doesn't imply God's omnipotence either.

This survey of some historical definitions of 'God' has been obviously inconclusive. It has been shown that some philosophers have accepted definitions of 'God' that implied His omnipotence and other philosophers have accepted definitions of 'God' that did not imply His omnipotence.

It may seem initially surprising that there should be so many and such different definitions of 'God'. If we were dealing with the word 'chair' we would presumably have much less diversity in the range of definitions that might be offered. There are, after all, many chairs in the world and many other objects which are not chairs but which bear certain similarities to certain chairs. If we were trying to give a definition for 'chair' we could start by looking for a definition such that all and only those objects which are customarily classed as chairs satisfied the definition.

When we are dealing with 'God', however, the case is different. We generally assume that there is at most one God in the world. Moreover, our acquaintance with that one God is such that different people claim to perceive Him rather differently. We do not have a number of things which are _very_ _similar_ to God in certain ways but are not God. We do not, in

other words, have a number of real particulars, some of which are God, some of which are not God, which we can compare and, through that comparison, compile a list of conditions such that a being will be called 'God' if and only if it satisfies those conditions.

In trying to determine whether God's omnipotence is included in or implied by the definition of 'God' we have two available arbiters: traditional definitional statements (In even the brief look at traditional definitions above we have found significant disagreement on the question of omnipotenc) and linguistic intuitions. From the above examination of traditional definitions of 'God', it is obvious that there exists a great deal of diversity among linguistic intuitions about 'God'. What can be called 'God' by the process theologian is incredibly different from what can be called 'God' by the fundamentalist preacher. The intuitions held by philosophers on this matter are no less diverse.

In the following few pages I shall bare my own intuitions about whether God is, by definition, omnipotent, and try to provide the reader with some of the motivations for those intuitions. I shall do this by describing two possible worlds which, I want to claim, are examples of possible worlds containing non-omnipotent Gods.

$W_1$ - In every respect not concerning God's powers, $W_1$ is identical to the real world. God is of such a nature that 'omnipotent', in the sense given in Chapter II, would be applicable to a being of His sort. God is, in $W_1$, omniscient, omnipresent, eternal, wholly benevolent, loving, etc. God is not, however, omnipotent. God can do anything except for one small thing. He cannot create a purple frog.

$W_2$ - $W_2$ is a bit stranger. Let us suppose that in $W_2$ there are two God-

like beings, G1 and G2. Each of them creates a solar system, SS1 and SS2, respectively, each of which includes a planet (E1 and E2 respectively) containing forms of life very much like those contained on earth in the real world. Let us suppose that G1 is very much like God is supposed to be in the real world by Christians who accept the model of God appropriate to Chapter II. G1 is the creator of everything except SS2, which was only created by G2 because G1 permitted it to be so. G1 is omnipotent, omnipresent (except in SS2), omniscient, eternal wholly benevolent, etc. Life on E1 is very much like it is on our real earth: similar in balance between good and evil; similar in contact or lack thereof between G1 and his creation; etc.

G2, on the other hand, is not omnipotent. He can only do those things which He is permitted to do by G1. G1 permits G2 to do nothing outside of SS2. Within SS2, G2 is permitted to do anything so long as it doesn't violate the natural laws of SS2. G2 is, however, omnipresent within SS2, omniscient, eternal, wholly benevolent, etc. Life on E2, moreover, is greatly preferable to life on E1. E2 has a very high balance of good over evil. The natural laws of E2 are such that life there is very easy and pleasant. There is also a very close contact between G2 and the human-like inhabitants of E2. G2's love for His creation is always very evident to his human-like creatures.

There is no contact between SS2 and the rest of $W_2$. The human-like inhabitants of E2 don't know that anything outside of SS2 exists, including G1. They know G2 very well. They know that G2 cannot violate the natural laws of SS2, therefore that G2 is not omnipotent. They do not know, however, that the reason for this is that G2 is prohibited from

doing so by G1.[14]

We may now ask whether either $W_1$ or $W_2$ are worlds in which there are non-omnipotent gods. Looking at $W_1$, is that member of the domain D1 of $W_1$ to which I have given the name 'God' really legitimately so called? The reasons for answering in the affirmative are obvious. That being can do anything which God has, supposedly, done in the real world. He can bring about any possible but non-actual state of affairs which could reasonably be regarded as interesting. (I am presuming that creating purple frogs is an intrinsically uninteresting thing, both to God and to the world.) He is omniscient, omnipresent, eternal, wholly benevolent, loving, etc. All these facts seem to me to make it perfectly legitimate and proper to call that being 'God'.

The reasons for answering in the negative are less obvious and, I submit, far less compelling. The most obvious reason would be simply a dogmatic belief that God is, by definition, omnipotent and, therefore, that any non-omnipotent being was, ipso facto, not God. This is clearly unsatisfying. To be convincing, such a belief would have to be supported either by some argument to the effect that "God is omnipotent" is provable or by appeal to some antecedently accepted definition of 'God'. The latter appeal would be, to a large extent, arbitrary, since it has been shown above that several traditionally held definitions of 'God' neither include nor imply God's omnipotence.

There is another approach which might be taken in objecting to calling the being in $W_1$ 'God'. It might be argued that since that being

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[14] The world, $W_2$, has grown out of conversations which I have had on this matter with Prof. Michael Jubien of the Department of Philosophy of the University of Massachusetts at Amherst.

cannot create purple frogs it must therefore lack the power to create purple frogs. In that case, however, there are a number of other tasks which require that same amount of power or even more (since it presumably doesn't require all that much power to create a purple frog) which that being must also be unable to do. Therefore, it might be claimed, there can be no being which fits the description given in connection with $W_1$.

This objection is ill-conceived. The problem is that it takes a notion of omnipotence which is roughly equivalent to that expressed by Def. 1 of Chapter II. Omnipotence is given in terms of degrees of power. This kind of a notion of omnipotence was shown to be inadequate in Chapter II, so I will say no more about it here.

$W_2$ raises a different set of problems. Does $W_2$ contain two gods, one god or no god? There are a number of reasons for calling G1 'God'. He is omnipotent, omniscient, wholly benevolent, loving, etc. He is very much like we suppose God to be in the real world. There are two factors which might motivate one to object to calling G1 'God'. He is not the creator of $W_2$ in its entirety, and he is not known to all of the creatures over which he has sovereignty. (He has sovereignty over the inhabitants of E2 since G2 controls them only because G1 permits it to be so.)

There are also a number of reasons for calling G2 'God'. He is omniscient, wholly benevolent, loving, known to all the creatures over which he has sovereignty. The reasons for which one might object to calling G2 'God' are that he is not the sole creator of $W_2$ and, while he is infinitely more powerful than his creatures, he is fairly limited in ability to

cause things to happen.

In the cases of both G1 and G2, the reasons for calling them 'God' seem to me to be more compelling. Both G1 and G2 are sufficiently transcendent to warrant being called 'God'. Both of them are sufficiently capable of entering into relationships with worshippers and a worshipping community. Both of them are benevolent. Finally, both of them have a very great ability to cause things to happen. While I would not want to claim that the above four characteristics are sufficient, in themselves, to warrant calling any being possessing them 'God', I do maintain that if a being possesses them in sufficient degree it does not need to be omnipotent as well in order to be called 'God'.

While the above considerations motivate my claim that God is not, by definition, omnipotent, I do not expect the reader to find them decisively convincing. I do, however, expect those considerations to show that a dogmatic assumption that the Anselmian definition of God (Def. 1) or any other definition which implies God's omnipotence is the only acceptable definition of 'God' is unwarranted.

We still have no decisive answer to the question, "Is 'God is omnipotent' true by definition?" Before considering the significance of this fact for attempts to assess the stone paradox, I should like briefly to look at John Duns Scotus' discussion of whether "God is omnipotent" is provable.

Among the portions of Scotus' Ordinatio which have been translated, there are at least two passages in which Scotus explicitly denies that it can be proved by natural reason that God is omnipotent, at least in the sense of 'omnipotent' which Catholic theologians of the time took to

be applicable to God.[15] While these passages, in themselves, don't give

Scotus' reasons for denying that God's omnipotence can be proved, in the

proper sense, or even make clear precisely what the proper sense is, one

of the passages does make reference to a fuller discussion of the ques-

tion in the untranslated forty-second distinction of the Ordinatio.

In this passage, Scotus draws clearly the distinction between the

sense of 'omnipotence' which is accepted as appropriate to theology and

another sense of 'omnipotence' which is theologically inadequate.

> Hic responderi posset, distinguendo, quod 'omnipotens' aut
> potest dici agens quod potest in omne possibile, mediate vel
> immediate, - et hoc modo est potentia activa primi efficientis
> omnipotentia, prout extendid se ad omnem effectum in ratione
> causae proximae vel remotae; ...
> Alio modo 'omnipotens' accipitur proprie theologice, prout
> omnipotens dicitur qui potest in omnem effectum et quodcumque
> possibile (hoc est in quodcumque quod non est ex se necessarium
> nec includit contradictionem), ita - inquam - immediate quod
> sine omni cooperatione cuiuscumque alterius causae agentis; ...[16]

It appears that the sense of 'omnipotence' which Scotus accepts as being

appropriate to theology is very similar to the sense of 'omnipotence'

given in Def. 2 of my second chapter. We might draw a definition from

Scotus' words as follows:

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[15] John Duns Scotus, Philosophical Writings, trans. by Allan Wolter, (New York: Bobbs-Merrill Company, 1964), pp. 69 and 95.

[16] Scotus, Opera Omnia, Vol. IV, (Civitas Vaticana: Typis Polyglottis Vaticanis, 1963), pp. 342f. "It is possible to respond to this by mak-ing a distinction, in that 'omnipotence' can indeed be predicated be-cause an agent has power, mediately or immediately, in all things possible - and in this sense, omnipotence is the active power of a first cause, as it extends itself to all effects in the system of causal relations, proximate or remote; ... 'Omnipotence' is accepted as appro-priate for theology according to the other sense, as omnipotence is predicated of what has power in all effects and in whatever manner possible (that is, in whatever manner which is neither in itself nec-essary nor involves a contradiction), thus - to repeat - immediately, because without any cooperation whatsoever from any other effective cause."

x is omnipotent $=_{df}$ x has power in all effects and in whatever manner possible ... without any cooperation whatsoever from any other effective cause.

I take it that having power in all effects and in whatever manner possible is precisely the same as being able to perform any possible task. The second clause of the above definition is what distinguishes between the first and second senses of 'omnipotence'. According to the second sense, omnipotence is the ability to perform any possible task without the use of any intermediary agency. According to the first sense, omnipotence is the ability to perform any possible task with or without such an intermediary. While Def. 2 of Chapter II makes no mention of intermediary agencies, it is quite easy to see that it is similar to Scotus' second sense on this point. Let us suppose that G is able to perform X by means of some intermediary agency, but not without that intermediary. Suppose, moreover, that it is logically possible that G perform X without any intermediary. From this it would follow, according to Def. 2 of Chapter II, that G is not omnipotent. On Scotus's first sense of 'omnipotence', however, G might still be omnipotent.

Anything that is omnipotent in the second sense is omnipotent in the first sense as well. The reverse does not hold. When we claim that God is omnipotent we are claiming that God is omnipotent in the first sense, but we are claiming more than that. It is for this reason that Scotus rejects the first sense as being inappropriate to theology.

Among the arguments for the provability of God's omnipotence which Scotus reports before giving his own position and arguments, two are interesting. The first one is this:

Praeterea, ratione probatur Deum esse potentiae infinitae (sic-

ut probatur VIII <u>Physicorum</u> et XII <u>Metaphysicae</u>); potentia autem
infinita nota est esse omnipotentia;[17]

Against this argument, Scotus introduces the above distinction, to show

that infinite power, in the sense proved, cannot simply be identified

with omnipotence, in the sense required.

In his central discussion of the question, Scotus claims that such

an argument would be sound if the premise "Whatever a first cause can do

through the agency of a second cause, it can do by itself, immediately."

were available to us.  In that case, the move from infinite power, as

mentioned above, to omnipotence would go through, according to Scotus.

However, that premise,

> non est nota ex terminis, neque ratione naturali, sed est tan-
> tum credita; quia si ipsa omnipotentia - ex qua dependet- esset
> nota ratione naturali, facile esset probare ipsis philosophis
> multa veritates et propositiones quas ipsi negant, et facile
> esset probare eis saltem possibilitatem multorum quae credimus,
> quae ipsi negant.[18]

That premise is not known from its terms nor is it immediately obvious

to natural reason.  The reason all Christians believe it to be true is

that it follows from, and depends upon, the claim that God is an omnipo-

tent first cause.  Therefore, to use it as a premise in an argument to

prove that God is omnipotent would be plainly circular.

While the premise, "Whatever a first cause can do through the agency

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[17] <u>Ibid</u>., p. 341. "Besides, it is proven by reason that God has infinite
power (as it is proven in <u>Physics</u>, Bk. VIII and <u>Metaphysics</u>, Bk. XII);
however it is well known that infinite power is omnipotence."

[18] <u>Ibid</u>., p. 346. "is not known from its terms, nor to natural reason,
but is merely believed; because if omnipotence itself - on which it
depends - is known by natural reason, it is easy for those philoso-
phers to prove many truths and propositions which they deny, and it
is easy for them to prove, at the very least, the possibility of many
things which we believe, which they themselves deny."

of a second cause, it can do by itself, immediately." may have consider-
able initial plausibility, Scotus does not think it is obvious to natural
reason since the more general rule that whatever a higher-order cause can
do through the agency of a lower-order cause, it can do by itself, immedi-
ately, is subject to obvious counter-examples:

> quia esti sol haberet in se causalitatem eminentiorem quam bos
> (vel aliud animal), non tamen concederet solem posse immediate
> generare bovem sicut potest mediante causa-bove generare.[19]

The other interesting argument is drawn from Richard of St. Victor's
De Trinitate.[20] In that work, Richard claims that there are necessary
reasons for all those things which we hold by faith,[21] and that by finding
and showing those reasons we can give proof of the main articles of the
Catholic faith.[22] While Richard's proof of God's omnipotence[23] is not,
in itself, interesting, since it is not concerned with a fully adequate
notion of omnipotence, his general point is of interest since, while it
wouldn't provide a proof, it would nevertheless show that one existed.

To this point, Scotus replies as follows:

> Ad auctoritatem Richardi dico quod etsi sint necessariae rati-
> ones ad probandum omnipotentiam et quaedam alia credita, non
> tamen sunt evidenter necessariae et verae: ... - quia licet sit
> ex necessariis, non tamen praemissae sunt necessario evidentes,

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[19] Ibid., p. 344. "because although the sun has in itself causality sur-
passing that of the cow (or any other animal), it is not nevertheless
permitted to the sun to be able to produce a cow immediately, although
it is able to produce one mediately, by means of a cow-cause."

[20] Ibid., p. 341.

[21] Richard of St. Victor, De Trinitate, J.P. Minge, ed., Patrologia Latina,
Vol. 196, (Paris: 1880), p. 891CD.

[22] Ibid., p. 892C.

[23] Ibid., p. 900BCD.

quia non sunt notae possibile est hoc inferre.[24]

The key here is in the next to the last line. Clearly "God is omnipotent" is not true merely by virtue of its form. If God's omnipotence is to be provable, then "God is omnipotent" must be true either by virtue of the meanings of the terms of the syllogism, i.e. by definition, or it must be the conclusion of some argument whose premises are either known from definition or obvious to natural reason. This latter possibility Scotus denies when he says that the premises are not evident to us either from what we know from the terms or from what we know immediately. Richard must have some other sense of 'necessary' in mind when he says that there are necessary reasons for all those things which we hold by faith, some sense of 'necessary' which is not relevant to the present issue.

It seems modest, if not miserly, to conclude that some people have and some people have not thought that God is, by definition, omnipotent, and that, therefore, "God is omnipotent" is necessarily true; and that I don't think that God is, by definition, omnipotent. The significance of this issue for an analysis of the stone paradox should be clear from what I said at the beginning of this chapter. The significance of this chapter is to show that it is not simply obvious, as many have supposed, that God is omnipotent by definition.

God is supposed to be sui generis, not created by anything other than Himself. As such, it makes no sense to speak of Him as having been

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[24] Scotus, Opera Omnia, Vol. IV, pp. 346f. "to the authority of Richard, I reply that even if there are necessary arguments for proving omnipotence and certain other beliefs, nevertheless, they are not clearly necessary and true: ... - because it is permitted that it should be from necessity, nevertheless, the premises are not of necessity evident, because they are not known from what we know by the terms nor can they be inferred from what we know immediately."

created differently. He just is. This has led many people to suppose that not only is it necessarily true that God is omnipotent, but that every true predication of God is necessary. This latter claim, however, has disastrous results. Among the supposedly true predications about God are the claims that He created David Schrader as a blond; that He created Descartes as a Frenchman; etc. Yet if every true predication about God is necessarily true, then it is necessarily true that God created the world as He did. It follows from this that God was not free to create the world in any other manner. Moreover, it follows that every true statement about the world is necessarily true. Therefore, to maintain contingency and God's freedom one must reject the claim that every true predication about God is necessarily true. One must at least maintain that some predications about the relation between God and the created order are contingently true. That God is omnipotent is a claim about the relationship between God and the created order. It is therefore at least not obvious that it is necessarily true.

The solution to the stone paradox in the case where God is not taken to be omnipotent of necessity is different from the solution in the case where God is taken to be omnipotent and which was given informally at the beginning of this chapter and will appear more formally in an appendix at the end of this dissertation. For the remainder of this dissertation I shall consider the soundness of the paradox of the stone in the case where God is not taken to be omnipotent of necessity. I will therefore operate on the assumption, from here on, that "God is omnipotent" is not a necessary truth.

# CHAPTER V

## THE FORM OF THE ARGUMENT

The argument of the stone paradox in its most traditional form is, to repeat from Chapter I of this dissertation:

A. (1) Either God can create a stone which He cannot lift, or He cannot create a stone which He cannot lift.

(2) If God can create a stone which He cannot lift, then He is not omnipotent (since He cannot lift the stone in question).

(3) If God cannot create a stone which He cannot lift, then He is not omnipotent (since He cannot create the stone in question).

(4) Therefore, God is not omnipotent.

The argument's form is:

A'. (1) $Pa \vee \sim Pa$

(2) $Pa \to \sim Qa$

(3) $\underline{\sim Pa \to \sim Qa}$

(4) $\sim Qa$

This form of argument is most commonly referred to as a "constructive dilemma". George Mavrodes argued, in Some Puzzles Concerning Omnipotence",[1] that the conclusion, "God is not omnipotent", cannot be reached by an argument of the above form. Rather, he claims, that conclusion can only be reached by means of a paradox, properly so-called, a reductio ad absurdum argument. The form would then be as follows:

A". (1) $Qa$

$\cdot$

$\cdot$

$\cdot$

(n) $C \, \& \sim C$

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[1] George Mavrodes, "Some Puzzles Concerning Omnipotence", Philosophical Review, LXXII, (1963), pp. 221-223.

$$(n+1) \; Qa \rightarrow C \; \& \sim C$$

$$(n+2) \sim Qa$$

Mavrodes claims that the stone paradox poses no limitation on God's power. The way Mavrodes comes to this conclusion is not by showing that the task posed is, in itself, logically impossible, nor by showing that, for any x, x's not being able to make a stone that x cannot lift poses no limitation on x's power, but by claiming that we must assume either that God is omnipotent or that He is not omnipotent. If we assume that God is not omnipotent, then making a stone that God cannot lift is not an impossible task for God, but this proves nothing since we have already assumed that God is limited in power and, in so doing, begged the question. On the other hand, if we assume that God is omnipotent, then the task in question becomes logically impossible. It becomes the task of creating a stone that cannot be lifted by Him whose power is sufficient to lift anything. This is clearly a logically impossible task and, it is claimed, poses no limitation on God's power.

Mavrodes claims that any proof regarding God's power to perform the task in question must start with one of the two assumptions mentioned in the last paragraph. He claims that a proof that God's power is limited can only be significant if it starts with the assumption of God's omnipotence.[2] Yet that claim surely seems absurd. Mavrodes cannot possibly want to claim that all proofs must proceed by reductio arguments. He has given no reason why proofs about God's power should proceed according to principles different from those which apply to other proofs. Clearly, argument A does not have the form of a reductio. It is, rather, a di-

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[2] Ibid., p. 222.

lemma, of form A'. Moreover, a great many important and widely accepted proofs proceed by methods other than reductio. Mavrodes has given no reason for us to accept this claim that "to be significant it must derive this same conclusion [that God is not omnipotent] from the assumption that God is omnipotent; that is, it must show that the assumption of the omnipotence of God leads to a reductio."[3]

Clearly, not assuming that God is omnipotent is quite different from assuming that God is not omnipotent. Given this distinction, argument A would seem to emerge unscathed by Mavrodes' charge of question-begging. Mavrodes says that "on the assumption that God is omnipotent, the phrase 'a stone too heavy for God to lift' becomes self-contradictory."[4] Without that assumption, it is presumably not self-contradictory.[5] Since A does not make any assumption one way or the other regarding God's omnipotence, it doesn't pose a logically impossible task. Clearly it poses a task whose accomplishment is incompatible with God's omnipotence, but that should be neither surprising nor alarming. If the task were compatible with God's omnipotence, then we would not have any claim to a disproof of God's omnipotence. Argument A does not beg the question, at least in the way Mavrodes suggests, since it begins with no assumption at all. Argument A may be open to the charge that it poses a task which is, of itself, logically impossible, but Mavrodes doesn't make that charge. That charge will be dealt with in Chapter VII of this work, in connection with other writers who do make it.

