Logic, Argumentation & Reasoning 6

Kenneth G. Lucey

Pesky Essays on the Logic of Philosophy

Springer

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Volume 6

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Logic, Argumentation & Reasoning

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ISSN 2214-9120 ISSN 2214-9139 (electronic)
ISBN 978-3-319-08062-8 ISBN 978-3-319-08063-5 (eBook)
DOI 10.1007/978-3-319-08063-5
Springer Cham Heidelberg New York Dordrecht London

Library of Congress Control Number: 2014955629

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

For
Carol Ann
&
our son
Griffin de Luce

Contents

Introduction

This book is collection of philosophy essays by Kenneth G. Lucey, who is a Professor of Philosophy at the University of Nevada, Reno, and who has served there as The Sanford Distinguished Professor of the Humanities.

A major theme of this collection is the philosophy of human *knowledge*, from a multitude of perspectives, with a particular emphasis upon the justification component of the classical analysis of knowledge, and with an excursion along the way to explore the role of knowledge in Texas Hold 'Em Poker'. Roughly half of the essays have previously appeared in major philosophy journals, while the rest are original essays appearing here for the first time. Another theme of the collection is the role of knowledge in religion, with a detailed argument for *agnosticism*. A number of the essays touch upon issues in philosophical logic, including a fascinating new counter-example to *Modus Ponens*. The collection is rounded out with essays on causality and the philosophy of mind. An added feature of the collection is the inclusion of responses to key essays by several prominent contemporary philosophers such as Roderick Chisholm, Ted Sider and Tomas Kapitan.

Part I
Knowledge & Justification

Chapter 1
Essay #1: What Is Knowing?

Kenneth G. Lucey

Abstract This essay begins with a brief vignette that illustrates a variety of sorts of knowledge, namely knowledge what, spatial knowledge, knowledge who, knowledge of possible consequences, knowledge when, and finally moral knowledge. Traditional epistemology has been deeply concerned with the analysis of the concept of knowledge, and this essay illustrates the process by which this occurs, namely as the analysis of theoretical definitions. This is displayed through a discussion of the notion of a counterexample. The essay distinguishes three kinds of counterexample, viz. of the first, second and third kinds. It explores necessary and sufficient conditions and their relationship to conditional propositions, and the idea of a theoretical definition being too broad, too narrow, or both. The prime example used in this essay cites Edmund L. Gettier's classic essay of 1963 entitled "Is Justified True Belief Knowledge?" to illustrate the process by which a philosopher shows that a particular proposal concerning knowledge fails. Gettier used two counterexamples to show that the proposals of A.J. Ayer and Roderick M. Chisholm are both too broad. Gettier does this with two counterexamples of the second kind. This essay also introduces "The Big Picture", which is an elaborate Venn diagram with seven dimensions. The essay concludes with a discussion of the distinction between counterexamples and borderline cases. This discussion is illustrated by the classic controversy between W.V.O. Quine and Strawson & Grice over the analytic/synthetic distinction. Strawson & Grice's critique of Quine amounts to a claim that his purported counter-examples to the analytic/synthetic distinction are at best borderline cases.

What is *knowing*? What kinds of beings have knowledge? What sorts of things are *known*? These are some of the questions considered in this essay. For 2,000 years philosophers have asked and attempted to answer these questions. This ongoing discussion constitutes the subject matter of the philosophical area called the *theory of knowledge*, or *epistemology*. By way of introduction, let's observe a fictional incident and treat it as a sort of case study concerning knowledge. Thomas Perry's second novel begins with a scene that is saturated with a variety of kinds of knowledge:

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_1

"Chinese Gordon was fully awake. He'd heard the clinking noise again, and now there was no question the cat was listening, too. The cat, Doctor Henry Metzger, had assumed the loaf-of-bread position on Gordon's blanket, his ears straight up like a pair of spoons to catch the sound and lock onto it. Doctor Henry Metzger sat up and licked his paw, then froze as he detected some variation in the sound that Chinese Gordon's ears couldn't hear.

"What is it?" whispered Chinese Gordon. "Somebody trying to break in, isn't it?"

Doctor Henry Metzger turned from the sound, walked up Chinese Gordon's chest, and stepped on his forehead on the way to the spare pillow. He'd identified it as a human sound, which placed it outside Doctor Henry Metzger's sphere of interest.

Damn, thought Chinese Gordon. Burglars. He slipped out of bed, moved quietly to the doorway, and listened. He could hear from downstairs the faint squeaking of the garage door to the shop moving on its rollers. His eyes strained, but he could see nothing below except the familiar dim shapes of the shop machines. Then, as the garage door opened farther, he saw a man silhouetted for a moment. The man entered, followed by another, and another.

Chinese Gordon stayed low, watching from the upper landing without moving. There were three of them. The gun was locked in the bottom of the tool chest in the back room downstairs, which meant it was worse than nothing because if he gave them enough time they'd find it

He could tell they were just inside the garage door now, probably standing there waiting for their eyes to adjust to the darkness before trying to move into the shop. It was a lousy situation, thought Chinese Gordon. They might be just kids or winos or junkies trying to score a lot of expensive tools and machinery, but that didn't mean they wouldn't kill him if he switched on the light or made a noise.

Beside him he felt Doctor Henry Metzger rubbing against him, purring. When Doctor Henry Metzger stopped purring and stared down into the shop, Chinese Gordon knew the men had begun to move. He watched the cat's face, the intent unblinking eyes focused on the darkness below. Then Doctor Henry Metzger crouched low and peered over the edge of the landing, his ears back so his head would have no silhouette. One of them must be directly below, looking up at the power tools hanging on the pegboard on the wall. Chinese Gordon listened, and he could feel the shape of the man below him, leaning forward over the bench, his face staring up at the tools to assess their value, weight, and bulk. Now he would be reaching up for the electric drill.

Chinese Gordon felt a twinge of guilt about what had to be done. He knew it wasn't fair, and there would be resentment, there might even be consequences be couldn't imagine. He gently placed his hand on Doctor Henry Metzger, feeling the thick, soft fur. Then, without warning, he scooped the cat up and dropped him. Doctor Henry Metzger screamed as he fell, the terror, surprise, and anger howled into the darkness in a high pitched screech.

Chinese Gordon could tell immediately that he'd judged the trajectory correctly. Doctor Henry Metzger could only have dropped five or six feet before the tone of the howling changed and the human scream joined it. The cat had definitely landed on the man's head, scrambling desperately with claws out for a foothold, from the sound of it tearing great gashes, because the man's shouts weren't just terror, they were pain.

There were other sounds now, too. The shouts of both of the man's companions competed with the howling and screaming. "What?" one yelled. "What? What?" Then he ran into the lathe, which rocked slightly although it was bolted to the pavement, and must have injured himself somehow, because then his voice came from the floor in a breathless, inarticulate moan. The other screamed, "Hold still! Freeze, you bastard!" as though he were either contemplating shooting someone or merely advocating keeping calm.

On the landing Chinese Gordon lay flat on his belly and listened. The man on the ground said, "We've got to get out of here."

"What the hell happened?" said the one with the commanding voice. "It sounded like a baby."

> "God, I'm bleeding!" said the other.
> Chinese Gordon heard them move away, then peered over the edge to watch them. One by one, escape under the partially opened garage door. A few seconds later he heard car doors slam and an engine start."[1]

Let us consider this incident from the point of view of the many sorts of knowledge involved. Gordon is awake wondering what he has just heard. The behavior of his cat clearly indicates that it has heard something also, and then its further behavior is taken to show that the cat is hearing sounds that Gordon himself cannot perceive. Gordon formulates the hypothesis that someone is attempting to force an entry into his home. This clearly isn't knowledge yet. But when the cat loses interest, Gordon thereby acquires evidence sufficient for him to conclude that it is human agency involved, and he now knows that someone is breaking into his house.

Moments later Gordon has visual evidence that at least three persons have entered the machine shop over which he lives. At the same time, Gordon *knows* where his pistol is located and is further *aware that* (yet another kind of knowledge) the location of the firearm poses a future danger to himself. The first of these is an instance of a kind of knowledge which pervades this vignette, namely, *knowledge where*. Gordon knows where his gun is located and at various times knows where his intruders have positioned themselves. He furthermore knows where the various contents of his shop are located in relation to one another, i.e. spatial knowledge.

Gordon also has formulated a hypothesis about the motive of his intruders and believes that if he reveals his presence to them by sound or action, he could easily end up dead. So here we have *knowledge* of possible motives and further *knowledge* of possible consequences of his own actions. Gordon is also able to interpret the behavioral states of his cat so as to *know when* one of the burglars is directly below them, i.e. temporal knowledge.

Gordon has *moral knowledge* as well. Perry tells us "He knew it wasn't fair" the way he was about to use his pet as a tool for getting out of his own difficult position. Gordon knows by touch the location of his cat and how to utilize the feline as a weapon. So we have knowledge how, knowledge that, knowledge who, knowledge why, knowledge whether, knowledge where, knowledge when, plus moral knowledge and practical knowledge about various "what ifs?" Perry has woven for us a rich tapestry that serves as a sampler of the multitude of sorts of knowledge, some of which we will be exploring in this essay.

Why Bother?

Any reader opening the present essay at random and attempting to jump into the middle of the ongoing discussions might find the whole business a little technical, somewhat confusing, fairly unmotivated, and might therefore ask "So What?" or

[1] Thomas Perry, Metzger's Dog (New York: Charter Books, 1983), pp. 1–3.

"Why bother?" The philosophical investigation of knowledge has been a central issue of liberal education in general and of philosophy in particular for the last 2,000 years and has enjoyed the near unanimous endorsement of traditional philosophers and academics. So a blatant appeal to authority might be one kind of justifying answer. A much better answer to the "So What?" question can be given, and it has three major parts.

In the first place it is a mistake to simply jump into the middle of the discussions offered here. By understanding the complexities of the discussion as it has historically developed, many of the difficulties become much easier to master.

The second major reason for bothering with these issues is that there is no better area in which to learn the methodology of analyzing concepts. Theory of knowledge (or epistemology) is a prime example of an arena in which there exists a whole array of concepts exhibiting complex, subtle, and sophisticated interconnections and interrelationships. Most arriving at their first encounter with theories of knowledge have had no previous opportunity to work with concepts as entities in themselves, whose interconnections are fixed, necessary, and objectively true or false. So, this is where many readers of philosophy first encounter theoretical definitions, which can be treated as hypotheses, and shown to be mistaken by means of counterexamples, where a counterexample is a logically possible case that establishes the falsity of a proposed definition. Generally, a counterexample shows a definition to be either (1) too broad, (2) too narrow, or (3) simultaneously both too broad and too narrow.

In the same vein many readers have only the most tenuous grasp of the interrelationships among the following concepts: definitions, biconditional statements, conditional statements, necessary conditions and sufficient conditions; or of how the notion of a counterexample connects up with all of the foregoing. In a word, the study of the classic issues in epistemology is where these relationships are most easily mastered.

Finally, the third answer to the question "Why bother?" is that the mastery of the subtle distinctions among these concepts is intrinsically valuable. Students who have mastered the distinctions among the certain, the known, the believed, the justified, the true, etc., thereby acquire a richly textured multidimensional conceptual scheme that could permanently alter their view of the world and their modes of grasping its various truths, both necessary and contingent.

Practical Applications

What readers may not realize is that, properly understood, epistemology is vitally relevant to the broad sweep of views and opinions that are constantly impinging upon their lives. The modern media constantly espouse views about ESP, ghosts, poltergeists, UFOs, Bigfoot, the Bermuda Triangle, channeling, crystal power, and New Age whatever. What should you believe and how should you decide to what you should give your assent? While not the subject matter of this present essay, the relevance of epistemology to such issues has been documented in great detail in the book *How We Know What Isn't So* by Thomas Gilovich, who makes the point that "people do not willy-nilly believe what they want to believe. Instead, people's preferences generally have their influence through the way they guide their evaluation of the pertinent evidence."[2] In a word, the key to getting a handle on the issue of what we ought to believe lies in our raising our intellect and consciousness about the concepts of evidence and justification. In a very real sense the whole topic of the theory of knowledge might more accurately be called the theory of justification. And *that* is our subject matter here, and in several subsequent essays.

By acquiring sophistication about the nature of evidence in general and of concepts of degrees of justification in particular, readers will acquire skills that will be invaluable for wading through the muck of beliefs of everyday life, with its occasional perplexity about what they should believe. By studying epistemology readers acquire subtlety in the evaluation of evidence claims. Acquiring this skill is a difference that can make a difference in their lives. By learning to make the appropriate distinctions concerning degrees of justification, it comes to be seen that there *really* is a difference between knowing something and merely believing it. Another result of mastering this material is that readers learn when it is appropriate to desire certainty and when the fallible character of the subject matter makes that desire totally inappropriate. And in the latter cases, just because certainty cannot be attained, that does not mean that the floodgates open and all sorts of speculation can be accepted as knowledge.

How Do Necessary and Sufficient Conditions Work?

The concepts of necessary and sufficient condition are required for a full mastery of the discussion of theoretical definitions, which comes next. There is a simple way of understanding the terminology of necessary and sufficient conditions by using conditional statements. The general form of a conditional statement is:

If (the antecedent) then (the consequent).

An example here would be: If (Tom is a brother) then (Tom is a male). The parentheses are used here just to call attention to the distinct units that constitute the antecedent and the consequent, and in more complex examples are used to clarify the grouping of the parts of the conditional. When a conditional statement is true the following holds:

The antecedent is a sufficient condition for the consequent, and the consequent is a necessary condition for the antecedent.

[2] (New York: Macmillan, Inc., The Free Press, 1991), p. 174.

A simple memory device for remembering this relationship is the acronym SIN, where S = sufficient condition, I = implies, and N = necessary condition. That is, in any true conditional the antecedent is a sufficient condition for the consequent, and the consequent is a necessary condition for the antecedent. Or, to express it differently, the truth of the antecedent holding *implies* the truth of the consequent holding, but not vice versa. So, in the example just given it is the case that Tom being a brother is a sufficient condition for Tom being a male, and Tom being a male is a necessary condition for Tom being a brother. The relationship expressed by any true conditional statement is called the *reciprocity of sufficiency and necessity,* i.e., if A is sufficient for C, then C is necessary for A. But note that in this case the consequent is *not* sufficient for the antecedent, and the antecedent is *not* necessary for the consequent. And this is because there are males who are not brothers.

What Is a Theoretical Definition?

A theoretical definition is a kind of equation. This is shown in the general form of any definition, which goes as follows:

$$\text{Definiendum} = \text{df. definiens}$$

where the ‘Definiendum’ is that which is being defined, and the ‘definiens’ is that which is doing the defining. This general form gets abbreviated as ‘D = df. d’, where ‘= df.’ is read as ‘equals by definition’. So, the whole abbreviation could be read as: Big D equals by definition little d. Theoretical definitions are so called because they represent a kind of theory about their subject matter. The definition is understood to be a hypothesis about the content of the definition, and the philosophical task is that of investigating whether the theoretical definition is true or false. The crucial point about theoretical definitions is that if they are true, they are necessarily true, and if they are false, they are necessarily false. Consider, by way of an example, this definition, which Plato refuted long ago: Knowledge = df. perception. If this definition were true, what it would be saying is that it is necessarily the case that every instance of knowledge is an instance of perception, and every instance of perception is a case of knowledge.

The philosophical method of investigating the truth of such a definition is by the method of counterexample. To understand the role of counterexamples in the evaluation of theoretical definitions it is helpful to understand what the logical form of a definition implies. Consider the following sequence:

$$\text{D} = \text{df. d},$$

for example: *x* is a brother = df. *x* is a male sibling;
implies

Necessarily, *x* is a D if and only if *x* is a d,

that is: Necessarily, *x* is a brother if and only if *x* is a male sibling;
which implies

Necessarily, if D then d, and if d then D,

i.e.: Necessarily, if *x* is a brother then *x* is a male sibling,
and if *x* is a male sibling then *x* is a brother;
which in turn implies

Necessarily, it is not the case that both (D and not d)
and it is not the case that both (d and not D).

i.e.: Necessarily, it is not the case that both *x* is a brother and not a male sibling,
and it is not the case that both *x* is a male sibling and not a brother.
'Necessarily' is equivalent to 'It is not possible that not . . .'.
So,

It is not possible that either (D and not d) or (d and not D).

i.e.: It is not possible that either *x* is a brother and not a male sibling, or *x* is a male sibling and not a brother. If either of these *is* possible, i.e., if it is possible that (D and not d), or it is possible that (d and not D), then a *counter-example* to the original hypothesis, which claimed that D = df d, has been found.

What Kinds of Counterexamples Are There?

Refutation by counterexample can occur in any of three ways, which will here be called (with credit to Steven Spielberg's "Close Encounters. . ." movie) "Counter-examples of the 1st Kind," "Counter-examples of the 2nd Kind," and "Counter-examples of the 3rd Kind." The logical form of the first two of these can be compared and contrasted as follows:

Counter-examples of the 1st Kind	*Counter-examples of the 2nd Kind*
D and not d	d and not D

Illustrated in terms of the faulty definition which asserted that "Knowledge = Df. perception," a Counter-example of the 1st Kind would be an instance of knowledge which was not an instance of perception; and a Counter-example of the 2nd Kind (if such were possible) would be an instance of perception which was not an instance of knowledge.

What do these counterexamples show? If actually produced, what they illustrate is that the definition is false because:

A Counter-Example of the 1st Kind shows that:

(1) D is not *a sufficient condition for d.*
(2) d is not *a necessary condition for D,*

(3) the definition as a whole is too narrow, b*ecause* the *extension of the definiens is smaller than the extension of the Definiendum*

A Counter-Example of the 2nd Kind shows that:

(1) d is not *a sufficient condition for D.*
(2) D is not *a necessary condition for d.*
(3) the definition as a whole is too broad, *because the extension of the definiens is larger than extension of the Definiendum.* The extension of a term is the set of all the items to which the term refers. So, the extension of the term 'dog' is the set of all the dogs that do, ever have, or will exist.

What I call a Counter-example of the 3rd Kind is the joint production of a pair of distinct cases (counterexamples); one of which shows that the definition is false in that it is too broad, and one that shows it to be false because it is too narrow. Providing two such counterexamples to a proposed definition is the most devastating sort of critique possible. What such a pair of cases establishes is that the *Definiendum* is neither necessary nor sufficient for the *definiens*, and that the *definiens* is neither necessary nor sufficient for the *Definiendum*. Such a theoretical definition is very defective indeed, and the successful showing of its falsity constitutes a very elegant refutation of the proposed definition.

Counterexamples: Too Broad, Too Narrow, or Both?

A Counter-example of the 1st Kind has been represented as having the logical form of: *D & not d,* i.e., as a case where the *Definiendum* applies. but the *definiens* does not apply. This counter-example establishes a definition as being too narrow. A convenient way of remembering this is by noticing how if one draws a pair of lines above and below the schema, connecting the top of the *D* with the circle of the *d;* the lines *narrow* when drawn from left to right (Fig. 1.1):

In this case *x* marks the individual of the counterexample which lies within the extension of D and outside the extension of d, Consider the definition: *x* is a brother = df *x* is a married male sibling. The *x* of the counterexample is an individual who is a brother but who isn't a married male sibling. The defect of a definition which is too narrow results from a *definiens* which is too restrictive or too strong or too complex.

A Counterexample of the 2nd Kind has the logical form: *d & not D,* which is to say that it represents a case where the *definiens* holds, but the *Definiendum* does not hold. This counterexample establishes a definition as being too broad. Once again, a memory device for remembering this consists of drawing a pair of lines connecting the top of the circle of *d* with the top of the *D,* and noticing how the lines *broaden* when drawn from left to right: Again, using circles to represent the extension of D and d, the result is (Fig. 1.2):

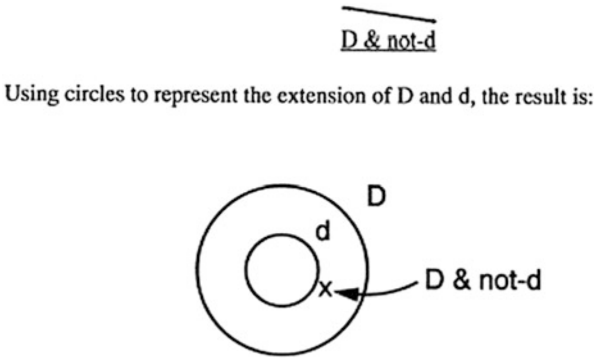

Fig. 1.1 A too narrow definition

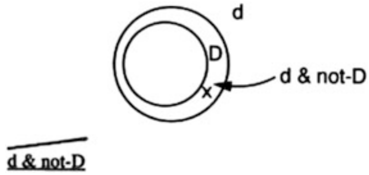

Fig. 1.2 A too broad definition

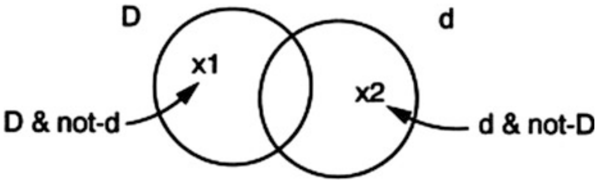

Fig. 1.3 A definition both too broad & too narrow

In this instance *x* marks the individual of the counterexample, which lies within the extension of d, but outside the extension of D. As an example, consider the definition: *x* is a brother = df *x* is a male. The *x* of the counterexample is an individual who is a male but who is not a brother. Such a definition is too broad because the extension of the *definiens* 'male' is larger than the extension of the *Definiendum* 'brother'. This results from the *definiens* being too liberal or too weak or too general.

A Counterexample of the 3rd Kind consists of a pair of cases which together confirm the logical form:

$$(\text{D \& not d}) \; \& \; (\text{d \& not D}).$$

Each case confirms one of the pair of 'and' statements. Such cases are produced to refute a definition that is both too broad and too narrow. In such a situation, the extensions of the two terms get represented as two overlapping circles, as follows (Fig. 1.3):

The two *x*'s each represent a completely distinct individual. An example of a definition that is doubly false in this way would be: *x* is a brother = df *x* is a married male. In this case xl would be a brother who isn't a married male, and x2 would be a married male who isn't a brother. In this sort of example the *definiens* is simultaneously both too liberal and too restrictive, or at once both too broad and too narrow.

A Classical Application

Consider Edmund L Gettier's modern classic, "Is Justified True Belief Knowledge?"[3] In it Gettier considers the traditional definition of knowledge, which goes as follows: A subject S knows that $p =$ df. (1) *P* is true, (2) S believes that *p,* and (3) S is justified in believing that *p*. Gettier's purpose in this paper is *not* to challenge that truth, belief, and justification are each necessary conditions of knowledge. His purpose is rather, by the use of two distinct ingenious counterexamples, to show that justification, truth, and belief are not *jointly sufficient* for knowledge. In other words, Gettier is constructing two Counterexamples of the 2nd Kind, namely: d & not D. His cases are possible scenarios in which the subject S has justified true belief, but nevertheless does *not* know that *p*. The point is to show that the traditional definition is false because it is *too broad,* i.e., the set of cases of justified true belief is larger than the set of all cases of knowledge. We shall return to this case in more detail below.

The Big Picture

The methodology used by Gettier can be exploited in a systematic way to describe the relationships among any number of concepts. Consider, for example, the question of how the following eight concepts interrelate one with another. The eight are: (1) the understood, (2) the true, (3) the certain, (4) the believed, (5) that about which one feels sure, (6) the known, (7) the justified true beliefs, and (8) the set of that for which one has adequate evidence.

My view of the truth of how these concepts relate to one another is contained in a diagram I call "The Big Picture." As an exercise for the reader, I have constructed in the column on the left a series of false definitions of knowledge using, in turn, each of these concepts in the *definiens*. The column in the center gives the logical form of the type of counterexample that it is possible to construct. Then the column on the right spells out a moral or derived principle that can be extracted from having shown each definition respectively to be false. The point of the exercise is for the reader to imagine an actual or possible concrete case that fits the counterexample. That is, to show the falsity of each of these definitions, the reader thinks of a case which illustrates each false definition in turn. For example, in the first definition the

[3] Edmund L. Gettier, "Is Justified True Belief Knowledge?" Analysis 23, no. 6 (June 1963), 121–123.

reader need only think of a proposition, such as that there is intelligent life elsewhere in the universe, which is a proposition we understand the meaning of, but which we currently do not know whether it is true or false (Fig. 1.4).

Definition	Counter example	Derived principle
1. Ksp = df *S* understands that *p* (‘Ksp’ is ‘*S* knows that *p*’)	d & not D	Realm of understood larger than realm of the known
2. Ksp = df *p* is true	d & not D	Realm of truth larger than realm of the known
3. Ksp = df *S* believes (accepts) that *p*	d & not D	Being true is a necessary condition of being known; and realm of beliefs is larger than the realm of knowledge
4. Ksp = df *S* is certain that *p*	D & not d	Realm of the certain is smaller than that of the known
5. Ksp = df *S* has true belief that *p*	d & not D	Adequate evidence (justification) is a necessary condition of knowledge; the realm of true belief is larger than that of knowledge.
6. Ksp = df *S* has adequate evidence that *p*	d & not D	Belief is a necessary condition of knowledge
7. Ksp = df *S* has justified belief that *p*	d & not D	Justified belief alone is not a sufficient condition for knowledge. Truth is necessary also.
8. Ksp = df *S* feels sure that *p*	(d & not D) & (D & not d)	Feeling sure is neither sufficient nor necessary for knowledge.

(continued)

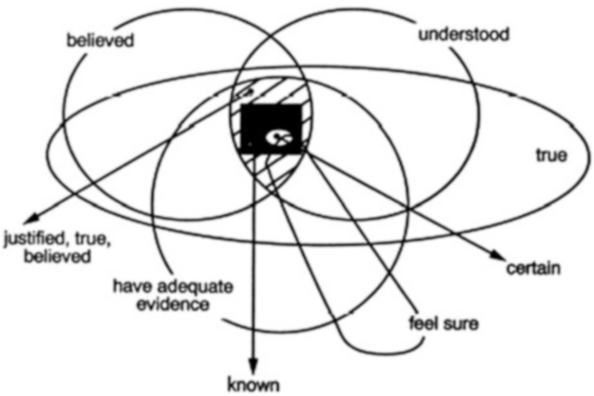

Fig. 1.4 The big picture

As an example consider the second of these definitions, namely: *S* knows that *p* = df *p* is true. This is most assuredly a false definition in that it is far too broad. The realm of the true, which in “The Big Picture” gets expressed as a great ellipse, is far more encompassing than the black box representing the realm of the known. But this definition is *not* doubly false; it is definitely not too narrow. Truth is, indeed, a necessary condition of knowledge. This is what I call the first great principle of epistemology, that is: *You can't know what isn't so*. The truth of the matter is: Necessarily, if *S* knows that *p* then *p* is true, but it is not necessary that if *p* is true then *S* knows that *p*.

The counterexample that shows this definition to be false is an example of a Counterexample of the 2nd Kind, namely: d & not D. That is, there is some proposition *p,* such that *p* is true but *p* isn't known to be true. The production of the counterexample consists in the posing of the possible case. Let the proposition *p* be some genuinely open (i.e., unproven) theorem of mathematics, such as Goldbach's Conjecture (which says that "every even number is the sum of two prime numbers"). Now, assuredly, either proposition *p* is true or its negation, *not p,* is true. Suppose for the moment that the true one is *p*. The counterexample, d & not D, just is the fact that Goldbach's Conjecture is true, but it is not known to be true. If it should turn out that the Conjecture really is false, then the needed counterexample is the case one gets by substituting *'not p'* for *'p'* throughout; i.e., the denial of Goldbach's Conjecture is true, but it is not known to be true.

Counterexamples and Borderline Cases

Under what conditions will a counterexample serve to refute a philosophical thesis? When must such a counterexample be an actual case? When is it appropriate to identify a proposed case as "borderline," and therefore as unsuitable for providing a successful philosophical refutation? These questions are clearly related in that each involves the posing of a case as a type of refuting evidence to a philosophic thesis or theory.

Counterexamples Again

As already mentioned above, one of the most clear-cut cases, in the recent philosophic literature, of a proposed counterexample offered in refutation of a philosophic thesis is that found in Gettier's justly famous "Is Justified True Belief Knowledge?" Therein Gettier constructs two cases that he suggests are counterexamples to the thesis that: *Anything is an instance of knowledge that p if and only if it is an instance of justified true belief that p*. (To clarify the logical form involved, these propositions shall be expressed symbolically. Readers unfamiliar with the logical notation may ignore it and concentrate on the statement formulations.) Using 'K*xp*' for 'x knows that *p*', 'J*xp*' for '*x* has justification for *p*', 'T*p*' for '*p* is true' and 'B*xp*' for '*x* believes that *p*', then the thesis in question could be expressed symbolically as shown in (1). The tilde sign, ~, is the symbol for negation in this context, and '(x)' is the universal quantifier.

(1) $(x)[Kxp \Leftrightarrow (Tp \;\&\; Jxp \;\&\; Bxp)]$

where '*p*' is an individual constant which is taken to be a name of the proposition p. Since the thesis takes the form of a universally quantified biconditional, it can be transformed into the conjunction of two conditionals, which say: If anything is an instance of knowledge then it is an instance of justified true belief, and if anything is an instance of justified true belief, then it is an instance of knowledge.

(2) $(x)\{[Kxp \Rightarrow (Tp \;\&\; Jxp \;\&\; Bxp)] \;\&\; [(Tp \;\&\; Jxp \;\&\; Bxp) \Rightarrow Kxp]\}$

Expressed in this way, the first conditional asserts that justified true belief is a necessary condition for knowledge, and the second conditional says that justified true belief is a sufficient condition of knowledge. Gettier's *goal* is to show that the second conditional is false. Each of the conditionals may in turn be transformed so as to eliminate the conditionals. The results would be: *Nothing is knowledge and not justified true belief, and nothing is justified true belief and not knowledge.*

(3) $(x)\{\sim[Kxp \;\&\; \sim(Tp \;\&\; Jxp \;\&\; Bxp)] \;\&\; \sim[(Tp \;\&\; Jxp \;\&\; Bxp) \;\&\; \sim Kxp]\}$

When the conditionals have been eliminated, the result is a conjunction made up of two compound expressions each of which is negated as a whole. Thus, it can now be seen that if one can construct a case that exemplifies either one of the compounds without its outermost negation, then a counterexample will have been produced to the original thesis. Two possible counterexamples to the original thesis are as follows:

A case of knowledge which is not a case of justified true belief.

(4) $Kxp \;\&\; \sim(Tp \;\&\; Jxp \;\&\; Bxp)$

A case of justified true belief which is not a case of knowledge.

(5) $(Tp \;\&\; Jxp \;\&\; Bxp) \;\&\; \sim Kxp$

Gettier's two examples were instances of counterexample (5), and thus were intended to show that justified true belief is *not* a sufficient condition of knowledge.

An interesting feature of Gettier's examples is that they are just two hypothetical or imagined cases. Reflection upon this might lead one to ask: When may a counterexample be a merely *possible* case? The key to answering this question lies in the *modal status* of the thesis in question; that is, whether the thesis is being asserted as a necessary truth, such as: *It is necessarily the case that anything is an instance of knowledge if and only if it is an instance of justified true belief.* Symbolically, this would be:

(6) $\Box\, (x)\, [Kxp \equiv (Tp \;\&\; Jxp \;\&\; Bxp)]$

where the box operator, □ is the standard symbol for *necessity*. In such a case all that would be required as a counterexample is a *possible* or imagined case. On the other hand, if the thesis in question is meant simply as an empirical or factual general truth, then one must produce an *actual* case in order to have successfully achieved a counterexample. It is clear that Gettier was construing the analysis of knowledge as justified true belief in terms of an assertion of a necessary truth along the lines of (6).

The conclusion to be drawn from this example is that at least one instance in which counterexamples are appropriate is whenever a philosophic thesis can be expressed as a *universal assertion,* i.e., expressed in the form a universally quantified expression. In the example I have been discussing the thesis was a universally quantified expression, the major connective of which was a biconditional. It may be concluded that *any* universally quantified statement is susceptible to counterexample, except those truly expressing logical truths. To say that any such are susceptible is of course not to say that one can actually produce a counterexample to a universal statement that really is *true*! The moral of (6) above was that an expression being an "alleged" necessary truth doesn't make it immune to counterexample, but rather only shows that all one need do is produce a *possible* counterexample.

Borderline Cases

When is it appropriate to react to a proposed counterexample as follows: "The case you have proposed, unfortunately, is not a genuine counterexample to my thesis, inasmuch as it is merely a borderline case, and thus not a refutation of the thesis"?

A classic example of this type of response would be that found in the H.P. Grice and P.F. Strawson article "In Defense of a Dogma,"[4] written in response to, and in criticism of, W.V.O. Quine's "Two Dogmas of Empiricism."[5] In the latter article, Quine can be seen as attempting to propose several counterexamples to the analytic/synthetic distinction. In offering them, Quine treats this distinction as if it were to be expressed as: *Any proposition is analytic if and only if it is not synthetic.* Taking *'A'* as an abbreviation for 'is analytic' and '*S*' for 'is synthetic', then Quine's construal of the analytic/synthetic distinction would be expressed symbolically as:

(7) $(x)\ [Ax \equiv {\sim}Sx]$

or equivalently as:

(8) $(x)\ \{[Ax \supset {\sim}Sx]\ \&\ [{\sim}Sx \supset Ax]\}$

I.e., *Every proposition is such that if it is analytic then it is not synthetic, and if it is not synthetic then it is analytic.* The result of systematically interchanging 'S' and *'A'* in the original biconditional would give an equivalent result, i.e.,

(9) $(x)[Sx \equiv {\sim}Ax]$

Every proposition is synthetic if and only if it is not analytic.

This would be to construe the categories of being analytic and being synthetic as mutually exclusive, in that nothing could be both analytic and synthetic at the same time. Just as with the case of knowledge and justified true belief, two types of case would constitute a counterexample, i.e.,

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[4] The Philosophical Review 65 (1956): 377–388.

[5] The Philosophical Review 60 (1951): 20–43.

(10) Ax & Sx

i.e., *a proposition which is both analytic and synthetic*.

(11) ~Sx & ~Ax

i.e., *a proposition which is neither analytic nor synthetic*.

That is, in order to show a counterexample to the analytic/synthetic distinction one would have to come up with a clear-cut case of a proposition that is either (a) both analytic and synthetic, or (b) neither analytic nor synthetic. Seemingly, then, this case is exactly the same as the previous case considered.

Where, then, do the *borderline* cases come in? In the case of a philosophical distinction, such as that between the analytic and the synthetic, the philosopher proposing the distinction will provide a criterion or set of rules to be used in applying one (or both) parts of the distinction. In some cases a separate criterion will be provided for each part of the distinction. A *borderline* case would then be an instance in which one simply cannot tell, by the criterion provided, which half of the distinction would apply in that case. It is *undecidable* on the criteria provided which half of the distinction applies. For example, if one were told that a proposition is *analytic* if and only if there is a subject and a predicate such that the concept of the predicate is contained in the concept of the subject, then the corresponding criterion for a proposition's being *synthetic* might be given as that there is a subject and a predicate such that the concept of the predicate was not so contained. On such a set of criteria one might argue that the proposition that $2 + 3 = 5$, constitutes a *borderline case,* inasmuch as it is not grammatically of the subject/predicate form. That is, $2 + 3 = 5$ is taken as a borderline case, since we cannot tell by the criteria provided whether it is analytic or synthetic.

As another example, let us suppose that a sheep farmer introduces a distinction between "wheeps" and "bleeps." The criteria supplied are that: (a) Any animal is a wheep if and only if it is a sheep of a whitish color. (b) Any animal is a bleep if and only if it is a sheep of a blackish color. Further, suppose that our farmer asserted the empirical thesis (S) that: Every sheep is either a wheep, or if not a wheep, a bleep, and vice versa. Imagine then that someone came along with a gray sheep, i.e., one that wasn't really either black or white, but rather some intermediate shade. Suppose then that the question arises whether this creature is a bleep or a wheep, and further whether this sheep constitutes a counterexample to the thesis (S)? In this case we would properly have to say that the sheep was a *borderline case* in that it isn't clear from the criteria given whether or not it was to be classed as one or the other. Is the gray sheep then a counterexample to the thesis (S)? Well, no, since it is a borderline case to the distinction as given, and as such we aren't able to tell whether it was or wasn't a wheep or a bleep.

What then would constitute such a counterexample? Clearly, if someone produced a Kelly green ewe, then, by the criteria given, it would be neither a bleep nor a wheep. Yet since it is certainly a sheep, it would (if actually produced) provide a decisive counterexample to the thesis (S), which was to the effect that every sheep is either a bleep and not a wheep, or a wheep and not a bleep. In this example we have distinguished between a *borderline case* and a *counterexample*. A borderline case is seen to occur when the criteria given for each part of the distinction *do not* completely specify which half of the distinction applies in the given case. The assertion that a counterexample has been successfully constructed presupposes that one has produced an example to which the criteria apply unambiguously, and yet which falsify the thesis under consideration. In this case the empirical nature of the thesis dictates that an *actual* counterexample would have to be produced. If the thesis had instead been "*Necessarily,* every sheep is either a wheep or a bleep, and not both, and not neither," then a merely *possible* Kelly green ewe would have sufficed as a counterexample.

The distinction that comprises any *philosophical dichotomy* (such as that between the analytic and the synthetic) can thus be taken as a philosophical thesis, in the sense of a universal statement, only when *distinct criteria* have been proposed that fix each part of the dichotomy. That is, it *cannot* be that one criterion is just the negation of the other. For, suppose the criterion of a proposition's being analytic is given as C. If the criterion for a proposition's being synthetic is given as simply "not C," or "non-C," then it obviously follows that there can be *no* counterexamples to the thesis that *"any proposition is analytic if and only if it is not synthetic."* If the criteria are so constructed as to be contradictories, there can be *borderline cases,* but no *counterexamples.* A counterexample to such a formulation of the analytic/synthetic distinction could only be constructed with regard to some thesis employing one term of the distinction (e.g., All propositions known *a priori* are analytic), but not with regard to the universal statement produced from the distinction itself, i.e., any proposition is analytic if and only if it is not synthetic.

It can be further noted that where the criteria used for applying the terms of the distinction are contradictories, there can be no counterexamples to a conditional thesis, such as that considered above in the case of the wheeps and bleeps, i.e., *If* any*thing is a sheep then it is a bleep if and only if it is not a wheep.* That is, taking 'S' for 'is a sheep', 'B' for 'is a bleep', 'W' for 'is a wheep', the thesis under consideration was:

(12) $(x)\,[Sx \supset (Bx \equiv {\sim}Wx)]$

Thus, if the criterion for being a wheep were the negation of the criterion for being a bleep, then no counterexample could be possible to the thesis that every sheep is a bleep if and only if it is not a wheep. With the criteria formulated as contradictories, every sheep not a wheep would of necessity be a bleep, or *vice versa*. Likewise, if the criterion for being analytic were the negation of the criterion for being synthetic, then such a thesis as "every scientific truth is analytic if and only if it is not synthetic" would be trivially true due to the fact that the biconditional in the consequent couldn't possibly be false.

The moral to be drawn from these considerations concerns attempts to provide counterexamples to philosophical distinctions. Before looking for a counterexample to a philosophical distinction or dichotomy, one should first look to the criteria proposed in the formulation of that distinction. If the criteria are the contradictories of one another, then there can be no hope of finding true and acceptable counterexamples to the distinction. The very best one could do would be to come up with cases that were *borderline,* wherein one cannot tell. i.e., it is undecidable, whether the terms applied or not.

Chapter 2
Essay #2: Scales of Epistemic Appraisal

Kenneth G. Lucey

Abstract This essay is a discussion of Roderick M. Chisholm's system of a scale of distinct levels of evidential appraisal. In a series of articles over two decades Chisholm developed and continually refined a conceptual scheme and an axiomatic system embodying a system of levels of evidential appraisal. My essay begins with a discussion of how criminal and civil courtroom situations require different levels of appraisal in reaching their verdicts. The scale that Chisholm develops has nine distinct levels of appraisal, with the top four levels representing positive appraisals of a proposition p, and the bottom three representing negative appraisals of the denial of the proposition p. At the middle of this scale is the appraisal "counter-balanced", which represents the situation in which neither p nor not-p is appraised more than the other. The specific scale that this essay explores is as follows: certain, evident, reasonable, has some presumption, counter-balanced, has no presumption, unreasonable, and gratuitous.

This essay has a double purpose. In the first instance it is an introduction to Chisholm's system of epistemic appraisal and a summary of a number of the key features of it. An appendix to the essay summarizes Chisholm's key definitions and derives three of his most important theorems. The essay also has a second and more critical purpose, which is to offer a characterization of Chisholm's system, and then to develop a conceptual alternative to it. The key issue here is how a positive appraisal of a proposition p should relate to the negative appraisal of the proposition not-p. The essay characterizes Chisholm's system as a "straight steps" system, and it offers by contrast the conception of a "mirrored steps" system. It is argued that there are counter-intuitive consequences to the Chisholmian straight-steps system. A distinct critical issue is whether Chisholm's hierarchy contains a serious ambiguity in the appraisal levels below the counter-balanced.

People are often surprised to learn that different courtroom situations require that juries use different levels of appraisal in reaching their verdicts. In a civil case (tort law) a jury has only to conclude that there is some presumption if favor of one litigant's case in reaching a verdict. In a criminal case, a jury is required to hold that

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_2

its verdict is beyond reasonable doubt. Thus, there exists a scale of appraisals which contains at least two levels, namely "has some presumption in its favor" and "is beyond reasonable doubt". The exploration of such a scale (or scales) is a primary topic of this paper.

Such scales are those of epistemic appraisal. Epistemic appraisal has previously been systematically discussed by various epistemologists, such as by C.I. Lewis [9]. Three recent writers in this area entitled their article "Reason and Evidence: An Unsolved Problem" [8]. The philosopher who has given this area the most sustained attention is Roderick M. Chisholm, who has appeared on numerous occasions expositing, defending and extending a system of the logic of epistemic appraisal. (See items [1–7] of the References.) At the heart of Chisholm's system is the extremely important insight that there exists with regard to given propositions for a given subject at a given time, a hierarchy of levels of epistemic appraisal in terms of which such propositions may be appraised for that subject at that time.

Professor Chisholm's last version of his hierarchy of levels of epistemic appraisal was [3], pp. 226–229, is as follows:

h is certain (absolutely certain)
h is evident
h is beyond reasonable doubt (reasonable)
h has some presumption in its favor
h is counterbalanced
~h has no presumption in its favor
~h is unreasonable (unacceptable)
~h is gratuitous

This hierarchy is at once generated by and an interpretation of a formal axiomatic system. Each level of the appraisal hierarchy gets defined in terms of a specific well-formed formula of the formal system. For the benefit of readers unfamiliar with Chisholm's system, an appendix has been added to this essay which gives an exposition of some basic features of it.

This paper attempts to offer a new perspective upon the nature of Chisholm's system of epistemic appraisal. It is argued that Chisholm's system is of the "straight steps" variety. My contention is that a "mirrored steps" system of epistemic appraisal is preferable to a "straight steps" system. This preferability is shown through the consideration of Chisholm's own illustrations. Finally, it is argued that Chisholm's hierarchy is actually the result of mixing together several distinct sorts of scales of epistemic appraisal.

I

The first counter-intuitive consequence of Chisholm's system to which I would like to call attention is that a relatively weak positive appraisal of a proposition **h** implies a very strong negative appraisal of the denial of that proposition, i.e.,

~h. That this consequence is counter-intuitive may be seen from the following example.

In "On the Nature of Empirical Evidence" [2] and [3] Chisholm offers the following courtroom illustration of the various levels of appraisal in his epistemic hierarchy:

> If the state is justified in bringing you to trial, then the proposition that you did the deed alleged must be one which, for the appropriate officials, has some presumption in its favor. If the jury is justified in finding you guilty, then the proposition should be one which, for it, is beyond reasonable doubt. And its decision should be based upon propositions which, for it, have been made evident during the course of the trial. ([3], p. 227)

I call Chisholm's system a "straight steps" system, because if a given step is true, it follows that all of the appraisals in the hierarchy below that step also are true. Now consider the relationship between the proposition **h** (the defendant committed the crime) and the proposition **~h** (the defendant did not commit the crime). According to Chisholm's "straight step" system of epistemic appraisal, if the proposition that the defendant committed the crime has some presumption in its favor, then it follows as theorems of the system that the appropriate officials are justified in believing that the proposition **~h** (that the defendant didn't commit the crime) has no presumption in its favor, is unreasonable, and is gratuitous.

But surely this is counter-intuitive, for one would normally consider that the strongest of these appraisals concerning **~h** would be warranted only after the jury has brought in a verdict of "guilty as charged". Just because there is some presumption in favor of the defendant's guilt, it surely should not follow that it is *unreasonable* to believe that the defendant is innocent. In the absence of other evidence, mere circumstantial evidence would suffice to establish that there is some presumption in favor of the defendant's guilt. But that surely doesn't make *unreasonable* or *gratuitous* the belief that the defendant is nevertheless innocent.

Part of the purpose of this paper is to characterize an alternative to Chisholm's "straight steps" system. My alternative to a "straight steps" system of epistemic appraisal is what I call a "mirrored steps" system of epistemic appraisal. The contrast between these two systems can best be seen in terms of a pair of diagrams. Figure 2.1 is a representation of Chisholm's system. The letters used here are the

a					a = **h** is evident
~c	~c				~c = **h** is beyond reasonable doubt
b	b	b			b = **h** has some presumption in its favor
- - - - - - - - - - - - - - - - **h** is counterbalanced - - - - - - - - - - - - - - - - - -					
~e	~e	~e			~e = **~h** has no presumption in its favor
d	d	d	d		d = **~h** is unreasobable
~f	~f	~f	~f	~f	~f = **~h** is gratuitous

Fig. 2.1 A "straight step" system

Fig. 2.2 A "mirrored steps" system

	X				X = **h** is evident
	Y	Y			Y = **h** is beyond reasonable doubt
	Z	Z	Z		Z = **h** has no presumption in its favor
--------				----------------	------ **h** is counterbalanced -------------
	Z*	Z*	Z*		Z* = ~**h** has no presumption in its favor
	Y*	Y*			Y* = ~**h** is unreasonable
	X*				X* = ~**h** is irrational (gratuitous)

abbreviations Chisholm employs in "On the Nature of Empirical Evidence" ([3], p. 228). The main feature of Fig. 2.1 is that implications in the "straight steps" system are **only** downward. If the appraisal at any give step is true, then it implies the truth of all the steps below it, and none of the steps above it.

The key notion in my "mirrored steps" system is that an affirmative appraisal of a given level only implies negative appraisals of a comparable level. In the "mirrored steps" system of epistemic appraisal, if the proposition **h** is presumptive or has some presumption in its favor, then the strongest negative appraisal that follows concerning **~h** is that it is non-presumptive or has no presumption in its favor. In the "mirrored steps" system the defendant's guilt must be established beyond a reasonable doubt before **~h** is shown unreasonable, and **h** must be established as evident before **~h** is shown to be gratuitous. Figure 2.2 is a representation of the "mirrored steps" system of epistemic appraisal.

The conventions are slightly different for interpreting the implications in Fig. 2.2. Above the counterbalanced the interpretation is the same in that if an appraisal at a given step is true, then it implies all the appraisals below it, respectively concerning **h** above the counterbalanced, and concerning **~h** below the counterbalanced. The convention for all the items below the counterbalances is different in that a negative appraisal implies those other negative appraisals above it up to the counterbalanced, but not above that. Thus X* implies Y* and Z*. Y* only implies Z*, and Z* implies nothing whatsoever. Thus, on the "Mirrored steps" system *irrational* (gratuitous) is the strongest negative appraisal, and *evident* is the strongest level of positive appraisal. On the "straight steps" system there is some ambiguity as to what is the strongest negative appraisal, although perhaps a case can be made for thinking that *has no presumption in its favor* is the strongest negative appraisal. That case would be that, below the counterbalanced, the appraisal "*~h has no presumption in its favor*" implies all the other negative appraisals, but none of them imply it.