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[3] Ibid., p. 222.

[4] Ibid., p. 222.

[5] Ibid., p. 222.

On the surface, what Mavrodes says appears to be just plain stupid. Perhaps, beneath the surface, there is a good explanation for what Mavrodes says in this article. Perhaps Mavrodes is operating from certain unexpressed, but generally sound, assumptions and actually shedding some light on the stone paradox. I shall consider two possible motives which might lead Mavrodes to say the things he does. These seem to be the only possible explanations why a respectable philosopher like Mavrodes might claim that the conclusion of the stone paradox can only be significantly derived if it is derived from the assumption of God's omnipotence.

First, we are dealing with what has been traditionally called "the stone paradox". Yet argument A does not have the form of a paradox. Presumably if we start with the assumption that God is omnipotent and then derive the conclusion that God is not omnipotent, then we have a proper paradox.

I suggest that the stone paradox is so called not because it is supposed to be a paradox in the proper sense of the word. I suggest that what we have is rather a case of a problem being historically associated with a particular name. This kind of association is not at all uncommon in the history of philosophy. Every philosopher is familiar with the naturalistic fallacy. Yet a great many philosophers would claim that 'the naturalistic fallacy' does not name either a formal or an informal fallacy in the strict and proper sense of the word 'fallacy', rather just a presumably wrong philosophical position.

Moreover, argument A can be easily altered so as to give us a proper paradox. We need only add:

A. (0) God is omnipotent.

A. (5) God is omnipotent and God is not omnipotent.

A. (6) If God is omnipotent, then God is omnipotent and God is not omni-
potent.

A. (7) Therefore, God is not omnipotent.

The assumption, A(0), does not damage A(4) because none of the steps by
which A(4) is derived depend on A(0) or any other assumption.

While this search for a proper paradox may, in part, motivate Mav-
rodes to approach the problem as he does, it does not justify the conclu-
sion he reaches.

A more plausible explanation might be based on an unexpressed assump-
tion to the effect that the meaning of 'God' changes depending on what
assumption is made about God's omnipotence. While it is not initially
clear how the meaning of a word is affected by assumptions about pre-
sumably non-necessary properties of the thing denoted by the word, we
may make some progress here by working backward to see what possible fact
about the word 'God' could give Mavrodes the conclusion he wants. (I say
"presumably non-necessary properties" because Mavrodes speaks of the pos-
sibility of assuming that God is not omnipotent. If omnipotence were
taken to be a necessary property of God, then, given God's existence,
that assumption would be self-contradictory. While there is nothing in-
herently wrong with making a self-contradictory assumption, since it is
regularly done in reductio arguments, if the assumption that God is not
omnipotent is self-contradictory, then "God is omnipotent" is a truth of
logic. If that were the case, there would be no need to introduce it as
an assumption. This is contrary to the main point of Mavrodes' article.)

Working backwards then, creating a stone that God cannot lift would
be a logically impossible task if and only if a stone that God cannot lift

is not a logically possible object. It is not sufficient for the logical impossibility of there being a stone that God cannot lift that God should be omnipotent. If God is, as a matter of fact, omnipotent, then a stone that God cannot lift may still be a possible, but non-actual object. In order for the existence of a stone that God cannot lift to be logically impossible, it is required that it should be logically impossible that God should fail to be omnipotent. Omnipotence would have to be a necessary property of God.

This does not appear to be what Mavrodes wants to say. As I mentioned above, if omnipotence is taken to be a necessary property of God, then one needs no assumption about God's omnipotence in order to reach the conclusion that the paradox poses an impossible task. Moreover, the necessary properties of God cannot be altered in any way merely by making assumptions about whether God is or is not omnipotent. This being the case, I can see no plausible explanation for Mavrodes' program.

It should be clear at this point that Mavrodes' claim that a reductio argument is needed is false, and that argument A does not beg the question in the way that Mavrodes claims that the stone paradox does.

In the second half of his paper, Mavrodes takes up an even more bizarre position. He imagines a particularly obstinate objector to his first defense, who claims that 'a stone too heavy for God to lift' is self-consistent, even on the assumption that God is omnipotent. He then claims that such a stone would be a possible object and that God could create it. At this point, rather than acknowledge that, if the objector is granted his point and if God creates such a stone, that there would then be something that God could not lift, hence something that God could

not do; or suggesting that unless God actually creates the stone there will be no such stone, hence no task; Mavrodes says that "such a stone is compatible with the omnipotence of God."[6] It follows from this that no damage is done to God's omnipotence, according to Mavrodes.

This is surely wrong. I have just claimed that, even on the assumption that God is omnipotent, 'a stone that God cannot lift' is self-consistent. I have claimed this not on the ground that the existence of such a stone is compatible with the omnipotence of God, but on the ground that unless God is necessarily omnipotent, if it is logically possible that God should fail to be omnipotent, then it is logically possible that there should be a stone that God cannot lift. Since Mavrodes has not claimed that God is necessarily omnipotent, he has not forestalled my objection. If Mavrodes were to claim that God is necessarily omnipotent, then the debate would have to move to the ground covered in Chapter IV. Mavrodes could have claimed that God is by definition omnipotent. He could have given some historical and/or theoretical support for that claim, and then given the solution given in Chapter IV, that the paradox fails because a stone that God cannot lift is not a logically possible object. That is clearly an option for Mavrodes, but one he has not taken.

That a stone that God cannot lift should exist is surely incompatible with the omnipotence of God. Mavrodes himself does not wish to deny this. What is peculiar about Mavrodes' point here is that he supposes that such an objector would be forced to accept the conclusion that the existence of a stone that God cannot lift would be compatible with God's omnipotence. It should be clear from the above that Mavrodes' objector

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[6] Ibid., p. 222.

is certainly not <u>forced</u> to that conclusion. Mavrodes' argument on this point is directed against a straw man, while the proponent of argument A, as amended on pages 70f. above, goes unscathed.

We remain with argument A. Its form is that of a dilemma, not that of a reductio. Mavrodes seems to suggest that we cannot arrive at the particular conclusion, A(4), in this manner, due, presumably, to peculiarities about the subject under discussion. Yet, nothing would seem more clear than that the form of argument A is unobjectionable. If the soundness of A is to be attacked, it must be claimed that one of its premises is false. This is what I'm sure Mavrodes would do if he were confronted with argument A as a representation of the stone paradox. I shall examine the premises of argument A in Chapters VI, VII, IX and X of this work.

Before moving on to the analysis of the premises of argument A, let us look at a variant on argument A, presented in the first of two papers on omnipotence by J.L. Cowan,[7] which argument, Cowan feels, is a decisive improvement on argument A. Cowan claims that the argument which we shall label 'B' is not susceptible to the criticism which has been leveled against A and which will be considered in Chapter VII. I shall show, in the next few pages that argument G is no improvement on A, that it is itself susceptible to one totally devastating criticism (It is completely circular.) and that A is therefore a more persuasive argument and the form of the stone paradox most worthy of consideration.

The heart of the issue is best stated in Cowan's own words:

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[7] J.L. Cowan, "The Paradox of Omnipotence", <u>Analysis</u>, Vol. 25 (Supplement), No. 3, (January 1965), pp. 102-108.

The crux of the entire issue lies in one simple fact. Because of its central importance I shall state this in three ways, in the formal mode as (1a), in the material mode as (1b), and in a simple logical notation as (1c). These are quite equivalent, however, and I shall refer to them indiscriminately as '(1)'.

(1a) There are perfectly respectable, non-self-contradictory predicates, predicates meaningfully and even truly predicable even of such lowly beings as you and me, predicates which, however, are such that the capacity to have them truly predicated of one logically excludes the capacity to have other similarly non-self-contradictory predicates truly predicated of one.

(1b) Some capacities imply limitations; there are things one can do only if one cannot do certain other things.

(1c) $(\exists F)(\exists G)(x)(pFx \supset \sim pGx)$. Here 'pFx' means 'x can (do or be) F', and the other symbols are as usual except that to rule out all suspicion of having cheated the Mayo-Mavrodes objections we might limit the range of the 'F's and 'G's to the non-self-contradictory.[8]

The argument follows:

B. (1) $(\exists F)(\exists G)(x)(pFx \supset \sim pGx)$     by definition

    (2) $(F)pFg$     assumption that God is omnipotent

    (3) $pFg \supset \sim pGg$     from (1) by instantiation

    (4) $pFg$     from (2) by instantiation

    (5) $\sim pGg$     from (3) and (4) by modus ponens

    (6) $pGg$     from (2) by instantiation[9]

The argument above, which is presented by Cowan, needs to be completed as follows:

    (7) $pGg \ \& \sim pGg$     from (5) and (6)

    (8) $(F)pFg \supset (pGg \ \& \sim pGg)$     from (2) and (7) by conditional proof

    (9) $\sim(F)pFg$     from (8) by reductio

If B(1) is true, and if we assume that 'F' and 'G' are limited to

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[8] Ibid., p. 104.

[9] Ibid., p. 105.

the predicates which may be appropriately applied to 'God' and such that 'Fg' and 'Gg' are both non-self-contradictory, then argument B is wholly unobjectionable. Cowan claims that (1) is a "simple fact". (1) is clearly not true simply by virtue of its logical form. Rather Cowan claims that "(1) is a logical truth, since the existence of mutually exclusive predicates is assured by definition."[10]

Unfortunately, Cowan provides neither theoretical nor definitional support for this last claim. While the existence of mutually exclusive predicates is assured by definition, it does not follow from this that (1) is a logical truth. This is because (1) does not concern predicates, simpliciter, but rather predicates of a particular kind, those involving ability to bring about states of affairs. Rather, the only support Cowan gives for the claim comes from an example. The example, interestingly, is the ability to create a stone which the stone's maker cannot lift.[11] Failing of any other support (Cowan offers none and I cannot imagine any other.), (1) must rise or fall with the more traditional stone paradox, A. If it is the case that if there is some possible task that God can do (create a stone that He cannot lift) then there is something else (lift said stone) that God cannot do, then (1) is true. But if, again, that is the case, then the stone paradox in its traditional form is decisive. Argument B is therefore superfluous. Moreover, B offers no clarification of the issue over A. On the contrary, B introduces additional complications by deciding the issue on the basis of a generalization, the supportive case for which is precisely the case which is dealt with speci-

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[10] Ibid., p. 106.

[11] Ibid., p. 102.

fically in argument A.

It should be apparent that we receive no benefit by abandoning A in favor of some other argument or form of argument against the omnipotence of God. A is a straight-forward dilemma. It is, therefore, of a wholly unobjectionable form. A certainly involves certain complexities. These are not complexities which can be obviated by moving to a different argument. They are complexities which are inherent in any argument which proposes to disprove the omnipotence of God by introducing incompatible tasks. The remainder of this work will therefore be devoted to unravelling these complexities and, thereby, to assessing the truth of the three premises of argument A. This in turn will enable us to assess the soundness of the argument and the weight of the stone paradox.

# C H A P T E R   V I

## THE FIRST PREMISE AND THE EXISTENCE ASSUMPTION

It would seem that the first premise of argument A is completely innocuous. It is:

A(1) Either God can create a stone which He cannot lift, or He cannot create a stone which He cannot lift.

Surprisingly, it has been suggested that A(1) is the most doubtful of the premises of the stone paradox. In "The Incompatibility of God's Existence and Omnipotence"[1] George Englebretsen claims that the form of A(1) is not

(i) (Pa v ~Pa), but rather

(ii) (Pa v $\overline{Pa}$),

where '$\overline{Pa}$' means that a possesses some property which is a contrary of the property named by 'P'.[2] Englebretsen goes on to claim that while "(Pa v ~Pa)" is a tautology, "(Pa v $\overline{Pa}$)" is not. While "Pa" and "$\overline{Pa}$" cannot both be true, they can both be false. Englebretsen claims that they can both be false precisely under the following conditions:

(a) if "Pa" is a category mistake;

(b) if "Pa" has a subject term which fails to refer;

(c) if "Pa" is semantically paradoxical; or

(d) if "Pa" is a truth-functionally counterfactual conditional.[3]

After rejecting (a), (c) and (d) as not applying in this case, Englebretsen concludes that if God exists, then A(1) is true. On this account,

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[1] George Englebretsen, "The Incompatibility of God's Existence and Omnipotence", Sophia, April 1971, pp. 28-31.

[2] Ibid., pp. 28f.

[3] Ibid., p. 29.

Englebretsen claims that the conclusion of the stone paradox is:

(1) if we accept A(1), then we must conclude that God is not omnipotent, and

(2) if we reject A(1) (if the conjuncts of A(1) are vacuous); and if the conjuncts of A(1) are not category mistaken, semantically paradoxical or truth functionally counterfactual conditional; and if we wish to avoid negative theology, then we must conclude that God does not exist.[4]

This much of Englebretsen's claim is right, if we reject A(1), then we must conclude that God does not exist. Englebretsen's claim that A(2) and A(3) are "clearly innocuous"[5] is clearly wrong, as we shall see in Chapters VII, IX and X. While Englebretsen is correct in pointing out the fact that the stone paradox involves an assumption of the existence of God, much of his supporting argumentation is based on mistakes.

Englebretsen's first problem is his claim that A(1) is of the form

(ii) $(Pa \lor \overline{Pa})$, and not

(i) $(Pa \lor \sim Pa)$.

In the first place, Englebretsen has no need to make that claim. He is led to it on the basis of a very simple error in logic. He claims that (i) is a tautology. Yet (i) is clearly not a tautology. Consider the following argument.

1) $Pa \lor \sim Pa$.

2) $(\exists x)(Px \lor \sim Px)$.

From (i) we can infer that there is at least one object in the world. Yet the existence of such an object is clearly not a truth of logic. The existence of an object denoted by 'a' is required for the truth of (i) as much as it is for the truth of (ii).

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[4] Ibid., p. 30.

[5] Ibid., p. 28.

Englebretsen recognizes that A(1) is not a tautology. Yet, since he thinks that (i) is a tautology, he is forced to conclude that (i) doesn't give the form of A(1). With this confusion disposed of, let us see whether there is any other incentive remaining for supporting Englebretsen's claim that A(1) is of form (ii).

First, let us look at the three sentences: "Pa", "$\overline{Pa}$", and "~Pa", where the interpretation of the letters is:

a - God, and

P_ - _can create a stone which _ cannot lift.

"Pa" attributes to God the property P. "~Pa" expresses the claim that God does not have property P. (Note that, contrary to Englebretsen's claim, God's existence is required for the truth of "~Pa".) "$\overline{Pa}$" expresses the claim that God does not have property P, and that God possesses a kind of agency such that property P could appropriately, although perhaps not truly, ascribed to God. For "$\overline{Pa}$" to be true, God must at least be the kind of agent that can create and lift stones.

Englebretsen points out that "Pa" and "$\overline{Pa}$" can both be false if, among other reasons, "Pa" has a subject term which fails to refer. As we have seen, however, in that case "Pa" and "~Pa" are also both false. Therefore, it does not follow from the fact that A(1) is false if there is no God that the form of A(1) is (ii) rather than (i).

Englebretsen also gives three other conditions under which "Pa" and "$\overline{Pa}$" can both be false. Let us look briefly at those other conditions to see whether Englebretsen is correct in claiming that they give different truth-conditions for "$\overline{Pa}$" and "~Pa". Englebretsen claims that if (d) "Pa" is a truth-functionally counterfactual conditional, then "Pa"

and "P̄a" can both be false while either "Pa" or "∼Pa" must be true.  By
"truth-functionally counterfactual conditional", Englebretsen seems to
mean must "counterfactual conditional".  The example he gives here is
"If Columbus had not sailed, America would not have been discovered."[6]
Given the fact that, despite an abundance of recent literature on the
subject, there is as yet no generally accepted logical analysis of coun-
terfactual conditionals, it is not possible to give a set of truth con-
ditions for such a sentence which would meet with any degree of general
acceptance.  Given this problem and the fact that Englebretsen simply
dismisses this case as not being relevant to the present problem, I shall
say no more about counterfactual conditionals.  "God can create a stone
that God cannot lift" is not a conditional at all, therefore certainly
not a counterfactual conditional.

Englebretsen's treatment is no better off with respect to case (c),
where "Pa" is semantically paradoxical.  His example here is "This very
statement is false."[7]  To illustrate the problem, let us take a closer
look at that example.  We may symbolize the example as Pa, where 'P'
and 'a' are interpreted as follows:

a - this very sentence (i.e. "This very sentence is false.")

P_ - _is false.

Thus 'a' names this very sentence, "This very sentence is false." and
"Pa" is, in our symbolism, that very sentence, "This very sentence is
false."  'a' therefore names "Pa".  It follows, therefore, that to say
that "Pa" is false is to say that a is false, that is, to say that Pa.

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[6] Ibid., p. 29.

[7] Ibid., p. 29.

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This is a problem for Englebretsen since he claims that semantically paradoxical statements present us with a situation where the statement and its contrary are both false. Yet in the case of his own example, if the semantically paradoxical sentence is false then it is true. This is untenable.

It is only in case (a), where "Pa" is a category mistake, that Englebretsen actually has a case where it is clear that "Pa" and "$\overline{Pa}$" can be false while "~Pa" is true. In arguing that "God can create a stone which He cannot lift." is not a category mistake, Englebretsen shows very clearly his theological naiveté. He says,

> If, say, "God can create a stone which He cannot lift" is a category mistake, then either it is nonsense or the predicate "can create a stone which He cannot lift" is being used in some non-standard, non-ordinary way. ... However, to say that predicates such as "can create ..." are used in a nonstandard way when predicated of God ... is to accept Negative Theology.[8]

This latter claim is simply untrue. Not only is the claim that certain predicates are used in a nonstandard way when predicated of God a different claim from that of Negative Theology, it is not even a claim about the same question. The claim that certain predicates are used in a nonstandard way when predicated of God is a claim about what we mean when we speak of God. Negative Theology, on the other hand, offers only a claim about what kind of things can be said of God. A claim about nonstandard usage, when accompanied by the appropriate sort of translation manual (Pace Quine), may very well run directly against the constraints of Negative Theology. Such claims would include the claim that predications about God are analogical in nature, the claim that religious

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[8] Ibid., pp. 29f.

language is reducible to ethical language, etc.

There is plenty of room to slide between the horns of the dilemma posed by the stone paradox, by claiming that A(1) is based on a category mistake. It may plausibly be claimed that the kind of agency which gives rise to the stone paradox cannot be appropriately ascribed to God. Since I am more concerned to examine the logic of the stone paradox rather than the theological assumptions on which it rests, I shall not concern myself with such claims.

While Englebretsen's analysis of A(1) is not well supported, He is right in pointing out that A(1) is true only if God exists. Englebretsen's objection to argument A could be met, of course, by adding "If God exists, then" on the beginning of each step in argument A. The conclusion would then be "If God exists, then God is not omnipotent."

In my formal assessment of the argument of the stone paradox I shall handle the existence assumption somewhat differently. In giving a model for the formal language which I shall develop in Chapter VIII, I shall simply assume that God is a member of the domain of the real world. The end result is the same. The conclusion of the argument is true only if God is a member of that domain. The more interesting question, of course, is the one which Englebretsen claims to be trivial, in claiming that A(2) and A(3) are innocuous. Must the conclusion be true if God is a member of the domain of the real world?

CHAPTER VII

THE THIRD PREMISE

With a clear definition of 'omnipotent' in hand from Chapter III,
we may proceed to an analysis of the second and third premises of argu-
ment A.  These are:

A(2) If God can create a stone which He cannot lift, then He is not omni-
potent.

A(3) If God cannot create a stone which He cannot lift, then He is not
omnipotent.

In almost all of the literature on the stone paradox A(2) has been
accepted as innocuous.[1]  A(3) has been accepted as the most obvious
point of attack on the soundness of argument A.  Because of this, there
is a rather considerable corpus of literature directed to the issue of
whether A(3) is true.  In this chapter I propose to consider that body
of literature to determine whether any of the writers on the stone para-
dox have succeded in showing the falsity of A(3).  At the conclusion of
that consideration I shall be able to draw at least a preliminary con-
clusion as to the truth of A(3).  The final judgement on A(3) must, how-
ever, be reserved until Chapter IX, after a formal logic adequate to the
expression of argument A has been developed.

The attacks on the truth of A(3) fall roughly into three general
approaches.  One of thse approaches is to give a more or less formal con-
struction of the argument or some part of it and to attack those points
which are weak, on that particular construction.[2]  The second approach

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[1] This general acceptance has been unfortunate as it has obscured poincs
of real interest concerning the stone paradox. Moreover, it is unwar-
ranted, since A(2) is not only not innocuous, it is not true, as we
shall see in Chapter X.

is to draw an analogy between the argument of the stone paradox and some other argument which either is obviously invalid[3] or suggests some other kind of solution to the stone paradox.[4] The third approach is to give some more general analysis of the notion of liftability according to which A(3) comes out false.[5]

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G. Wade Savage gives the following more general version of argument A:

C. (1) Either x can create a stone which x cannot lift, or x cannot create a stone which x cannot lift.

   (2) If x can create a stone which x cannot lift, then, necessarily, there is at least one task which x cannot perform (namely, lift the stone in question).

   (3) If x cannot create a stone which x cannot lift, then, necessarily, there is at least one task which x cannot perform (namely, create the stone in question).

   (4) Hence, there is at least one task which x cannot perform.