Consideration of another example will reinforce my previous claim that Chisholm's "straight steps" system is counter-intuitive. In "A System of Epistemic

Logic" [6], which Chisholm co-authored with Professor Robert G. Keim, we find the following example:

> Consider, for example, the proposition expressed "There are now at least two people in the President's office". For most of us, this is counterbalanced: there is nothing to be said in its favor and there is nothing to be said in favor of its negation. But for one who has read that the President plans to hold a conference there at this time, the proposition may have some presumption in its favor; for one who has heard an official announcement that the conference is now taking place, it may be acceptable; for the guard outside the door, it my be beyond reasonable doubt, and for the President himself, either it or its negation may be evident. ([6], p. 99)

Consider the epistemic situation of the man who has read that the President plans to hold a conference, and thus for whom the proposition **h** has some presumption in its favor. Chisholm's system implies that for this individual the proposition **~h**, that there are not now at least two people in the President's office, has no presumption in its favor, is unreasonable, and is gratuitous. But surely it would not be either unreasonable or gratuitous for this man to believe **~h**, even though **h** has some presumption in its favor. My claim is that it is counter-intuitive to think that **~h** must be either unreasonable or gratuitous for S at t, just because **h** has some presumption in its favor. But what support is there for this claim?

What is amiss in Chisholm's system is that only a strong positive appraisal of a proposition **h** ought to imply a strong negative appraisal of the denial of that proposition. It seems to me that a "mirrored steps" system of epistemic appraisal, in which it follows that positive appraisals of a given level only imply negative appraisals of a comparable level, is much to be referred. The major difference between the straight steps and the mirrored steps system of epistemic appraisal is that the former assumes that all of the negative appraisals must be true on every occasion that a positive appraisal (no matter how weak) is true. But at least in the examples that I have been examining, its seems wrong or counterintuitive to make that assumption. The problem reduces to the question – Why must **~h** be unacceptable, unreasonable or gratuitous for the subject, just because **h** has been seen to have some presumption in its favor?

A distinct critical point would be that it seems to me that Chisholm's appraisal hierarchy contains a serious ambiguity in the appraisal levels below the counterbalanced. The ambiguity concerns what it is that is being measured on the negative half of the scale. When a weak negative judgment is compared with a strong negative judgment, what is the scale upon which the comparison is being made?

There are three scales from which the answer here can be drawn. They are: (1) a scale which measures the strength of one's reasons for withholding **~h**. (2) a scale which measures the strength of one's reasons for refraining from believing **~h**. And (3) a scale which measures the strength of one's reasons for disbelieving **~h**. The first scale mentioned above isn't really a serious option for use in interpreting Chisholm's hierarchy, since a scale of strength of reasons for withholding **~h** is just as much a scale of strength of reason for withholding **h**. If this were the scale at work below the counterbalanced in Chisholm's hierarchy, then positive appraisals of **h** above the counterbalanced would be implying reasons for withholding **h**. But clearly that isn't the case!

My contention here is that Chisholm's hierarchy is ambiguous between scales two and three. Chisholm's hierarchy above the counterbalanced is no doubt a scale which measures the strength of one's reasons for believing **h** in the sense that the higher on the scale an appraisal falls, the more (or better) reason one has for believing **h**. Scale (3) is quite similar to this in that disbelieving **~h** is equivalent to believing **~(~h).** When Chisholm defines "**~h** is unreasonable" as "withholding **~h** is epistemically preferable to believing **~h**" he seems to be working with a type (2) scale which would measure strength of one's reasons for refraining from believing **~h**. So, "being unreasonable" would seem to be an appraisal on a "refraining" type of scale. When Chisholm defines "**~h** has no presumption in its favor" as "it is not the case that believing **~h** is epistemically preferable to believing **h**", he seems to be working with a type (3) scale. Thus, "having no presumption" would seem to be an appraisal on a "believing" type of scale. My intuition is less clear as to which of these types of scale the definition of "gratuitous" ("believing **~h** is not epistemically preferable to withholding **~h**") belongs, although perhaps a case could be made for a type (2) scale. In any case, given the way the implications go in Chisholm's hierarchy, having no presumption in its favor would seem to be the strongest negative appraisal, being unreasonable would be a weaker appraisal, and being gratuitous would seem to be the weakest negative appraisal. Chisholm's choices here are puzzling to say the least, for it seems counter-intuitive to say that being unreasonable is a weaker negative appraisal than having no presumption in its favor.

Yet another feature of Chisholm's systems that I would question is the fact that his system implies that every proposition for any individual at any time, will always have either a very strong positive appraisal or a very weak negative appraisal. The feature to which I'm here referring is Chisholm's theorem that every proposition is either **evident** or **gratuitous** (the two poles of the hierarchy). This fact follows directly from the law of the excluded middle and Chisholm's definitions of the levels of appraisal. That is: (1) **p** or **~p**.; (2) (Bh P Wh) or ~(Bh P Wh); Hence (3) either **h** is evident or **h** is gratuitous. The disjuncts in step 2 are the definiens for the appraisals given in step (3). In a similar way, it follows as a corollary that every proposition is either beyond reasonable doubt or unreasonable. In all the versions of Chisholm's system prior to [3] it was also a theorem that every proposition h is either acceptable or unacceptable.

The fault that I find with these theorems is that they purposefully turn appraisals which one would naturally consider contraries into contradictories. Chisholm's system precluded the possibility of there being a proposition **h** which is (a) neither evident nor gratuitous, of (b) neither beyond reasonable doubt nor unreasonable, or (c) neither acceptable nor unacceptable. Each of these exclusive disjunctions seems to me to be counter-intuitive.

I conclude that a "mirrored steps" system of epistemic appraisal is preferable to a "straight steps" system. No attempt has been made in this paper to present an axiomatic version of such a system. So, it remains an "open question" of philosophical logic to construct a simple and elegant version of a “mirrored steps” logic of epistemic appraisal.

Appendix

For further information concerning issues in the Appendix refer also to items (3), (5) & (7) of the References.

This appendix summarizes Chisholm’s key definitions and derives three of his theorems. Chisholm’s single primitive is the two-place relations predicate “... is more reasonable than —“or”... is preferable to —”. Here “preferable” means epistemically preferable rather than ethically preferable. It relates three basic epistemic attitudes, viz. (1) believing, (2) disbelieving, and (3) withholding or suspending belief. What is being appraised is always a believing, a disbelieving, or a withholding *by a particular subject at a particular time*. And when various attitudes are being ranked it is presupposed that the subject and time are constant throughout. Act of believing and acts of disbelieving differ only in having contradictory objects. *Withholding* is defined by Chisholm as the compound attitude of refraining from believing and refraining from disbelieving ([5], p. 88)

There are six ways that these basic attitudes may be related, taking them two at a time. And then if we switch to the relation “... is not epistemically preferable to —”, there are then six more combinations making twelve in all. Chisholm defines the basic elements of his vocabulary of epistemic appraisal in terms of these twelve combinations. Here is the 1973 definition of each item of the appraisal vocabulary. (1) h is *evident* for S at t $=_{df}$. believing h is epistemically preferable to withholding h for the subject S at the time t. (2) h is *gratuitous* for S at t $=_{df}$. it is not the case that believing h is epistemically preferable to withholding h for the subject S at the time t. (3) h is *unreasonable* for S at t $_{df}$. withholding h is epistemically preferable to believing h for the subject S at the time t. (4) h is *reasonable* (beyond reasonable doubt) for s at t $_{df}$. it is not the case that withholding h is epistemically preferable to believing h for the subject S at the time t. (5) h has some *presumption* in its favor for S at t $_{df}$. believing h is epistemically preferable to disbelieving h for the subject S at the time t. (6) h has *no presumption* in its favor for S at t $_{df}$. it is not the case that believing h is epistemically preferable to disbelieving h for S at t.

In the system of 1966 [5] Chisholm constructed his system with just three axioms. In later writings, versions of these three axioms remain the core of an expanded set containing seven axioms. The first two spell out logical properties of the primitive predicate “... is epistmically preferable to —”. The first is an axiom of transitivity. It says that if one act of believing (withholding, etc.) is epistemically preferable to a second such act, and the second epistemically preferable to a third, then the first is epistemically preferable to the third. Again, a strict statement of this axiom would specify a constant subject and a constant time ([5], p. 95).

Chisholm's second axiom states that "... is epistemically preferable to —" is an asymmetric relation. It says that if one epistemic attitude is epistmically preferable to a second, then the second is not epistemically preferable to the first.

A third axiom differs from the first two in that rather than specifying some other logical property of the primitive relation, it specifies an entailment that holds among the basic epistemic attitudes of Chisholm's epistemic vocabulary. It says that if withholding a proposition **h** is not epistemically preferable to believing **h**, then believing **h** is epistemically preferable to disbelieving **h**. That is, if **h** is beyond reasonable doubt, then **h** has some presumption in its favor. Chisholm has illustrated this axiom thus: "If agnosticism is not more reasonable than theism, then theism is more reasonable than atheism." ([5], p. 95)

Consider now three of the most controversial results of this system of epistemic appraisal. They are the derivations of the three theorems that follow from the appraisal that h *has some presumption in its favor*. That is, if **h** has some presumption in its favor, then: (1) **~h** has no presumption in its favor. (2) **~h** is unreasonable. (3) **~h** is gratuitous.

Take 'B**h**' as 'S believing **h** at t'; 'B**~h'** as 'S believing **~h** at t' or 'S disbelieving **h** at'; 'W**h**' as 'S withholding **h** at t' and '...P—' as '... is epistemically preferable to —'. The first theorem is then: If (B**h** P B**~h**) then ~(B**~h** P B**h**). This first theorem is an immediate consequence of Chisholm's second axiom, which asserts the asymmetry of '... P —'. The second theorem is: If (B**h** P B**~h**) then (W**~h** P B**~h**). The proof is:

1.	If ~(Wh P Bh) then (Bh P B~h)	Axiom #3
2.	If ~(W~h P B~h) then (B~h P Bh)	Substitution into 1
3.	If ~(B~h P Bh) then (W~h P B~h)	2, Transposition
4.	If (Bh P B~h) then ~(B~h P Bh)	Axiom #2
Thus, 5.	If (Bh P B~h) then (W~h P B~h)	3,4 Hypothetical Syllogism

The third theorem to be proven is: If (Bh P B~h) then ~(B~h P W~h)

1.	If (W~h P B~h) then ~(B~h P W~h)	Axiom #2 Asymmetry
2.	If (Bh P B~h) then (W~h P B~h)	Previous Theorem
Thus, 3.	If (Bh P B~h) then ~(B~h P W~h)	1,2 Hypothetical Syllogism

These are the theorems which show Chisholm's system a "straight steps" logic of epistemic appraisal, in which a weak positive appraisal of **h** implies a strong negative appraisal of **~h.**

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Chapter 3
Essay #3: On Epistemic Preferability

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Abstract "On Epistemic Preferability" is a critical response to Duane L. Cady's charge that R. M. Chisholm's system of epistemic appraisal is fatally flawed. Cady's claim was that Chisholm's system it vitiated by an ambiguity of his primitive epistemic relation in such a way as to make his system appear foundationless. Cady claims that this ambiguity centers upon the two epistemic commandments "avoid error" and "get the truth". This essay rebuts Cady's critique by showing that Chisholm's system is *not* ambiguous between those two commandments. I argue that the most distinctive feature of Chisholm's logic of epistemic appraisal is that it is a Pyrrhonistic system. As such the system takes an unequivocal stand in favor of the commandment "avoid error", and gives it priority over the commandment "get the truth". This essay argues that Cady has failed to appreciate the important distinction between (1) Chisholm's axiomatic system of the logic of epistemic appraisal, and (2) the accompanying "theory of evidence" in terms of which such a system receives its application. The crucial aspect of Chisholm's system which makes it Pyrrhonistic is that fact that it defines the appraisal *ought to be withheld*, which is understood to hold when a proposition and its negation are *counterbalanced*. It is noted that Chisholm's system contains no corresponding appraisal to the effect that any proposition *ought to be accepted*. The essay concluded by rejecting and rebutting Cady's claim that Chisholm's system is either "foundationless" or a "futile systematization".

In an article "Avoiding Error And Getting The Truth" [1] Duane L Cady has criticized Roderick M. Chisholm's system of the logic of epistemic appraisal. (Cf. [2–8]). Cady's charge is that Chisholm's "system contains a serious flaw – one so crucial that the system itself appears foundationless" and thus that "Chisholm's systematizing is futile . . .". Cady aims his criticism at the primitive relation of epistemic preferability in terms of which Chisholm has constructed his system. In essence Cady's criticism is that Chisholm's system is vitiated by an

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_3

ambiguity of this primitive relation with regard to the two epistemic commandments "avoid error" and "get the truth."

Professor Cady's main argument consists of considering two appraisals that Chisholm uses as illustrations. Cady's strategy is to show that the first example is an appraisal in which the operative sense of epistemic preferability seems to be "more reasonable for purposes of avoiding error." Then Cady tries to show that in a second sample appraisal the operative sense is "more reasonable for purposes of getting at the truth."

Cady's conclusion is then that Chisholm's project of systematizing our epistemic vocabulary "is futile because he has not made clear the precise function of this relation."

This essay shows that Cady's criticism misfires for two main reasons.

First, Chisholm's system is *not* ambiguous between these two commandments. Perhaps the most distinctive feature of Chisholm's logic of epistemic appraisal is that it is a Pyrrhonistic system. As such, the system takes an unequivocal stand in favor of the commandment "avoid error," and gives it a clear priority over the commandment "get the truth". The second reason that Cady's criticism fails is that he has not appreciated the important distinction between (1) an axiomatic system of the logic of epistemic appraisal, with its primitives, axioms, and theorems, and (2) the accompanying "theory of evidence" in terms of which such a system receives its application. I show that the examples Cady cites as evidence for such an ambiguity in Chisholm's system depends upon conflating the distinction between Chisholm's Pyrrhonistic axiomatic system on the one hand, and his non-Pyrrhonistic "theory of evidence" on the other. A theorem is here called "Pyrrhonistic" if it advocates the suspension or withholding of belief for some class of propositions.

One clear indication that Chisholm's system is oriented to the epistemic commandment "avoid error," rather than to the commandment "get the truth," is that his system defines a level of appraisal "**h** *ought to be withheld*," but it does *not* define the appraisals "**h** *ought to be believed*" or "**h** *ought to be disbelieved*." If a proposition is such that withholding **h** is preferable to believing **h** and withholding **~h** is preferable to believing **~h**, then (by Chisholm's definitions) that proposition *ought to be withheld* ([4], p. 229), i.e., '(W**h** P B**h**) & (W**~h** P B**~h**)', or otherwise expressed, a proposition **h** ought to be withheld if and only if both **h** is unacceptable and **~h** is unacceptable.

To see this Pyrrhonistic aspect of Chisholm's logic of epistemic appraisal, consider the status of a proposition **h** which is "indifferent," in the sense that believing **h** is not epistemically preferable to believing **~h** and believing **~h** is not epistemically preferable to believing **h**. Chisholm refers to propositions which are "indifferent" in this sense as *counterbalanced* ([4], pp. 28–29). By Chisholm's definitions, a proposition h is *counterbalanced* if and only if there is no presumption in its favor and there is no presumption in favor of its negation, i.e., ~(B**h** P B**~h**) & ~(B**~h** P B**h**). I'll now show that it is a theorem of Chisholm's system that if a proposition is *counterbalanced* then it ought to be withheld.

In the latest version of Chisholm's system, [4], his fourth axiom is "For any proposition **h**, if withholding **h** (that is, neither believing **h** nor believing **~h**) is not epistemically preferable to believing **h**, then believing **h** is epistemically preferable to believing **~h**" ([4], pp. 225–226), i.e. 'if~(W**h** P B**h**) then (B**h** P B~**h**).' Upon substitution this axiom says that if **h** is beyond reasonable doubt then **h** has some presumption in its favor. The equivalent transposition of this proposition says that if **h** has no presumption in its favor, then **h** is unacceptable (or unreasonable), i.e. 'if~(B**h** P B**~h**) then (W**h** P B**h**).'

The proof of the above mentioned theorem proceeds by conjoining two applications of the transposition of Chisholm's fourth axiom, yielding [if~(Bh P B~h) then (Wh P Bh) & if ~(B~h P Bh) then (W~h P B~h)]. Since an expression of the form '((p ⊃ q) & (r ⊃ s)) ⇔ ((p&r) ⊃ (q & s))' is tautological, it follows from the conjoined transpositions of Chisholm's fourth axiom that "if proposition **h** is counterbalanced then **h** ought to be withheld," i.e., '[~(B**h** P B**~h**) & ~(B**~h** P B**h**)] [(W**h** P B**h**) & (W**~h** P B**~h**)].' Since a proposition "**h** is *counterbalanced* if and only if **~h** is *counterbalanced*," it likewise follows that "if **h** is *counterbalanced* then **~h** *ought to be withheld*."

One way that a proposition **h** could be *counterbalanced* is when there is no evidence whatsoever for **h** and no evidence whatsoever for **~h**. In such a case, if the major epistemic commandment were to "get the truth," then the best course would be to arbitrarily pick either **h** or **~h,** and believe it. In such a case, one would at least have a 50 % chance of believing the truth with regard to **h**. But Chisholm's system is clearly oriented (despite Cady's charge of ambiguity) to the epistemic commandment "avoid error." For it follows from the theorem just derived that our "epistemic duty" is to *withhold* judgment with regard to both **h** and **~h**, thus avoiding completely the possibility of error with regard to either.

A second major Pyrrhonistic aspect of Chisholm's system is that it follows as a theorem that for any subject S and any proposition **h**, either **h** is *unacceptable* for S at time t or **~h** *is unacceptable* for S at time t, i.e., '(S)(h)[(W**h** P B**h**) v (W**~h** P B**~h**)].' Another way of expressing this theorem is that for any subject S and any proposition **h** either *withholding* **h** is preferable to believing **h** or *withholding* **~h** is preferable to believing **~h**. The proof of this theorem depends just upon Chisholm's previously mentioned fourth axiom and a further axiom which asserts the asymmetry of the relation of epistemic preferability. The proof goes as follows:

1.	~(W**~h** P B**~h**) ⊃ (B**~h** P B**h**)	Axiom 4
2.	~(W**h** P B**h**) ⊃ (B**h** P B**~h**)	Axiom 4
3.	(B**~h** P B**h**) ⊃ ~(B**h** P B**~h**)	Asymmetry
4.	~(W~h P B**~h**) ⊃ ~(B**h** P B**~h**)	1,3 Hypothetical Syllogism
5.	~(B**h** P B**~h**) ⊃ (W**h** P B**h**)	2, Transposition
6.	~(W**~h** P B**~h**) ⊃ (W**h** P B**h**)	4,5 Hypothetical Syllogism
Hence, 7.	(W**~h** P B**~h**) v (W**h** P B**h**)	6, Definition of Material Implication

Q.E.D. This conclusion is not an exclusive disjunction, for it may be both that **h** is unacceptable and that **~h** is unacceptable, which is the case where **h** ought to be withheld. Yet it is definitely *not* a theorem of Chisholm's system that for any subject S and any proposition **h**, either **h** is acceptable for S at time t or **~h** is acceptable for S at time t.

I have now shown that Chisholm's axiomatic system has important Pyrrhonistic theorems and is thus oriented to the commandment "avoid error." It yet remains for us to consider the two sample appraisals that Cady cited in trying to show the ambiguity of Chisholm's primitive relation of epistemic preferability. The first sample appraisal was:

> Consider, for example, the proposition that the Pope will be in Rome on the third Tuesday in October, five years from now. Believing it, given the information that we now have, is more reasonable than disbelieving it; i.e., it is more reasonable to believe that the Pope will be in Rome at that time than it is to believe that he will not be there. But withholding the proposition, surely, is more reasonable still. ([6], p. 90)

Cady's point is that in this example it is clear that the relation of epistemic preferability is being employed in the sense of "more reasonable for purposes of avoiding error." In this case I believe that Cady is correct. The principle being employed here is not exactly the first theorem considered above, but it is closely related to it. The principle would be something like:

If believing **h** is only very slightly epistemically preferable to believing **~h**, then withholding **h** is preferable to believing **h**.

Such a principle is clearly consistent with the Pyrrhonistic character of Chisholm's system of the logic of epistemic appraisal.

Cady's second example refers to Chisholm's position concerning propositions about perception. He points out that Chisholm is willing to appraise as "evident" propositions which are about what one believes he perceives, despite the fact that this leaves open the possibility that there are then propositions which are both evident and false. Cady concludes that in so doing "Chisholm is taking a chance for knowledge; he is risking a mistake." Cady's conclusion is that in this instance Chisholm is clearly giving preference to the epistemic commandment "get the truth," even though in doing so one runs the risk of falling into error. The commandment "get the truth" thus seems to be prevailing over the commandment "avoid error." Thus, Cady thinks that Chisholm stands convicted of a lack of clarity in his use and characterization of the relation "being more reasonable than."

I'll now show that Cady's criticism of Chisholm fails because he has misinterpreted the nature of this second example. When Cady turns to Chisholm's views on perception, he has left the realm of the axiomatic system that is Chisholm's logic of epistemic appraisal. Cady has moved from that realm into a distinct area which Chisholm has called his "theory of evidence". The principles that constitute Chisholm's theory of evidence are the principles which give application to the levels of appraisal generated by the formal axiomatic system.

The theorems generated by the axioms and definitions of Chisholm's system give rise to a hierarchy of appraisal levels, namely: **h** is certain / **h** is evident / **h** is beyond reasonable doubt / **h** has some presumption in its favor / **h** is counterbalanced /~**h** has no presumption in its favor /~**h** is unreasonable (unacceptable) / ~**h** is gratuitous. (For a critical discussion of this hierarchy see Lucey [9], which is also the previous essay in this volume. But it is no part of the task of Chisholm's axiomatic system to spell out under what circumstances the appraisals of this hierarchy get applied to the actual situations of would-be knowers. Such is rather the separate task of a "theory of evidence." An example of a principle from Chisholm's theory of evidence is:

> If there is a certain sensible characteristic F such that S believes that he perceives something to be F, then it is evident to S that he is perceiving something to have that characteristic F, and that there is something that is F. ([8], p. 47)

Chisholm has subsequently modified this principle ([4], p. 244), but we do not need to go into that here. This is the operative principle in the second example considered by Cady. He seemed to think that all the various principles that constitute Chisholm's theory of evidence must somehow be latently contained in the primitive relation of epistemic preferability. In the penultimate sentence of his essay Cady says:

> What is needed, then, is an unpacking of the single epistemic relation "more reasonable than" that makes clear the conditions under which we are justified in risking error to get the truth, and the conditions under which we are obligated to avoid error rather than take a chance.

Yet what Cady seems to be asking for as an "unpacking" cannot be done. One cannot "unpack" from the primitive relation of epistemic preferability the various principles, which would constitute a theory of evidence, for they are not packed in there to begin with. Such principles are definitely not analytic truths. I believe that Chisholm would consider them likely candidates for the status of synthetic *a priori* truths.

So Cady has argued the erroneous thesis that Chisholm's primitive relation is ambiguous. My own view is that it isn't the relation of epistemic preferability, but rather the hierarchy of levels of appraisal, which is ambiguous. I believe that different appraisal scales are generated when the primitive relation is ranking different sorts of epistemic attitudes. Thus, comparisons of believing with withholding generates one scale, whereas comparison of believing with disbelieving generates another. So Chisholm's hierarchy actually contains two distinct scales, namely (Fig. 3.1).

The top half of scale (A) represents levels of increasing strength appraisals for believing **h**. The bottom half of scale (A) represents levels of decreasing strength appraisals for withholding ~**h**. The top half of scale (B) represents levels of increasing strength appraisals for believing **h** as opposed to ~**h**. The bottom half of scale (B) represents levels of increasing strength appraisals for believing ~**h** as opposed to believing **h**.

As Chisholm developed his hierarchy, the top half of scale (B) occurs in the middle of scale (A). Scale (A) balances truth seeking against risk taking. The level of appraisal '(B**h** P W**h**)' represents a level of appraisal in which the truth seeking act of believing **h** is epistemically preferable to the avoidance of the risk of error

Fig. 3.1 Chisholm's two scales

	Scale (A)	Scale (B)
	(Bh P 'Wh')	(Bh P B~h)
	~('Wh' P Bh)	~(B~h P Bh)
Counterbalanced	-------------------	————————
	(W~h P Bh)	~ (Bh P B~h)
	~(B~h P 'Wh')	(B ~h P Bh)

through withholding **h.** Scale (B) is thus concerned just with truth seeking, and not at all with the avoidance of error.

In summary, my claim is that Cady has neglected to draw the crucial distinction between the axiomatic system of the logic of epistemic appraisal, with elements such as the primitive relation, and the theory of evidence which is used to give that system application. There is no inconsistency in Chisholm's having an axiomatic system which is Pyrrhonistic and oriented to "avoiding error," and in having a theory of evidence containing non-Pyrrhonistic principles which are oriented to "getting the truth."

I agree with Cady that there is an ambiguity in Chisholm's system, but we disagree about where it is located. Even if there is, as I claim, an ambiguity in Chisholm's hierarchy – it has not been shown that the ambiguity is vicious. In neither case has it been show that Chisholm's system is either "foundationless" or a "futile" systematization.

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Chapter 4
Essay #4: On Being Unjustified

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Abstract This essay investigates the concept of being unjustified. In particular it examines the concept in light of a square of opposition for justification. It employs the distinction between internal and external negation to clarify the distinction between being justified, unjustified and two senses of being completely unjustified. It also assumes a distinction between strong and weak justification, where the former is taken as a necessary condition of knowledge, and the latter amounts to having some lesser amount of evidence in favor of a proposition. Strong and weak justification yield different squares of opposition – the former traditional and the latter Boolean, and when combined they yield "The Cube of Justification" which exhibits 24 distinct conceptual interconnections. The analysis of these connections yields a set of eight distinct epistemic categories, i.e. five unique categories for p, and three more "duals" for ~p. These eight are represented on the Cube of Justification in different ways. Three of the eight are represented by faces of the Cube, and a fourth by a plane cutting through it. The other four are each represented by a pair of triangles, called either the Butterflies of Justification, or the Moths of Weak Justification. These eight categories constitute a set of five unique levels or strengths of justification, two for propositions that are completely justified and three for propositions that are completely unjustified. *These levels are the main theoretical result of this investigation, beyond the work of conceptual clarification concerning being unjustified.* The Cube of Justification also has eight planes (including three faces) that can only represent "Two Agent" Cases, because of the fact that 'Jp' and "J~p" are contraries. It is shown that these "Two Agent" Cases form a somewhat different set of levels of justification. The chief differences are in the emergence of mixed strength cases, and the lack of any uniquely "Two Agent" forms at the bottom level.

The essay also shows how our initial intuitions about a concrete case of being completely unjustified are shown problematic by considerations of fallible evidence based on contextual probabilities. I raise but do not settle the issue of how positive evidence contrasts with negative (or statistical) evidence in arriving at the judgment that a proposition is completely unjustified. The paper concludes with an

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_4

investigation of why internal negations are stronger than external negations in contexts of justification, and with a brief view of agent-relative evidence.

What Does It Mean to Be Unjustified in Believing a Proposition?

In trying to answer this question, let us start with a concrete case. My freshman college roommate was a fellow named Fred. I haven't seen Fred or heard from or about him in the last 50 years. Actually I don't even know if Fred is still alive. Now suppose that I have a shoebox full of small slips of paper, and that each slip of paper has written on it a sentence about Fred. Each slip has Fred located in a different place. For example, one might say that Fred is in Moscow, and another says that Fred is in Paris, and yet a third might say that Fred is in Washington, DC. Imagine that the shoebox contains a thousand such slips of paper, similar to what one would find in a Chinese fortune cookie, and each of them has Fred in a different place. Assume that I, totally at random, select one such slip, and that it says that Fred is in Juneau, Alaska. How best should I describe my relation to the proposition that Fred is in Juneau, Alaska? Having said that I have no idea if Fred is still alive, it also seems to me obvious that I have no reason to believe that he is in any particular place. Clearly I would be **unjustified** in believing that Fred is in Juneau, Alaska. Let the proposition that Fred is in Juneau, Alaska be called 'p', and since my name is Ken, we'll refer to me as 'k'. So, the locution that we are interested in clarifying is that Ken is unjustified in believing that Fred is in Juneau, Alaska, or that: 'k is unjustified in believing that p'.

In the word 'unjustified' the prefix 'un' clearly expresses a negation. So another form of the locution we are exploring is 'k is not justified in believing that p'. If we let a capital 'J' stand for the relationship of being justified in believing, then the proposition that Ken is justified in believing that Fred is in Juneau, Alaska would abbreviate as 'kJp'. Now how should we express the negation that corresponds to the 'un' of 'unjustified'? The standard terminology for such matters distinguishes an external negation from an internal negation. Using the tilde sign, '~', for negation, the external negation would be '~ (kJp)', and the internal negation would be '(kJ~p)'. The internal form is saying that Ken is justified in believing that Fred is not in Juneau, Alaska. My initial view is that it would seem to be a mistake to claim any justification for believing that ~p. (This intuition gets explored in more detail in section "Some Worries About Being Completely Unjustified" below.)

My situation is that I have no reason to believe that Fred is in Juneau, and I have no reason to believe that he is not in Juneau. For all I know he could be anywhere, or if no longer alive, nowhere at all. The correct version of my situation corresponds to the external negation, namely '~ (kJp)'. I am unjustified in believing that p in the sense that it is not the case that I am justified in believing that p. Clearly, if I have no reason for believing that Fred is in Juneau, then it would be wrong to say that I am justified in believing that Fred is in Juneau. Since I have no information whatsoever about where he is, that means I lack justification both about the proposition that he is in Juneau, and likewise about the proposition that he is not in Juneau. Subsequently we will find a need to examine more closely this second claim, after we get clearer about how these concepts relate to one another. What would a square of opposition for justification look like?

A Potential Square of Opposition for Justification

(kJp) [Ken is justified in believing that Fred is in Juneau]	**(kJ~p)** [Ken is justified in believing that Fred is not in Juneau]
~(kJ~p) [It is not the case that Ken is justified in believing that Fred is not in Juneau] I.e., k is **unjustified** in believing that not p.	**~(kJp)** [It is not the case that Ken is justified in believing that Fred is in Juneau] I.e., k is **unjustified** in believing that p.

Each proposition of this potential square contradicts the proposition diagonally opposite to it.

Completely Justified vs. Completely Unjustified

The literature on the topic of justification sometimes makes a distinction between being justified and being completely justified, or between being unjustified and being completely unjustified. A prominent philosopher who employs this terminology is Keith Lehrer. He has said: "I shall assume that if a man knows *that* p, then he is completely justified in believing *that* p" ([5], p. 285). Does the above potential square of opposition diagram shed any light on these distinctions? My proposal is that one sense of what it means to be **completely unjustified** with regard to a proposition is best captured by the situation of my example. What that diagram shows is that my first impression about my situation with regard to Fred is best represented by a conjunction of the bottom two propositions, namely ~(kJ~p) & ~(kJp). On this view of the matter what it is to be completely unjustified is to lack all justification for p and to similarly lack all justification for ~p. So to say that k is completely unjustified with regard to p is to say: '~ (kJp) & ~(kJ~p)'. The distinction between 'unjustified' and 'completely unjustified' in this first sense then is that a proposition or its negation is unjustified if it satisfies either '~ (kJp)' or '~ (kJ~p)', but to be completely unjustified it must satisfy both of them.

Ken is unjustified in believing that p = df. ~ (kJp).

Ken is unjustified in believing that ~p = df. ~ (kJ~p).
Ken is completely unjustified in believing that p = df. ~ (kJp) & ~(kJ~p).
Ken is completely unjustified in believing that ~p = df. ~ (kJ~p) & ~(kJp).

Notice that the formulas defining 'completely unjustified in believing p' and 'completely unjustified in believing ~p' are logically equivalent, and hence the defined terms themselves are equivalent by this understanding. To be completely unjustified in believing a proposition (in this first sense) is logically equivalent to being completely unjustified in believing the internal negation of that proposition. The contrasting positive definitions are:

Ken is justified in believing p = df. (kJp), and: Ken is justified in believing ~p = df. (kJ~p).

Another Sense of 'Completely Unjustified'

There is a line of reasoning that one might make as an objection to my definition of this first sense of being 'completely unjustified'. Suppose there is a proposition p, which has one's highest possible level of justification. Let that be absolute certainty. We are assuming that one is absolutely certain about proposition p. It might, for example, be that two is greater than one. What then do we want to say about the level of justification for the proposition ~p? On my first definition we cannot say that ~p is completely unjustified, because in this case clearly one is justified in believing p, and 'completely unjustified' has been defined as both 'p unjustified and ~p unjustified'. The crux of this objection is that if p has the strongest possible justification then ~p deserves the strongest negative evaluation. So, if p is absolutely certainly true, then that implies that it is also absolutely certain that ~p is false. And the need to be able to say that ~p is absolutely certainly false clearly suggests that there is a second sense of ~p as 'completely unjustified'. Again, consider a self-evidently false proposition, say one of the form (p&~p). On my first definition I can say that (p&~p) is unjustified, but I cannot say that it is completely unjustified, because the negation ~(p&~p) is not also unjustified. This shows that my first definition of 'completely unjustified' does not capture all of the situations in which we want to make use of that phrase.

These considerations convince me that I need to distinguish between two senses of the concept of 'completely unjustified'. My original definition captures the negative sense, i.e. negative in the sense of a privation. So, a proposition is completely unjustified in this negative privation sense if and only if both it and its negation are unjustified. The positive sense of 'completely unjustified' applies just to a proposition or its negation, but not to both. So if a proposition p is certain, then its negation is completely unjustified in this positive sense. It is positive in the sense that evidence or justification of a high order exists for p, which in turn makes ~p completely unjustified. I do not know if our ordinary usage contains such a distinction concerning 'completely unjustified', but it is clear that my original negative or privation sense doesn't completely cover the field of cases of propositions that one would wish to dismiss as completely unjustified.

Now a bit of a puzzle arises over the question of how to define the locution that 'Ken is completely justified in believing that p', as opposed to the two senses of 'completely unjustified', which were just discussed. My initial thought about this was that it should go as follows: Ken is **completely justified** in believing that p = df. Ken is justified in believing p and Ken is unjustified in believing that ~p. That is, Ken is completely justified in believing that p = df. (kJp) &~(kJ~p). And similarly, Ken is completely justified in believing that ~p = df. (kJ~p) & ~(kJp). As we shall see below this initial thought has a problem.

An Application of these Considerations

The single most cited article in the literature on the topic of justification is Edmund L. Gettier's [4] article, "Is Justified True Belief Knowledge?" In that article the first of two principles gets stated as follows: "in the sense of 'justified' in which S's being justified in believing P is a necessary condition of S's knowing that P, it is possible for a person to be justified in believing a proposition that is in fact false." (p. 121) If we let a capital 'K' stand for 'knows that', then Gettier's principle gets expressed as: If ((kKp) only if (kJp)), then ◇ ((kJp) & (~p)) The antecedent of this conditional says that "If Ken knows that p then Ken is justified in believing that p", which is to say being justified is a necessary condition for knowing. The consequent of this conditional is saying that it is logically possible to be justified in believing a proposition that is false. OK, but is it logically possible to be **completely justified** in believing a proposition that is false?

Continuing my previous example, my roommate Fred had a sister named Vicki. Suppose that after these many years I make contact with Vicki, and she tells me that her brother is living in Tijuana, Mexico. Assume that this is the only piece of evidence that I have about Fred. That is, I have no evidence that Fred does not live in Tijuana, but I have the testimony of his sister that he is now living in Tijuana. So, yes, in this case I would say that I am **completely justified** in believing that Fred is in Tijuana, Mexico. And yet it is certainly logically possible that Fred has moved somewhere else, say to San Francisco, and has yet to inform his sister of his move. So, it does seem to be the case that it is logically possible to be **completely justified** in believing a proposition that is false. But as I hinted earlier there is a problem with my first thought about how to define the concept of 'complete justification'.

Assume that I've got an item of evidence in favor of a proposition p and another (qualitatively equal) item of evidence in a favor of ~p. Suppose, contrary to fact, that Fred has two sisters and one tells me that Fred is in Tijuana and the other tells me that Fred is not in Tijuana, and that both sisters are equally credible. In this case it does not seem to me that it is true that I am justified in believing p, nor that I am justified in believing that not p. To the extent that there are equal amounts of evidence for both p and not p, one can say that they are counterbalanced, and that neither of them is more justified than the other, and hence that neither is a proposition that I am justified in believing. Roderick Chisholm has expressed this notion as follows: “The followers of Pyrrho held that, if a proposition is counterbalanced, then it ought to be withheld. And they tried to show, as far as possible, that every proposition is counterbalanced.” ([1], p. 10, fn. 6) The crucial idea here is that it is logically impossible both for a proposition and its negation to be justified for a single agent at the same time. To the extent that they have evidential parity, they each undermine the justification provided by the other.

This phenomenon of evidential undermining seems to me to support the notion that there is a **subaltern** relationship downwards in the justificatory square of opposition. That is, (kJp) does logically imply that ~ (kJ~p), and that (kJ~p) does logically imply that ~(kJp). One might be tempted to think of this as a version of a principle of double negation, but that would be a mistake for each negation has a different scope. Double negation is always an equivalence relation, but in this case all we have is a one way implication. It also looks like a kind of justificatory **obversion**, but that also would be a mistake because in Aristotelian logic **obversion** [all S are P/ so, no S are non-P] is also always an equivalence relationship. So, if we need a name for this relationship we’ll have to make due with **justificatory subalternation**. In the first version of the example I have been discussing I was completely unjustified with regard to whether Fred was in Juneau, i.e. both ~(kJp) & ~(kJ~p). And if one is completely unjustified with regard to a proposition, it certainly **does not** follow that one is justified in believing either that proposition or its negation. This shows that there is no implication upward on the vertical in the square of opposition. That is, if either of the lower propositions is true, then that does not imply that the proposition directly above it is also true. To summarize: (kJp) ⇒ ~ (kJ~p); and (kJ~p) ⇒ ~ (kJp); and **~**[~(kJp) ⇒ (kJ~p)], and **~**[~(kJ~p) ⇒ (kJp)].

But now here is the problem that I have been hinting at: If (kJp) logically implies ~(kJ~p), then every proposition that is justified is thus also completely justified. Remember that ‘completely justified’ has been defined as ‘(kJp) & ~(kJ~p)’. This consequence follows because of the logical rule of **absorption**, i.e., (p ⊃ q) ⊃ (p ⊃ (p&q)). By this rule, if (kJp) implies ~(kJ~p), then (kJp) also implies that ((kJp) & ~ (kJ~p)), which by my definition of ‘completely justified’ is just to say that if a proposition is justified, then it is completely justified. It seems to me that further reasons for this come out in the next section.

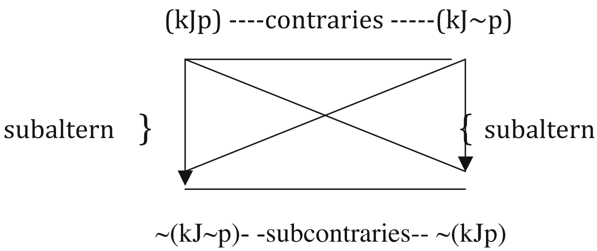
Two Concepts of Justification

When one comes to develop a logic of justification there is a fundamental decision that must be made about how strong a concept of justification one is talking about. One possible system employs a weak concept of justification according to which there **is** a distinction between being justified and being completely justified. There is a distinction in the sense that one might have enough evidence that one is justified in believing that p, but not be completely justified in believing that p. On this weak concept of justification it is logically possible that one could have evidence such that one is justified in believing that p, and (on different evidence) also justified in believing that not-p. We saw an instance of this above in the case where we imagined that Fred had two sisters who gave conflicting testimony. My intuition is that this weak sense of justification is too weak to warrant any knowledge claims that might be based upon it. In Gettier's words this weak concept is **not** the "sense of 'justified' in which S's being justified in believing P is a necessary condition of S's knowing that P." As I originally tried to make the distinction, '(kJp)' is justification, and '(kJp) & ~(kJ~p)' is complete justification. The main point is that on this weak concept of justification it is logically possible to both be justified in believing that p and justified in believing that not-p. My own judgment is that this weak sense of 'justification' amounts to pretty much the same thing as 'has some evidence for'. But 'having some evidence for p' is not at all the same as 'being completely justified in believing that p'.

Is this difference significant enough to pose a problem for what Richard Feldman calls the philosophy of "evidentialism"? "Evidentialism. . . holds a belief is epistemically justified for a person if and only if the person's evidence supports the belief." ([2], p. 119) Evidence for p is evidence precisely because it provides some support for p. Presumably weak evidence only provides weak justification. But it may be that evidentialists are using either the term 'evidence' or the term 'support' in an achievement sense, such that the claim that there is evidence for p analytically translates into there being strong justification for p. The key test would be whether the evidentialist would claim that anything considered evidence for p necessarily provides support of the sort yielding the justification necessary for knowledge. If this were how the term 'evidence' is being construed by evidentialism then the notion of evidence providing a level of support too weak to yield knowledge would be a misuse of the term 'evidence'. Such would be considered 'alleged evidence', 'purported evidence', or 'merely apparent evidence'.

There is a stronger sense of justification that allows no such distinction between justification and complete justification. On this stronger sense every proposition that is justified is also completely justified. So, on this stronger concept of justification it is not logically possible both that one is justified in believing that p and also justified in believing ~p. In fact on this strong sense of justification, if k is justified in believing that p then that would logically imply that it is not the case that k is justified in believing that ~p. This usage has been endorsed by Keith Lehrer who has said: "However, if a belief is completely justified, then those with which it conflicts are unjustified." (Lehrer [5], p. 293) My thought is that it is this stronger sense of justification that constitutes a necessary condition for knowledge. It is also the case that this stronger sense of justification yields a full justificatory square of opposition, complete with contradictories, contraries, sub-contraries and subaltern relationships. That would look like the following:

A Full Square of Opposition for Justification



Across the diagonal'(kJp)' and '~ (kJp)' are contradictories of one another and necessarily differ in truth-value. Likewise '(kJ~p)' and '~ (kJ~p)' are contradictories. On the upper horizontal '(kJp)' and '(kJ~p)' are contraries and as such they **cannot** both be true, although they can both be false. On the lower horizontal '~ (kJ~p)' and '~ (kJp)' are sub-contraries, and as such **can** both be true, although they cannot both be false. On the left hand vertical '(kJp)' and '~ (kJ~p)' are the subalterns in that the truth of the first logically implies the truth of the second, and the falsity of the second logically implies the falsity of the first. The same would hold for '(kJ~p)' and '~ (kJp)', on the right hand vertical.

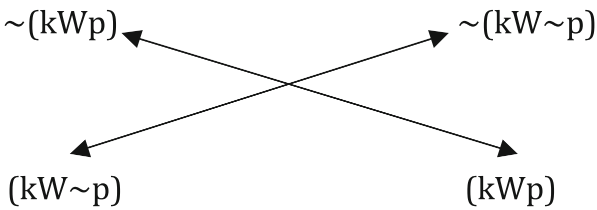
Is there another sense of 'completely justified' that corresponds to the positive sense of 'completely unjustified'? If a proposition has the highest level of justification, such as when p is absolutely certain, then it would no doubt be appropriate to say that it is also 'completely justified', according to the definition '(kJp) & ~ (kJ~p)'. But, it seems to me that on fallibilist grounds, that it would be a mistake to restrict the completely justified to that small minority of items about which we are absolutely certain. In the case of 'completely unjustified' it was necessary to distinguish two senses, because when p was certain, it was not possible to say that ~p was completely unjustified in the privation sense. There is no parallel problem requiring the positing of a second sense of 'completely justified'.

Weak Justification

What is this weak sense of justification referred to above? For example, do I have any evidence providing a weak justification about the present location of my roommate Fred? As I said earlier, I haven't heard from or about Fred in very many years, so I have no current information. When I think about it, I remember that after graduation Fred was admitted to the Ph.D. program at Princeton University. Does that memory give me some weak evidence that he today lives in Princeton, New Jersey? He was also from a small village in upstate New York. Does that memory give me evidence that he is now back in upstate New York? I also recall that he had a Rhodes Scholarship to do graduate work at Trinity College in Ireland. Does that give me evidence that he now lives in Dublin? The one thing that seems clear to me is that none of this memorial evidence gives me justification for believing that Fred is or is not in some particular place, in the strong sense of justification. So, if any of this memory data is evidence at all for Fred's location, it is at best a weak sense of justification that does not warrant any knowledge claims.

Let 'kWp' abbreviate 'Ken is weakly justified in believing that p'. What is the relationship between 'kJp' and 'kWp'? If 'W' meant 'has some justification' then 'kJp' would imply 'kWp', because any proposition that has justification of the sort necessary for knowledge necessarily has some justification. But 'has some justification' does not capture the weakness of the weak sense of justification. So a better explication for 'W' would be 'justified to a degree less than that necessary for knowledge'. But that still won't quite do because being justified to a degree less than that necessary for knowledge is compatible with there being no justification at all for the proposition p. To get around that problem I propose that we define 'W' as follows: (kWp) = df. there is some justification for p, but less than that necessary for knowledge. Clearly on this understanding '(kJp)' does not imply '(kWp)'. Does (kWp) imply ~(kJp)? The answer is "yes" (kWp) does imply ~(kJp), i.e. p being weakly justified does imply that p is unjustified, where 'unjustified' is the external negation of the strong form of justification. What kind of a square of opposition is there for 'W'?

1. A Boolean Square of Opposition for Weak Justification



Clearly there are contradictories again across the diagonals which must have opposite truth values. A moment's reflection yields that this is a Boolean Square of Opposition in that, for example, '(kWp)' and '(kW~p)' are neither contraries nor sub-contraries in that they can both be true and they can both be false. The very hallmark of weak justification is the logical possibility that they can both be true, with some evidence for p and yet some other evidence for not p. And in the case where there is no evidence for either one of them, then they are both false. In the case where there is some evidence of p and some evidence for ~p, the bottom corners are both true and the upper corners are both false. A natural reading for '~ (kWp)' would be that Ken has no evidence for p, and for '~ (kW~p)' would be that Ken has no evidence for ~p. But this isn't quite right. It should be 'Either there is no evidence for p, or there is at least that necessary for knowledge'.

By combining the traditional square of opposition for the relation J of strong justification with the Boolean square of opposition for the relation W of weak justification, one generates The Cube of Justification, the eight vertices of which represent the eight different logical forms for these two relations. In an appendix to this essay a two dimensional representation of the Cube of Justification is given, deleting for the moment any symbol for the believer.

Radical Skepticism & Basic Beliefs

In arguments for radical skepticism a common intermediate conclusion is the claim that "No one is completely justified in believing anything." What does this claim amount to on the scheme that we have been considering? According to that scheme, 'k is completely justified in believing that p = df. k is justified in believing that p & ~(k is justified in believing that ~p)'. So the thesis of the radical skeptic amounts to the negative existential assertion that there does not exist a k, such that k is justified in believing that p & ~(k is justified in believing that ~p). But, by my reasoning in the previous sections, in the sense of 'justification' which is a necessary condition of knowing, there is **no** distinction between justification and complete justification for the reason that '(kJp)' logically implies '~ (kJ~p)'. That is, every case of justification (in this strong sense) is a case of complete justification. So what the radical skeptic is really asserting is that "no one is justified in believing anything," in the strong sense of 'justified'. And this leads directly to the radical skeptic's claim that "we do not know anything." (Lehrer, op. cit., p. 284)

Epistemologists often talk about "basic beliefs". How do basic beliefs relate to the issue of strong and weak justification? In a typical discussion of this topic Douglas Gasking has said that basic beliefs, which he calls ego-propositions [such as that expressed by 'I am hungry'] are infallible and ungrounded. By contrast, Keith Lehrer has argued that it is logically possible for these ego propositions to be arrived at by a faulty inference, and hence to be (in such a case) quite fallible ([5], pp. 287–288). At this point it would seem to be important to distinguish the grounded ego-statements (say the ones arrived at by Lehrer's inference) from the ungrounded ones. It is concerning the latter that the evidence question is being raised. Gasking suggests that there are non-ego statements that are ungrounded such as his quite famous chicken-sexing example. How does the issue of basic beliefs factor into this discussion? Such basic beliefs are supposed to be beliefs that are completely justified without there existing any positive evidence in support of them. Can a basic belief have strong justification and yet have no evidential basis? My thought is that a basic belief can be both infallible and ungrounded, where being grounded means supported by some other believed proposition. When a trained chicken-sexer ([3], p. 158) looks at a day old chick, and issues the judgment "female" he cannot say what it is about the look that leads him to that judgment. Nevertheless the evidence exists in the look of the chick, so such a case is not a counterexample to the claim that justification requires the existence of evidence even while being ungrounded.. But it is a case where the evidence is not another grounding proposition. So, to say that a basic proposition is ungrounded in the sense of there not being another proposition upon which it is based, is not to say that there is no evidence supplying the justification for that basic belief. The chicken-sexer's claim that a chick is a female is not based upon some other proposition, because the chicken-sexer has no idea what it is about the look of the chick that grounds that judgment. Yet the look of the chick is still the evidence which supplies the justification for the judgment. So, my conclusion is that basic beliefs can be ungrounded, but that does not mean that there is no evidence underlying their justification.