   (5) If x is an omnipotent being, then x can perform any task.

   (6) Therefore, x is not omnipotent.[6]

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[2] Following this approach are G. Wade Savage, "The Paradox of the Stone", *Philosophical Review*, Vol. LXXVI, No. 1 (January 1967), pp. 74-79; G.B. Keene, "A Simpler Solution to the Paradox of Omnipotence", *Mind*, Vol. LXIX (January 1960), pp. 74-75; and Barry Miller's contribution to David Londey, Barry Miller and John King-Farlow, "God and the Stone Paradox: Three Comments", *Sophia*, (October 1971), pp. 23-33.

[3] Following this approach are David Londey and John King-Farlow in Londey, et al., *Op. Cit.*

[4] J.L. Mackie, "Evil and Omnipotence", *Mind*, Vol. LXIV, No. 254 (April 1955), pp. 200-212; and Ian T. Ramsey, "The Paradox of Omnipotence", *Mind*, Vol. LXV, (1956), pp. 263-266 follow this approach, although in very different directions.

[5] Such analyses are offered in Savage, *Op. Cit.*,; and Barry Miller's contribution to Londey, et al., *Op. Cit.*

Argument C is more general than argument A because, aside from other differences, the singular term 'God' is replaced throughout the argument by the free variable 'x'. Savage makes this alteration in order to better capture what he sees as the basic point of the stone paradox. Also, Savage feels, this strengthens the paradox against the inclination to say that God is, by definition, omnipotent and, therefore, that a stone that God cannot lift is not a logicaly possible object, and the creation of such a stone not a logically possible task. Savage states these two points clearly as follows:

> For if God is by definition omnipotent, then, obviously, creating a stone which God (an omnipotent being who can lift any stone) cannot lift is a task whose description is self-contradictory. What the paradox of the stone really seeks to prove is that the notion of an omnipotent being is logically inconsistent - that is, that the existence of an omnipotent being, God or any other, is logically impossible [emphasis is Savage's]. It tries to do this by focusing on the perfectly consistent task of creating a stone which the creator cannot lift. The essence of the argument is that an omnipotent being must be able to perform this task and yet cannot perform the task.[7]

I suggest that 'creating a stone which the creator cannot lift' does not in fact name a "perfectly consistent task", precisely because it does not name a task at all. It is, rather, a schema for naming a very large number of tasks.

Savage, Londey and Miller all fail to take note of this kind of objection. Cowan, however, is aware of this kind of objection and devotes fair effort to showing that real tasks can be named by expressions in-

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6 Savage, Op. Cit., p. 76.

7 Ibid., pp. 75f. A similar move is made by Londey and Miller, in Londey, et al., Op. Cit., pp. 25 and 26; and by J.L. Cowan, The Paradox of Omnipotence Revisited", Canadian Journal of Philosophy, Vol. III, No. 3, (March 1974), pp. 40ff.

volving the use of token reflexives. Cowan attempts to show this by giving examples of what he takes to be legitimate tasks which are named by expressions involving such reflexives. I give Cowan's statement of what is by far his most convincing case.

> We are operating a wilderness survival training school. One skill we are endeavoring to get each of our trainees to master is that of building, alone, without aid, and utilizing only native materials, a boat which not only can carry its builder but which, to negotiate the inevitable portages, he in turn can carry. Smith and Brown succeed. Jones fails; his boat can carry him, but not he it. Have Smith and Brown not demonstrated an ability, capacity or power Jones lacks?[8]

The answer is surely, "Yes."

It does not follow, however, from the fact that Smith and Brown have shown an ability, capacity or power that Jones lacks that Jones has failed to perform some task which Smith and Brown have performed. What we should rather say is that Jones failed to perform a task which is related in a particularly intimate way (We might say "reflexively-index-ically related".) to the tasks which Smith and Brown succeded in perfor-ming. Yet this needs some argument if it is to be convincing. Consider the following sentences:

(1) Jones builds a boat which he can lift.

(2) Smith builds a boat which he can lift.

(3) Smith builds a boat which Jones can lift.

(1) and (3), respectively, attribute performance of one and the same task to Jones and to Smith. That task is the building of a boat which Jones can lift. To see this, note that any set of actions will, if performed by Jones, constitute a performance of the task spoken of in (1) if and

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[8] Cowan, Op. Cit., p. 41.

only if that same set of actions will, if performed by Smith, constitute a performance of the task spoken of in (3).

Here lies the problem for Cowan's claim that (1) and (2) attribute to Jones and Smith the performance of the same task. We must suppose that either (1) attributes to Jones the performance of one task or (1) attributes to Jones the performance of more than one task. Let us suppose that (1) attributes to Jones the performance of just one task. Let us further suppose that (1) attributes to Jones the performance of the same task the performance of which (2) attributes to Smith. Yet we know that (1) attributes to Jones the performance of the same task the performance of which (3) attributes to Smith. This leads to the conclusion that (2) and (3) attribute the performance of the same task to Smith. This conclusion is obviously false. Therefore, on the assumption that (1) attributes to Jones the performance of only one task, we must conclude that the task which (1) attributes to Jones and the task which (2) attributes to Smith are different tasks, contrary to the conclusion Cowan would have us draw from his example.

Assume, on the other hand, that (1) ascribes to Jones the performance of more than one task. Assume, again, that one of the task-performances ascribed to Jones by (1) is the same as (one of) the task-performance(s) ascribed to Smith by (2). Clearly no task-performance which (2) ascribes to Smith is the same as the task-performance ascribed to Smith by (3), yet one of the task-performances ascribed to Jones by (1) is the same as that ascribed to Smith by (3). We may suppose that the task which (3) ascribes to Smith may be named unequivocally by 'building a boat which Jones can lift'. The only plausible candidate for naming the single

supposed task which is ascribed to Jones by (1) and to Smith by (2) is 'building a boat which the builder can lift'. It follows that 'building a boat which Jones can lift' and 'building a boat which the builder can lift' name two different tasks, even when Jones is the builder.

We must now look for the difference between those tasks. Both the tasks are the building of a boat which fits a particular description. If they are different tasks they must be buildings which are somehow different, one such that it is a boat that Jones can lift, one such that it is a boat which the builder can lift. (This is not to say that some or all boats might not fit both descriptions, just as there are some boats which can undoubtedly be lifted by both Jones and Smith, and it is possible that Jones and Smith should be able to lift all and only the same boats.) Yet certainly, where Jones is the builder, both descriptions pick out exactly the same boats. Moreover, they do not pick out the same boats merely by some accident of nature, but because 'Jones' and 'the builder' are two terms which pick out the same individual. Therefore 'building a boat which Jones can lift' and 'building a boat which the builder can lift' do not name different tasks, but rather are different names for the same task.

There is no difference between a boat which Jones can lift and a boat which the builder can lift (when Jones is the builder). Therefore, there is no difference between building a boat which Jones can lift and building a boat which the builder can lift.. They are one task, not two. This contradicts the original assumption.

It may be objected here that just as, in my possessing the property of being self-identical and in my possessing the property of being identi-

cal with David Schrader, I possess two different properties, so also (1) and

(1') Jones builds a boat that Jones can lift.

attribute the performance of different tasks to Jones. The property of being self-identical is a property possessed by me, but also by everything else. The property of being identical with David Schrader, on the other hand, is a property that I and only I possess. I share it with nobody.

There are crucial differences between tasks and properties. A task, unlike a property, is necessarily related to some state of affairs or possible state of affairs which is brought about by a successful performance of the task. A state of affairs, however, cannot be uniquely described by an expression which uses a reflexive whose reference is not determined by another part of the same expression. Thus, "There is a boat which he can lift." picks out no particular state of affairs since 'he' picks out no particular object as it is used in the above expression. The same is true for "There is a boat which the builder can lift."

We may conclude, then, that there is no task such that its performance is ascribed by (1) to Jones and by (2) to Smith. Cowan's most convincing case fails. This should show that expressions involving token reflexives do not name tasks, but rather are schemata for naming tasks, such that, when the reflexive is replaced by a name or definite description, the expression names a task. The task at issue in the stone paradox is not that of creating a stone which the creator cannot lift, but that of creating a stone which God cannot lift.

Savage fails in his attempt to circumvent the issue of whether God

is by definition omnipotent, because that issue is central to the stone paradox. I have, of course, dealt with it in Chapter IV, and assume here that God is not by definition omnipotent. Therefore, we need not worry about the paradox's breaking down on that point.

Savage continues by giving the following as a formal representation of his C(1)-C(3), where 'S' stands for 'is a stone', 'C' for 'can create', and 'L' for 'can lift':

D. (1) $(\exists y)(Sy \cdot Cxy \cdot -Lxy) \vee -(\exists y)(Sy \cdot Cxy \cdot -Lxy)$.

   (2) $(\exists y)(Sy \cdot Cxy \cdot -Lxy) \supset (\exists y)(Sy \cdot -Lxy)$.

   (3) $-(\exists y)(Sy \cdot Cxy \cdot -Lxy) \supset (\exists y)(Sy \cdot -Cxy)$.[9]

Savage proceeds to point out the obvious. D(3) is false. "$-(\exists y)(Sy \cdot Cxy \cdot -Lxy)$" does not imply "$(\exists y)(Sy \cdot -Cxy)$". Rather "$-(\exists y)(Sy \cdot Cxy \cdot -Lxy)$" is equivalent to "$(y)(Sy \cdot Cxy \supset Lxy)$". "God cannot create a stone which God cannot lift." is logically equivalent to "Any stone which God can create God can lift." This latter version, according to Savage, does not make any claim that God cannot perform some task.

Savage is wrong in this claim, as we shall see presently. One might just as well say that, since "Any stone that God can create God can lift." is logically equivalent to "God cannot create a stone that God cannot lift.", the former claim does imply a limitation on God's power. Either form, conjunctive or conditional, is quite capable of expressing a claim of a limitation on something's power.

Unfortunately, Savage makes the above claim without offering any defense for it. The same claim was, however, also made by G.B. Keene[10]

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9 Savage, Op. Cit., p. 77.

10 G.B. Keene, "A Simpler Solution to the Paradox of Omnipotence", Mind

seven years before the appearance of Savage's paper. Keene also respon-
ded[11] to criticisms of the above position by Bernard Mayo.[12] While
Mayo's objections are not really very good, they do, at least, force
Keene to expand on his original position, thus giving the reader an idea
of what is really at play in this defense against the stone paradox. In
order to give Mayo's criticisms of the Keene-Savage solution most clearly,
I give the following sentences:

(1) God cannot create a stone which God cannot lift.

(2) Any stone which God can create God can lift.

(3) I cannot make paper airplanes.

(4) Anything I can make is not a paper airplane.

(5) I cannot tie knots which I cannot untie.

(6) Any knot I can tie I can untie.

Mayo appears to take it as obvious that sentences like (2), (4) and (6)
do not imply any limitation, while sentences like (1), (3) and (5) do,
at least on their faces, imply limitation. The crucial question, once
Mayo has given Keene this much, is whether (1), (3) and (5) are "reword-
able" as (2), (4) and (6), respectively. It is obvious that (3) does im-
ply some limitation of capacity. Mayo takes this to support the claim
that (3) is not rewordable as (4). This should convince us. according
to Mayo, that not all such sentences are rewordable in this manner. Mayo
takes it as a good reason against saying that (1) is rewordable as (2)

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Vol. LX1X, No. 273, (January 1960), pp. 74-75.

[11] Keene, "Capacity-Limiting Statements", Mind, Vol. LXX, No. 278, (April 1961), pp. 251-252.

[12] Bernard Mayo, "Mr. Keene On Omnipotence", Mind, Vol. LXX, No. 278, (April 1961), pp. 249-250.

that the following holds of the closely analogous (5) and (6): (6) asserts an unlimited unknoting capacity on my part, while (5) asserts a limitation on my knotting capacity.[13] If this latter claim is right, the analogy between (1) and (2), and (5) and (6), respectively, may support Mayo's point.

First, it must be noted that (1) and (2) are logically equivalent, as are (3) and (4) and also (5) and (6). Mayo is claiming, then, that two sentences which are logically equivalent nevertheless assert two different claims. This is a problem. (1) and (2) may very well differ in what they would connote in normal conversation. They may well differ in their implicatures, but they differ in no way which would affect the logic of the stone paradox. Whatever can be deduced from one can be deduced from the other. If the conclusion that God is not omnipotent can be deduced from (1) it can be deduced from (2) as well.

Keene, in his reply, acknowledges that (3) implies some limitation of capacity, but says that (4) does as well. This is for the reason that some things which other people make are paper airplanes. Moreover, he says that (5) and (6) both imply some limitation in capacity if and only if it is the case that a knot that I cannot untie could conceivably be tied. Finally, Keene says that (1) and (2) would both imply some limitation of capacity if it were the case that such a stone could conceivably be created.[14] Keene thinks it is logically impossible that there should be such a stone. That is to say, Keen thinks it is necessarily true that God can lift any stone.

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[13] _Ibid._, p. 250.

[14] Keene, "Capacity-Limiting Statements", p. 252

This is very revealing. For Keene at least, (1) does not fail to imply some limitation on God's power simply because it is logically equivalent to (2), but rather because it poses a task whose performance is not logically possible. If that task were possible, then (1), and (2) as well, would imply a limitation on God's power. The rewording itself is only a red hering that steers us back into the problem with which we have already dealt in Chapter IV.

Clearly Savage is wrong when he says, "it is obvious [emphasis is mine] that the latter statement ["If x can create a stone then x can lift if."] does not entail that x is limited in power."[15] Savage has apparently forgotten that a statement can express a negative claim without the word 'not' occuring in it once.

Be that as it may, Savage is right in claiming that D(3) is not logically true. (Whether the sentence supposedly represented by D(3) is logically true or true for other than logical considerations will not concern us at this point.) Savage's point is relevent, however, only if D(1)-D(3) is an adequate representation of C(1)-C(3). D(1)-D(3) does not adequately represent C(1)-C(3). The problems revolve around the use of the existential quantifier and the predicate 'can create'. D(1) does not capture the same disjunction that is expressed by C(1). Moreover, the consequent of D(3) does not represent the consequent of C(3).

To show that D(1) does not provide an adequate representation of C(1), I shall show that the first disjunct of D(1), on the given interpretation of the predicate letters, says something quite different from the first disjunct of C(1). The first disjunct of C(1) is "x can create

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15 Savage, Op. Cit., p. 77.

a stone which x cannot lift". The first disjunct of D(1), under the specified interpretation, represents "there is a stone which x can create, but which x cannot lift". D(1) claims that the stone in question actually exists. C(1), on the other hand, merely claims that God can create such a stone, hence that it might possibly exist (and whatever else is required in addition to logical possibility for a stone to be creatable by God). C(1) certainly does not claim that such a stone actually exists. More-over, the 'Cxy' is rendered virtually superfluous in D(1), at least as a reflection of A(1). It would seem to be presupposed in any discussion of God as a creator that if something does exist, then God can create it. In C(1), however, "x can create ..." is clearly not superfluous. The dichotomy expressed in C(1) is between x's ability to create the stone and x's inability to create the stone. The dichotomy in D(1) is between the existence and non-existence of the stone which x can create but not lift. Consider the case where x can create a stone which x cannot lift, but, in fact, neither x nor anyone else has created such a stone and the stone does not exist in actuality. That case would satisfy the first disjunct of C(1), but the second disjunct of D(1). Thus D(1) cannot be an adequate representation of C(1).

Similarly, the consequent of D(3) claims that there exists a stone which x cannot create. C(3)'s consequent only claims that x cannot create a stone of a certain specification. We would normally think that, in the context of a debate over the omnipotence of God, if God cannot create something, then it doesn't exist, contrary to the consequent of D(3). At very least, C(3) doesn't claim that such a stone does in fact exist.

It can be seem, therefore, that D(1)-D(3) is not an adequate formal

representation of C(1)-C(3), even less of A(1)-A(3). Both for this rea-
son and because, as I showed earlier, Savage fails to show by virtue of
its formal equivalence to "(y)(Sy·Cxy ⊃ Lxy)" that the second disjunct of
D(1) does not entail any limitation on God's power, Savage's formal
analysis of the stone paradox removes none of the paradox's teeth, nor
does it lessen the weight of the stone.

Barry Miller, in his contribution to "God and the Stone Paradox:
Three Comments", renders the argument of the stone paradox in yet an-
other way. In the following, 'M' is the modal operator of possibility,
'X' names some arbitrary creator, and 'Y' names the stone. We have the
argument:

E. (1) M(X creates a stone Y which it cannot lift) or -M(X creates a
stone Y which it cannot lift).

   (2) If M(X creates a stone Y which it cannot lift), then there is
a task which X cannot perform (viz, lift Y which has been created
by X).

   (3) If -M(X creates a stone Y which it cannot lift), then there is a
task which X cannot perform (viz. create Y which is unliftable by
X).

   (4) Therefore, there is a task which X cannot perform (i.e. X is not
omnipotent.[16]

Miller goes on to argue that the task mentioned in (2) and (3) of E, X's
creating a stone Y which it cannot lift, poses no limitation on X's power
since it is "inherently unperformable".[17] I shall examine later what
Miller means by "inherently unperformable".

For the present, I should like to criticize Miller's construction,
E, of the argument as providing no helpful analysis of the paradox. The

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[16] Londey, et al., Op. Cit., pp. 26f.

[17] Ibid., p. 27.

first problem involves the conclusion. A(4) is "Therefore, God is not omnipotent." E(4) is "Therefore, there is a task which X cannot perform (i.e. X is not omnipotent)." For better or worse, "There is a task which X cannot perform." does not mean the same as "X is not omnipotent." "X is not omnipotent." means that there is some task which is not logically impossible and which X cannot perform. This is not a trivial difference. If "There is a task which X cannot perform." were to mean the same as "X is not omnipotent", and if Miller is correct in his claim that the task in question is inherently unperformable (assuming that "inherently unperformable" means "logically impossible"), then there will clearly be a task, albeit a logically impossible one, which X cannot perform and X will clearly not be omnipotent. Calling the task in question a "pseudo-task"[18] does not help if one still calls it a task.

This is, of course, a problem which Miller can easily get around by replacing "there is a task which X cannot perform" in E(2)-E(4) with "X is not omnipotent". With that substitution, Miller's construction would clearly not be subject to the above criticism. Moreover, such an alteration would clearly be more in tune with Miller's general approach to the paradox. This would give us the following argument:

E'. (1) M(X creates a stone Y which it cannot lift) or -M(X creates a stone Y which it cannot lift).

(2) If M(X creates a stone Y which it cannot lift), then X is not omnipotent.

(3) If -M(X creates a stone Y which it cannot lift), then X is not omnipotent.

(4) Therefore, X is not omnipotent.

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[18] Ibid., p. 30.

Another problem with Miller's construction of the stone paradox arises from his use of the modal operator. It is not at all clear that the possibility operator, on any of its fairly standard interpretations, captures what it must capture if E (or E') is to express the stone paradox adequately. If we give 'M' the interpretation of logical possibility, then the formulation, E', guarantees its own unsoundness as follows. In that case, E(3) expresses the claim that if it is not logically possible that X creates a stone Y which it cannot lift, then X is not omnipotent. However, if it is not logically possible that X creates a stone Y which it cannot lift, then it does not follow that there is a logically possible task that X cannot perform. Thus, it also does not follow that X is not omnipotent. Hence E'(3) is false and the argument fails. (This interpretation well illustrates the problem with E(4) as an expression of the conclusion of the stone paradox.)

Even on the most restrictive of the fairly standard interpretations of the possibility operator, physical possibility, it still expresses a notion which is somewhat less restrictive than that expressed by the 'can' in argument A. Consider the case where it is physically possible that X create a stone Y which it cannot lift, but for some reason or other X cannot create such a stone (just as it is physically possible that I should make 100 free throws in 100 attempts, but clearly for other reasons I cannot do so). This case would fall under the second disjunct of A(1), but under the first disjunct of either E(1) or E'(1). Moreover it is certainly not obvious, and generally not thought to be true, that God cannot perform physically impossible tasks. Therefore, E(1) and E'(1) do not capture the same dichotomy as A(1).

This should show quite clearly that, at least on two interpretations of 'M', Miller's construction, E, does not at all well represent the traditional stone paradox. Perhaps Miller could give a suitable interpretation for 'M', but he has not supplied one in the present article. The notion that 'M' must express is not so much possibility as ability. The difficulty in expressing such a notion formally becomes apparent if we look at the wide variety of conditions in which we say that some agent fails to have a certain ability. Some of our normal notions of impossibility do imply lack of ability, but in combination they do not exhaust it by any means.[19]

E and E' do not give enough formalization to shed any light on the deeper structure of the argument. What formalization they do give is not a representation of the traditional paradox.

While the particulars of Miller's construction of the stone paradox play virtually no role in his analysis of the paradox, he nevertheless gives the construction as a representation of the traditional stone paradox.[20] E is not an advance on A in terms of clarity. Rather E requires much work to be done on it if it is to express at all the ideas which are expressed much more clearly in A.

Both Miller and Savage fail to provide through their, more or less,

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[19] The relation between ability and any of our normal notions of possibility is, to a point, open to dispute, but that dispute is strictly peripheral to the present point so long as none of the standard notions of possibility are identical with the notion of ability at play in the stone paradox. A more careful consideration of the relationship between various notion of possibility and ability will follow in Chapter VIII.