Some Worries About Being Completely Unjustified

Given that there are literally thousands of places that Fred could be, if indeed he is still alive, and given the further fact that I have no reason to believe that he is in one place rather than another, there is a question that occurs to me, namely: given that I have no evidence as to where Fred is located, could I be justified in believing that Fred is not in some randomly selected place? Suppose I draw another slip from my shoebox and the slip says that Fred is in Big Sur, California. Clearly I would be **unjustified** in believing that Fred is in Big Sur given that I have no evidence that locates him there. But how about the negation? Would I be justified in believing that Fred is not in Big Sur, California? Strictly speaking I both have no evidence that he is in Big Sur, and likewise have no positive evidence that he is not in Big Sur. (There are two notable exceptions to the generality that I have no knowledge about Fred's location, namely I know that Fred is not where I am when I am alone in a room, although he could be living in the same city without my being aware of the fact. And secondly, I know that Fred is not on Mars or any other extraterrestrial body, since I believe that I know that no human beings are in such places.) But let us take a closer look at the negative case. Suppose my shoebox has now become a huge crate, and now contains a million different place names. The likelihood that Fred is **not** in the location on a randomly drawn slip would seem to be very high indeed. So, the evidence that he is in that place is zero, but the evidence (or probability) that he is **not** in that place seems to be very high.

This case is analogous to a single lottery ticket in a drawing where the odds are (say) 30 million to one. In New York state the lottery commission formerly had a Lotto ad that said "Hey, you never know!", meaning thereby that you never know whether your next lottery ticket purchase might be the next big winner. My intuition with regard to that slogan is that while, admittedly, I am not absolutely certain that my single Lotto ticket purchase is not the next big winner, given the odds, I really can legitimately claim **to know** that my ticket will be a loser. This is of course a claim to **fallibly know** that the ticket will be a loser, and in the highly unlikely case that the ticket does win, my refuge would simply be to reiterate (along with Gettier) that one can be completely justified in believing a proposition that is false.

So how does this relate to whether I am justified in believing that Fred is not in some randomly selected place whose name is drawn from a huge collection of place names? My notion is that I am **justified in believing** that he is not in Big Sur, California, for the very same reason that I am justified in believing that my lottery ticket will not be a winner. The odds against are just too high in the case of the ticket, and there are just too many other places where it is just as likely that Fred could be. So with regard to the proposition that Fred is in Big Sur, my previous claim was that I was **completely unjustified** in believing that proposition in the privation sense, where 'completely unjustified' meant that '~ (kJp) & ~(kJ~p)'. This is to say it is not the case that Ken is justified in believing that Fred is in Big Sur, and it is not the case that Ken is justified in believing that Fred is not in Big Sur. But this conflicts with the notion that was just arrived at to the effect that I am justified in believing that he is not in some randomly selected location, i.e. (kJ~p). My original idea was that I had no positive evidence that Fred is in Big Sur and furthermore I have no positive evidence that he is not in Big Sur. And that still seems to be true. The fact that there are a million other places that he could just as well be is not positive evidence that he isn't there. By contrast, if I got a statement from his sister that he is in Tijuana, then that would be positive evidence that he is not in Big Sur. So perhaps, given the distinction between positive evidence and a lack of positive evidence, one could say that [with respect to positive evidence] Ken is completely unjustified in believing that Fred is in Big Sur, but that [with respect to negative evidence] Ken is justified in believing that Fred is not in Big Sur. Yet, by that line of reasoning, I would be justified in believing that Fred is not in any place one randomly mentions, just as one can say of any lottery ticket that one happens to get hold, that one is justified in believing that it will be a loser. But from that it does not follow that every ticket is a loser, nor would it follow that one is justified in believing that there is nowhere where Fred is located. That would be equivalent to being justified in believing that he is already dead, and I certainly have no positive or negative evidence for that.

Or do I? Fred and I were both 18 years old as freshmen in college, and now I am much older. Suppose I were to consult the appropriate statistical study and learned that 20 % of that generation's cohort have died in the intervening years. So, from the statistics (hypothetical, at this point), there would seem to be one chance in five that Fred is already deceased, and thus there is a 20 % chance that his location is nowhere at all. (Of course if he is dead his corpse might be somewhere.) So with regard to the proposition that Fred is in Big Sur, California I have no positive evidence whatsoever for believing it. If my evidence that he is dead and thus nowhere at all is 20 %, then that would seem as well to be a 20 % [negative?] evidence that he is not in Big Sur. Yet is that statistical fact really any kind of evidence, in the sense that a report from his sister would be positive evidence? In summary, I have zero evidence for believing that Fred is in Big Sur, and some statistical evidence for thinking that he is not there, namely the 20 % possibility that he is dead, and the huge number of other places that he could be if he is alive.

So, what I conclude from all this is that I am **completely unjustified** in my first sense in believing that Fred is in Big Sur with respect to positive evidence, and yet am fallibly justified in believing that he is not in Big Sur, based on the (negative?) statistical considerations concerning his being nowhere at all, or in some other place altogether. So, clearly there is further work to be done on the concept of being completely unjustified, in sorting out the respective roles of positive and negative evidence.

Internal vs. External Negation: Which Is Stronger?

Which is the stronger form here, the internal negation or the external negation? In the original example considered, the internal version seems to me to be the stronger because it is making an affirmative claim, namely that I **am justified** in believing that Fred in not in a certain place. The external negation is weaker in that it is denying that I am justified in believing that Fred is in that place. To be justified in believing the former, the internal negation, I need to have some evidence that Fred is not in Juneau. By contrast, the external negation can be true simply on the basis of my having no evidence whatsoever about Fred's present location. So the internal negation is stronger because it requires the existence of **some** evidence to be true, whereas the external negation is weaker because it can be true in the case where I am completely lacking any evidence at all about the proposition p. The truth of the external negation is based on a privation, which involves the nonexistence of any such evidence, or the existence of evidence which is inconclusive.

This issue could stand a closer examination. Underlying the affirmative/negative issue is a question of logical form. The affirmative claim amounts to an existential assertion, viz. there exists an x such that x is evidence for p. By contrast the negative claim is the denial of an existential assertion, viz. it is not the case that there exists an x such that x is evidence for p. But the negation of an existential quantifier is logically equivalent to a universal quantification, viz. every x is such that x is not evidence for p. So, Why should an existential assertion be considered stronger than a universal assertion?

The logical form of being justified, i.e., (kJp) and of (kJ~p) implies that there exists something that serves as evidence for p in the case of the (kJp) and of ~p in the case of (kJ~p). Let 'V' stand for 'is evidence for'. So '(kJp)' implies '(∃x)(xVp)' and '(kJ~p)' implies '(∃x)(xV~p)'. To establish this existential assertion as true there must be a single something that truly instantiates the existential quantifier. By contrast '~ (kJp)' implies '~ (∃x)(xVp)'. This denial of an existential quantifier is equivalent to '(x)~(xVp)'. Similarly '~ (kJ~p)' implies '(x)~(∃xV~p)'. To establish either of these every member of the universe of discourse must instantiate the universal quantifier truly. Clearly, it is a lot easier to prove the existential assertion true than it is to prove the universal assertion true. This shows why being justified is considered stronger than being unjustified, because justification can be verified, whereas being unjustified is very difficult to establish, since verifying the implied universal quantifier is impossible in an infinite universe of discourse. The situation is exactly the opposite for falsification. It only takes one instance to falsify the universal, where every member of the universe of discourse must be canvassed in order to falsify the existential assertion. So falsifying a justification claim is nearly impossible, whereas falsifying a claim that something is unjustified is quite easy. So, it is only in relation to verification that justification claims are stronger and claims of lack of justification are weaker.

Agent-Relative Evidence

Now, strictly speaking, the fact that Ken lacks justification for a proposition p [is unjustified in believing p] does not just flat out imply that there is no evidence for p. In fact there might be lots of evidence for p, which just is not available to Ken. So, for this lack of justification to imply that there is no evidence, we need to take 'evidence' as elliptical for the agent relative 'evidence for Ken for p'. So, to say that Ken is justified in believing that p. what we are really saying is that there exists some evidence, possessed by Ken, for p. And what 'unjustified' means is that there does not exist some evidence, possessed by Ken, for p. By this analysis, '~ (kJp)' implies '(x)~(xVp)', where 'V' gets understood as relative to 'evidence for Ken'. How does the agent relative nature of evidence affect the points made above about the verifiability and falsification of justification claims? It seems to me that the agent-relative nature of evidence does not alter the case concerning the verifiability of claims about being justified. It does seem to temper the case concerning the difficulty of establishing the truth of claims about being unjustified. It does this by reducing the range of the domain of discourse to the smaller set, which is the evidence available to the agent, rather than to the infinite range of all possible evidence.

Summary

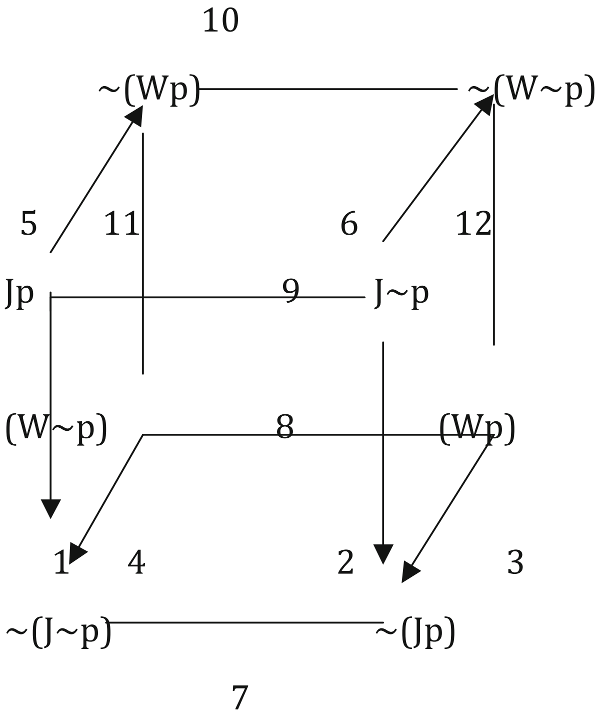
The main task of this paper has been to get clearer about the concept of being unjustified. Appealing to the distinction between internal and external negation, it was possible to clarify the distinction between being unjustified and being completely unjustified. The paper goes on to distinguish two senses of the phrase 'completely unjustified'. It was shown that the development of a traditional full square of opposition for justification depends upon employing a strong sense of justified which collapsed any distinction between being justified and being completely justified. As shown in the Appendix one of the main results of this paper is the development of a hierarchy of five unique levels of epistemic justification, and their illustration using the concrete example ("Where is Fred?") that threads its way though the paper. *The primary theoretical result of this study is the point that the two justificatory relations, **J** and **W**, give rise to a hierarchy of five levels of strength of justification, namely two levels of being completely justified,* *and three levels of being completely unjustified, and that they form a spectrum from unchallenged justification at the top to total privation of justification at the bottom.* The paper also explores eight planes of the Cube of Justification, which can only represent "Two Agent" cases of people having different levels of justification concerning a proposition and its negation. It is found that the Cube represents ten distinct categories of "Two Agent" cases, which again exhibit five levels or strengths of support. A different pattern of levels is shown by the "Two Agent" cases due to the occurrence of mixed levels of support possessed by the different agents.

The paper introduces, but does not solve, the issue of how positive evidence contrasts with negative evidence in arriving at the judgment that a proposition is completely unjustified. The paper concludes by looking at the notion that justification claims (& internal negations) are "stronger" than claims about being unjustified (external negations). By consideration of the implicit quantifiers involved it is shown that justification claims are "stronger" only in the sense of being more easily verifiable. By contrast claims about being unjustified are more easily shown false. These ideas were also examined in light of the agent-relative character of actual evidence.

I would like to acknowledge the valuable assistance of Guy Axtell, Georges Dicker, W. Tell Gifford, Sherwin Iverson and Carol A. Lucey for discussion and critique of earlier drafts of this essay.

Appendix

The Cube of Justification



Twenty Four Conceptual Connections

The "Cube of Justification" has eight corners, each of which represents one of the logical forms of the relation **J** of strong justification or the relation **W** of weak justification. Eight items, taken two at a time yield 8 times 8, or 64 combinations. Eight of those are combinations of the same form with itself, reducing the number to 56 distinct combinations. But half of that number are combinations of the same two items in different order, so that reduces the 56 combinations to 28 combinations. The front and back faces of the Cube have contradictories across the diagonals, so the number 28 can be reduced by those four, leaving 24 conceptual connections to be investigated.

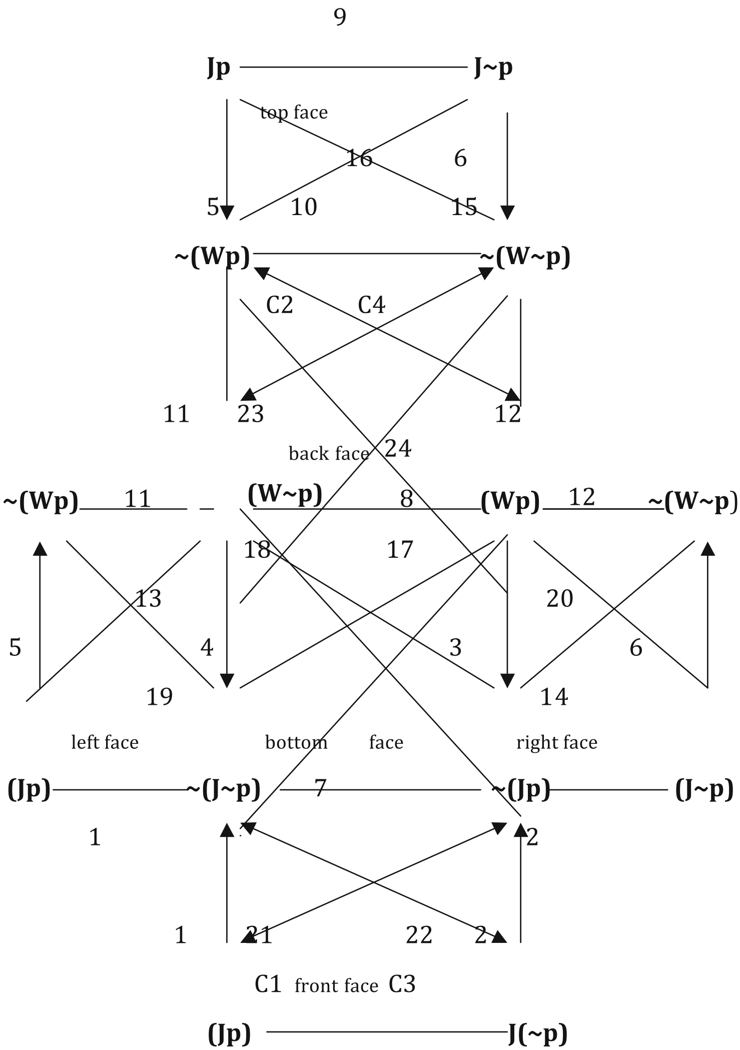
Each line connecting two of these vertices represents either an implication, an impossible situation, or a possible situation. The number on each of the lines of the Cube above represents one of these twelve cases. Of the twelve, six are implications, and they are composed of three sets of *duals* where the dual of one statement is a second statement arrived at by systematically substituting '~p' for 'p'. My usage of 'dual' differs somewhat from that of W.V. Quine, by whose usage two schemata are called 'duals' of each other when their behavior under truth-value analysis is exactly alike except for a systematic interchange of 'true' and 'false'. By Quine's usage 'p and q' is a dual of 'p or q', and '~p' is a dual of itself ([7], p. 67). The six implications are as follows: (The Roman numeral in brackets at the right of each line relates the item in question to the eight categories discussed below in section "Agent-Relative Evidence" [19].) The numeral at the left below corresponds to the number labeling a line on the Cube of Justification above and the Cube of Justification Exploded in section "Eight Distinct Categories of Justification" below.

1. If p is justified then ~p is unjustified. (kJp) ⊃ ~(kJ~p) [**I, II**]
2. If ~p is justified then p is unjustified. (kJ~p) ⊃ ~(kJp) [**VI, VII**]
3. If p is weakly justified then p is unjustified. (kWp) ⊃ ~(kJp) [**III, V**]
4. If ~p is weakly justified then ~p is unjustified. (kW~p) ⊃ ~(kJ~p) [**V, VIII**]
5. If p is justified then p is not weakly justified. (kJp) ⊃ ~(kWp) [**I, II**]
6. If ~p is justified then ~p is not weakly justified. (kJ~p) ⊃ ~(kW~p) [**VI, VII**]

   After the six implications have been noted there remain eighteen connections to be investigated. These break down into seventeen possible and one impossible combination, as follows:
7. ◇ (~(kJ~p) & ~(kJp)) [**III, IV, V, VIII**] This situation is our definition of p completely unjustified in the negative or privation sense. The two formulas are subcontraries. (The '◇' is here used for the modal operator of logical possibility.)
8. ◇ ((kWp) & (kW~p)) [**V**] This situation occurs when p and ~p are both weakly justified. This is the state when p and ~p are counterbalanced.
9. **~** ◇ ((kJp) & (kJ~p)) [**none**] This is the impossible situation of both p and ~p being strongly justified for a single individual k. (When two different individuals are involved it is an entirely different matter, as we shall see in section "A Hierarchy of Five Levels or Strengths of Justification".) The two formulas are contraries.
10. ◇ (~(kWp) & ~(kW~p)) [**I, IV, VI**] Suppose that there is no evidence for either p or for ~p. In that case neither of the propositions is weakly justified. The two formulas are neither contraries nor subcontraries. (The same holds for the formulas in 8). Connection 10 could also hold when either p, or ~p, is completely justified.
11. ◇ (~(kWp) & (kW~p)) [**II, VIII**] There is weak justification for ~p and much or none for p.
12. ◇ (~(kW~p) & (kWp)) [**III**, **VII**] There is weak justification for p and much or none for ~p. The situations in (11) and (12) are duals of one another.

These 12 implications or situations exhaust the 12 connections along the lines that are the outside edges of the Cube of Justification. Only the front and back faces of the cube have diagonals that express contradictories among the expressions. There are 12 more connections that come into view when the interior diagonals are taken into consideration To make it easier to see what connections are being talked about, consider what I call "The Cube of Justification Exploded".

The Cube of Justification Exploded



The Cube of Justification has been opened up so that the front face [1, 2, 7, 9] is now at the bottom, and the top face [5, 6, 9, 10] is at the very top. The original left face [1, 4, 5, 11] is at the left and the right face [2, 3, 6, 12] to the right of the bottom [3, 4, 7, 8]. The original back of the Cube [8, 10, 11, 12] is now below the top face.

The two headed arrows represent forms that are contradictory of one another, and are labeled C1 through C4. There are twelve more connections to be explored, namely the diagonals on the top, bottom, right and left faces of the original cube, plus four more longer connections spanning several faces. These are labeled connections 13 through 24.

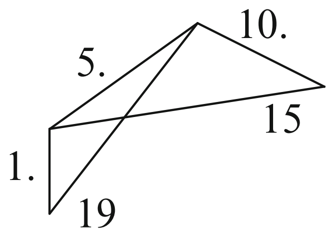
13. ((kJp) & (kW~p)) [**II**] This case is when p is strongly justified and yet there is some weak evidence for ~p.
14. ((kJ~p) & (kWp)) [**VII**] This is the dual of (13).
15. ((kJp) & ~(kW~p)) [**I**] This is possible only when p is strongly justified and there is no evidence whatsoever for ~p.
16. ((kJ~p) & ~(kWp)) [**VI**] This is the dual of (15).
17. ((kWp) & ~(kJ~p)) [**III, V**] In this case there is weak evidence for p and ~p is unjustified.
18. ((kW~p) & ~(kJp)) [**V**, **VIII**] This is the dual of (17), with weak evidence for ~p and p is unjustified.
19. (~(kWp) & ~(kJ~p)) [**I, II, IV**] In this case ~p is unjustified and there is no evidence or a lot for p. This is compatible with (kJp).
20. (~(kW~p) & ~(kJp)) [**III**, **IV, VI, VII**] This is the dual of (19).
21. (kJp), (kWp) These are contraries which cannot both be true.
22. (kJ~p), (kW~p) This is the dual of 21, and they also are contraries.
23. (~(kJp) & ~(kWp)) [**IV, VIII**] This occurs when p is both unjustified and has no weak justification.
24. (~(kJ~p) & ~(kW~p)) [**III, IV**] This is the dual of 23, where ~p is both unjustified and has no weak evidence.

Eight Distinct Categories of Justification

The reader may well wonder what is the point of this latest exercise. What seems to me worthwhile in this investigation is that it, upon analysis, yields a set of eight unique justificatory categories. Actually there are five categories, and then three more which are the duals of the first three, generated by replacing p with ~p. (The numbers in brackets relate to the connections on "The Cube of Justification" which correspond to this justificatory category.) The eight categories are:

I. p is completely justified, with no weak evidence for ~p. [(kJp) & ~(kJ~p) & ~(kWp) & ~(kW~p)] This category is a completely justified proposition p, which has unchallenged justification. When the other necessary conditions of belief and truth are present, this category constitutes (barring Gettier-like issues) **fallible knowledge**. If I should meet and recognize Fred on a street in Reno, Nevada, then I am completely justified in believing that Fred is in Reno at that time, and at that point I would have nothing that counts as even weak evidence to the contrary. [1, 5, 10, 15, 19] On the Cube this could be called the first "Butterfly of

Justification”, which consists of triangles on the left face and top face of the Cube. They are <1, 5, 19> and <5, 10, 15>. It looks as follows:



II. p is completely justified with some weak evidence for ~p. [(kJp) & ~(kJ~p) & ~(kWp) & (kW~p)] This category is also complete justification, despite the presence of some weak evidence sowing faint seeds of presumption in favor of ~p. This would be my situation when Vicki tells me that Fred is living in Tijuana, and I accept that information as justified despite the weak evidence of my memories, which indicate other places he might have been. [1, 4, 5, 11, 13, 19] This category is the Left Face of the Cube.

III. Both p and ~p are completely unjustified, despite some weak evidence for p. [~(kJp) & ~(kJ~p) & (kWp) & ~(kW~p)] The items in this category are completely unjustified propositions, which nevertheless have some presumption in favor of p. This category is illustrated by my relation to the proposition that Fred is in Dublin, Ireland. My memory that he had a Rhodes Fellowship to Trinity College provided some weak evidence for his being there now, but nevertheless I am still completely unjustified in believing that proposition or its negation [3, 7, 12, 17, 20, 24]. This is the first Moth of Weak Justification consisting of triangles on the bottom and right faces of the Cube. They are <3, 7, 17> and <3, 12, 20>.

IV. Both p and ~ p are completely unjustified and neither is weakly justified. This is the lowest state possible. [~(kJp) & ~(kJ~p) & ~(kWp) & ~(kW~p)] Category IV propositions are ones where one ought to withhold judgment since there is no evidence whatsoever in their behalf. They are as completely unjustified as one can get, in the privation sense. [7, 10, 19, 20, 23, 24] This category is a plane cutting through the middle of the Cube on a diagonal from the bottom front to the top back.

V. Both p and ~p are unjustified and yet each has some weak evidence in its favor. [~(kJp) & ~(kJ~p) & (kWp) & (kW~p)] I think this category describes my actual state with regard to any proposition about Fred’s current location, at least with regard to what I would call the positive evidence. The memories that pose possible locations for him seem to counterbalance one another, and suggest that any such proposition ought to be withheld (where withholding means ‘refraining from believing and refraining form disbelieving’.) [3, 4, 7, 8, 17, 18] This category is represented by the bottom square of the Cube of Justification.

Categories VI through VIII are the duals of I through III, with ~p replacing p. They are:

VI. [(kJ~p) & ~(kJp) & ~(kW~p) & ~(kWp)] **~p is completely justified, with no weak evidence for p**. [2, 6, 10, 16, 20] This category is called the second "Butterfly of Justification", which consists of two triangles on the right face and top face of the Cube. They are <6, 10, 16> and <2, 6, 20>. This category constitutes unchallenged complete justification for ~p, and is a dual of category **I**.

VII. [(kJ~p) & ~(kJp) & ~(kW~p) & (kWp)] **~p is completely justified, with some weak evidence for p.** [2, 3, 6, 12, 14, 20] This category is represented by the square which is the right face of the Cube of Justification. This is the dual of category **II**.

VIII. [~(kJ~p) & ~(kJp) & (kW~p) & ~(kWp)] **Both p and ~p are completely unjustified, despite some weak evidence for ~p**. [4, 7, 11, 18, 19, 23] This category is called the second Moth of Weak Justification. It consists of triangles on the bottom and on the left faces of the Cube. They are <4, 7, 18> and <4, 11, 19>. This final category is the dual of category **III**.

A Hierarchy of Five Levels or Strengths of Justification

The eight justificatory categories break down into four cases of being completely justified [I, II, VI, VII] and four cases of being completely unjustified [III, IV, V, VIII]. Within the eight categories there is a definite hierarchy of five distinct levels or strengths of justification.

1st: Categories **I** and **VI** are cases of a proposition completely justified, with no weak evidence for the negation of that proposition. This is the highest level of the five and can be thought of as unchallenged justification. It is not of course the highest possible level of justification, for that title would be reserved for propositions about which one is absolutely certain. On the Cube of Justification this level was represented by the two "Butterflies of Justification".

2nd: The second highest level of the five are categories **II** and **VII**, which are also cases of completely justified belief, but with the mitigating feature that there is some weak evidence for the negation of the proposition which is completely justified. This second level is represented respectively by the left and right faces of the Cube. These two levels exhaust the four categories that are concerned with propositions that are completely justified. The remaining three levels concern propositions that are completely unjustified.

3rd: The third and middle most level consists of categories **III** and **VIII**, which are a proposition and its negation, both of which are unjustified, but where there is nevertheless some weak justification for one of them. Because of this weak evidence there is some presumption in favor of that proposition and opposed to its negation, while both of them still lack strong justification and are thus unjustified. On the Cube this middle level is represented by the two Moths of Weak Justification.

4th: The second level from the bottom consists of category **V**, where a proposition and its negation are both unjustified, and yet each of them has some weak justification in its favor. This level is lower on the scale than the previous one because the two sets of weak justification are seen as counterbalancing one another. They thus create a situation in which the weak evidence for p undermines the weak evidence for ~p, and vice versa, leaving one in a position where it is appropriate to withhold belief from them both. This fourth level is represented by the bottom square of the Cube of Justification.

5th: The lowest level consists of category **IV**, wherein both a proposition and its negation are completely unjustified, and in which neither of them is weakly justified. This is the lowest possible level because it is the case of a proposition and its negation where there is no evidence whatsoever in behalf of either one of them. This level consists of an utter and total privation of justification. This lowest level of justification is represented on the Cube by the diagonal plane that cuts it in half from the bottom front to the top back.

What this hierarchy shows is that a system based on just the two relations, **J** of strong justification, and **W** of weak justification, generates five distinct levels of epistemic justification and the lack thereof ranging from unchallenged justification at the top to the total privation of justification at the bottom. *This is the main theoretical result of this investigation, beyond the work of conceptual clarification concerning being unjustified.*

The Cube of Justification & "Two Agent" Cases

There are three faces (and five other planes) of the Cube of Justification that are not represented in the hierarchy of five levels just discussed. They are: (#1) the front face [1, 2, 7, 9]; (#2) the top face [5, 9, 10, 12], (#3) the diagonal plane from the top front to bottom back [8, 9, 13, 14], (#4) the diagonal plane from the top left to the bottom right [3, 5, C1, C2], (#5) the diagonal plane from top right to the bottom left [6, 4, C3, C4], (#6) the diagonal plane from the back left vertical to the right front vertical; [2, 11, 16, 18], (#7) the diagonal plane from the front left vertical to the back right vertical [1, 12, 15, 17] (#8) the back face of the Cube [8, 10, 11, 12].

The top of the Cube and the front face of the Cube, because '(kJp)' and '(kJ~p)' are contraries, could each only hold in what I shall call a "Two Agent" Case, where each agent has distinct evidence completely justifying their belief in their respective proposition. In such a situation only one of the agents can be a knower, whereas the other only has a completely justified false belief.

The back of the Cube represents another "Two Agent" case where one agent has some weak evidence for p and none for ~p, whereas the second agent has some weak evidence for ~p and none for p. Because of the way '~(kWp)' and '~(kW~p)' have been defined the 'no evidence' condition could be replaced by instances of being completely justified. Again, when that situation holds one of the agents has a completely justified false belief.

A third "Two Agent" case is represented by the diagonal plane that cuts the Cube in half from the top front to the bottom back. In this case each agent has a completely justified belief for a proposition and some weak evidence for the negation of that proposition, while again only one of the agents can be a knower.

To come at this issue somewhat more systematically, it can be seen that the Cube of Justification represents eight planes that generate nine distinct categories of "Two Agent" cases. They form a slightly different hierarchy of levels than was discovered in the previous section. These "Two Agent" cases fall into four groups on two levels of complete justification. At the third level there are four groups, with mixed strength levels. At the fourth level there is one last "Two Agents" case. But then it is shown in category ten that "Single Agent" forms can easily be reinterpreted as "Two Agent" cases. There are no uniquely "Two Agent" cases at the bottom level, but there again reinterpretation of "Single Agent" cases is possible.

1st: Unchallenged Justification for Conflicting Propositions:

1. **(kJp) & ~(kJ~p)** & & **(sJ~p) & ~(sJp)** Here one agent has completely justified belief of p and the other agent (called 's') has a completely justified belief in ~p. This is the 1st level of the "Two Agent" cases and consists of unchallenged justification for conflicting propositions. This is the front face of the Cube. [1, 2, 7, 9] Again, the numerals in brackets name lines on the Cube of Justification.
2. **(kJp) & ~(kWp) & (sJ~p) & ~(sW~p)** This is similar to the case just considered in that agent k has a justified belief in p and agent s has a justified belief in ~p. It differs in that it spells out explicitly that each agent has no weak evidence for their justified belief. This is the top face of the Cube. [5, 6, 9, 10] A different interpretation of this square would have k having no weak evidence for ~p, and agent s having none for p.

2nd: "Two Agent" Complete Justification, with Caveats:

3. **(kJp) & (kW~p) & (sJ~p) & (sWp)** This is the "Two Agent" case at the second level, where each agent has a completely justified belief, but also has some weak evidence for the negation of the justified proposition. On the Cube this is the diagonal plane from the top front to the bottom back. [8, 9, 13, 14]
4. **(kJ~p) & (kWp) & (sJp) & (sW~p)** The dual of this situation would have exactly the same level, and would be represented by the very same diagonal plane. [8, 9, 13, 14]

3rd: Mixed Levels for "Two Agents":

Here we diverge from the pattern set in section "Summary". In that pattern the third level was the first in which both p and ~p were completely unjustified. At this third level, categories five through eight are combinations of a completely justified belief for one agent, with an unjustified belief for another agent, together with various permutations of the weak evidence.

5. **(kJp) & ~(kWp) & ~(sJp) & (sWp)** This is a mixed level case because the agent k has a completely justified belief in p, whereas p is unjustified for agent s, who nevertheless has weak evidence for p. On the Cube this is the diagonal from the top left to the bottom right. [3, 5, C1, C2] C1 and C2 are contradictory diagonals.
6. **(kJ~p) & ~(kW~p) & ~(sJ~p) & (sW~p)** This is just the dual of the previous case, where agent k is completely justified in believing ~p, agent s is unjustified concerning ~p, but nevertheless has weak justification for ~p. On the Cube this is the diagonal plane from the top right to the bottom left. [6, 4, C3. C4]
7. **(kJ~p) & ~(kWp) & ~(sJp) & (sW~p)** This is another mixed level case because agent k is completely justified in believing ~p and has no weak justification for p, while agent s is also unjustified in believing p, yet she too does have weak evidence for ~p. It is the conflict between J~p and W~p that makes this a Two Agent case. On the Cube this is a diagonal plane from the back left vertical to the front right vertical. [2, 11, 16, 18]
8. **(kJp) & ~(kW~p) & ~(sJ~p) & (sWp)** This is yet another mixed level case because agent k is completely justified in believing p, and while agent s is unjustified in believing ~p, she does have weak evidence for p. It is the conflict between Jp and Wp that makes this a "Two Agent" case. On the Cube this is a diagonal plane from the front left vertical to the back right vertical. This is dual of the previous situation. [1, 12, 15, 17] Groups seven and eight are just duals of one another and both agents have evidence for the same proposition, although at different degrees of justification.

At this third level categories five and eight are alike in being cases, for example, where Sherlock Holmes is completely justified in believing that the suspect is guilty, whereas Dr. Watson only has some weak evidence for that conclusion. In categories six and seven Holmes is completely justified in believing that the suspect is not guilty, where Dr. Watson again only has weak evidence for that verdict.. So, in sum, all four of these mixed level cases are at the same justificatory level.

4th: Near Bottom Level "Two Agent" Cases:

In these "Two Agent" cases we are clearly in the realm of the unjustified, with each of the agents having some evidence that the other agent lacks.

9. **(kWp) & ~(kW~p) & (sW~p) & ~(sWp)** As mentioned in the introduction to this section, this is a 4th level case where agent k has weak justification for p, and none for ~p, and agent s has weak justification for ~p, and none for p. Unlike the "Single Agent" case, there is no counterbalance of weak evidence in such a situation, and neither agent has any epistemic obligation to withhold judgment. This category, which is represented by the back of the

Cube of Justification, is the last of the pure "Two Agent" forms. [8, 10, 11, 12]

10. ~(kJp) & (kW~p) & ~(sJ~p) & (sWp) [2, 4, 7, 8] This "Two Agent" case is the bottom square of the Cube, and was previously met in section "Agent-Relative Evidence" as group **V** of the fourth level as a "Single Agent" Case. The point of including it here is to indicate that many "Single Agent" situations can be reinterpreted as "Two Agent" cases. The big difference is that in the "Single Agent" case the evidence is counterbalanced and as a result the agent was in a position where she ought to withhold judgment. In the "Two Agent" Case there is not this counterbalancing effect and each agent has some presumption in favor of their individual propositions.

5th: Bottom Level for "Two Agent" Cases:

There is no distinctly "Two Agents" form at this bottom level, although category **IV**: [~(kJp) & ~(kJ~p) & ~(kWp) & ~(kW~p)], which says: "Both p and ~p are completely unjustified and neither is weakly justified," could easily be interpreted as a "Two Agent" case. [7, 10, 19, 20] This concludes the review of the situations represented by The Cube of Justification.

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Chapter 5
Essay #5: "I Should Have Known It!" Gilbert Ryle and Poker Knowledge

Kenneth G. Lucey

Abstract "I Should Have Known It!" is a discussion of the role of different kinds of knowledge in the card game called "Texas Hold 'Em Poker." The essay builds upon Gilbert Ryle's distinction between "knowledge that" and "knowledge how". The essay begins with a scenario involving a potential "bad beat" jackpot, which often involves substantial amount of money as a prize. Poker knowledge, in the first instance, presupposes mastery of the vocabulary of the game, such as flop, board, turn, river, etc. Next is knowledge of the nine distinct rankings of various hands, and of what cards they consist of, which constitutes an *a priori* knowledge, once the various concepts have been acquired.

The single most important kind of poker knowledge is a kind of trained perception in which the player knows automatically at each step of the game how many ways there are in which the player's particular cards can be beat. This is called knowing *the best possible hand* at each stage of the flop, the turn and the river. The article exhibits five conditional principles the internalization of which allows the skilled player to know at a glance what the best possible winning hand is and what the probabilities are of the hand occurring. Knowing how to bet, check, or fold is the crucial kind of "knowledge how", but that skill presupposes a considerable amount of "knowledge that". The article draws upon Ryle's view of the role of trained *dispositions* in the enlightened conduct of a Texas Hold 'Em player. The point is made that much of poker knowledge is highly contextual, with very different strategies being played in games with different betting limits. The strategies of a 3–6 game are very different from those of a "no limit" game.

The role of luck is explored and the point is made that poker knowledge may or may not yield poker success, totally depending upon the luck of the draw. Drawing upon insights of Israel Scheffler a contrast is made between the horizontal activity of *knowing that*, versus the vertical spectrum of *knowledge how*. The spectrum here is one of competence, proficiency, and mastery. As with any kind of *know how* there is an open ended spectrum to poker *know how*, as there is with any advanced skill. The intelligence and sophistication in the application of poker skill are capable of unending continuous refinement.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_5

You're in a Texas Hold 'Em game with four Aces, and prior to the showdown you suspect that you're on the losing end of a "bad beat,"* making you the potential winner of 50 % of this casino's "bad beat" jackpot, that currently stands at $180,000. You're holding "pocket aces" as your "hole" cards, and the board is A♦, 9♦, 8♦, with 7♦ of diamonds on the "turn" and A♣ on the "river". The way the betting has gone you think you're up against two flushes, and you hope against hope that only one of them is a straight flush, putting you on the losing end of the "bad beat."

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*A "bad beat" jackpot is (usually) a large sum of money that a Casino pays differentially to all the players at a table, when four deuces (or some higher hand) is beaten by a yet higher hand. Casinos differ in their rules, with some requiring the player to have one key card in the hole, whereas others require two hole cards to be involved.

As it turns out, your four Aces were worthless. Each of your two opponents has a straight flush. One is holding J♦-10 ♦, which makes him the winner. The other is holding 6♦-5♦ of diamonds, which makes him the "bad beat" loser, and thus the recipient of half the jackpot. At this casino the other players at the table share 10 % of the jackpot, so your consolation prize is $2,250, which is not much in relation to what you thought you were going to win, but it nevertheless puts you ahead for the day.

Still, it's understandable that you're disappointed. You couldn't possibly have assumed that you'd be up against two straight flushes. Or should you have known it? What can you claim to know in such a situation? Is it possible to have a kind of "poker knowledge" of the possibilities, of a sort that would have tempered your hopes in this case?

To answer our questions about "poker knowledge," we first need to talk about the various sorts of knowledge in general. The British philosopher Gilbert Ryle (1900–1976) [1] emphasized the philosophical distinction between "knowing that" and "knowing how." He writes, "Philosophers have not done justice to the distinction which is quite familiar to all of us between knowing that something is the case and knowing how to do something." The former involves knowing the truth of some proposition where the latter involves a learned skill – like riding a bike or playing the piano.

Poker knowledge involves both knowing how and knowing that, and skilled poker play involves knowledge of both sorts. Any thoughtful poker player could benefit by being clear about Ryle's distinction between knowing that something is true, and then knowing how to follow through on it.

Knowledge "That" and Knowledge "How"

To begin with, any poker player must understand the fundamental concepts that constitute the game (in Ryle's lingo, the "knowing that" something is true). In other words, one kind of poker knowledge simply consists of correctly understanding the vocabulary of poker: flop, board, turn, river, showdown, and so on. The next step is knowing the various hand rankings: high card, pair, two pair, three of a kind, straight, flush, four of a kind, straight flush, royal flush. In the jargon of the philosopher such knowledge is *a priori* knowledge in the sense that once the concepts have been acquired, the statement is necessarily true (for example, that a flush beats a straight).

Without having to think about it an experienced poker player knows that any flush beats any simple straight, and that any full house beats any simple flush. Likewise, any four of a kind beats any full house. The knowledgeable player just looks at his hole cards, and after the flop can tell what the best possible winning hand would be, and how many possible ways there are that he can be beat. For example, suppose I am holding a pair of aces ("pocket rockets") as my hole cards, and the flop comes 7♦, 8♣, 9♦. The skilled poker player knows that there are nine possible combination of cards that are beating him at this point, plus a "diamond flush peril" if another diamond appears on the turn and/or the river.

The single most important kind of poker knowledge is this kind of trained perception. It is something that the poker novice hardly notices at all, and something that the experienced poker player on occasion forgets about at his or her financial peril. Properly done it becomes, with experience, almost automatic. In a phrase, it is *knowing the best possible hand* given the flop, the turn, or the river. This sort of poker knowledge helps one look at the community cards and at a glance be able to say what the best possible winning hand could be. It requires the internalization of some simple principles, such as the following five:

1. If there is a pair on the board, then the winning hand could be either a set of three such, a full house, or four of a kind.
2. If there are three cards of the same suit, and no pair on the board the winning hand could be a straight flush or a simple flush.
3. If there are three cards within a five card span and no pair on the board, and no three cards of the same suit, then the winning hand could be a simple straight. A simple test here is that unless there is a five, or a ten, either in your hand or on the board, then there is no way you could have a straight. For example, employing this sort of poker knowledge the experienced poker player looks at a board of 3, 8, 9, A, J and just knows that the winning hole cards could consist of a 7-10, or 10-Q. Many a poker player caught up in the infatuation with his hole cards of A-J and his respectable two pair, has fallen victim to the overlooked possibility of a winning straight.
4. If there is not a pair on the board, and not three cards of the same suit, and not three cards within a five card span, then the winning hand could be either "trips" (assuming that some player has a pocket pair in the hole), or two pair, one of

which matches the highest card on the board, or some lower two pair built from the under cards on the board.

5. If there is no full house, no flush, no straight, no set, and no two pair, then the winning hand is either the highest single pair, or at worst, the highest card of all of the hands still in the pot.

The internalization of these conditionals allows the experienced poker player to simply know where his cards place him in relation to the various ways he or she can be beat. Such a player doesn't have to think through the possibilities, any more than the experienced golfer has to think through the mechanics of her golf swing while teeing off. For example, on the flop the experienced poker player automatically notes if there are two cards of the same suit (say diamonds), and registers the "diamond threat," for if another diamond appears on the turn or the river, a flush is a distinct possibility threatening any straight, three of kind, or one or two pairs that the player has in his own hand. On the other hand, suppose the player already has two diamonds as his own hole cards. In this case the player is hoping for that third diamond to appear on the turn or on the river. Yet the player also knows that the approximate odds are 75 % against a diamond appearing on the turn and the same percentage against on the river. In other words the odds are distinctly against the player completing her flush. And, of course, even if she does complete her flush, she knows that unless she has "the nuts" someone else may have a yet higher flush.

But just because you know that a flush can beat a pair of aces, doesn't mean you should suddenly save up $10,000 and head off to Vegas for the World Series of Poker tournament. The most difficult thing to learn is the "knowledge how" to play particular hands given what you know. This is what separates the Phil Iveys from the Joe Blows. For example, if you're on the river with two pair, and you can see that the board allows for two possible straights, as well as a possible flush, you should know that raising is not prudent given all the possible ways in which you can be beat. Knowing how to bet (as well as how to check and how to fold) in the appropriate circumstances is a crucial kind of "knowledge how," that presupposes a considerable amount of "knowledge that."

Getting "Ryled Up"

Although Ryle worked hard to discriminate between different kinds of knowledge, he was also quick to counteract the intellectualist prejudice of such theories. Certain states of mind, Ryle argued, can best be understood dispositionally. For example, the mental state of believing is not best understood as a conscious entertaining of specific thoughts or propositions. It is better understood as being *disposed* to say or do various things (including entertaining thoughts). In a similar fashion I would like to emphasize that inescapable role of dispositions in the enlightened conduct of the Texas Hold 'Em player.

For example, in a low limit game with, say, a three-six betting structure, some people will stay to see the flop with any hole cards no matter how bad. Suppose your hole cards are a 2-9 (affectionately known as a “Montana banana”, on the grounds that anyone lucky enough to win with those cards could grow bananas in Montana). If anyone stays to see the flop with 2-9 enough times, in the very long run, a flop will come 9-9-2, thereby giving you a very strong full house. Here is where the “knowledge that” versus “knowledge how” distinction comes into play. The “knowledge that” in question is knowing that there is a very low percentage chance of your 2-9 hole cards winning. This “knowledge that” is worthless to you unless it is accompanied by a corresponding “knowledge how” to play those cards. And such “knowledge how” consists in part in an ongoing disposition to discard those cards and not pay to see the flop with them.

As we’ve noted, poker knowledge plays very different roles in low limit games and no-limit games. For example, in a low limit game a pair of pocket Aces may be of marginal value because so many players are staying to the river on every hand. By contrast in a no limit game the same pocket Aces may generate an “all-in” bet, which instantly cuts the competition down to one caller – if that. So, the moral of this story is that poker knowledge is highly contextual in that the knowledge of the value of different combinations remarkably varies the appropriate betting. One’s dispositions must be developed accordingly.

The poker player who knows how to play her 2-9 hole cards, exhibits that knowledge by her regular disposition not to waste her money by hanging around to see the flop. Of course, we all know she’ll be bitterly disappointed at not having stayed on the rare occasion when the flop makes those cards worthwhile. This finally brings us to the role of luck in poker knowledge.

It is conventional wisdom that knowledge is power. In the case of Texas Hold ‘Em Poker it is absolutely true that poker knowledge is a form of poker power. Of course, poker power is not the same thing as poker success. Success at poker essentially involves the element of luck. With a little bit of bad luck, excellent hole cards lose to low hole cards due to low cards on the flop. Anyone who has had his A-K lose to an A-2 knows the role of luck in poker. Nobody likes to go bust by getting bad cards and then playing them badly. This is where poker knowledge enters the scene. Poker knowledge, in the sense of the dispositions that constitute “knowledge how,” permits one to avoid playing badly and experiencing the misery that attends knowing that one has done so. The game of poker has an amazing capacity to prove wrong anyone who thinks in advance of a flop that they know which cards are worth playing. We may think we know that “rags” aren’t worth staying with, but nothing stings quite like discarding hole cards which turn out to be exactly what is needed for a set, or a full house, or a lucky win. The phenomenon of luck sets serious limits to the scope of poker knowledge. Nevertheless, it is the combination of poker “knowledge that” and the set of dispositions that constitute the “knowledge how” to exercise that knowledge, that ultimately distinguishes the expert player from the beginner.

So What?

The critical reader who has followed my discussion of *knowing how* and *knowing that* may find himself asking “So what?” at this point of the essay. Such a reader might say: “All the author is saying is that you have to know the rules and how to apply them. How is this supposed to make me think differently about poker?” The quick answer is that corresponding to the dispositional activity that constitutes *knowing how* there is a procedural process of “*learning to*”. In order to *know how* to play poker one has to *learn how*, which is a matter of acquiring the more or less complex skills and techniques which are the behavioral underpinning of *knowing how*. This brings me to my final point about the distinction between these two kinds of knowledge. *Knowing that* is in a certain sense a horizontal activity, in that once a proposition is known to be true, that is all there is to it, although one can explore what further propositions entail or are entailed by the known proposition. By contrast, what is important about the skills and techniques that enter into “knowing how” are a vertical activity. Israel Scheffler in his Conditions of Knowledge ([2], p. 96) has put the matter this way: “knowing how to do something is one thing, knowing how to do it well is, in general, another, and doing it brilliantly is still a third, which lies beyond the scope of *knowing how* altogether . . .”. The idea here is that *knowing how* forms a vertical spectrum of evaluation some points of which are competence, proficiency, and mastery. Standards of achievement with regard to *knowing how* to play poker are, fundamentally open-ended in the case of such an advanced skill. The advanced poker player doesn’t just know the rules of the game and the various strategies of play. What he has in addition is an intelligence and sophistication in the application of those rules, which is capable of continuous refinement. Just as there is no maximum skill level in knowing how to play the piano, it is likewise the case that *know how* in poker play is likewise capable of endless refinement. And realizing the truth of that is the ultimate answer to the “So What?” question.