[20] Ibid., p. 26. Actually, Miller's construction is based on that of Geroge Englebretsen and inherits one of its problems, the one concerning its conclusion, from Englebretsen.s construction.

formal constructions fail so badly in their attempts to capture the original paradox. A correct formal rendering of the argument in question is always necessary before one can expect any formal analysis to be help- ful. In connection with the stone paradox, such a correct formal ren- dering poses certain problems, which we have just encountered, which make that task a very difficult one, requiring a logical apparatus which is not available to us in most of our standard first-order systems, be they extensional or modal.

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David Londey and John King-Farlow both attempt a different kind of attack on the stone paradox.[21] Each of them tries to analogize the stone paradox to another argument which poses a task which is clearly logically impossible. Londey gives the following presumed parallel:

F. (1) God can state a problem which He cannot solve or God cannot state a problem which He cannot solve.

(2) If God can state a problem which He cannot solve, then there is a task which God cannot perform.

(3) If God cannot state a problem which He cannot solve, then there is a task which God cannot perform.

(4) Therefore, there is a task which God cannot perform.[22]

Londey quite correctly points out that the argument is sound, but that it doesn't prove that God is not omnipotent. The reason for this is that the task which it is claimed in F(2) that God cannot perform is a logic- ally impossible one. On the assumption that God can do anything your average logician can do, God can state the problem of giving a formal

[21] Ibid., pp. 23ff. and pp. 31ff.

[22] Ibid., p. 24.

decision procedure for the first-order predicate calculus. That problem is, however, logically unsolvable. Therefore, God's inability to solve it does not show that God is not omnipotent.

Londey thinks that the stone paradox poses a similarly impossible task. He reasons as follows: We must suppose that 'God' refers to some unusual sort of being who might be omnipotent. The argument loses its bite without this supposition, for "if we were to replace "God" everywhere in the argument by "The Prince of Wales" or "Christopher Columbus", we would just get an elaborate demonstration of what no one doubts."[23] Londey acknowledges that one must try to avoid allowing the usual assumption of God's omnipotence to become explicit in the argument. Otherwise we might be able to substitute 'God, who is omnipotent' for 'God' throughout the argument. In that case, 'a stone that could not be lifted by God, who is omnipotent' would obviously be self-contradictory.[24]

Londey thinks that this problem cannot be overcome. He suggests, as the best possibility for getting around the problem, the formulation of the "Generalized Stone Paradox".[25] This is fundamentally the argument C, but under universal quantification. This still doesn't help, according to Londey. He claims that we must suppose that $x$ ranges over all conceivable beings. (This is certainly a non-standard way of setting the range of a variable, but let us suppose that Londey has a free logic of some sort, in which this is a legitimate practice.) But, "a being who

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[23] Ibid., p. 24.

[24] John King-Farlow makes a similar point in Ibid., p. 32. The criticisms that I make against Londey's position will apply equally to that of King-Farlow.

[25] Ibid., p. 25.

can perform any logically performable task appears to be a conceivable being, and hence within the range of x."[26] Therefore, "(x)(x cannot create a stone that x cannot lift ⊃ x is not omnipotent)" is false, since 'an omnipotent being' is a possible value for 'x'.

Three criticisms can be made against Londey's analysis of the stone paradox. First, Londey's claim that we must suppose that 'God' refers to some unusual sort of being lest the argument lose its bite is surely wrong. That an argument proves "what no one doubts" certainly does not count against the argument. No one doubts that 1+1=2. We can also give an elaborate proof of that in Zermelo-Fraenkel set theory. The proof in no way suffers because it proves something that no one doubts. That we can use a stone type argument to prove that Richard Nixon and David Londey are not omnipotent does not require that we suppose 'God' to refer to some different sort of being. We need make no supposition at all about what kind of being 'God' refers to, as long as we do not suppose that God is necessarily omnipotent.

Secondly, there is no reason to think that we should be able to substitute 'God, who is omnipotent' or something to that effect for 'God' throughout the argument. Clearly such a substitution is illegitimate unless God is necessarily omnipotent. If it were legitimate without that assumption, then we would be able to prove that I am blond, by substituting 'David Schrader, who is blond' for 'David Schrader'. In Chapter IV it was argued that God may not be necessarily omnipotent. The present consideration is carried out under the assumption that if God is omnipotent, He is only contingently omnipotent.

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[26] Ibid., p. 25.

Finally, Londey's criticism of the generalized stone paradox is question-begging. Londey claims that an omnipotent being appears to be conceivable. It is not at all clear that such a being is conceivable. A being is conceivable only if it is logically possible. But if the stone paradox in its general form is sound, then an omnipotent being is logically impossible. The argument must not assume anything about what kind of being is conceivable. Rather it, if sound, proves something about what kind of being is conceivable. That Londey begs the question can best be shown by pointing out that, on Londey's assumption that an omnipotent being is conceivable, and his practice of having variables range over all conceivable, not just actually existing, entities, it is impossible to reach the conclusion by any means since the 'x' in '(x) (x is not omnipotent)' is presumed to range over an omnipotent being. Londey assumes that there can be such a being. On that assumption the stone argument is impossible. This is a case of using an assumption to immunize a position against rational debate.

King-Farlow's analogical criticism of the paradox is more interesting. King-Farlow reminds us of the familiar truth of mathematics, that there is no greatest number (NGN). After an uninteresting and pointless argument which purports to show that F.T. Sommers is a less powerful mathematician and logician than any of the editors of Sophia, which argument fails due to the truth of NGN, King-Farlow states the principle that there is not a greatest task (NGT): "For any time t and for any [degree of power] d1, there is a d2 such that Is-Desired-d1 at t ENTAILS that BOTH Is-Available-d2 at t AND d2 Is-Greater-than-d1."[27] King-Farlow does not

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[27] Ibid., p. 33.

spell out explicitly how this principle is supposed to save God from the stone paradox. If we state NGT more perspicuously, it becomes apparent: for any degree of power that is desired (for performing a certain task), an even greater degree of power is available (to God). Thus stated, it is obvious how NGT solves the problem. It begs the question. Moreover, in King-Farlow's defense of NGT, he says, "If there is an omnipotent Deity ..., then for every degree of power desired ... there is no ... task ... demanding a degree of power too great for more than enough power to be available."[28] NGT is a principle that arises from the assumption of the omnipotence of God, then it is used as a weapon against an argument against the omnipotence of God This is clearly circular.

The surface parallel between NGT and NGN, which is not only true, but highly intuitive as well, is deceptive. Numbers are all commensurable. For NGT to be plausible, even on the assumption that some omnipotent God exists, degrees of power must be commensurable as well. If we could determine the degree of power necessary in order to perform some task simply in terms of the amount of energy required for the accomplishment of that task, the degrees of power would be commensurable. Power, in the sense relevent to the stone paradox, cannot be so simply determined in degrees.

It might be noted here that King-Farlow's formulation of NGT is based on the notion of omnipotence characterized in Chapter III above under Def. 1. That notion was rejected at that time as failing to capture what we intuitively understand by 'omnipotence'. That alone is sufficient for the rejection of King-Farlow's argument. Yet in the event

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[28] *Ibid.*, p. 33.

that, for any reason, this should not be compelling to someone, I include the following argument to dispose of King-Farlow's position decisively.

If degrees of power are commensurable, then we should be able to give a comparative ordering of the following: the degree of power required to see a bacteria, the degree of power required to lift the Washington Monument, the degree of power required to prove the independence of the Continuum Hypothesis relative to the axioms of Zermelo-Fraenkel, and the degree of power required for a 180 pound creature to fly from Hartford to DesMoines. It is clear, however, that there can be no such comparative ordering of those degrees of power. In that case, we must also say that degrees of power are not commensurable, that the relation 'is greater than' is not everywhere defined for degrees of power and, therefore, not that NGT is false, but that it makes no sense, it is not well-formed, even on the assumption that an omnipotent God exists. We may conclude that King-Farlow's attempted analogy with NGN provides no help in assessing the soundness of the stone paradox.

J.L. Mackie, in his famous article, "Evil and Omnipotence",[29] sets forth a more general paradox of omnipotence, involving the same principle which is at work in the stone paradox, and then suggests a solution which arises through his analysis of a presumed analogy to his paradox of omnipotence.

> This leads us to what I call the Paradox of Omnipotence;
> can an omnipotent being make things which he cannot subse-
> quently control? Or, what is practically equivalent to this,
> can an omnipotent being make rules which then bind himself?
> ...
> It is clear that this is a paradox: the questions cannot

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[29] J.L. Mackie, "Evil and Omnipotence", Mind, Vol. LXIV, No. 254, (April 1955), pp. 200-212.

> be answered satisfactorily either in the affirmative or in
> the negative. If we answer "Yes", it follows that if God ac-
> tually makes things which he cannot control ..., he is not
> omnipotent once he has made them: ... But if we answer "No",
> we are immediately asserting that ... he is already not
> omnipotent.[30]

This is obviously a more general version of our stone paradox. Mackie

seems to assume that the argument of the paradox is sound, for he gives

no in depth analysis of it. As such, it poses a problem and needs a

solution.

> Before suggesting a solution of this paradox, I would
> point out that there is a parallel Paradox of Sovereignty.
> Can a legal sovereign make a law restricting its own future
> legislative power?[31]

If by 'sovereign' we mean 'absolute sovereign', then the analogy seems

to be a good one.

Mackie's solution comes as no surprise. Following the legislative

distinction between the authority to make laws governing the authority

of legislative bodies (Mackie calls this 'sovereignty (2)'.) and the

authority to make all other laws (Mackie calls this 'sovereignty (1)'.),

Mackie draws a parallel distinction between omnipotence (1) and omnipo-

tence (2). Omnipotence (1) is the unlimited power to act, and omnipo-

tence (2) is the unlimited power to determine what power to act things

shall have. Mackie concludes that we may consistently say that God is

omnipotent (1) or that God is omnipotent (2), whichever we prefer for

theological reasons, but not that God is omnipotent, in an inclusive

sense of 'omnipotent'.

Mackie's solution involves something of a retreat from the tradi-

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[30] Ibid., p. 210.

[31] Ibid., p. 211.

tional theological claim of divine omnipotence, but it does, at least,
provide some presumably solid ground to which the theologian may retreat.
Yet Mackie's solution may be offered a bit prematurely. A solution is
only necessary where there is a problem. In particular, Mackie's solution
is only necessary if the argument of the paradox of omnipotence is sound.
At the present point, we are not yet in position to say with certainty
that it is sound. I shall, therefore, lay aside Mackie's solution and
get back to the matter of whether a solution is necessary at all.

I should point out here that Mackie's solution introduces an inter-
esting distinction between two senses of 'omnipotent'. These also give
rise to two parallel senses of 'power' which will be considered in
Chapter XI in connection with some possible complications which may be
thought to arise from my treatment of the stone paradox.

Finally Ian Ramsey, in "The Paradox of Omnipotence", claims that
Mackie's analogical "Paradox of Sovereignty" suggests a different solu-
tion to the paradox of omnipotence. Specifically, Ramsey claims that by
varying qualifications on the model of power ('scarcely powerful', 'rather
powerful', 'definitely powerful', 'very powerful', 'most powerful', ...[32]),
we vary the "logical placing" of the subject on which a certain kind of
power is predicated. When we reach 'all powerful' or 'omnipotent', we
have made an "appropriately odd logical claim"[33] about the subject, in
this case, God. In this way, Ramsey claims that "the question which
sets the paradox, despite Mr. Mackie's assertion, is not a proper ques-
tion, and it is not a proper question precisely because of the notion

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[32] See Ramsey, "The Paradox of Omnipotence", p. 263.

[33] Ibid., p. 263.

of omnipotence which is nothing if not logically odd."[34] Iemphasis is
Ramsey'sI.

As I previously considered Ramsey's position in Chapter III above,
and rejected at least its logical claims, I shall devote no more time
to it here.

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This brings us to the more general analyses of liftability and its
relation to omnipotence. Savage suggests one such analysis. Savage
summarizes his analysis as follows: "Whether $x=y$ or $x \neq y$, x's inability
to create a stone which y cannot lift constitutes a limitation on x's
power only if (i) x is unable to create stones of any poundage, or (ii)
y is unable to lift stones of any poundage."[35] Conditions (i) and (ii)
are not necessary conditions for x's inability to create a stone that
y cannot lift to constitute a limitation on x's power. Suppose that
x can create stones of any poundage and that y can lift stones of any
poundage, but that y cannot lift a slippery stone and that x, similarly,
cannot create slippery stones. In that case clearly x's inability to
create a stone that y cannot lift does constitute a limitation on x's
power. It is absurd to think that the only reason y might not be able
to lift a certain stone is because of its weight.

Conditions (i) and (ii) must be revised. The most likely candidates,
in light of the traditional notion of omnipotence, are (i) and (ii) with
"of any poundage" replaced by "of any non-contradictory description".

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[34] Ibid., p. 263.

[35] Savage, Op. Cit., p. 78.

Yet 'a stone which God cannot lift' is a non-contradictory description, but in that case, Savage would have to claim that God's failure to be able to create a stone which God cannot lift constitutes a limitation on God's power.

Savage is making the issue needlessly complicated. On our normal understanding of omnipotence, x fails to be omnipotent if and only if x cannot perform some task which is logically possible. We determine whether God's power is shown by the stone paradox to be limited by determining whether God's creating a stone which God cannot lift is a logically possible task.

Barry Miller presents a bold, if peculiar, argument in attempting to show that X's creating a stone Y which X cannot lift[36] is an "inherently unperformable" task. "Inherently unperformable" seems to mean "impossible by virtue of the rules of logic and certain meaning postulates regarding 'create' and 'lift'" in light of Miller's argument. The following is Miller's argument to the effect that the task posed in the stone paradox is "inherently unperformable", although Miller doesn't pull all the steps together in this form.

G. (1) X creates Y if and only if X makes it the case that Y exists.

(2) Y exists if and only if Y is individuated.

(3) Y is individuated if and only if the being-lifted-of-Y is individuated.

(4) The being-lifted-of-Y is individuated if and only if the being-lifted-of-Y exists.

(5) Y exists if and only if the being-lifted-of-Y exists.

(6) X creates Y if and only if X makes it the case that the being-lifted-of-Y exists.

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[36] See Miller's construction of the stone paradox, argument E.

(7) X makes it the case that the being-lifted-of-Y exists if and only if X lifts Y (directly or through some other agency).

(8) Therefore, X creates Y if and only if X lifts Y.

The conclusion clearly means that X's creating a stone which X cannot lift is impossible.

G is not a valid argument if we are limited to standard propositional logic. In particular, G makes use of one rule that goes considerably beyond anything available to us in propositional logic. That rule is something like the following:

R(1) If X makes it the case that P, and P if and only if Q; then X makes it the case that Q.

While R(1) is hardly obvious, it does bear some initial plausibility. For the benefit of assessing the rest of argument G, let us give Miller the rule he needs. With something like R(1) available, argument G is obviously valid, but its soundness is still very questionable. Let us look over the steps, in order to see whether they are all true. G(1) gives a fairly intuitive rendering of "X creates Y." This gives precisely the same construal to "X creates Y." as I shall use in developing a more precise logic for the stone paradox over the next three chapters of this paper.

G(2) expresses a philosophical claim which is not wholly uncontroversial. Nevertheless, nothing interesting in the present argument turns on this premise. If the philosophical claim which G(2) expresses were rejected, the argument could, without too much effort, be patched up on the basis of some replacement for G(2).

G(3) looks false. It is initially hard to understand why anyone would think it true. G(3) is based on one fairly controversial onto-

logical claim, that "accidents are, in a sense, particulars."[37]  If the being-lifted-of-Y is not a particular, an entity which can, itself, be individuated, then argument G fails.  Even if Miller is given the above ontological doctrine, a concession I am more than willing to make in order to be fair to his case, G(3) depends on other, yet more bizzare, assumptions.

I shall try, here, to give Miller's support for G(3).  Miller takes the first big step when he says,

> "Exists" is of course a contingent predicate, which means that "Y exists" can be affirmed only on the basis either of empirical evidence or of a contingent premise. In this case the premise would be "X creates Y". Moreover, "Y exists" can continue [emphasis is Miller's] to be affirmed only on those same bases.  In particular, it cannot continue to be affirmed at any time when "X creates Y" has ceased to be true.[38]

Let us accept Miller's claim that 'exists' is a contingent predicate.[39] Then it is true that "Y exists" can be affirmed only on the basis of either empirical evidence or a contingent premise.  Finally, it is true that "X creates Y" is a basis for affirming the truth of "Y exists". However, it is not true, nor does it follow from anything Miller has said, that "Y exists" can continue to be affirmed only so long as "X creates Y" remains true.  Where Y is a stone, from the moment when X first creates Y there is empirical evidence on which to base the affirmation of Y's continued existence.

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[37] Londey, et al., Op. Cit., p. 29.

[38] Ibid., p. 28.

[39] This claim may be debated by advocates of the ontological argument for God's existence, but it is certainly indisputable that the predicate 'exists' is only contingently applied to stones. Since this is the application involved in the present case, we can accept Miller's claim here.

We can make sense of Miller's views if we note that Miller is bringing into play a highly non-standard notion of creation. It appears that Miller believes that creation is an on-going activity, that the duration of the creation of some object (by God) is identical with the duration of the existence of that object.[40]  This rules out, say, a deist position to the effect that God created the universe long ago and then left it to its own devices.  On this view of creation, Miller would be right in claiming that "Y exist" cannot continue to be affirmed at any time when "X creates Y" has ceased to be true.  The reason, however, that this would be true is not that there would then be no basis, either evidential or logical, for affirming "Y exists", but rather that "Y exists" would then be false.

This notion of creation involves a theological assumption which Miller has given us no reason to accept, viz. that divine creation is such that its products will pass out of existence unless the creative act is performed constantly and continuously.  Moreover, there seems to be two very good reasons for rejecting that assumption.  On a religious level, it is assumed that divine creation is in some sense superior to human creation.  It is also assumed that an object is better created if it can continue to exist without the constant attention of its creator. Human beings can create objects which continue to exist without the constant attention of their creators.  God should be able to do the same. On the level of language, if Miller's notion of creation is accepted, the presumed analogy between divine and  human creation must become at- tenuated to the breaking point.  It is not at all clear that we can even

[40] Ibid., p. 28.

make sense of divine <u>creation</u> on Miller's account of it.

While Miller's claim to the effect that "Y exists" can only be affirmed so long as "X creates Y" is true is, strictly speaking, not essential to his support of G(3), it does lend a certain plausibility to Miller's program. In particular, it insures that the relation which X bears to Y by virtue of X's creative activity will hold through any accidental change in Y. At any time when Y is lifted, since Y must exist in order to be lifted, X will be, at that same time, creating Y.

Miller's support for G(3), <u>per se</u>, is basically as follows:

(i) Accidents are particulars.

(ii) The being-lifted-of-Y is an accident of Y.

(iii) The particularity of an accident is derived from the particularity of that of which it is an accident.

(iv) The particularity of the being-lifted-of-Y is derived from the particularity of Y.[41]

Miller seems to take this conclusion, (iv), as equivalent to G(3).

There is one obvious problem here. (ii) commits us to the existence of the being-lifted-of-Y, to Y's having the property of being lifted at some time or other. Yet since it is an accidental rather than an essential property of Y, we may well suppose that Y might lack that property. (Certainly it would seem that some stones are never lifted, eg. the Rock of Gibralter.) At best, the individuation of the being-lifted-of-Y is a necessary and sufficient condition for the individuation of Y only if the being-lifted-of-Y exists.

This forces a moderation of the conclusion of argument G to:

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[41] This argument does not actually appear in Miller's article, but is contained in substance in <u>Ibid</u>., p. 29.

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G(8)' Therefore, if X creates Y and Y is lifted, then X lifts Y.

Yet this conclusion does no damage to the stone paradox. We remain without any decisive criticism of the third premise of the paradox,

A(3) If God cannot create a stone which He cannot lift, then He is not omnipotent.

Moreover, despite the fact that we have looked at several attempts, we remain without any adequate formal analysis of the paradox.

The first part of this chapter has, at least, shown where some of the principle difficulties lie in giving a formal construction of the stone paradox. Perhaps the most severe difficulty lies in the attempt to capture the notion expressed by 'can' in the paradox by means of some formal aparatus. This came out most clearly in my treatment of Barry Miller's position.[42] The other major difficulty encountered by the writers mentioned in this chapter was that of capturing precisely the same disjunction in their formal representations of the stone paradox as is expressed by the first premise of the traditional statement of the paradox, A(1).[43] This latter difficulty is easily dispensed with once an adequate answer is given to the former problem. It is indispensible, therefore, at this stage in our inquiry to develop some formal logic which will allow us to give adequate formal expression to the stone paradox.

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[42] See this chapter, pp. 98f. above.

[43] See this chapter, pp. 94f. and 98 above.

# C H A P T E R   V I I I

## A FRAGMENT OF A FORMAL LOGIC OF ACTION

In the last chapter I presented one attempt to capture the notion expressed by 'can' in the stone paradox by means of standard logical modalities.[1] That attempt failed. For any of the fairly standard interpretations of the logical modalities it was very easy to provide counterexamples which showed the inability of such modalities to express the relevant sense of 'can'.

It should be apparent at this point that the 'can' of the stone paradox must be expressed by some other means, be it through some different interpretation of modalities or as a relation sign in some non-modal system.

A logic adequate for the expression of the stone paradox must include the standard modalities as well, however. A being is omnipotent if and only if it can perform any logically possible task. Therefore an adequate formulation of the stone paradox will involve the standard notion of logical necessity. This means that if it is determined that the 'can' of the paradox can best be expressed by means of some interpretation of modalities then the logic required to express the paradox will have to contain two different sets of modal operators.