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Part II
Philosophy of Religion

Chapter 6
Essay #6: An Agnostic Argument

Kenneth G. Lucey

Abstract This essay defends the theological agnostic's view that one ought to withhold judgment concerning God's existence, by offering a justification for that belief. A distinction is made between a strong agnostic, who believes it is impossible to know that God exists, and a weak agnostic, who just takes it to be a contingent fact about herself that she does not know whether or not God exists. The concept of God being used in this paper is that expressed by J.N. Findlay and Alvin Plantinga, who understand God as possessing its various qualities *in some necessary manner*. The paper proceeds by constructing an antinomy, according to which it follows from innocuous assertions both *that God does exist* and t*hat God does not exist*. Two distinct arguments are offered, with one deriving the existence of God, and the other deriving the nonexistence of God. Having described both arguments, the agnostic appeals to the Pyrrhonistic epistemic principle which says that if a proposition is counterbalanced, then with regard to that proposition *one ought to withhold belief*.

The innocuous premise in the proof of God's nonexistence is: that man has landed on the moon does not logically imply that God exists. The corresponding innocuous premise in the proof of God's existence is: that God exists does not logically imply that man has landed on Uranus. These two premises are combined with the following two propositions that are used to capture the necessitarian concept of God, viz. (1) If God exists then it is necessarily true that God exists, and (2) If God does not exist then it is necessarily true that God does not exist. The concept of entailment employed is the likes of C.I. Lewis's strict implication. The gist of this essay is the notion that if it is possible to prove both that God exists and prove that God does not exist by strictly analogous derivations, then the Pyrrhonistic counter-balancing has been achieved, which leaves the agnostic withholding judgment about whether or not God exists.

This essay defends the theological agnostic's view that one ought to withhold judgment concerning God's existence. The term 'agnostic' is here used for the weak position of the individual who, if sincerely reporting his beliefs, would say

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_6

that he does not *know* whether or not God exists. He just takes it to be a contingent fact about himself that he lacks that knowledge. By contrast, a strong agnostic would report that he likewise does not have that knowledge, but that in addition he believes that it is impossible to know whether or not God exists.

A further distinction is possible, namely between the literate agnostic and the agnostic by default. The agnostic by default is the individual who lacks theological knowledge because he does not possess the appropriate concept. I shall be concerned just with the weak agnostic of the literate sort. The main purpose of this paper is to offer a justification for the weak agnostic's belief that he lacks knowledge of God's existence.

The agnostic being considered does have a distinct concept of God. There are, of course, different notions of God. I shall limit my attention in the following to the agnostic who has a concept of God as a necessary being. This concept was well expressed by J.N. Findlay in his 1948 Mind article "Can God's Existence be Disproved?" as follows:

> Not only is it contrary to the demands and claims inherent in religious attitudes that their object should exist 'accidentally': it is also contrary to those demands that it should *possess its various excellences* in some merely adventitious or contingent manner. It would be quite unsatisfactory from the religious standpoint, if an object merely *happened* to be wise, good, powerful and so forth, even to a superlative degree, and if other beings had, *as a mere matter of fact*, derived their excellences from this single source. . . . And so we are led on irresistibly, by the demands inherent in religious reverences, to hold that an adequate object of our worship must possess its various qualities *in some necessary manner*.[1]

Findlay was employing this concept as an atheist. An example of a contemporary theist who shares this concept of God, would be Alvin Plantinga, in Chapter X of his book *The Nature of Necessity*.[2]

For simplicity, I shall distill this aspect of the agnostic's concept of God down to his acceptance of the following two propositions, viz.:

(1) If God exists then it is necessarily true that God exists.
(2) If God does not exist then it is necessarily true that God does not exist.

There is, of course, no inconsistency in the agnostic's accepting both of these conditionals, while at the same time denying knowledge of the truth or falsity of either of their antecedents. Given that he accepts that either God does or God does not exist, it will follow from (1) and (2) that our agnostic employs a concept of God according to which either it is necessarily true that God exists or it is necessarily true that God does not exist.

The reason for the acceptance of propositions (1) and (2) by theist, agnostic and atheist alike is that they do not believe that it is just an accident of history whether or not God exists. It is believed not to be just a contingent fact that God exists, if He

[1] J.N. Findlay, "Can God's Existence Be Disproved?" Mind (1948), and in Alvin Plantinga (ed.) The Ontological Argument (New York, 1965), pp. 111–122; quoted from pp. 117–118.
[2] Alvin Plantinga, The Nature of Necessity (Oxford, 1974), pp. 197–221.

does, or that He doesn't exist, if in fact He doesn't exist. They would re-express this point by saying that either God exists in every possible world, or he exists in no possible world. But it is found repugnant that He might exist in some possible worlds, while not existing in others. This is not, of course, a uniquely contemporary view.

Yet there is a hidden difficulty in the acceptance of this concept of God. The difficulty arises when one comes to make assertions about what is and what is not logically implied by the proposition that God exists, and by the proposition that God does not exist. The specific problem is that our ordinary intuition about what is *not* logically implied by those propositions leads directly to an antinomy. The antinomy is that, given the assumption of the concept of God just outlined, it follows directly from these seemingly innocuous assertions about entailments, *that God does not exist,* and from other equally innocuous ones, *that God does exist.*

The difficulty may best be seen by considering the entailment relations that hold among a group of propositions. By 'entailment' is meant the likes of C. I. Lewis' strict implication, or the necessity of the conditional. Consider list (A) and list (B), each of which contains five propositions.

A		**B**	
(G)	God exists.	(M)	Man has landed on the moon.
(A1)	At least one god exists	(B1)	All gods exist.
(A2)	Something exists	(B2)	Both God and Satan exist.
(A3)	Either something exists or man has landed on the moon.	(B3)	Something exists and either nothing exists or God exists.
(U)	Man has landed on Uranus	(G)	God exists.

If asked to say what entailment or logical implication relations hold between (G) and the rest of the propositions of list **A**, the agnostic would, no doubt, say that (G) entails (A1), (A2), and (A3), but that it does not entail (U). Likewise, his ordinary intuitions concerning list **B** would be that (B1), (B2), and (B3) each entails (G) but that (M) does not logically imply (G). In place of proposition (U) and (M) one could just as well have taken any number of other examples, such as that President Washington was assassinated (for U), and that Nazis committed human atrocities (for M). The same intuitions about implications would hold for these examples.

The importance of these sorts of intuitions *cannot* be overestimated. Our ability to articulate what is and what is not logically implied by a proposition such as that God exists goes to the very core of both systematic theology and the philosophy of religion. For future reference I shall refer to these two failures of entailment as follows:

(3) That God exists does not logically imply that man has landed on Uranus.
(4) That man has landed on the moon does not logically imply that God exists.

Baldly state, the previously mentioned antinomy consists in the fact that propositions (1) and (4) logically imply that God does not exist (**~G**); whereas, propositions (2) and (3) logically imply that God does exist (**G**). That is to say, both of the following are formally valid arguments:

(1) If God exists then it is necessarily true that God exists.
(4) That man has landed on the moon does not logically imply that God exists.

Therefore, (**~G**): God does not exist.

. . . .

(2) If God does not exist then it is necessarily true that God does not exist.
(3) That God exists does not logically imply that man has landed on Uranus.

Therefore, (**G**): God does exist.

The proof of the validity of the first argument is as follows:

1. If God exists then it necessarily true that god exists.
2. That man has landed on the moon does not logically imply that God exists.
3. It is not necessarily true that if man has landed on the moon then God exists. (2, Definition of logical implication)
4. It is possible that it is false that if man has landed on the moon then God exists. (3, Modal equivalence)
5. It is possible that both man has landed on the moon and God does *not* exist.

(Definition of the Negated Conditional)

6. It is possible that man has landed on the moon and it is possible that God does not exist. (Distributivity of possibility)
7. It is possible that God does not exist. (6, Simplification)
8. If it is not necessarily true that God exists then God does *not* exist. (1, Transposition)
9. If it is possible that God does *not* exist then God does *not* exist. (8, Modal Equivalence)

Therefore

10. God does *not* exist. (9, 7 Modus Ponens)

The crucial fact that is brought out by this proof is that in granting the truth of premise two, we are thereby committed to the possibility that God does not exist, as is made evident by line seven of the derivation.

As the reader may check for himself there is a strictly analogous proof using exactly the same pattern of inferences that validly yields the conclusion that God *does* exist. The crucial feature of the second proof comes out in its seventh line where it is made obvious that in granting the truth of its second premise (viz. that God exists does not logically imply that man has landed on Uranus) one has thereby committed himself to the possibility that God *does* exist. And it is a direct consequence of the first premise of that argument that if it is possible that God exists then it is *true* that God does exist.

So now we have the full antinomy before us. The agnostic's situation is that his intuitions concerning the entailment relations that do not hold in columns A and B, together with his concept of God as a necessary being, logically commits him both to the conclusion that God exists, and to the conclusion that God does not exist. Thus, with regard to each of these propositions the agnostic is counterbalanced in that he has a proof both of it and of its negation.

At this point the agnostic appeals to the Pyrrhonistic epistemic principle which says that if a proposition is counterbalanced, then with regard to that proposition *one ought to withhold belief*.[3] So the agnostic conclusion of this paper is that there is justification for claiming that one ought to both refrain from believing that God exists and refrain from believing that God does not exist.

[3] Roderick M. Chisholm, Theory of Knowledge Second Edition (Englewood Cliffs, N.J., 1977), p. 10 fn. 6.

Chapter 7
"Lucey's Agnosticism: The Believer's Reply" by Tomis Kapitan

Kenneth G. Lucey

Abstract Kapitan characterized Lucey's paper as presenting "an apparent *antinomy*" concerning the truth-value of the proposition that God exists. Kapitan challenges Lucey's conclusion that "one ought to refrain from believing that God exists and refrain from believing that God does not exist." Kapitan's claim is that the anti-agnostic can deflate Lucey's antinomy by noting that the view of logical implication, drawn from C.I. Lewis, can be rejected, and replaced by the alternative provided by an Anderson & Belnap style *relevance conditional*. Building upon an assumption of the law of excluded middle, Kapitan concludes that clearly one of Lucey's argument is unsound, although noting that Lucey can readily agree.

The middle section of Kaplan's critique is his case on behalf of the rationally-minded Believer. His claim is that to establish an antinomy one must establish that neither the proposition nor its negation can claim superiority with respect to the sum total of evidence that can be brought to bear on the issue. This would require evaluating all the multitude of arguments for the existence of God and all of those for the nonexistence of God and "Patently, Lucey has not done this." Kapitan concluded that "Lucey's argument leaves the theistic debate exactly where it found it."

In "An Agnostic Argument" Kenneth Lucey has presented an apparent *antinomy* concerning the truth-value of the proposition that God exists, arguing that "there is justification for claiming that one ought to both refrain from believing that God exists and refrain from believing that God does not exist."[1] Because of the particular view of logical implication that Lucey adopts, however, there is a convenient strategy that the anti-agnostic can utilize in deflating this antinomy.

Lucey's argument proceeds from two premises that have received wide acceptance in the current theistic debate:

(1) If God exists then it is necessarily true that God exists.
(2) If God does not exist then it is necessarily true that God does not exist.

[1] Kenneth G. Lucey, "An Agnostic Argument," International Journal for Philosophy of Religion 14, No. 4 (1983), 249–252. & previous essay above.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_7

He then advances two further claims:

(3) that God exists does not logically imply that man has landed on Uranus,
and (4) that man has landed on the moon does not logically imply that God exists, *both* of which, he claims, are grounded upon "ordinary intuitions" about what is and is not logically implied by a proposition such as *that God exists*.

It is important to understand that, for Lucey, logical implication (entailment) is construed as "C.I. Lewis' strict implication, or the necessity of the conditional." As such, he is able to derive from (1) and (4) the proposition *that God does not exist* by standardly accepted modal principles, and, by a strictly analogous proof, from (2) and (3) the proposition *that God exists*. Assuming that both arguments are equally plausible we arrive at an antinomy.

The validity of Lucey's inferences is dependent upon certain properties of the strict conditional and modal operators. First, if logical implication is expressed by the strict conditional '$\rightarrow$' then since $\sim(A \rightarrow B) \rightarrow \sim \Box (A \supset B)$ and $\sim\Box (A \supset B) \rightarrow \Diamond (A \& \sim B)$ if follows from (4) that

(5) it is possible that both man has landed on the moon and God does not exist.

A move of this sort would not be permitted on certain other construals of logical implication, for instance, that preferred by the relevance logicians where $\sim (A \rightarrow B) \rightarrow \sim \Box (A \supset B)$ is not sanctioned if '$\rightarrow$' expressed the relevance conditional.[2] It is plain, therefore, that such an interpretation of (3) and (4) cannot be adopted by Lucey. Second, the use of (1) with (5) to derive the atheistic conclusion requires that the modal terms in both statements express the *same type* of modality. That is, if the modality in (5) is that of *logical* possibility, as it presumably is, then the necessity of (1) must be logical necessity, otherwise Lucey would not be able to use *modus ponens* as he does in arriving at his conclusion *that God does not exist*. Similarly, if the modality in (1) is of another variety the same would have to hold for the modality in (5). But since we are speaking of *logical* implication in (4) we are bound to view the modality in (5) and, thus, in (1), as logical.

By excluded middle we can assume that at least one of the following holds:

(6) God exists.
(7) God does not exist.

So, by (1) and (2), the same can be said of the pair:

(8) *That God exists* is (logically) necessarily true.
(9) *That God does not exist* is (logically) necessarily true.

[2] See, for example, A.R. Anderson and N. D. Belnap, Jr., Entailment (Princeton: Princeton University Press, 1975). A prominent feature of relevance systems is a denial that $(p \& \sim p) \rightarrow q$ is a valid form where '$\rightarrow$' expresses entailment (logical implication). Thus, there are propositions A and B such that $\sim((A \& \sim A) \rightarrow B)$ is true. Because of this, the relevance logicians must deny that $\sim((A \& \sim A) \rightarrow B)$ logically implies $\Diamond ((A \& \sim A) \& \sim B)$ in order to avoid the undesirable $\Diamond (A \& \sim A)$.

Now if either (8) or (9) is true and logical implication is expressed by the strict conditional then not both (3) and (4) are true. For if (8) is true then (4) is false, since a (logically) necessary truth is logically implied by any other proposition; so the atheistic argument is unsound. On the other hand, if (9) holds then (3) is false, since *that God exists* would then be a necessary falsehood logically implying every other proposition. Clearly, one of Lucey’s arguments is unsound.

With this Lucey can readily agree; he does not, after all, claim that both (3) and (4) *are* true, only that both are equally grounded upon our intuitions about logical implications. The *antinomy* exists because the premises of the atheistic argument are no more and no less plausible than those of the theistic argument, and the mere fact that one of those argument is unsound in no way resolves the paradox.

The rationally-minded Believer need not be shackled by such reasoning. To establish an antinomy is not sufficient to construct two equally plausible arguments one which supports a proposition and the other of which yields its negation. What is essential is that neither the proposition nor its negation can claim superiority with respect to the *sum total of evidence* that can be brought to bear on the issue.[3] Thus, if there are independent grounds for either (6) or (7) then there are grounds for rejecting (3) or for rejecting (4) – despite what our “ordinary intuitions” might be – and these grounds could be appealed to in adjudicating between the two poles of the supposed antinomy.

To defend the claim that both (3) and (4) are equally plausible in light of all the evidence available to us would require undermining all other arguments for (6) and for (7), or, more exactly, demonstrating that the evidential support for (6) is precisely equal to that for (7). Patently, Lucey has not done this; he has not shown that either (6) or (7) cannot be based upon independent grounds which *outweigh* the intuitions supporting (3) and (4).

Accordingly, the theist who accepts (1) may respond by bringing forth his favorite arguments for (6) and, thereby, for (8) and the denial of (4), while the atheist who endorses (2) can appeal to his reasons for (7), hence, for (9) and the denial of (3). Both have the means to bounce the ball back into the agnostic’s court

[3] Cf., Immanuel Kant, Critique of Pure Reason (London: Macmillan, 1964), translated by Norman Kemp Smith, where we find: “If thetic be the name for any body of dogmatic doctrines, antithetic may be taken as meaning, not dogmatic assertions of the opposite, but the conflict of the doctrines of seemingly dogmatic knowledge (*thesis cum antithesis*) in which no assertion can establish superiority over another” (A420/B448). The modality expressed by ‘can’ here suggests an underlying generalization concerning all available grounds for either side of the antithetic, a point further underscored by Kant when he writes that the opposition constituting an antinomy is “but a natural and unavoidable illusion, which even after it has ceased to beguile still continues to delude though not to deceive us, and which though thus capable of being rendered harmless *can never be eradicated*” (A422/B450), my emphasis.) It is not viable, therefore, to erect a would-be antinomy in a vacuum, immune from appeals to our background knowledge.

and, for the meantime, rest assured that they have swept away this particular threat of antinomy.[4]

It is precisely Lucey's understanding of logical implication that paves the way for this reply to his argument. Alternatively, one could attempt to base (3) and (4) upon other theoretical views concerning logical implication, logical truth or logical necessity. Indeed, the relevance logician can readily defend both (3) and (4) on the grounds that there is a conspicuous lack of relevance between the antecedents and consequents of the negated entailments. But the appeal to relevance, as already indicated, is not available to one who supports the inference patterns underlying Lucey's reasoning. Perhaps some other gambit could be invoked, e.g., intuitionism, in order to avoid acceptance of either (6) or (7). But this could be sustained only by undermining all efforts to constructively prove these propositions, an order that Lucey has not fulfilled. An outright insistence that (3) and (4) are just obvious truths about logical implications, finally, must be counterbalanced by the observation that both (1) and (2), and for that matter (8) and (9), are *not* obvious as truths of logic – recalling that the modalities contained in these latter statements must be *logical* if Lucey's inferences are valid. The anti-agnostic can be just as stubborn in his appeal to intuitions.

Perhaps there is yet another construal of logical implication which would provide the material needed to preserve the force of this skeptical antinomy. For the present, the Believer – whether theist or atheist – can remain at ease, for Lucey's argument leaves the theistic debate exactly where it found it.

From International Journal for Philosophy of Religion 18: 87–90 (1985).

[4] No doubt there are theists who would reject (4) on the grounds that since God is the ultimate cause or ground of all else then any truth would imply – even logically imply – the proposition that God exists. For an alternative point of view I refer the reader to my "Can God Make Up His Mind?" International Journal for Philosophy of Religion 15 (1984), 37–47, in which reasons are advanced for (7).

Chapter 8
Essay #7: Theism, Necessity and Invalidity

Kenneth G. Lucey

Abstract This essay deals with the *necessitarian* concept of God. It is a response to the widespread acceptance in the second half of the twentieth century of the modalities of necessity and possibility. This was primarily due to the "possible world" semantics developed by Saul Kripke and others, and to the scholarship of Alvin Plantinga. The contention of this paper is that when a modal concept of God is adopted, some of the theist's crucial ordinary intuitions concerning which arguments are successful misfire. The main thesis of the essay is that the theist employing such a modal concept of God cannot hold any argument for God's existence to be invalid on pain of logically implying the denial of theism.

The modal concept of God involves the following two conditionals: (1) If God exists, then necessarily God exists, and (2) If God does not exist, then necessarily God does not exist. In other words either God exists in every possible world, including the actual world, or God exists in no possible world whatsoever. That is, either it is necessarily true that God exists, or it is necessarily true that God does not exist.

The core of the essay concerns the argument: 1. Evil exists. Hence, 2. God exists. Since the theist is committed to the truth of both the premise and the conclusion, the soundness of the argument turns solely upon the validity or the invalidity of the argument. The thesis of the essay is that contrary to one's ordinary intuitions, *the argument cannot be rejected as invalid*. The theist cannot endorse the proposition which says: It is not the case that the existence of evil entails the existence of God. This result is demonstrated with a ten step argument, the conclusion of which is the proposition *that God does not exist*. The derivation definitely shows that the theist holding the modal concept of God cannot reject any argument for God's existence as invalid on pain of implying the truth of atheism. The theist employing the modal concept of God must hold that: "*Evil exist. / hence God exists*." is a sound argument.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_8

> A close examination of the validity of the proofs adduced to support any proposition, has ever been allowed to be the only sure way of attaining truth . . . (Percy Bysshe Shelley, The Necessity of Atheism, 1811)

During the second half of the twentieth century the modalities of necessity and possibility went from being slightly disreputable to having widespread acceptance. The possible worlds semantics for these modalities has been accompanied by several sophisticated defenses of a modal concept of God. (If the word weren't so ugly I would call it the *necessitarian* concept of God.) This note will demonstrate a significant unremarked feature of the modal concept of God. It is that the theist employing this concept cannot hold any argument for God's existence to be invalid, on pain of logically implying the denial of theism.[1]

The modal concept of God is a concept according to which the following two conditionals are held to be true, namely:

1. If God exists, then necessarily God exists.
2. If God does not exist, then necessarily God does not exist.

The first conditional is saying that if God exists in the actual world, then God exists in every possible world. The second says that if God does not exist in the actual world, then there is no possible world in which God exists. Theist, atheist and agnostic alike can embrace the truth of both of these conditionals while, of course, disagreeing about which antecedent is true or whether either can be true.

Every argument is either valid or invalid, and no argument is both valid and invalid. These are the standard operating assumptions made in any discussion of arguments concerning the existence or nonexistence of God. The main contention of this paper is that when a modal concept of God is adopted, some of the theist's crucial ordinary intuitions concerning which argument are successful misfire.

Are there any arguments which have the conclusion **G**, that God exists, and which the theist would normally consider invalid? Here our ordinary philosophical intuitions lead us to the answer: "Sure – lots of them." Usually one would think that any premise or set of premises which did not logically imply the truth of **G**, would for that reason be considered an invalid argument. But here is where our ordinary beliefs and the modal concept of God come into conflict.

The theist and the atheist differ with regard to the truth of the proposition **G**, that God exists, and **~G**, that God does not exist. They differ with regard to these propositions in that each believes true a proposition, which the other believes false. But more than mere truth and falsity are at stake here. For on the modal concept of

[1] In particular the writings of Alvin Plantinga have employed such a concept of God. Cf. *The Nature of Necessity* (Oxford University Press, 1974, Chapter X, "God and Necessity") [2], *God, Freedom and Evil* (Harper & Row, 1974) [3]; and *Does God Have a Nature*? (Marquette University Press, 1980) [4]. Various other writers on the philosophy of religion have embraced the modal concept of God, with some arguing a theist position and others arguing the atheist viewpoint. In "An Agnostic Argument" (see the previous essay) I have employed the modal concept of a necessary God in justification of the agnostic view that one ought to withhold judgment concerning the existence of God.

God, the theist holds not only that **G** is true, but that it is necessarily true. Whereas the atheist holds that not only is it false that God exists, but also it is necessarily false. It is this element of necessity which causes problems for our ordinary beliefs about which arguments are invalid.

To say that an argument of the form **p / hence q** is valid is to say that it is *logically impossible* for p to be true while q is false. The theist wants to be able to say that any argument for the existence of God in which the premise or premises do not logically imply the truth of **G** would thereby be invalid. But here is the rub. On the modal concept of God, according to which the proposition **G**, if true, is necessarily true, it follows that every proposition whatsoever, whether true or false, logically implies the truth of **G**. Every proposition logically implies a necessary truth (which is what the theist considers **G**). In any instance of an argument with the form **p / hence, G**, **p** must logically imply **G**, because it cannot be (on the theist's view) that it is logically possible that **p** is true and **G** is false. This because the theist holds that it is logically impossible that **G** can be false.

Standard philosophical terminology says that an argument is sound just in case it is both valid and has only true premises, and that an argument is unsound if it is either invalid or has even one false premise. The theist's usual philosophical intuition would hold that an argument such as:

1. Evil exists.
Hence 2. God exists

is unsound because it is invalid. The traditional theist is committed to the truth of both the premise and the conclusion of this argument, and thus the only way in which the argument can be unsound is by being invalid. But only at his peril can the theist with a modal concept of God assess this argument as unsound because invalid. For the assertion that *evil exists* does not logically imply that *God exists*, leads directly to the conclusion that *God does not exist*.