It should be noted here that a logic for the stone paradox need not be based upon as comprehensive a logic of action as might be desirable, say, for deontic logic. The deontic logician, for example, may well want to draw the distinction between bringing about some state of affairs and

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[1] See the construction of the paradox by Barry Miller, Chapter VIII, p. 96, above, from Londey, Miller and King-Farlow, Op. Cit., pp. 26f.

serving that same state of affairs (closing a door and keeping it
ed). Logics of action have been developed which provide for that
inction.[2] For the purposes of dealing with the stone paradox, how-
, such distinctions are not important. What is important in the stone
dox is not whether something is brought about or preserved, not whether
stone is actually created or rather merely sustained. What is im-
tant in the stone paradox is whether the action involved can or can-
t be performed. While the ambiguity between production and preserva-
ion would beset the premises of the paradox, it would not affect the
conclusion. In either case, whether God cannot create (bring about the
existence of) a certain stone or whether God cannot sustain (preserve
the existence of) a certain stone, there is something that God cannot
do. The same would hold true of lifting a stone and holding it or keep-
ing it in a lifted position.

For this reason I shall follow the more simple course of not adop-
ting a logic which comes at action through change, specifying both the
beginning-state and the end-state for a given act. Rather I shall adopt
a logic which specifies only the end-state, that state of affairs which
is brought about by the act under discussion.

Before laying out the language for our fragment of a logic of action,
a brief discussion is in order concerning the various senses of the word
'can' which confront and confound theories of action.

Consider the following sentences:

1) I can photograph the Empire State Building now.

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[2] Two examples of such logics are provided by G.H. von Wright in Norm and
Action, (London: Routledge and Kegan Paul, 1963), and An Essay in Deon-
tic Logic and the General Theory of Action, (Amsterdam: North-Holland
Publishing Company, 1968).

2) I can play the piano.

3) Horowitz can play the piano in a room which contains no piano.

4) I can play the piano in a room which contains no piano.

Presumably we want to say that all these sentences are false. Yet we do not want to say that they are all false for the same kind of reason. 1) is false because I am not now within the sight of the Empire State Building with a camera in hand. I do not, in other words, have the opportunity to photograph the Empire State Building now. 2), on the other hand, is false because I lack the ability to play the piano. While it is true that I am not now near a piano, and therefore lack the opportunity to play one now, as well as the ability, 2) does not claim that I can play the piano now. Rather it claims that I have the ability to play the piano. It claims, among other things, that if I should be in a room containing a piano tomorrow I could play it. 3) is clearly false because in a room containing no piano Horowitz would not have the opportunity to play the piano, despite the fact that he clearly has the ability. Of course, if we were sitting in a piano-less room with Horowitz and I said, "Horowitz can play the piano.", my statement would be true. That, however, would be because my claim was not that Horowitz could play it there and then, but that he had the ability. If I said, on the other hand, "Horowitz can play the piano here and now.", the case would be different. That statement would clearly be false. Finally, 4) is false for two reasons. In a room containing no piano I would have neither the ability nor the opportunity to play the piano. From all this it is clear that there are at least two different senses of 'can'. One of these claims the ability to perform some task. The other claims the opportunity to

perform some task.

J.L. Austin suggests that 'can' has, in addition to the above to senses, what he calls an "all-in" sense which seems to include both the ability and the opportunity senses of 'can'.[3] I suggest that this is not really an additional sense of 'can'. When we speak of human action, the 'can' of opportunity is generally taken to presuppose the 'can' of ability. What is really at play here is Austin's "all-in" sense of 'can'. There is no human-action sense of 'can' which would allow one to say that I can play the piano simply by virtue of the fact that there is a piano at hand. The "all-in" sense of 'can' is not a sense different from the opportunity sense. Rather it is the opportunity sense.

All this is not to say that the opportunity sense of 'can' and the ability sense exhaust the senses of 'can'. 'Can' is also used, albeit perhaps in a rather attenuated sense, in connection with what might be called "second-order abilities", that is the ability or capacity to acquire some other ability or set of abilities.[4] I take it that this is the sense of 'can' used in a sentence like "Human beings can use tools."

In addition to these senses of 'can', there are also various subsidiary senses which involve various combinations of the above senses and perhaps others.[5]

In the claim that x is omnipotent if and only if x can perform any

[3] J.L. Austin, "Ifs and Cans", Myles Brand, ed., The Nature of Human Action, (Glenview, Ill.: Scott, Foresman and Company, 1970), p. 177.

[4] Cf. von Wright, Norm and Action, p. 317, and Austin, Ibid., p. 177.

[5] This has been pointed out in Bruce Aune, "Can" in Paul Edwards, ed., The Encyclopedia of Philosophy, Vol. 2, (New York: The Macmillan Company, 1967), pp. 18-20.

logically possible task, I submit that we must take 'can' in the broadest possible sense. A failure in terms of any of the above senses of 'can' would, according to the standard intuitions regarding omnipotence, constitute a lack of omnipotence. To be adequate for our purposes, a formal analysis of 'can' must be able to express that broad range of senses.

A great deal of effort has been spent in the attempt to give a conditional analysis of 'can' statements. Let us take as our example the sentence

1) S can perform a.

One might initially think that

2) If S tries to perform a, then S will perform a.

provides an adequate analysis of 1).[6] Yet a moment's reflection will show that this analysis of 'can' is not adequate. All of us frequently try to do things, which we would normally want to say that we can do, and yet fail. Suppose that I can make a certain shot at pool. If on occasion I fail to make that shot we would clearly not want to say that I cannot make the shot, although we would, I think, want to say, on a particular occasion when I fail to make the shot that there is some point before the pool ball stops rolling after which we should say that I cannot make the shot on that occasion. Similarly, Dick Allen can hit a home run. Yet he does not hit one every time he comes to the plate in every baseball game.

A possible way out of this problem might be to offer in place of 2) as an analysis of 1)

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[6] This view can plausibly be ascribed to G.E. Moore (Cf. Ethics, (Oxford: The Clarendon Press, 1912), p. 127.) adn P.H. Nowell-Smith (Cf. Ethics, (London: Penguin Books, 1954), p. 240).

3) If S tries to perform a on a certain number of occasions, then S will perform a on an appropriate percentage of those occasions.

At first glance, this would seem to provide a test for determining when a person can perform some act and when a person does something simply by accident. If a baseball player hits a home run one time in every twelve at bats, then we should certainly say that he can hit home runs. If someone only hit one home run in twelve thousand at bats, then we should be fairly inclined to say that he cannot hit home runs. Clearly the percentage of successes which would be relevant would be different for different activities.

3) however has serious problems of its own. In those cases where S has not tried enough times to determine whether he has the relevant success percentage, then 3) would require that we say that S can perform a. Clearly it is not the case that everyone can do everything that he has never tried. Even beyond this, we might suppose that there is a certain person who, we should normally say, can perform a certain act. Yet every time he tries to do so, some remarkable event intervenes to cause his attempt to fail. Suppose, for example, that every time Dick Allen hits a ball toward the fence a bird flies over the stadium and collides with the ball, causing it to fall in the outfield. In this case, we should not, I think, want to say that Dick Allen cannot hit home runs.

There are a number of ways in which one might attempt to patch up 3), by adding conditions to the antecedent, in order to retain the criterion of success in the consequent. All these attempts retain the first problem which we encountered with 3). Consider - "S can perform a if and only if, if S tries to perform a on a certain number of occasions and ... then S will perform a on an appropriate percentage of those oc-

casions." If "S tries to perform a on a certain number of occasions." is false, then so is "S tries to perform a on a certain number of occasions and ..." In that case, the definiens of 3) is true, but surely we might want to say that the definiendum is false. I have, for example, never tried to play Bach's "Minuet in G" on a trumpet. Yet my failure to so try is not sufficient grounds for claiming that I can play it.

Ability is, however, connected in some way with successful performance. This seems intuitively obvious. To give an adequate analysis of 1) we will have to get away from trial and success in the real world, for that does not work for the reasons stated above.

We might, of course, try to alter 3) by making its antecedent subjunctive. The result of such an alteration would, however, be a counterfactual conditional. That being the case, it would offer little insight into the logical analysis of 1), since the logical analysis of counterfactual conditionals is no more clear than that of 'can'-statements.

It has been argued that the basic 'can' of action is identical with physical possibility.[7] I considered this claim briefly in Chapter VII and rejected it on the basis of the following counter-example. It is physically possible that I should successfully shoot 100 basketball free throws in 100 attempts. Yet I cannot do so.

My counter-example may not be damaging if a certain radical physicalist thesis is true: namely that the laws of physics account for all events in the physical world. In that case it could be claimed that it is not physically possible that I should successfully shoot 100 free throws in 100 attempts. It could be claimed that my vision or my eye-

[7] Cf. Storrs McCall, "Ability as a Species of Possibility", Brand, ed., Op. Cit., pp. 139-147.

to-muscle coordination was such that my shooting 100 successful free throws would constitute a violation of the laws of physics for such bodies as mine. This claim would also psychological laws, etc.

This approach need not rest upon so radical a physicalist thesis. The minimal claim required to make such an approach useful is that all behavior is governed by rules which, if known, could be stated, be they physical, psychological, or of some other sort. While this claim is not unobjectionable, it is a much weaker claim than the above phsicalist thesis.

On this weakened claim we are no longer dealing with simple physical possibility, but rather some more stringent kind of possibility. Yet even this species of possibility is not identical with the notion we want to express by 'can'. We might well suppose that my performing some act is quite compatible with all the rules which govern my behavior. Yet if some other agent intervenes to prevent me from performing that act, then we should want to say that I cannot perform it. To account for the relevant sense of 'can' we must take into consideration not only the rules governing my behavior, but also the actions of other agents which may have some bearing on my behavior.

This can be done by defining 'can' in terms of other action modalities. The approach I follow in analyzing 'can' here follows that of Ingmar Pörn in The Logic of Power.[8] Pörn gives two action modalities, represented by 'D' and 'C'. A formula of the form '$D_i p$' is interpreted to read something like

It follows from what i does that p;

8 Ingmar Pörn, The Logic of Power, (Oxford: Basil Blackwell, 1970).

i sees to it that p;

i brings it about that p;

i acts in such a way that p;

it is a thing done by i that p; or

i does p.

A formula of the form '$C_i p$' is interpreted to read something like

It is compatible with everything i does that p;

it is possible for all that i does that p; or

what i does allows (permits) that p.[9]

These modalities will be clearer presently when I provide a formal seman-
tics for Pörn's language, $L_1$, and my revision of it, $L_s$.

'can' is then defined as follows:

$$Can(p(i)) =_{df} (t)C_t p(i).$$

Specifically, $CanD_i p$, "i can do p" is defined as $(t)C_t D_i p$, "i's doing p
is compatible with everything any person does." This clearly vacuates
the problem of interference from another agent. If I am prevented from
performing some act due to another agent's interference, then my perfor-
ming that act is not compatible with everything that agent does.

Yet there is another problem which may appear to remain unsolved.
Although the above definition of 'can' solves the problem of interference
from another agent, it appears to leave unsolved the problem of inter-
ference from the cooperative activity of a number of other agents. This
appearance is deceptive, however. Among the things that every agent does
are things he does in concert with other agents. If Smith and I cooper-
ate in lifting a large rock, then one of the things I do is that I cooper-

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[9] _Ibid_., pp. 2f.

ate with Smith in lifting a large rock. Thus, if I am prevented from doing p by the joint activity of a number of agents, then there are a number of agents of whom it may be said that they do something incompatible with my doing p.

Let us now check this account by looking at some of our previous examples.

1) I can photograph the Empire State Building now. According to the above analysis this must be false. It is not compatible with everything that I do. Everything I have done up to this moment requires that I not be in New York now. If I am not in New York now, then I cannot photograph the Empire State Building now.

2) I can play the piano. Again, it is not compatible with everything I do that I play the piano. I have not played the piano in years. When I last did so I did quite badly. I read music rather poorly. All these together are not compatible with my playing the piano.

3) Horowitz can play the piano in a room which contains no piano. Here we get a truth value of false, which is what we want if we are to take 'can' in the broadest sense. Being in a room with no piano is not compatible with playing a piano.

4) I can make a certain shot at pool (which I miss on occasion). Here we have a certain ambiguity in the English. If we mean a certain type of shot, then I certainly can. It is consistent with everything everyone else does. It is consistent with my past performances around the pool table, etc. If, on the other hand, we mean a particular shot which I, in fact, miss, then we should certainly want to say that up to the moment I start my shot everything I do is compatible with my making the

shot. Roughly at the moment I start my stroke, however, I do something, which is incompatible with my making that particular shot. For that split-second, when the ball is moving toward its target, we must say that I cannot make that particular shot. This seems quite natural.

5) I can successfully shoot 100 free throws in 100 attempts. It is not compatible with everything I do that I should do so. My past performances at throwing things, including basketballs, clearly are not compatible with shooting 100 successful free throws in 100 attempts.

6) Finally, we have the hardest case. Dick Allen can hit home runs (supposing that every time he has hit one toward the fence to date it has collided with a bird and fallen in the outfield). Here I should think we would say that he can hit home runs. It is fully compatible with the way he hits the ball, both in terms of power and trajectory. It is compatible with everything anyone does that on future occasions birds might not get in the way and the ball should go over the fence. This final case seems to pose no problem for the above analysis of 'can'.

It is this analysis of 'can' that will become a part of the logic of the stone paradox. I am now in position to present a formal language and semantics which will provide our logic for assessing the soundness of the stone paradox. First, I shall present the logic of action, language $L_1$ and semantics, given by Pörn in The Logic of Power. Then I shall present my extension of that language, $L_s$, and a Kripke-type semantics for it,[10] which will then be adequate for the demands of our paradox.

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10 Pörn provides a Hintikka-style modelling as his semantics for $L_1$. I prefer to offer a Kripke-type model structure as my semantics for $L_s$, due to my greater familiarity with the Kripke-type semantics.

Pörn's language, $L_1$, is a two-sorted language based on the language of first-order predicate logic with identity.[11] The signs of $L_1$ are: $(,),*,',=,\sim,\rightarrow,D,C,F,i,t,a,x$.[12]

'(', ')', '=', '$\sim$', and '$\rightarrow$', on the intended interpretation, are the symbols in $L_1$ for the left and right parentheses,[13] identity, negation and material implication, respectively, just as in the standard predicate calculus with identity. 'D' and 'C' are the signs for the action modalities which were introduced on pages 112f. above.

The sign 'i' is a free individual symbol. On the intended interpretation it will denote an agent throughout any given context and may therefore be called a free agent symbol as well. If s is a free agent symbol, then so is s'. We will use

$i,j,k,i_1,j_1,k_1,i_2,\ldots$

to designate the free agent symbols of $L_1$

The sign 't' is a bound individual variable. It will also be called a bound agent variable as it is used as a medium for cross-reference in quantificational contexts about agents. Again, if w is a bound agent variable, then so is w'. We will use

$t,u,v,t_1,u_1,v_1,t_2,\ldots$

to designate the bound agent variables of $L_1$.

The sign 'a' is another kind of free individual symbol, except that throughout any given context it is interpreted as referring to a non-

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[11] For the exposition of $L_1$, I am following Ibid., pp. 1-3.

[12] To designate the first seven signs in this list we shall use the signs themselves autonymously.

[13] We shall follow the usual conventions about omitting parentheses.

agent, an individual which cannot be said to perform or fail to perform actions. If s is a free non-agent symbol, then so is s'. We will use

$a, b, c, a_1, b_1, c_1, a_2, \ldots$

to designate the free non-agent symbols of $L_1$.

The sign 'x' is the second kind of bound individual variable. It will be used as a medium of cross-reference in quantificational contexts concerning individuals which are not agents. Again, if w is a bound non-agent variable, then so is w'. We will use

$x, y, z, x_1, y_1, z_1, x_2, \ldots$

to designate the bound non-agent variables of $L_1$.

The sign 'F' followed by any finite, non-empty sequence *...* of n stars is called an n-place predicate of $L_1$. 'F' is interpreted as designating an n-place relation among the individuals in the range fixed for the free individuals, both agent and non-agent, of $L_1$. If P is an n-place predicate, then so is P'. We will use

$F, G, H, F_1, G_1, H_1, F_2, \ldots$

to designate the predicates of $L_1$.

The well-formed formulae (wffs) of $L_1$ are as follows:

1) If $s_1$ and $s_2$ are free individual symbols of $L_1$, then $(s_1 = s_2)$ is a wff of $L_1$. This is called the identity of $s_1$ and $s_2$ and is interpreted as expressing the claim that $s_1$ and $s_2$ designate the same individual.

2) If F is an n-place predicate and $s_1, s_2, \ldots, s_n$ are free individual symbols of $L_1$, then $F(s_1, s_2, \ldots, s_n)$ is a wff of $L_1$. This is called predicating F of $s_1, s_2, \ldots, s_n$. When $n \geq 2$, this is interpreted as expressing the claim that the relation designated by F holds among the individuals designated by $s_1, s_2, \ldots, s_n$, taken in that order. When n=1, it is inter-

preted as expressing the claim that the individual designaged by $s_1$ is a member of the class designated by F.

3) If p is a wff of $L_1$, then $D_ip$ and $C_ip$ are wffs of $L_1$ as well. Wffs of this kind are called basic D-statements. $D_i$ and $C_i$ are called 'praxi-ological' operators. The wff p constitutes their scope. The interpreta-tion of basic D-statements was given on pages 112f. above.

4) If p is a wff of $L_1$, then so is $\sim$p. It is called the negation of p.

5) If p and q are wffs of $L_1$, then so is $(p \rightarrow q)$. It is called the conditional of p and q, with p as its antecedent and q as its consequent. We read $(p \rightarrow q)$ as: if p then q.

6) If p is a wff of $L_1$, and p(w/s) is the result obtained by substituting an occurence of the variable w for every occurrence of the free individu-al symbol s, then (w)p(w/s) is a wff of $L_1$ also. (It is assumed that free agent symbols are only replaced by agent variables and that free non-agent symbols are only replaced by non-agent variables.) (w)p(w/s) is called a universal quantification. (w) is the universal quanitifer and p(w/s) constitutes its scope. The universal quantification is read as: for every (actually existing) individual w, p(w/s).

7) There are no wffs of $L_1$ other than those given in 1)-6).

The following standard abbreviations are used in $L_1$:

$(s_1 \neq s_2)$ for $\sim(s_1=s_2)$ and read as: $s_1$ is not identical with $s_2$;

$(p \& q)$ for $\sim(p \rightarrow \sim q)$ and read as: p and q;

$(p \vee q)$ for $(\sim p \rightarrow q)$ and read as: p or q (or both);

$(p \leftrightarrow q)$ for $((p \rightarrow q)\&(q \rightarrow p))$ and read as: p if and only if q;

$(Ew)p$ for $\sim(w)\sim p$ and read as: there is an individual w such that p.

In providing a semantics for $L_1$, I will depart from Pörn's approach

(Pörn gives a Hintikka-style modelling for $L_1$.[14]) in favor of giving a Kripke-type semantics for $L_1$.[15] The basic notions in providing a semantics for $L_i$ are those of model structure and model.

A model structure is an ordered triple $\langle G,K,R \rangle$, where K is a set, G is a member of K and R is a reflexive relation on K, in the present case defined for each agent i. Intuitively, we shall say that K is the set of all possible worlds and G is the "real world". If $H_1$ and $H_2$ are two members of K, then $H_1 R_i H_2$ means intuitively that $H_2$ is similar to $H_1$ in terms of agent i's possible behavior. From this we can see that R's reflexivity-requirement is perfectly natural. Additional requirements might also be added for R (symmetry or transitivity, perhaps), but we shall see shortly that some of these give undesirable results.

Given a model structure $\langle G,K,R \rangle$ and a function $\psi$ which assigns to each member H of K a set $\psi(H)$, called the domain of H, (Intuitively, $\psi(H)$ is the set of all individuals existing in H.) a model is a binary function $\phi(P,H)$, where the first variable ranges over n-place predicate letters, '=' and basic D-statements, and H ranges over members of K. $\phi(F*...*,H)$, with n occurrences of '*', is a subset of $U^n$, where $U = \bigcup_{H \in K} \psi(H)$. Similarly, $\phi(=,H)$ is a subset of $U^2$, specifically, for our present interpretation of $L_1$, if $a_1, a_2, ..., a_n$ are the members of U, $\phi(=,H)$ is that subset of $U^2$ whose members are all the ordered pairs of the form $\langle a_i, a_i \rangle$. We are now in position to define inductively for a formula A and a world H a truth-

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[14] See Ibid., pp. 9f.

[15] Cf. Saul Kripke, "Semantical Considerations on Modal Logic", Proceedings of a Colloquium on Modal and Many-Valued Logics, (Helsinki: 1963), pp. 83-84.

value $\phi(A,H)$ relative to some assignment of the members of U to the free individual symbols of $L_1$. Given an assignment of elements $a_1,\ldots,a_n$ of U to $s_1,\ldots,s_n$, we define $\phi(F(s_1,\ldots,s_n),H)=T$ if the n-tuple $a_1,\ldots,a_n$ is a member of $\phi(F*\ldots*,H)$, again with n occurrences of '*', otherwise $\phi(F(s_1,\ldots,s_n),H)=F$. We proceed to define the truth-values of wffs other than predications of individuals and equalities, with the exception of basic D-statements, according to the following rules:

1) If $\phi(A,H)=T$, then $\phi(\sim A,H)=T$, otherwise T;

2) if $\phi(\sim\sim A,H)=T$, then $\phi(A,H)=T$, otherwise F;

3) if $\phi(\sim A,H)=T$ or $\phi(B,H)=T$, then $\phi(A \rightarrow B,H)=T$, otherwise F;

4) if $\phi(p(s),H)=T$ for each free individual symbol s which is assigned to some member of $\not{q}(H)$ and at least one free individual symbol is so assigned, then $\phi((w)p(w/s),H)=T$, otherwise F.

This gives a semantics for all the wffs of $L_1$ except for its D-statements. Let us say that $\phi$ assigns truth-values to the basic D-statements in some way such that the following conditions are satisfied:

i) if $\phi(D_i p,H)=T$ and $HR_i H'$, then $\phi(p,H')=T$;

ii) if $\phi(\sim D_i p,H)=T$, then $\phi(C_i \sim p,H)=T$;

iii) if $\phi(C_i p,H)=T$, then there is at least one H' such that $HR_i H$ and $\phi(p,H')=T$; and

iv) if $\phi(\sim C_i p,H)=T$, then $\phi(D_i \sim p,H)=T$.

Given such an assignment, then non-basic D-statements, those constructed from basic D-statements by means of truth-functional and quantificational rules receive their truth-values through the application of rules 1)-4) on the last page.

Condition iv) presents a problem. It gives rise to what is known,

in Deontic Logic, as the Good Samaritan paradox. Let us suppose that i is a good Samaritan. One of the things he does is to help a robbery victim. It is not compatible with his helping the robbery victim that there should be no robbery. We may take as p, "There is no robbery." Therefore $\sim C_i p$ is true. That there is no robbery is not compatible with everything the good Samaritan does. However it follows by condition iv) that $D_i \sim p$, the good Samaritan makes it the case that there is a robbery. This surely is an undesirable result.

The good Samaritan paradox has plagued a great many logics of action and logics of obligation. The paradox can be eliminated, but only at the cost of introducing some much more complex technical machinery. For that reason and because condition iv) plays no controversial part in the formal arguments that appear in Chapters IX or X of this dissertation, I shall not attempt to circumvent the good Samaritan paradox. Rather I shall simply acknowledge that this poses a problem for $L_1$ (and $L_s$) as a general logic of action, but a problem which is of no relevance for the purpose of providing a formal analysis of the stone paradox.

An interesting issue arises in connection with the construction of our D-statements. Either we are forced to limit the kind of wffs which can replace p to those expressing contingent propositions, or we are forced to say such things as "i brings it about that p v $\sim$p." The latter course leads us to say some very counter-intuitive things. The former course involves a considerable sacrifice of systematic neatness.

The latter course is not really as awkward as it appears at first. $D_i(p \, v \sim p)$ is implied by $C(p \, \& \sim p)$. This latter wff expresses the claim that p & p is not compatible with everything that i does. This claim

is not only true, but does not even seem a particularly odd thing to say. If this is kept in mind, then the oddity of $D_i(p \lor \sim p)$ should at least be ameliorated. We shall therefore permit p to be replaced by any wff whatsoever.

As specified so far, $L_1$ appears to be a semantical counter-part to the modal system T. With different conditions on the R, we might make $L_1$ a semantical counter-part of some other modal system. If it were required that R be transitive as well as reflexive, then we would have a counter-part to S4. In this case, formulae of the form $(D_i p \to D_i D_i p)$ would be true. $D_i D_i p$ would be read as: i brings it about that i brings it about that p. This might be expressed in another way by saying that i exercises control over his doing p. From this it is apparent that $(D_i p \to D_i D_i p)$ ought not to be true by virtue of the semantics, for we do not want to say that every person exercises control over everything he does.

If we added a symmetry requirement as well, then we should get that every person exercises control over everything he does not do. Finally, if we have the symmetry requirement without the transitivity requirement, then we get that everyone forbears to bring about anything that is not the case. Both of these alternatives are obviously undesirable. It is for this reason that we do not require R to be more than reflexive.

My language $L_s$ is also a two-sorted language based on the language of a second-order predicate logic with identity, on the one hand, and based on Pörn's language $L_1$, on the other. The signs of $L_s$ are:
$( , ) , *, ', =, \sim, \to, D, C, L, F, i, t, a, x, p.$ [16]

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[16] Again, to designate the first seven signs in the list we shall use the

All of the above signs which were also signs of $L_1$ will be given the same interpretation for $L_s$ as they were given for $L_1$. This leaves the two signs, 'L' and 'p'.

The sign 'L' is the standard alethic modality of necessity.

The sign 'p' is a bound propositional variable. It will be used as a medium for cross-reference in quantificational contexts about propositions. Instead of propositions, we could also say that these variables are used to talk about states of affairs or whatever else it is that agent make to be the case by their actions. If p is a bound propositional variable, then so is p'. We will use

$$p,q,r,p_1,q_1,r_1,p_2,\ldots$$

to designate the bound propositional variables of $L_s$.

The wffs of $L_s$ are those given by rules 1)-6) on pages 127f. above[17] with the following added:

7) If p is a wff of $L_s$, then so is Lp. This is called the necessitation of p and is read: it is necessary that p is true.

8) If A is a D-statement (basic or otherwise) of $L_s$, p is a wff of $L_s$ and the scope of at least one D-operator ($D_i$ or $C_i$) occuring in A, q is a bound propositional variable of $L_s$, and A(q/p) is the result of substituting an occurrence of the variable q for every occurrence of the wff p throughout A, then (q)A(q/p) is a wff of $L_s$. We shall call this propositional quantification. The propositional quantification $(q)C_i(q/p)$ is read: everything is compatible with all i does.

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signs themselves autonymously.

[17] It is assumed here that '$L_s$' is substituted for '$L_1$' throughout 1)-6) in adapting these rules for $L_s$.

9) There are no wffs of $L_s$ other than those given by 1)-6) (adapted), 7) and 8).

The standard abbreviation: Mp for $\sim L \sim p$, and read as: it is possible that p is true, is used in $L_s$ in addition to those used in $L_1$ and given on page 128 above. It may at first glance seem peculiar that we should want wffs of the kind given in 8) above. 8) is included in order to permit us to construct such wffs as $(Eq)D_i q$. This is read as: there is something that i does. This kind of wff may clearly be useful to us. Because rule 8) provides for such restricted use of bound propositional variables, their introduction here leads to no type-theoretic difficulties.

In providing a semantics for $L_s$, I will again give a Kripke-type semantics, based on the notions of model structure and model. Given the way in which $L_s$ expands on the language $L_1$, the notion of a model structure which will be required for $L_s$ will have to be expanded over that which was required for $L_1$. Our new model structure will be an ordered quadruple $\langle G,K,W,R_{i,j,\ldots,n} \rangle$, where K is a set, G is a member of K, and W and $R_{i,j,\ldots,n}$ are reflexive relations on K. Intuitively, we shall again say that K is the set of all possible worlds and G is the "real world". If $H_1$ and $H_2$ are two members of K, then $H_1 W H_2$ means intuitively that $H_2$ is possible relative to $H_1$. Since every world is presumably possible relative to itself, reflexivity is a perfectly natural requirement on W. In giving our model we shall place additional requirements on W. Again if $H_1$ and $H_2$ are members of K, then $H_1 R_{i,j,\ldots,n} H_2$ means intuitively that $H_2$ is similar to $H_1$ in terms of the possible behavior of agents $i,j,\ldots,$ and n. Again reflexivity is a perfectly natural requirement. For the

reasons discussed above in connection with $L_1$, no fruther restrictions ought to be placed on $R_{i,j,\ldots,n}$.

Given a model structure $\langle G,K,W,R_{i,j,\ldots,n} \rangle$ and a function $\psi$ which assigns to each member H of K a set $\psi(H)$, called the domain of H, a model is again a binary function $\phi(P,H)$, where the first variable ranges over n-place predicate letters, '=' and basic D-statements, and H ranges over members of K. $\phi(F*\ldots*,H)$, with n occurrences of '*', is a subset of $U^n$. Similarly $\phi(=,H)$ is a subset of $U^2$, specifically, on the present model, if $a_1,\ldots,a_n$ are the members of U, then $\phi(=,H)$ is that subset of $U^2$ whose members are all the ordered pairs of the form $\langle a_i,a_i \rangle$. We are now in position to define, inductively, for a formula A and world H, a truth-value $\phi(A,H)$, relative to some assignment of the members of U to the free individual symbols of $L_s$. Given an assignment of elements $a_1$, $\ldots,a_n$ of U to $s_1,\ldots,s_n$, we defing $\phi(F(s_1,\ldots,s_n),H)=T$ if the n-tuple $a_1,\ldots,a_n$ is a member of $\phi(F*\ldots*,H)$, again with n occurrences of '*'; otherwise $\phi(F(s_1,\ldots,s_n),H)=F$. We proceed to define the truth-values of wffs other than predications of individuals and equalities, with the exception of basic D-statements, according to rules 1)-4) from page 130 with the following addition:

5) if $\phi(A,H')=T$ for every H' such that HWH', then $\phi(LA,H)=T$, otherwise F.

As before, our model assigns truth-values to the basic D-statements of $L_s$ in some way such that certain conditions are satisfied, viz.:

i) if $\phi(D_i p,H)=T$ and $HR_i H'$, then $\phi(p,H')=T$;

ii) if $\phi(\sim D_i p,H)=T$, then $\phi(C_i \sim p,H)=T$;

iii) if $\phi(C_i p,H)=T$, then there is at least one H' such that $HR_i H'$ and $\phi(p,H')=T$; and

iv) if $\phi(\sim C_i p, H)=T$, then $\phi(D_i \sim p, H)=T$

The semantics for $L_s$ is completed by adding the following rule:

6) $\phi((q)Aq, H)=T$, where $(q)Aq$ is a propositionally quantified D-statement of $L_s$ having q as the range of at least one of its praxiological operators, if and only if $\phi(A(p/q), H)=T$ for every wff p of $L_s$, otherwise $\phi((q)Aq, H)=F$.

Since, in order to capture the logic of the stone paradox, it is required that 'L' express strict logical necessity, it must be further required that on our present model $W=K \times K$, since every possible world is logically possible relative to every other possible world. This completes the semantics for $L_s$.

It is of interest at this point to look at some of the kinds of wffs that turn out to be true on the present interpretation of $L_s$. Before doing this, I want to bring to mind the definition of 'can' which was informally introduced on page 123 above:

$Can(p(i)) =_{df} (t)C_t(p(i))$, or in the instance in which we shall be interested in in connection with the stone paradox,

$CanD_i p =_{df} (t)C_t D_i p$.

Among the wffs of $L_s$ that turn out to be true on the present interpretation are all those of the following forms:

1) $D_i p \to p$;

2) $p \to C_i p$;

3) $\sim D_i p \to C_i \sim p$;

4) $D_i p \to \sim D_i \sim p$;

5) $D_i p \to C_i p$;

6) $D_i(p \to q) \to (D_i p \to D_i p)$;

7) $D_i(p \to q) \to (C_i p \to C_i q)$;

8) $D_i p \to D_i(q \to p)$;

9) $D_i{\sim}p \to D_i(p \to q)$;

10) $D_i D_j p \to D_i p$;

11) $D_i D_j p \to (D_i p \& D_j p)$;

12) $D_i D_j p \to D_i{\sim}D_k{\sim}p$;

13) $D_i \; D_j p \to {\sim}D_k{\sim}D_j p$;

14) $D_i D_j p \to {\sim}D_i D_j{\sim}p$;

15) $p(s_1) \& (s_1 = s_2) \to p(s_2)$;

16) $Lp \to p$;

17) $p \to Mp$;

18) $Lp \to Mp$;

19) $Mp \leftrightarrow LMp$;

20) $Lp \leftrightarrow MLp$;

21) $Lp \leftrightarrow LLp$;

22) $Mp \leftrightarrow MMp$;

23) $L(p \to q) \to (Lp \to Lq)$;

24) $LD_i p \to Lp$;

25) $MD_i p \to Mp$;

26) $D_i p \to Mp$;

27) $CanD_i p \to MD_i p$;

28) $CanD_i p \to Mp$;

29) $D_i p \to (Eq)D_i q$;

30) $CanD_i p \to (Eq)CanD_i q$.

Of the above kinds of wffs, 1)-18), 23)-26) and 29)-30) are valid in $L_s$ as well. The remainder depend for their truth upon the interpretation of W as KxK. Some would remain true for many of the standard inter-

pretation of W, but one could give interpretations of W such that even 27) and 28) would be false. (An example of such an interpretation would be if we stipulated that $H_1WH_2$ if and only if not-$(H_1R_{i,j,\ldots,n}H_2)$.

On the entended interpretation, most of the above wffs express claims which we quite obviously wish to accept. A few of them warrant some comment however. 10), in particular is of interest. $D_iD_jp \rightarrow D_ip$ expresses the claim that if i makes it the case that j makes it the case that p, then i makes it the case that p. In connection with the stone paradox, this means that if God either creates or lifts the stone through some other agency (Say, God makes it the case that I lift the stone.) then God is still said to create or lift the stone. 11)-14), which also concern what might be called indirect agency, should be fairly straight-forward in light of 10).

Finally, 27)-30) bear some comment. 27) expresses the claim that if i can perform p, then it is possible that i should perform p. This is clearly intuitive. 28) makes the additional claim that if i can perform p, then it is possible that p is the case. This will be important in formally expressing the stone paradox. It is important to note here that it is not, in general, true that if i can perform p, then p is the case. If i can perform p, then there is some world which is agent-similar (a world H' such that $GR_{i,j,\ldots,n}H'$) to the real world in which p is the case, hence some logically possible world (a world H' such that GWH') in which p is the case. This only leads to the conclusion that it is possible that p is the case, not that p actually is the case. 29) and 30) express the claims, respectively, that if performs or can perform p, then there is something such that i performs or can perform it. This will be rele-

vant in expressing the claim that i is omnipotent.

This should give us a logic by means of which we can adequately give formal expression to the stone paradox.

CHAPTER IX

## THE FORMAL ARGUMENT AND THE THIRD PREMISE REVISITED

The stone paradox can now be represented with complete formality as the following argument:

H. (1) $CanD_j((Ex)(Fx\&\sim CanD_j Gx))v\sim CanD_j((Ex)(Fx\&\sim CanD_j Gx))$.

(2) $CanD_j((Ex)(Fx\&\sim CanD_j Gx)) \rightarrow \sim Hj$.

(3) $\sim CanD_j((Ex)(Fx\&\sim CanD_j Gx)) \rightarrow \sim Hj$.

(4) $\sim Hj$.

The interpretation of the predicate letters and individual symbols is as follows:

F: is a stone;

G: is lifted;

H: is omnipotent; and

j: God.

It is readily apparent that this is an adequate representation of the traditional paradox. H(1), on the given interpretation, expresses "Either God can make it the case that there exists a stone such that God cannot make it the case that that stone is lifted, or it is not the case that God can make it the case that there exists a stone such that God cannot make it the case that that stone is lifted." This is no more than a less perspicuous way of saying "Either God can create a stone that He cannot lift or it is not the case that God can create a stone that He cannot lift." H(1), therefore, expresses the same disjunction as A(1).

In order to adequately assess the soundness of argument H, it is necessary that we make explicit our notion of 'omnipotence'. In Chapter III, the following definition of 'omnipotent' was accepted:

Def. 2'': x is omnipotent $=_{df}$ for any sentence (wff) p, if it is possible that x make it the case that p is true, then x can make it the case that p is true.

We can formalize this definition as follows:

Def. 3: Ht $=_{df}$ (p)(MD$_t$p → CanD$_t$p).

Our conclusion, H(4), " Hj" is therefore logically equivalent to "(Ep)(MD$_j$p&~CanD$_j$p)".

H(1) is quite obviously of the form Pjv~Pj, and since we have assumed that 'j' names a member of the domain of G, is therefore true.

If H(2) and H(3) are similarly true, then the conclusion, that God is not omnipotent, follows. Chapter VII offered a wide variety of criticisms of premise 3) of the stone paradox - which is reflected in H(3) - which have been put forward in the recent literature on the paradox. I shall devote the rest of this chapter to settling the controversy over that premise by showing that, on the given interpretation of L$_s$, H(3) is true merely by virtue of its logic and semantics.

One thing is required in order to show that H(3) is true, that is to show that "MD$_j$((Ex)(Fx&~CanD$_j$Gx))" is true, assuming the antecedent of H(3). If it is, then H(3) can be proven true by the following argument:

J. (1) ~CanD$_j$((Ex)(Fx&~CanD$_j$Gx))                                     Hyp.

   (2) MD$_j$((Ex)(Fx&~CanD$_j$Gx))                                        To be shown

   (3) MD$_j$((Ex)(Fx&~CanD$_j$Gx))&~CanD$_j$((Ex)(Fx&~CanD$_j$Gx))  (1),(2)

   (4) (Ep)(MD$_j$p&~CanD$_j$p)                                           (3)

   (5) ~Hj                                                                (4), Def. 3

   (6) ~CanD$_j$((Ex)(Fx& CanD$_j$Gx)) → ~Hj.

This proof is clearly sound as long as J(2) is true and "(Ex)(Fx&~CanD$_j$Gx)"

is a wff of $L_s$, which it is on the basis of rules 2)-5) from pages 127f. of Chapter VIII.

I shall show that J(2) is true by means of an informal demonstration in the metalanguage of $L_s$.

Let us take 'd' as a dummy non-agent individual symbol. It's function is to stand for some non-agent individual symbol whose particular identity is of no concern to us whatsoever. Our first concern is to establish "M(Fd&~Gd)". "M(Fd&~Gd" is true precisely in the case that there is some possible world H', such that GWH', in which "Fd&~Gd" is true. Given that W=KxK, this is the case precisely if "Fd&~Gd" is non-contradictory. "Fd&~Gd" is obviously non-contradictory. Therefore, there is such a possible world. Let us call that world '$H_1$'.

By virtue of condition i) of the semantics for $L_s$, given on page 135 of Chapter VIII, (I remind the reader here that $R_j$ is a reflexive relation.) "~Gd" implies "$\sim D_j Gd$". Therefore, "$Fd \& \sim D_j Gd$" follows from "Fd&~Gd" and is also true in $H_1$.

"$Fd \& \sim D_j Gd$" is non-contradictory. It is also consistent with the existence of agent i. Therefore, there must be a possible world $H_2$ whose domain includes agent i and in which "$Fd \& \sim D_j Gd$" is true. Moreover, since the truth of "$D_i \sim D_j Gd$" does not entail the violation of any of the conditions, i)-iv) on pages 135f. of Chapter VIII, which must be satisfied by any assignment of truth-values to the basic D-statements of $L_s$, there is some possible world $H_3$ in which "$Fd \& D_i \sim D_j Gd$" is true.

Again we have it, by conditions i) and iii) on page 135 of Chapter VIII, that "$D_i \sim D_j Gd$" entails "$\sim C_i D_j Gd$". It follows that "$Fd \& \sim C_i D_j Gd$" is true in $H_3$. From this it follows quite obviously that the following are

also true in $H_3$: "Fd&(t)($\sim C_t D_j$Gd)" and therefore "Fd&$\sim$(t)($C_t D_j$Gd)". This last dummy wff is equivalent, by virtue of the definition on page 136 of Chapter VIII, to "Fd&$\sim$CanD$_j$Gd".

We can now dispense with our dummy variable and have it that "(Ex) (Fx&$\sim$CanD$_j$Gx)" is true in $H_3$. Finally we note that the truth of "D$_j$((Ex) (Fx&$\sim$CanD$_j$Gx)" does not entail any violation of the conditions, i)-iv) on pages 135f. of Chapter VIII, which must be satisfied by any assignment of truth-values to the basic D-statements of $L_s$. There is, therefore, some possible world, $H_4$, in which "D$_j$((Ex)(Fx&$\sim$CanD$_j$Gx))" is true.

Since $H_4$ is logically possible, it follows that GWH$_4$. If GWH$_4$ and $\phi$(D$_j$((Ex)(Fx&$\sim$CanD$_j$Gx)),$H_4$)=T, then $\phi$(MD$_j$((Ex)(Fx&$\sim$CanD$_j$Gx)),G)=T. Therefore, J(2) is true.

It follows that argument J is sound, and its conclusion, H(3) is true.

# CHAPTER X

## THE SECOND PREMISE

Since the first and third premises of argument H have been shown to be true by virtue of the semantics given for $L_s$, all that remains to be done, in order to prove that God is not omnipotent, is to demonstrate that the second premise is true. That premise is,

H(2) $CanD_j((Ex)(Fx \& {\sim}CanD_j Gx)) \rightarrow {\sim}Hj$,

or, to fill this out in light of Def. 3 from page 141 of the last chapter,

H(2)' $CanD_j((Ex)(Fx \& {\sim}CanD_j Gx)) \rightarrow (Ep)(MD_j p \& {\sim}CanD_j p)$.

This turns out to be more of a problem than has generally been supposed.[1]

Looking at the informal statement of the second premise,

A(2) If God can create a stone that He cannot lift, then God is not omni-potent,

the consequent appears to follow because of the existence of a stone which God cannot lift. Lifting some stone seems to be the logically possible task which, it is claimed, God cannot perform. It is clear that no other task, of which it might be claimed that it is logically possible that God should perform it and yet God cannot perform it, is forthcoming from the antecedent of A(2). We might expect, then, that if the consequent of H(2)' is derivable from the antecedent, the last step in the derivation should be from something of the form $MD_j Gd \& {\sim}CanD_j Gd$, where 'd' stands for some non-agent individual symbol of $L_s$.

If there is to be any chance of deriving something of this form from "$CanD_j((Ex)(Fx \& {\sim}CanD_j Gx))$", it must be possible first to derive

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[1] I remind the reader that at the beginning of Chapter VII I pointed out that the second premise of the stone paradox has been generally accepted as innocuous.

some wff which asserts, under the given interpretation, the existence of a stone of the appropriate sort. It was pointed out at the end of Chapter VIII[2] that wffs of the form $CanD_i p \to p$ are not, in general, true by virtue of the semantics given for $L_s$. Therefore, looking at "$CanD_j((Ex)(Fx$ &~$CanD_j Gx)) \to (Ex)(Fx$&~$CanD_j Gx)$" as an instance of the schema, $CanD_j p \to p$, does no good here.

To show that the consequent of H(2)' does not follow from the antecedent, it is sufficient to produce a model which satisfies the semantics given for $L_s$, and such that the antecedent of H(2)' is true and the consequent false in some world on that model. Let us take a possible world, $H_f$, such that God is the only agent in its domain, $d(H_f)$. Let us take a model $\phi'$, such that it assigns truth-values to the wffs of $L_s$ in some way that is consistent with the semantics given in Chapter VIII and with the following condition:

$\phi'$i) if $\phi'(Lp,H_f)=T$, then $\phi'(D_j p,H_f)=T$, otherwise F.

It was shown in the last chapter that there was a possible world, $H_4$, such that $\phi(D_j((Ex)(Fx$&~$CanD_j Gx)),H_4)=T$, for some model $\phi$. Since that assignment is perfectly consistent with both the semantics given in Chapter VIII and $\phi'$i), we may further stipulate that $\phi'(D_j'(Ex)(Fx$&~$Can D_j Gx)),H_4)=T$. Since $H_4$ is logically possible, it follows that $H_f W H_4$. Therefore, $\phi'(MD_j((Ex)(Fx$& $CanD_j Gx)),H_f)=T$. This, of course, is an abbreviation for $\phi'(\sim L \sim D_j((Ex)(Fx$&~$CanD_j Gx)),H_f)=T$. It follows from this and condition $\phi'$i) that $\phi'(\sim D_j \sim D_j((Ex)(Fx$&~$CanD_j Gx)),H_f)=T$. From this and condition ii) on page 135 of Chapter VIII it follows that $\phi'(C_j D_j((Ex)(Fx$&~$CanD_j Gx)),H_f)=T$. Since 'j' continues to be the symbol for

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[2] See page 138, Chapter VIII.

God, the only agent in the domain of $H_f$, this last assignment is identical to $\phi'(CanD_j((Ex)(Fx\&\sim CanD_jGx)),H_f)=T$.

Let us now take some arbitrary wff, p, of $L_s$. Assume that $\phi'(MD_jp, H_f)=T$. This abbreviates $\phi'(\sim L\sim D_jp,H_f)=T$. From this and $\phi'i)$ it follows that $\phi'(\sim D_j\sim D_jp,H_f)=T$. Again from this and condition ii) on page 135 of Chapter VIII it follows that $\phi'(C_jD_jp,H_f)=T$. Finally, since God is still the only agent in $H_f$, this is equivalent, by definition, to $\phi'(CanD_jp,H_f)=T$. Since 'p' has stood for any arbitrarily chosen wff, it follows obviously that $\phi'((p)(MD_jp \rightarrow CanD_jp),H_f)=T$, and $\phi'(\sim(Ep)(MD_jp\&\sim CanD_jp),H_f)=F$.

We now have a model, $\phi'$, which satisfies the semantics for $L_s$ and such that the antecedent of H(2)' is true and its consequent false in a world, $H_f$, on that model. This shows that the consequent of H(2)' does not follow from the antecedent.

H(2) may, of course, be true simply by virtue of the facts of the real world and the peculiarities of the material conditional. However, H(2) is not rendered true simply by virtue of the rules of logic and the semantics required for stating the stone paradox. Since H(2) is not derivable from the semantics given for $L_s$, it cannot appear in a proof carried out in $L_s$, as it does in argument H, without prior assumption. H is therefore not sound, and the stone paradox proves nothing. It is somewhat remarkable that the stone paradox breaks down precisely at the point where it has generally been considered so strong as not to merit close investigation at all.

I have examined previously[3] a number of writers who have attacked

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[3] See Chapter VII.

the third premise of the stone paradox in order to point out that the at-
tacks on that premise are poorly founded and that the third premise is
not a weak spot in the paradox. There are yet other writers who have
claimed that the stone paradox does decisively disprove the omnipotence
of God. Obviously they and I cannot both be right. In the remainder of
this chapter I shall look at those cases that have been made for the
soundness of the argument of the stone paradox, especially as they deal
with the second premise.

The claim that the stone paradox does prove that God is not omnipo-
tent has, with variations, been put forward in the recent literature by
three philosophers in four different articles. George Englebretsen, in
"The Incompatibility of God's Existence and Omnipotence", claims that we
can conclude from the stone paradox that "there is no omnipotent God."[4]
Englebretsen deals with the second premise with dispatch, "(2) and (3)
are clearly innocuous."[5] It should be apparent from what has been said
above that (2) (Englebretsen's (2) is, "If God can create a stone which
He cannot lift, then there is a task which God cannot perform.") is
not at all innocuous. The difference between Englebretsen's (2) and my
(2) (A(2) or H(2)) is of no consequence for the present issue, for if
Englebretsen's (2) were true, my A(2) and H(2) would follow shortly.
A(2) and H(2) are false precisely because it does not follow from "God
can create a stone" that God actually does anything, hence that there
is anything at all except God.

I can only speculate at Englebretsen's reasons for saying that (2)

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[4] Englebretsen, Op. Cit., p. 31.

[5] Ibid., p. 28.

is innosuous.  I suspect that Englebretsen simply confuses two sentences:

(5) There is a stone which God cannot lift. and

(6) It is possible that there is a stone which God cannot lift.

(6), but not (5), follows from "God can create a stone which He cannot lift."  (5), but not (6), will imply either conclusion, "There is a task which God cannot perform." or "God is not omnipotent."  The strongest conclusion we can get from (6) is

(7) It is possible that God is not omnipotent, or

(8) It is not the case that God is necessarily omnipotent.

Englebretsen may make the tacit assumption,

(9) If God is omnipotent, then God is necessarily omnipotent.

If (9) is true, then it follows from (8) that God is not omnipotent. That assumption, however, was discussed in Chapter IV above, and, as I showed there, it certainly cannot be taken for granted, as Englebretsen would have to be doing in order to get his conclusion.  Even with that assumption we have seen that Englebretsen's conclusion is not to be had.

J.L. Mackie reaches much the same conclusion in "Evil and Omnipotence", viz, "That God's omnipotence must in any case be restricted in one way or another, that unqualified omnipotence cannot be ascribed to any being that continues through time."[6]  Mackie seems clearly not to take (9) as an assumption, and, at the same time, almost gives the solution to the paradox without noticing it.  He says,

> It is clear that this is a paradox: ... If we answer "Yes",
> [God can create something that He cannot control.] it follows
> that if God actually makes things which he cannot control ...,
> he is not omnipotent once he has made them: ...[7]

[6] Mackie, Op. Cit., p. 212.

Three things are obvious from this brief quote:

1) Mackie takes it as obvious that the argument of the paradox is sound. He says, "It is clear that this is a paradox." This is followed by a very brief explanation of why it is a paradox, but no attempt to give any in-depth analysis. Mackie apparently feels that further analysis of the argument of the paradox is unnecessary.

2) Mackie does not seem to accept assumption (9). Mackie says, "it follows that if God actually makes things which he cannot control ..., he is not omnipotent once he has made them: ..." Mackie does not say that God fails to be omnipotent if He _can_ make such things, but rather if He _does_ make them. This does not, of course, amount to a denial of (9), but it does give one the impression that Mackie would allow that it does not follow that if God can but does not actually make things which He cannot control, He is not omnipotent. This last statement does constitute a denial of (9).

3) Mackie is on the verge of the solution to the stone paradox, but misses it. As I said above, Mackie gives the impression that he would admit that if God can but does not actually make things which He cannot control it does not follow that God is not omnipotent. If this is so, the paradox dissolves. Mackie fails to observe that in this case it is not so clear that there is a paradox.

J.L. Cowan has written two articles on the stone paradox. In his first article, "The Paradox of Omnipotence", Cowan claims

> The crux of the entire issue lies in one simple fact. ... Some capacities imply limitations; there are things one can do only

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[7] _Ibid._, p. 210.

> if one cannot do certain other things. ... It is important to note, moreover, that the existence of such mutually exclusive predicates is a matter of logic. If we did not have them already, we could define some.[8]

Cowan rests the case for his existential claim primarily on an example, the capacity to create a stone that the stone's creator cannot lift.[9] If my argument at the beginning of this chapter is right, however, then that capacity does not have the limiting feature that Cowan claims for it. Cowan claims that the existence of predicates naming such capacities is a matter of logic, and that if we did not have them already, we could define some. Cowan does not present any argument to the effect that such predicates are forthcoming from logic alone, nor does he construct any for us. Rather he depends on his example. Moreover, in the face of subsequent attack on that example,[10] Cowan, in his second paper, does not give a logical construction of some appropriately limiting predicate, and thereby shore up his first article in a decisive manner. Rather, he abandons the entire project of his first article and presents a wholly different argument. Since the first article gives no more than the example, and since I cannot imagine what more Cowan might have had in mind, I shall pass with no more comment to his second article.

Cowan, in his second article, presents the following argument as a construction of the stone paradox:

K. (1) $(\exists y)(Sy \cdot Cxy \cdot -Lxy) v -(\exists y)(Sy \cdot Cxy \cdot -Lxy)$

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[8] Cowan, "The Paradox of Omnipotence", p. 104.

[9] In a slightly different context, this case is treated in Chapter V of this paper, pp. 74ff.

[10] Cowan's second paper is, at least in part, a response to the above-mentioned papers by Savage and Wolfe.

(1') $Ta.(Pxa \equiv (y)((Sy \cdot Cxy) \supset Lxy))$

(1") $Tb.(Pxb \equiv (\exists y)(Sy \cdot Cxy \cdot -Lxy))$

(2) $(\exists y)(Sy \cdot Cxy \cdot -Lxy) \supset (\exists z)(Tz \cdot -Pxz)$

(3) $-(\exists y)(Sy \cdot Cxy \cdot -Lxy) \supset (\exists z)(Tz \cdot -Pxz)$

(4) $(\exists z)(Tz \cdot -Pxz)$

(5) $Ox \equiv (z)(Tz \supset Pxz)$

(6) $-Ox.$[11]

First, I give the interpretation of the predicate letters in K:

Sy: y is a stone;

Cxy: x can create y;

Lxy: x can lift y;

Tz: z is a task;

Pxz: x can perform z; and

Ox: x is omnipotent.

I should like to follow the argument step by step. K(1) is a tau-tology of the form $Pv{\sim}P$, and it therefore innocuous. It may be noted in passing that K(1) is the same as D(1) of Savage's construction, presented in Chapter VII.[12] It was criticised in that Chapter for not expressing the first premise of the traditional stone paradox adequately.[13] That criticism still stands. However, Cowan, unlike Savage, is trying to prove that some version of the stone paradox does work. Therefore, it is of no consequent if his argument is something of a variant on the traditional paradox as long as it gives the result he desires.

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[11] Cowan, "The Paradox of Omnipotence Revisited", pp. 36f.

[12] See p. 91, Chapter VII above.

[13] See pp. 94f., Chapter VII above.

K(1') and K(1") are claimed to introduce two tasks, a and b, such that "x can perform a" means that x can lift any stone he can create, and "x can perform b" means that x can create a stone he cannot lift. I shall come back to these later.

K(2) and K(3) follow clearly from K(1') and K(1") respectively, and, with K(1), give K(4) by constructive dilemma.

K(5) is an obvious problem point. In Chapter III it was argued that for x to be omnipotent it was not necessary that x should be able to perform any task. Rather it was required that x should be able to perform any task which was such that it was logically possible that x should perform it. This is a problem, but one which Cowan can presumably get around. He would have to enlarge his language by adding a predicate to express "x performs y" and by adding the necessity operator, but with these additions, an argument similar to K could reach the conclusion, K(6), which, in the present case follows from K(4) and K(5) by modus tolens.

All this is not to say that some variant on argument K is sound. The problem with K lies in the notion of task expressed by 'T'. The problem is this: if 'T' expresses anything close to a normal notion of task, then 'a' does not name a task at all, and 'b' does not name the task which Cowan claims for it in his informal explanation of K(1"). On the other hand, if 'T' is merely a predicate formally constructed in ac-cordance, at least in part, with rules expressed by K(1') and K(1"), then it is no longer the case that some variant of K(5) is true. In this latter case the notion expressed by 'T' will be very different from the notion of 'task' which comes into play in the traditional definition of

'omnipotent'.

To make this clear, let us look at the predicate which it would be necessary to introduce if we were to replace K(5) with an adequate notion of 'omnipotent', the predicate which allows us to express "x performs y". If give 'D' the interpretation,

Dxz: x performs y.

I take it that something like the following condition must hold:

(I) if $Tz \cdot (Pxz \equiv Q)$, where Q is some wff, then there is some wff R such that $Dxz \equiv R$.

For any task, if the conditions are sepcifiable under which we can say that a particular agent can perform that task, then the conditions must be equally specifiable under which we can say that that agent actually does perform that task. A condition of this kind must hold simply because for there to be a task at all, it must be possible to say what is to constitute a performance of the task, or what state of affairs must hold upon successful performance of the task. Such specification is what is necessary for any identification of the task.

Let us look at the supposed tasks named by 'a' and 'b'. From K(1') and condition (I) it follows that there is some wff R such that $Ta \cdot (Dxa \equiv R)$. We shall expend our vocabulary a bit with the following interpretations, in order to assist in finding some appropriate wff:

C'xy: x creates y; and

L'xy: x lifts y.

There are two initial candidates for wffs to replace 'R' in this case:

(1) $(y)(Sy \cdot Cxy \supset L'Xy)$, and

(2) $(y)(Sy \cdot C'xy \supset L'xy)$.

Neither of these will do the job, however. Neither (1) nor (2) make any existence claim. Either of them is true if there are no stones. If there are no stones, then a fortiori there are no stones for God to lift, and, on any reasonably normal construal of 'task', no task, a, for God to perform.

The existence problem can be resolved by changing (1) to

(1') $(\exists y)(Sy \cdot Cxy) \cdot (y)(Sy \cdot Cxy \supset L'xy)$.

(Although I will just deal with (1) here, what I say will apply, mutatis mutandis, to (2) as well.) This, as a specification of a, would give us, x performs a if and only if x lifts every actually existing stone which is such that God can create it and, in fact, there is at least one such stone. The problem with this is that the ability to perform the task specified by (1') is not the same as the ability to perform the task a. $Pxa \not\equiv (y)(Sy \cdot Cxy \supset Lxy)$. If we name the task specified by (1') 'c', such that $Tc \cdot (Dxc \equiv (\exists y)(Sy \cdot Cxy) \cdot (y)(Sy \cdot Cxy \supset L'xy))$, it naturally follows that $Pxc \equiv (\exists y)(Sy \cdot Cxy) \cdot (y)(Sy \cdot Cxy \supset Lxy)$. x can perform c if and only if x can lift any actually existing stone which is such that x can create it and there is at least one such stone. This must be the case because for x to perform c there must actually be at least one such stone, and, therefore, there must also be such a stone if we are to say that x can perform c. It follows from this that $Pxa \not\equiv Pxc$. Therefore, $a \neq c$.

This illustrates the source of confusion in Cowan's approach. For it to be the case that God can lift any stone that He can create it is not necessary that there be any stones. It is precisely for that reason that one cannot generate from that formula any task which it presumably expresses God's ability to perform. Cowan falls into the trap here

because he follows Savage in allowing the dichotomy in the first premise to turn on the existence or non-existence of a certain stone.

This confusion can be further illustrated by a brief look at task b. "x can perform b" is supposed to mean that x can create a stone that x cannot lift. What it actually means, according to K(1") is that there is a stone which God can create but not lift. According to K(1"), that there exists a stone which God can create but not lift is a necessary condition for God's being able to create such a stone. Yet we would normally think that God is able to create quite a number of things which don't in fact exist. Moreover, we would normally think that God's creating something is in itself a necessary condition of something's existence. In that case, the 'Cxy' in K(1") is rendered superfluous by the existential quantification over the 'y'. In any case, 'b' does not name the task Cowan would have us think it names.

The above criticisms of argument K are, of course, based on the fairly natural assumption that the quantifiers in K range over only actually existing objects. Since formulating these criticisms, I have found out, through correspondence with Mr. Cowan, that he does not intend the range of the quantifiers to be thus limited. Although he does not state this in his article, Cowan intends the quantifiers in K to range over Meinongian unactualized possible objects as well as actually existing objects. On this construal of the quantifiers, my criticism of task b in the paragraph immediately above is no longer to the point.

Similarly, on a Meinongian construal of the quantifiers, my criticism of task a requires some revision. Cowan writes,

Your argument against K(1') suffers from the same confusion. The

"R" for "Dxa ≡ R" is presumably your (1) ..., "(y)(Sy·Cxy ⊃ L'xy)".
(Your (2) will not do since it could be true even though there
are other stones God could create but doesn't and which he could
not lift.) But this (1) would not be vacuously true simply be-
cause there happened to be no stones actualized, but only if God
could not create any stones - - in which case His omnipotence
would fail on that ground.[14]

While this does save Cowan's argument from my earlier criticisms, it
also opens the way to another pair of criticisms.

First, Cowan is quite right in claiming that if God cannot create
any stones then He is not omnipotent. Yet there is a problem in claiming
that God performs task a if and only if He lifts every stone which He
can create. It follows from that that if God cannot create any stones
then He performs task a. This should raise some initial doubt concerning
the legitimacy of the task named by 'a'. It seems thoroughly bizzare to
think that the failure of God or anyone else to have the ability to
create stones should constitute or imply that agent's performance of
some actual task.

There is also a second and far more serious problem raised by
Cowan's rejoinder to my first set of criticisms. It would seem fairly
clear, I should think, that 'liftability' is not predicable upon unac-
tualized possible objects. Presumably only physical objects can be lifted,
and unactualized possible objects are certainly not physical objects. If
this is true, then a thing's being an unactualized possible object would
be a sufficient condition for its not being liftable by any agent. If
what I have said so far in this paragraph is right, then there is an ob-

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[14] This is from a letter which I received from Mr. Cowan, dated November
13, 1974, which he very graciously wrote in reply to a letter which I
sent to him regarding the criticisms of his article made in pages 152-
155, above.

vious counter-example to K(2) of Cowan's argument. We must suppose that God did not create every stone which He might have created. Consider a stone which God can create, but has not actually created. Since this stone is an unactualized possible object, it is not a physical object. Since it is not a physical object it cannot be lifted by anyone, including God. This situation satisfies the antecedent of K(2), $(\exists y)(Sy \cdot Cxy \cdot -Lxy)$. However, the situation is also clearly compatible with God's being able to perform any logically possible task, as normally think of tasks, at least.

It might be replied to this that, for those unactualized possible objects within the range of 'y', "L'xy" means that x lifts y in any possible world in which y is actualized. This, however, will not do. What God can or cannot do in other possible worlds has nothing to do with whether or not God is omnipotent in the real world.

Perhaps Cowan is still right that some variant of the stone paradox is sound.[15] If so, he has not shown that to be the case in either of his articles or in his subsequent correspondence with me. The second article, especially with the clarification it is given through the correspondence, offers a very clever argument, K, but that argument turns on an inadequate and/or wrong notion of 'task'. Because K(1') does not give a legitimate task at all, K(2) Cowan's version of the second premise, fails.

My construction of the stone paradox, H, is not beset by this difficulty, or any other that I can see. It is a fundamentally correct representation of the traditional stone paradox, A. Because of the failure of H(2), we can be sure that there is at least one version of

15 Cowan, "The Paradox of Omnipotence Revisited", p. 35.

the stone paradox, the traditional one, that is not sound.

## C H A P T E R  X I

## ORDERS OF ABILITY AND FURTHER POSSIBLE DILEMMAS

While the traditional stone paradox has been shown to pose no threat to God's omnipotence, there is a certain point in the analysis where it appears that further dilemmas may be generated. Specifically, does God have the ability to exercise all of His abilities? Another problem is whether God has the ability to exercise certain of His abilities and yet remain omnipotent. In connection with the former problem it may be helpfull to distinguish two different types or orders of ability: ability to perform ordinary tasks and ability to exercise other abilities. This can be handled formally within the language $L_s$ with no difficulty.

Talk of different orders of abilities recalls to mind J.L. Mackie's solution to the paradox of omnipotence.[1] Mackie, it will be remembered from Chapter VII, distinguishes between two orders of omnipotence, and accordingly two orders of ability: ability to act and ability to determine what abilities to act things shall have. This distinction is quite similar to that mentioned in the last paragraph and can equally be expressed in $L_s$. It will be of interest to determine how well-taken such distinctions are with respect to the problems of omnipotence.

Finally, the form of the paradox which Mackie raises cannot be expressed in $L_s$. It is

L. (1) Either God can make things which He cannot fully control, or God cannot make things which He cannot fully control.

   (2) If God can make things which He cannot fully control, then He is not omnipotent.

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[1] Mackie, Op. Cit., p. 212.

(3) If God cannot make things which He cannot fully control, then He is not omnipotent.

(4) Therefore, God is not omnipotent.

While L obviously yields to the same solution as version A of the paradox, it can be seen that it requires some extension on $L_s$ in order to be adequately expressed formally. While I will not provide such an extension, I will briefly outline what must be done to $L_s$ in order to get such an appropriate extension.

It is initially obvious that God does not have the ability to exercise all His abilities concurrently. Presumably God has the ability to make it the case that I am sick tomorrow and the ability to make it the case that I am not sick tomorrow. If God were to exercise both of these abilities then I would both be sick and not be sick tomorrow. Since this latter situation is contradictory, it is obvious that God cannot exercise all of His abilities concurrently.

This is not, however, the problem that arises out of my solution to the stone paradox as given in the last chapter. Rather the problem is one of whether there are certain of God's abilities which He has not the ability to exercise. The case that comes to mind is whether God can exercise His ability to create a stone which He cannot lift. One might think that either answer is problematic. It appears that we might have a new paradox here, raised one level above the old stone paradox.

Let us state this proposed new dilemma as

M. (1) Either God can exercise the ability to create a stone that He cannot lift or God cannot exercise the ability to create a stone that He cannot lift.

(2) If God can exercise the ability to create a stone that He cannot lift, then He is not omnipotent.

(3) If God cannot exercise the ability to create a stone that He cannot lift, then He is not omnipotent.

(4) Therefore, God is not omnipotent.

This argument is very similar to argument A. Argument M can be expressed in $L_s$ as the argument

N. (1) $CanD_jD_j((Ex)(Fx\&\sim CanD_jGx))v\sim CanD_jD_j((Ex)(Fx\&\sim CanD_jGx))$

(2) $CanD_jD_j((Ex)(Fx\&\sim CanD_jGx)) \rightarrow \sim Hj$

(3) $\sim CanD_jD_j((Ex)(Fx\&\sim CanD_jGx)) \rightarrow \sim Hj$
_____

(4) $\sim Hj$.

We can now see how close this new dilemma is to our old paradox. Argument H, form Chapter IX, page 140, gave the formal expression of the old paradox in $L_s$. Argument N is identical to argument H except for having a second iteration of '$D_j$' within the outermost group of praxiological operators in both conjuncts of the first step in that argument and in the antecedents of both the second and third steps in the argument.

It should be apparent that argument N is susceptible to precisely the same sort of analysis as was given to argument H in Chapters IX and X. This means that N(2) is not true merely on the basis of logic and semantics and that, therefore, argument N is not sound. It is possible for God to have the ability to exercise the ability to create a stone that He cannot lift and yet remain omnipotent. God only fails to be omnipotent if He exercises the ability to exercise the ability to create a stone that He cannot lift.

An infinite number of dilemmas can be generated in this way. We can speak of "the ability to exercise the ability to exercise ... the ability to create a stone that God cannot lift". This can be formalized

by repeated reiterations of 'D$_j$' in the same manner which led from H to N. Each proposed dilemma is solvable in the same way, that basic approach to which was given in Chapter X above.

If a serious dilemma is to be found, it must be found in some other direction. It may still seem strange to say that God may be omnipotent, but only because He didn't create a certain kind of thing which He very well could have created. Perhaps there is a further dilemma coming from this direction. If God exercises His ability to create a stone that He cannot lift, then He is no longer omnipotent. Therefore, God does not have the ability to make it the case that there is a stone that He cannot lift and that He is omnipotent. There is, therefore, something that God cannot do. It may be thought that it follows from this that God is not omnipotent. This argument can be expressed in L$_s$ as

O. (1) $D_j((Ex)(Fx \& \sim CanD_j Gx)) \rightarrow \sim Hj$

(2) $\sim CanD_j(D_j((Ex)(Fx \& \sim CanD_j Gx)) \& Hj)$

(3) $\underline{\sim CanD_j(D_j((Ex)(Fx \& \sim CanD_j Gx)) \& Hj) \rightarrow \sim Hj}$

(4) $\sim Hj$.

Let us follow this argument step by step. O(1) is clearly true by virtue of the semantics given for L$_s$. If God makes it the case that there is a stone that He cannot lift, then there is such a stone. Since it is logically possible that any stone should be lifted, if there is a stone that God cannot lift, then God is not omnipotent.

O(2) is true and O(3) is defective for precisely the same reason. The reason for God's being unable to make it the case both that there is a stone that He cannot lift and that He is omnipotent is that it is logically impossible that that should be the case. That follows from the fact

that O(1) is provable. If it is not logically possible that it should be the case that there is a stone that God cannot lift and that God should be omnipotent, then it is not logically possible that God should make that the case, nor is God able to make that the case.[2] If it is not logically possible that God should make it the case that there is a stone that He cannot lift and that He should be omnipotent, then God's inability to make that the case does not lead to the conclusion that God is not omnipotent.[3] Argument O is unsound, failing in the third premise.

In connection with the first problem dealt with in this chapter, expressed by arguments M and N, a number of things are now apparent: 1) The various orders of ability which we found ourselves able to develop are all easily expressible in $L_s$. 2) We can go to any order of ability we like in attempting to construct a sound extension on the stone paradox, but we will never be able to construct a sound dilemma so long as we proceed merely by raising the level of the traditional statement of the paradox. 3) Therefore, distinguishing orders of ability in this manner is of no consequence to any attempt to construct new dilemmas in this way.

1) It is obvious from the start that we are not dealing here with two orders of ability, as we might have suspected at the beginning of this chapter, but with an infinite number of different orders of ability. There is the simple ability to act; the ability to exercise the ability

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[2] The two conclusions given in this sentence follow from instances of the theorem schemata, 25) and 28) from page 137 of Chapter VIII, respecitively.

[3] This conclusion follows from definition 3 from page 141 of Chapter IX.

to act; the ability to exercise the ability to exercise the ability to act; and so on _ad infinitum_.

We do not talk about abilities _per se_ within the language $L_s$. Rather we express "i has the ability to (can) do p" within $L_s$ by "$CanD_i q$", where q is some appropriate wff of $L_s$. In the instance of the traditional stone paradox, "God has the ability to (can) create a stone that He cannot lift." is expressed in $L_s$ by "$CanD_j((Ex)(Fx\&\sim CanD_j Gx))$". "$(Ex)(Fx\&\sim CanD_j Gx)$" is the wff of $L_s$ which is appropriate for expressing the task of creating a stone that God cannot lift.

In order to explain how certain types of wffs of $L_s$ express claims that agents have abilities of certain order, a new bit of technical terminology needs to be introduced. Let us say that for any task p, "i performs p" is expressed in $L_s$ by "$D_i q$", where q is some wff of $L_s$, then q is the _associated task wff_ of p. "$(Ex)(Fx\&\sim CanD_j Gx)$" is thus the associated task wff of creating a stone that God cannot lift.

In order to be able to speak about such things as my ability to make it the case that someone else exercises the ability to ..., let us say that any description of an ability is in its _standard form_ when it is in the form 'the ability to make it the case that $x_1$ exercises the ability ... to make it the case that $x_n$ exercises the ability to perform r', where r is some simple act.

An ability may be called a _first-order_ ability if it is described in standard form by a description of the form 'the ability to perform r', again where r is some simple act. An ability is of the $n^{th}$-order when its standard form description contains n-1 occurrences of the expression 'exercises the ability'. We may now say that if p is any task and q is the

associated task wff of p, then 'q' contains, starting with its leftmost sign, n occurrences of 'D' prior to the occurrence of any other sign of $L_s$ which is not an agent symbol or quantifier if and only if the ability to perform p is an ability of order n+1.

I recognize a certain arbitrariness in the notion of order given above. One might well want to say that the ability to make it the case that Jones has (not exercises) an ability to perform r ought to be counted as a second-order ability rather than as a first-order ability. Be that as it may, there is no wholly non-arbitrary notion of order of ability at hand. What is important at this point is to note that for any specification of orders of ability that may be given, certain forms of wffs of $L_s$ can be specified which will express the possession or exercise of those orders of ability.

2) It should be apparent from looking at the treatment of argument M/N on pages 160 and 161 above and at the way in which higher orders of ability are expressed in $L_s$ that a sound paradox at a higher order of ability, but otherwise identical to the paradox of the stone, is not to be found. If there is to be a sound argument against the omnipotence of God, it must be found in some other quarter.

3) It follows from this that distinguishing orders of ability in this manner is of no help in any effort to construct a sound version of the stone paradox. Moreover, it has become apparent that distinctions among various orders of ability are drawn according to largely arbitrary lines. One is left with the feeling that there is probably very little benefit at all to be derived from making such distinctions.

Since we have yet found no sound argument against God's omnipotence,

we do not yet stand in need of a solution to any paradox of omnipotence. Among others, Mackie's solution is unnecessary. We do not need to distinguish between orders of omnipotence to solve the paradox any more than we can, by so distinguishing, construct a paradox. Nevertheless, I should like to look for a moment at the general practice of distinguishing among various types of abilities to see what relevance it has in general to the problem of omnipotence.

Generally the differences among different types of abilities will be reflected in $L_s$ by differences among the types of wffs which are the associated task wffs for the tasks of the appropriate type. (A task t is of type n if and only if the ability to perform t is an ability of type n.) This was obviously the case with the distinctions among orders of abilities which were made on the last page. This is also the case with Mackie's distinction between abilities to act and abilities to determine what abilities to act things shall have. Let us call the former sort of abilities 'abilities$_1$' and the latter 'abilities$_2$'. We may now say that if p is a task and q is the associated task wff of p, then 'q' contains a non-eliminable occurrence of 'Can' if and only if the ability to perform p is an ability$_2$.

We can, of course, draw many other distinctions: the ability to create (The associated task wff here expresses an existential claim.) as opposed to the ability to affect already created entities; and many others which are less natural. They are relevant to the problem of omnipotence only if 1) they provide a solution to some argument which proves that God is not omnipotent, or 2) they enable us to construct such an argument. At this point, such distinctions are of no help in providing

a solution to any case against God's omnipotence precisely because we have found no solid argument against God's omnipotence. The stone paradox doesn't work. If some better argument can be found against God's omnipotence, then it would depend on the nature of that argument whether distinctions among various kinds of abilities would be at all helpful.

Also, there is no reason to suppose that such distinctions give any help in the effort to construct a sound argument against omnipotence. This is the case because they give us nothing which we didn't have before. These distinctions only allow us to make various new groupings of things which we already have. If there is to be an argument against omnipotence based on problems about abilities, it will proceed by posing two incompatible abilities. There is no other way that omnipotence can be shown to be impossible. But to do this all that we need to be able to talk about are particular abilities. Different kinds of abilities never enter into the problem.

The conclusion, then, is that distinctions among various types of abilities serve no legitimate purpose in connection with the issue of omnipotence.

The final problem that presents itself is Mackie's argument L.[4] Argument L cannot be expressed in $L_s$. The reason for this is that $L_s$ has no device for quantifying over relations, only over individuals and wffs. In order to express the notion of 'things which God cannot completely _control_' we would need to be able to quantify over relations, since for God to completely control something he must be able to make it the case that any consistent predication on that thing holds true.

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[4] See this chapter, pages 159f.

This requires an extension on $L_s$. While a third-order extension on $L_s$ which would allow sufficient quantification over relations could be constructed, that would require considerable complexity. At this point it should certainly be apparent from the similarity between argument M/N and argument A/H and from the analysis given to the latter argument within $L_s$ that Mackie's argument is susceptible to the same solution as the traditional stone paradox.

In this chapter I have tried to look beyond the traditional stone paradox to see whether there may not be a sound argument against God's omnipotence coming from some other quarter. While I definitely cannot say for certain that there is no sound argument against God's omnipotence, I can say with complete confidence that there is no sound argument against God's omnipotence coming forth from those directions from which one might be most expected.

CONCLUSION

Since the publication, twenty years ago, of J.L. Mackie's famous
article, "Evil and Omnipotence", a good deal has been written about the
stone paradox. Despite an abundance of literature on the stone paradox,
it remains the subject of controversy. It has been my hope, in this dis-
sertation, to provide a decisive solution to the stone paradox.

To begin with, it has been necessary to show that God is subject to
the laws of logic, and that, therefore, His failure to perform some task
whose description is self-contradictory does not count against His omni-
potence. If this much is denied, it follows that theological language
becomes utter nonsense.

The notion of 'omnipotence' which I have accepted dispenses with
the notion of 'performing a task' in favor of the more accessible notion
of 'bringing about a state of affairs' or, to make it more formal and
still more accessible, 'bringing it about that a certain sentence is true'.
I have accepted the following as a definition of 'omnipotent':

x is omnipotent $=_{df}$ for any sentence p, if it is logically possible that
x make it the case that p is true, then x can make it
the case that p is true.

I hasten to point out that "it is logically possible that x make it the
case that p is true" is necessary in the antecedent of the definiens in-
stead of just "it is logically possible that p is true" in order to avoid
our having to say that God is not omnipotent because God cannot make it
the case that there exists a stone which God cannot create. "There
exists a stone which God cannot create." may be a self-consistent sen-
tence, but "God makes it the case that there exists (creates) a stone

which God cannot create." is certainly not.

While this notion of 'omnipotence' may depart radically from the notions of 'omnipotence' held by many, if not most, contemporary theologians,.it is a notion with considerable appeal to laypersons and philosophers. Moreover, it is the notion of 'omnipotence' on which the stone paradox poses the strongest threat to divine omnipotence.

With these preliminaries out of the way, we may move to the solution itself. Clearly one of the following is true: either I) it is logically necessary that God is omnipotent, or II) it is not logically necessary that God is omnipotent. Whether I) or II is true is somewhat hard to say. There is a strong tension between the sui generis character of God and the freedom of God's agency. Those who have placed major emphasis on the former have tended to maintain the truth of I), while those who have placed major emphasis on God's freedom have generally maintained the truth of II). Regardless of which of them is true, it is certainly the case that one of them is.

I

Let us assume that it is logically necessary that God is omnipotent. In this case, the consequent of premise 3) of the stone paradox (If God cannot create a stone which He cannot lift, then He is not omnipotent.) does not follow from its antecedent. If it is logically impossible that God is not omnipotent, then it is not logically possible that there should be a stone that God cannot lift. To speak in the idiom of possible-world semantics, if God is omnipotent in every possible world in which He exists, then a stone that God cannot lift does not exist in any possible

world. (In a world in which God does not exist there will be no such stone since the term 'a stone which God cannot lift' will not pick out any entity in that world.)

From the above definition of 'omnipotent', we have it that

x is not omnipotent $=_{df}$ there is some sentence p such that it is logically possible that x makes it the case that p is true, and x cannot make it the case that p is true.

If it is logically impossible that there exists a stone that God cannot lift, then it is also logically impossible that God should make it the case that there exists a stone that God cannot lift. From this we can see that it does not follow from the truth of the antecedent of 3) that there exists any sentence p, such that it is logically possible that p is made true by God, and God cannot make it the case that p is true. It does follow from the truth of the antecedent of 3) that there is a sentence p such that God cannot make it the case that p is true, but that p, "There is a stone that God cannot lift.", is also such that it is not logically possible that God make it true.

This much of the solution is not new. A number of writers on the stone paradox have made points similar to the one I offer above, on the tacit assumption that it is logically necessary that God is omnipotent.[1] To my knowledge, however, it has never been supported in recent litera- ture on the stone paradox as an explicit position. Nor, for that matter, has it been explicitly claimed that the contrary might be true. The issue of whether it is logically necessary that God is omnipotent has been sadly ignored in discussion of the stone paradox, despite its centrality

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[1] See Keene, "Capacity-Limiting Statements"; Mavrodes, Op. Cit.; and Lon- dey's and King-Farlow's contributions to Londey, et al., Op. Cit.

to the paradox.

## II

Let us now assume the contrary, that it is not logically necessary that God is omnipotent. (This has been the assumption of Chapters V-XI above.) In this case, the consequent of premise 2) of the stone paradox (If God can create a stone that He cannot lift, then He is not omnipotent.) does not follow from its antecedent. From "God can create a stone that He cannot lift." we cannot get "There is some sentence p such that it is logically possible that God makes it the case that p is true, and God cannot make it the case that p is true." The sentence p, which God presumably cannot make true, that is generally assumed to issue from "God can create a stone that He cannot lift." is "Stone X is lifted." Clearly we have no way of getting that sentence or anything like it. We could only get it on the basis of some additional principle such as, "For any sentence p, if God can make it the case that p is true, then God does make it the case that p is true." There is no reason, however, to accept such a principle. Rather there is every reason to think it false.

From "God can create a stone that He cannot lift." the most we can get is "It is logically possible that there should be a stone that God cannot lift." From this it does not follow that God is not omnipotent, only that it is logically possible that God should fail to be omnipotent, which is only to restate our assumption that it is not logically necessary that God is omnipotent.

Again, to use the idiom of possible-world semantics, if God can create a stone that He cannot lift, then we may suppose, at most, that

there is some logically possible world in which God does create such a stone. From this it follows that there is some logically possible world in which there is such a stone, and hence that in some logically possible world the sentence "There is a sentence p (i.e. "Stone X is lifted.") such that it is logically possible that God makes it the case that p is true, and God cannot make it the case that p is true." is true. Again all that follows is that there is some logically possible world in which God is not omnipotent. This means only that it is not logically necessary that God is omnipotent. No conclusion follows with respect to God's omnipotence in the real world. God can be omnipotent as long as He does not choose to create the stone.

It may sound strange to say that God is omnipotent because He chose not to create a stone of a certain sort. However, this is not really so remarkable as it seems. It is important to remember that omnipotence is a relational property, relating God to the created order. Any relational property that God possesses contingently is such that God could have created a different order in which He would not have possessed that property. Since we are operating here on the assumption that it is not logically necessary that God is omnipotent, it follows that it is logically possible that God could have created a world to which He bore quite different power-relations than He does to the real world. If it is logically possible that God should fail to be omnipotent, then God could have created a world in which He would not have been omnipotent.

It can now be seen that on either assumption, I or II, the argument of the stone paradox is unsound. Since it is a truth of logic that either I or II must hold, it follows that the stone paradox proves nothing.

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# APPENDIX

At the end of Chapter IV I promised that I would give an adequate proof that A(3) failed if it is assumed first that God is necessarily omnipotent. Here is that proof.

A(3) is rendered formally as

H(3) $\sim CanD_j((Ex)(Fx \& \sim CanD_j Gx)) \to \sim Hj$.

To include the assumption that God is necessarily omnipotent, we alter the semantics for $L_s$ given in Chapter VIII by adding the following condition to those given on pages 135f. which must be satisfied by any assignment of truth-values to the basic D-statements of $L_s$:

v) if $\phi(D_j p, H')=T$ for some H' such that HWH', then $\phi(CanD_j p, H)=T$.

It should be noted that with our augmented semantics for $L_s$ the proof given in Chapter IX for H(3) no longer goes through. With the addition of v) to the conditions which must be satisfied by any assignment of truth-values to basic D-statements of $L_s$, it is no longer the case that "the truth of '$D_i \sim D_j Gd$' does not entail the violation of any of the conditions"[1] which are given on pages 135f. of Chapter VIII with the addition of v). Therefore, the proof of H(3) does not go through.

As with H(2) in Chapter X, to show that the consequent of H(3) does not follow from the antecedent, it is sufficient to produce a model which satisfies the augmented semantics for $L_s$, and such that the antecedent of H(3) is true and the consequent false in some world on that model. As it turns out, H(3) is false on every model for our augmented semantics.

To show this, let us start by assuming the negation of the antecedent

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[1] Chapter IX, page 142 of this dissertation.

of H(3), $\phi(\text{CanD}_j((\text{Ex})(\text{Fx\&}\sim\text{CanD}_j\text{Gx})),\text{G})=\text{T}$. From this it follows by 8) on page 137 of Chapter VIII that $\phi(\text{M}((\text{Ex})(\text{Fx\&}\sim\text{CanD}_j\text{Gx})),\text{G})=\text{T}$. From this it follows that there is some world H' such that GWH' and such that $\phi(((\text{Ex})(\text{Fx\&}\sim\text{CanD}_j\text{Gx})),\text{H}')=\text{T}$. Let us take the dummy variable 'd' to stand for some appropriate non-agent individual symbol. We may then say that $\phi((\text{Fd\&}\sim\text{CanD}_j\text{Gd}),\text{H}')=\text{T}$, and that $\phi(\sim\text{CanD}_j\text{Gd},\text{H}')=\text{T}$. But obviously 'Gd' is not a contradiction, and is therefore consistent. From this it follows that $\phi(\text{MGd},\text{H}')=\text{T}$. Since 'D$_j$Gd does not violate any of the conditions i)-iv) on pages 135f. of Chapter VIII or v) of the immediate past page, there is some world H'' such that $\phi(\text{D}_j\text{Gd},\text{H}'')=\text{T}$. Since W=KxK, H'WH''. It follows from this by condition v) above, that $\phi(\text{CanD}_j\text{Gd},\text{H}')=\text{T}$. This presents us with a contradiction. Therefore the antecedent of H(3) is true.

The negation of the consequent of H(3) is, according to Def. 3 on page 141 of Chapter IX, short for $(p)(\text{MD}_j p \rightarrow \text{CanD}_j p)$. Its truth, hence the falsity of the consequent of H(3), follows directly from condition v) above.

This completes the proof that A(3) is false on the assumption that God is necessarily omnipotent.