If we let **G** stand for the proposition *that God exists* and **E** for the proposition *that Evil exists*, then the assertion of the invalidity of the above argument amounts (to the denial that the premise logically implies the conclusion, i.e., $\sim\mathbf{E} \rightarrow \mathbf{G}$). In the following '$\rightarrow$' stands for logically implies and '$\supset$' for the material conditional. When this is conjoined with the modal concept of God, i.e., with ($\mathbf{G} \supset \Box\, \mathbf{G}$), it can be shown that from these two premises it follows that $\sim\mathbf{G}$, *God does not exist*. The derivation proceeds as follows:

1.	$(\mathbf{G} \supset \Box\, \mathbf{G})$	
2.	$\sim(\mathbf{E} \rightarrow \mathbf{G})$	
3.	$\sim \Box\, (\mathbf{E} \supset \mathbf{G})$	2. Definition of Logical Implication
4.	$\Diamond \sim (\mathbf{E} \supset \mathbf{G})$	3. Modal Equivalence
5	$\Diamond\, (\mathbf{E}\ \&\ {\sim}\mathbf{G})$	4. Definition of Negated Conditional
6.	$\Diamond\, \mathbf{E}\ \&\ \Diamond {\sim}\mathbf{G}$	5. Distributivity of Possibility
7.	$\Diamond {\sim}\mathbf{G}$	6. Simplification
8.	$(\sim \Box\, \mathbf{G} \supset {\sim}\mathbf{G})$	1. Transposition
9.	$\Diamond \sim \mathbf{G} \supset {\sim}\mathbf{G}$	8, Modal Equivalence
10.	${\sim}\mathbf{G}$	7, 9 *Modus Ponens*

(A variant of this argument is used in "An Agnostic Argument," [1] above, as part of that essay's defense of agnosticism.) This derivation definitely shows that the theist holding the modal concept of God cannot reject *any* argument for God's existence as invalid on pain of implying the truth of atheism.

Upon inspection of this derivation, it might be wondered whether it plays fast and loose with the scope of the modal operators. Has there been some illicit movement from *de re* to *de dicto* necessities, or vice versa? To say that **G**, or that necessarily God exists, seems to me a straight forward *de dicto* necessity, which simply amounts to the assertion that God exists in every possible world. Whether this implies a *de re* necessity, such as having the property of necessarily existing (if such there be) doesn't seem to me to arise. It does not arise because in the derivation all the modal operators have "large scope" in the sense of operating on propositions or negations of propositions.

Another query is whether the derivation involves an objectionable slide from the alleged necessary truth of **G**, that God exists, to the logical impossibility of it being false that God exists. The question here is whether the realm of necessity isn't distinct from (perhaps larger than) the realm of logical truths? Premise one involves a necessary truth (for the theist), whereas premise two involves a logical non-implication. Does the mating of the two constitute a difficulty?

My answer to the query is that the mating of these two does not involve an objectionable conflation. If there are necessary truths, which are not logical truths, then they are necessary in the sense of causal or natural necessity, and that is not the sort of necessity that is at issue here. What is at issue here is what Plantinga has called "broadly logical necessity" (Cf. *The Nature of Necessity*, p. 2) and concerning that kind of necessity there is an equivalence of the sort required by our derivation, namely: **E** logically implies **G** if and only if necessarily, if **E** then **G**. This bi-conditional implies: If necessarily (if **E** then **G**) then **E** logically implies **G**.

And the transposition of this conditional is the justification of the inference involved in the derivation from premise 2 to line 3.

So, in conclusion, it is seen that the theist employing the modal concept of God is unable to reject *any* argument for the existence of God as being invalid. On this concept the traditional theist must hold that *Evil exists.* / hence *God exists* is a sound argument.

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Chapter 9
Essay #8: Logical Form and the Ontological Argument

Kenneth G. Lucey

Abstract The first section of this article consists of philosophical reflections about logical form. It begins with the metaphor that logical form is a great onion, in the sense that it comes in a variety of levels or strata. A list is given in which 12 such levels are distinguished. The big point it makes is that there is a genuine logical asymmetry between validity and invalidity of logical form. Two conditionals are discussed, viz.: (1) Every instance of a valid logical form is a valid argument, and (2) Every instance of an invalid logical form is an invalid argument. The first conditional is true, whereas the second is most assuredly false. The first section also has a discussion of the connection between validity/invalidity and the distinction between the existential and universal quantifiers. In general, proving invalidity is very much more difficult than proving validity, except in the very special case where an argument has all true premises and a false conclusion.

The remainder of the paper is an application of the previous conclusions to a modern discussion of St. Anselm's Ontological Argument for the existence of God. The authors James Cornman, Keith Lehrer and George S. Pappas consider a series of seven distinct versions of the argument, labeled A through G, each of which is expressed as an instance of the argument form *Modus Tollens*. Version A of that argument goes as follows: (1a) If the greatest being possible does not exist, then it is possible that there exists a being greater than the greatest being possible. (2a) It is not possible that there exists a being greater than the greatest being possible. Therefore (3a) The greatest being possible exists. In the series of arguments considered, the next, version B, is Gaunilo's famous "greatest island possible" counter-example. The upshot of this whole discussion is that Cornman et. al., end up rejecting version G as unsound, and concluding thereby that Version A is also unsound. This paper argues that an "apparent methodological confusion" occurs in this critique of Anselm, and that the mistake stems from the neglect of the very issues discussed in the first section of the paper. None of the arguments forms A through G can be shown to be unsound due to any logical invalidity, precisely because they are all instances of *Modus Tollens*. The attempt to show Anselm's version A unsound due to a false premise simply cannot be shown by arguing that

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_9

other arguments of the same form have a false premise. To attempt to do so is the methodological confusion mentioned earlier.

> What type of sentence (I asked myself)
> will an absolute mind construct? I
> consider that even in the human languages
> there is no proposition that does not
> imply the entire universe . . ..[1]

Jorge Luis Borges' story "The God Script" tells the story of Tzinacan the Aztec priest, who has been tortured and then imprisoned for life by his Spanish conqueror, Pedro de Alvarado. The priest preserves his sanity over the years by trying to systematically recall all that he had previously known.

One night he recalls the legend according to which "on the first day of Creation [God wrote] a magical sentence," the God's Script, which would ward off all evils. The rest of the story is the account of the priest's travail, which leads him to an ultimate mystical experience and to his mastery of "the God's script." It is in Borges' account of the priest's agonizing search that he considers that "in the human languages there is no proposition that does not imply the entire universe" (p. 171). And it is during the priest's mystical enlightenment that "There occurred the union with the divinity, with the universe," which he didn't know how to distinguish. So to extrapolate somewhat Borges' implication, the claim is that every proposition expressed by human language implies both the entirety of the universe and the divinity. The logical form of an inference endorsed by this story would be:

$$\begin{array}{rl} & \text{1. } \mathbf{p}\,\text{[i.e., any proposition whatsoever]} \\ \hline \text{Therefore,} & \text{2. God exists} \end{array}$$

Part of this essay shall consider an instance of this argument form, which has traditionally been called the "Ontological Argument." But first I shall pause for some sustained reflections upon the topics of validity, invalidity and logical form.

I

Section one of this essay is primarily concerned with examining some issues concerning the logical form[2] of arguments in general, and then in subsequent sections concerned with applying those observations to some different formulations

[1] Jorge Luis Borges, "The God Script," Labyrinths (New York: New Directions, 1962, 1964). pp. 169–173; quote from p. 171.

[2] The most profound thinking on the issue of logical form of which I am aware is to be found in a series of articles by Gerald J. Massey. See "The Fallacy Behind Fallacies" in The Foundations of Analytic Philosophy ed. P.A. French. T.E. Uehling, Jr. and H.K. Wettstein. Minneapolis, 1981, pp. 489–500, and other works of Massey's cited in that article.

of the Ontological Argument for the existence of God in particular. One point that shall be demonstrated is that the failure to take account of the asymmetry between the notions of validity and invalidity, in the context of recognizing a spectrum of levels of logical form, brings to grief even very sophisticated discussions of the Ontological Argument.

An accurate albeit playful representation of the topic of logical form is to say that logic is a great onion. The point here is not that the study of logic often results in tears, but rather that just as with an onion, logical form comes in a variety of layers, levels or strata. An example of such a peeling of the onion of logic might be:

propositional logic
syllogistic logic
monadic predicate logic
logic of relations
alethic modal logic
tense logic
deontic logic
epistemic logic
erotetic logic
intensional logic
many-valued logic
set theory

The key point is that actual arguments with concrete premises and conclusions are simultaneously instances of a number of different levels of logical form. Obviously, not every argument exhibits instances of logical form at every level of logical form.

The Asymmetry of Validity and Invalidity

Any discussion of validity and invalidity must begin with some presupposed definition of one term or the other, either implicit or explicit. The definition that I shall assume as a characterization of "valid" is as follows:

(I) Argument form A is valid = Df. It is impossible that there exists an instance of A, which has true premises and a false conclusion.

The corresponding definition of 'invalid' is:

(II) Argument form A is invalid = Df. It is possible that there exists an instance of A, which has true premises and a false conclusion.

Clearly these two definitions are mutually exclusive and jointly exhaustive and in consequence every argument form is either valid or invalid, and no form is both valid and invalid, and furthermore no argument form is neither valid nor invalid.

The asymmetry between validity and invalidity can be seen by comparing the following two principles:

(I) If an argument is an instance of an invalid argument form, then it is an invalid argument.
(II) If an argument is an instance of a valid argument form, then it is a valid argument.

These two principles are identical except for the fact that (I) contains "invalid" whereas (II) contains "valid". Yet the difference between them is all the difference there is between truth and falsity. Principle (I) is false, whereas principle (II) is true. The truth of these assessments can be seen through the consideration of a simple example. Any instance of the argument form: 1. No S are P / Therefore, 2. No P are S is clearly a valid argument in that the conversion of a traditional universal negative categorical proposition is a valid inference. Thus: 1. No mammals are reptiles / Therefore 2. No reptiles are mammals, is a valid argument. Yet this very same argument is also an instance of the invalid argument form: 1. p / Therefore 2. q. Thus the actual argument is an instance of both of these argument forms at the very same time. The asymmetry of validity and invalidity may be summarized as follows:

> Whereas it is **true** that every valid argument is an instance of an invalid argument form, it is **false** that any invalid argument is an instance of a valid argument form.

Does the Asymmetry Hold Only Between Layers or Within Layers as Well?

The examples that have been used to illustrate the asymmetry between validity and invalidity have called upon argument forms from two distinct levels of logical form. The argument form: No S are P /Hence, No P are S, is drawn from the level of logical form embracing the immediate inference of conversion and as such turns on the logical form of the traditional categorical propositions. The argument form: p / Hence q, is rather drawn from the level of propositional logic. The question remains whether the very same asymmetry holds within a single level of logical form as well as between two such levels. Consider the following argument:

1. Brown University wins and Princeton University loses. / Hence,
2. Either Brown University wins or Princeton University loses.

In the first instance this argument is again an instance of the invalid argument form: p / Hence, q. At the same level of logical form it is also an instance of the valid argument form: 1. r & s / Hence 2. r or s. So, at the very same level of logical form, it can still be seen that the asymmetry of validity and invalidity does indeed hold.

One might ask at this point whether this asymmetry can still be made out without appealing to the level of propositional logic, which in some sense seems to be the most superficial level of logical form, and which may thus skew the whole issue with its infamous invalid argument form: p /Hence, q ?

Consider at the level of alethic modal logic, the invalid argument form which goes: 1. Possibly p / Hence, necessarily p. In every modal logic of my acquaintance this is considered an invalid argument form. Yet depending upon the choice of proposition replacing "p", this argument form might very well have an instance, which is a valid argument. For example, let the proposition "p" be the proposition that $\mathbf{a} = \mathbf{a}$, where '**a**' is understood to be an individual constant, in the sense of a rigid designator, of some particular object. Thus, an instance of the invalid argument form: Possibly p / hence, necessarily p, would be the valid argument form: possibly ($\mathbf{a} = \mathbf{a}$), / hence, necessarily ($\mathbf{a} = \mathbf{a}$). This is a valid argument form since clearly it is impossible for the premise to be true and the conclusion false. This can be seen, simply by noting, that it is impossible for the conclusion to be false. That is not to say, though, that the premise is irrelevant to the conclusion for the latter logically implies the former, independently of one's choice of a substitution instance for '**a**'. So, without appeal to any considerations from the level of propositional logic, we see again that valid arguments can be instances of invalid argument forms, but not vice versa. That is, **no invalid argument is ever an instance of a valid argument form**.

A General Moral About Validity and Invalidity

The above considerations can be generalized into a fairly high level observation about validity and invalidity. The moral here can be related to properties of the existential and universal quantifiers, and to the fact that within an infinite domain[3] an existential assertion is verifiable, but unfalsifiable, whereas a universal assertion is falsifiable but unverifiable. To put my moral baldly and boldly, it is that (with one slight reservation), **validity is verifiable but unfalsifiable, whereas invalidity is falsifiable, but unverifiable**. The reservation is that there is one case where it is simplicity itself to verify that a concrete argument is invalid. That is the case where the argument in question is known to have true premises and a false conclusion. It is thus possible to know that an argument is invalid, without knowing what invalid argument form it happens to be an instance of. Yet in such a case one would, of course, know that every form of which it is an instance is invalid.

The truth of the previous moral can be seen as follows: An argument is <u>valid</u> if and only if <u>there exists</u> a valid argument form of which it is an instance. Here the

[3] I do not claim to know that there are infinitely many levels of logical form, but I certainly am willing to take that as a possible assumption. Or, at least, that there are more than eleven such levels.

existential quantified expression can be verified or shown to be true simply by producing the valid argument form of which the argument is an instance. But showing the claim of validity false is another issue altogether.

An argument is *invalid* if and only if (i) *there exists* an invalid form of which it is an instance, and furthermore (ii) *every* other form of which it is an instance is not a valid argument form. Clause (ii) could as well be expressed: *no* other form of which it is an instance is a valid argument form. Clause (ii) could also be reworded so as to imply clause (i), but the simplicity so achieved brings no greater clarity. The point here is that you don't show that an argument is *invalid* simply by showing that it is an instance of *some* invalid argument form, such as the fallacy of affirming the consequent. Showing such is the prelude to a systematic survey which would try to establish that there is *no other* valid argument form of which the argument is also an instance. But since one can never be sure that there isn't some as yet unconsidered valid argument form, of which that argument is also an instance, one can never have ultimately verified that the argument in question really is invalid. The best one can establish, after surveying all the relevant valid argument forms that one can think of, is that it is highly likely that the argument is invalid. Such a judgment may have to be revised in light of newly discovered strata of logical form.

II

In the third edition of that excellent text Philosophical Problems and Arguments[4] the authors have given a very careful discussion of St. Anselm's version of the Ontological Argument for the existence of God (see pp. 243–245). I shall show that their discussion, while highly subtle and sophisticated is, nevertheless, defective and that the problems with it are directly attributable to not taking into account the very asymmetry of validity and invalidity of logical form discussed in Sect. I of this essay.

Without making any claim for historical accuracy our authors believe that they capture the core of Anselm's case with the following argument, which I shall call Version **A**:

1a. If the greatest being possible does not exist, then it is possible that there exists a being greater than the greatest being possible.
2a. It is not possible that there exists a being greater than the greatest being possible.
Therefore 3a. The greatest being possible exists.

What can be said about this argument's logical form? At the most superficial level this argument has a very well known logical form. At the level of propositional logic, which I take to be the most superficial level, it has a least two logical forms.

[4] James W. Cornman, Keith Lehrer, and George S. Pappas, Philosophical Problems and Arguments: An Introduction (New York: Macmillan Publishing Co., Inc., 1982).

In the first instance it exemplifies the invalid argument form: 1. p, 2. q / Hence 3. r. Also, at the level of propositional logic, it has the valid logical form called *Modus Tollens*. Its form so understood is: 1. If not p, then q. 2. Not q / hence p. An intermediate conclusion of not-not-p could have been drawn with p inferred from it by double negation. The major point to be made here is that since the argument is clearly an instance of a valid argument form, there can be no doubt whatsoever that Version **A** of the argument is a valid argument. Once that point has been made, the only philosophical issue which remains to be discussed concerning the argument's overall evaluation is the question of whether each of the premises of the argument is individually true.

Our authors next turn to a reconstruction of the objection brought against Anselm by his contemporary Gaunilo of Marmoutiers. In his work entitled In Behalf of the Fool Gaunilo launches his objection, called "The Greatest Island Possible" counter-example, which would go as follows, hereafter called Argument **B**:

1b. If the greatest island possible does not exist, then it is possible that there exists an island greater than the greatest island possible.
2b. It is not possible that there exists an island greater than the greatest island possible.

Therefore, 3b. The greatest island possible exists.

Following a common terminology, an argument is called "sound" if and only if two conditions are met, namely: (i) it is valid, and (ii) all of its premises are true (compare Philosophical Problems and Arguments, p. 5). Correspondingly, an argument is unsound whenever (i) it is invalid, (ii) it has one or more false premises, or (iii) it is both invalid and has a false premise. So what is to be said about the soundness of argument **B**? Our authors say the following: the argument "proves too much so that it is surely unsound" (p. 244). Taking a step back from this whole issue, one might well ask *what is going on here?* Is the argument supposed to be unsound because invalid, or unsound because of a false premise, or both?

Argument **B** is of the very same logical form as argument **A**, viz., *Modus Tollens*, and in consequence it is obvious that both are alike in their validity. But the only point of starting with one argument and then moving to a second argument of the same logical form is to try to show that the original argument is invalid. Producing another argument of the same logical form to serve as a counter-example can at most show about the first argument that it is an instance of an invalid argument form. But since we know in advance that arguments **A** and **B** are both valid, the only source of unsoundness that can arise is the presence of one or more false premises.

In argument **B** the conclusion that the greatest island possible exists is patently false and hence given that the argument is valid, it follows that at least one of the premises must be false. The operative principle here is: *Any valid argument with a false conclusion must have at least one false premise*. So in argument **B**, since premise 2b, to the effect that "It is not possible that there exists an island greater than the greatest island possible" seems to me logically true, the only possible conclusion is that premise 1 is false. Represent the first premise of B as [if ~p then q]. If the first premise must be false, then its negation must be true. The negation of it, ~ [if ~p then q] is equivalent to [~p & ~q], i.e., the greatest possible island does not exist, and it is not possible that there exists an island greater than the greatest island possible. Again, in the case of argument **B** this is just to affirm that the greatest possible island does not exist and it is impossible that there exists an island greater than the greatest possible island. So argument **B** is unsound, not because it is invalid or because it "proves too much," but rather because it has a false first premise. What, if anything, does that show about the Anselm's argument **A**? The short answer here is "nothing." Given two valid arguments of the same valid argument form, if in one you know that the conclusion is false, then it must follow that that argument has a false premise. If you don't know the conclusion is false, then you can't infer anything about the truth of the premises. And that is our situation with regard to argument **A**, except for the corresponding intuition that premise 1b [It is not possible that there exists a being greater than the greatest being possible.] is logically true.

How do our authors represent Anselm as answering Gaunilo? As they see it "Anselm's reply was merely to say that the logic of his argument applies only to the greatest being possible and to no other" (p. 244). In effect the Gaunilo criticism is interpreted as pointing out that Anselm's argument is an instance of an invalid argument form, which I'll call Version C, namely:

1c. If the greatest X possible does not exist, then it is possible that there exists an X greater than the greatest X possible.
2c. It is not possible there exists an X greater than the greatest X possible.

Therefore, 3c. The greatest X possible exists.

At this point the discussion has gone seriously awry for two reasons. First Version C which substitutes "X" for "being" isn't an invalid argument form. It still has the *Modus Tollens* argument form and hence remains as valid as an argument form can possibly be. Secondly, even if Version C were an invalid argument form, that wouldn't definitively show that argument A was invalid. To repeat the moral of Part I of this paper – *every valid argument is an instance of some invalid argument forms*.

For our authors to have Anselm saying that "his argument applies only to the greatest being possible and to no other" is somewhat misleading. Anselm cannot deny that Argument A is an instance of the logical form given in Version C, for it surely is an instance of that form. But that doesn't show anything about the soundness of argument A, any more than would pointing out that it is an instance of the invalid argument form: 1. p. 2. q / hence 3. r.

A footnote (#36, p. 244) credits Keith Lehrer in particular with "showing how St. Anselm could avoid Gaunilo's objection". Lehrer has Anselm claiming that Gaunilo has made a mistake in substituting "X" for "being" and that what he should have done is rather to substitute "X" for "greatest being possible". Thus Lehrer has

Anselm endorsing yet a different logical form, which I shall call Version D (p. 244), which is:

1d. If X does not exist, then it is possible that there exists a being greater than X.
2d. It is not possible that there exists a being greater than X.

Therefore, 3d. X exists.

The significant difference to note between Version C and Version D is that in Version D there is one and only one possible substitution for X which turns premise 2d into a logical truth, and that is the substitution of "greatest being possible" for X. On Gaunilo's substitution you get "It is not possible that there exists a being greater than the greatest possible island," which is a highly dubious proposition at best.

Anselm is represented as saying that "the logic of his argument applies only to the greatest being possible and to no other." How are we to understand this talk about "the logic of his argument"? Our previous discussion of logical form can illuminate this remark. A reply to Gaunilo could go like this: "It is not at all surprising that you, Gaunilo, have found what you might take to be an invalid logical form that my argument is an instance of. After all, every argument is an instance of innumerable argument forms, and any number of those are, no doubt, invalid. What is really important here is whether the argument is also an instance of at least one valid argument form. And version D does have a valid argument form."

Yet as far as I can tell Version D's validity stems more from the argument's being an instance of *Modus Tollens* than from anything to do with the choice of terms which X is allowed to stand for. And even if Version D could be shown to have an invalid argument form, that wouldn't show anything whatsoever about the original argument A.

III

If our authors had stopped at this point, then my commentary upon their discussion might be seen as correct, although not fundamentally damaging. At bottom, their claim up to this juncture is that Gaunilo has not refuted Anselm, and with that I agree. But they do not stop at that point. Rather, they go on to try to show that Anselm's argument is unsound by, as they say, "a reason similar to Gaunilo's" (p. 245)

What our authors do next is point out that Anselm's argument is an instance of yet another logical form, which I shall call Version E. What they have done is to peel the logical onion yet one layer deeper to the strata called the logic of relations. The logical form they come up with is Version E (p. 245):

1e. If X does not exist, then it is possible that there exists a being more Y than X.
2e. It is not possible there exists a being more Y than X.

Therefore, 3e. X does exist.

What they have done here is to (in part) accept Anselm's specification that X is to stand for "greatest being possible," and then to substitute for "greater" the term "more Y." The fault they then find is that the argument seems to imply "that a being that is superlative in any way at all exists" (p. 245). A substitution of the sort that they have in mind would be the following, Version F:

1f. If the most obscene possible being does not exist, then it is possible that there exists a being more obscene than the most obscene possible being.
2f. It is not possible that there exists a being more obscene than the most obscene being possible.

Therefore, 3f. The most obscene possible being does exist.

They say "But we can substitute any adjective at all for Y and thus prove not only that the most great of any kind of being exists, as Gaunilo tried to prove, but also that a being that is superlative in any way at all exists" (p. 245). This passage is a curious mixture of truth and apparent methodological confusion. The truth to which I refer is their comment that "the argument form is valid." The apparent confusion arises from the attempt to use the contrasting co-instantiated logical forms to show the unsoundness, in the sense of premise falsity, of the first of those forms and of argument **A** (p. 94) which instantiates it.

The first point to be noted is that in the previous response to Gaunilo, Anselm required that X remain unchanged throughout as standing for "the greatest being possible." But that has not occurred in moving from the logical form E to the instance F. If X had remained intact then it would have yielded the obviously false second premise: It is not possible that there exists a being more obscene than the greatest being possible.

The argument form that Version F is most fully an instance of is not the argument form E, namely 1e, 2e / hence 3e, but rather another form altogether which I call Version G. The contrast may be seen by comparing the following:

Version E	Version G
1e. If X does not exist then it is possible that there exists a being more Y than X.	1g. If the most Y possible being does not exist, then it is possible that there exists a being more Y than the most Y possible being.
2e. It is not possible that there exists a being more Y than X.	2g. It is not possible that there exists a being more Y than the most Y being possible.
Therefore 3e. X does exist.	Therefore, 3g. The most Y possible being does exist.

Logical forms Version E and Version G are both valid and argument A is an instance of both of them. What our authors are trying to do here is to show that any instance of premise 1e of Version E must be false, by showing that there are instances of Version G with obviously false conclusion and premise. Yet, as in response to Gaunilo, Anselm could here reply, “How is that supposed to show **my** argument unsound?”

The crucial point in this discussion is that Cornman, Lehrer and Pappas think that the consideration of the actual Version F, about obscenity, which is at once an instance of each of the argument forms E and G, somehow provides some reason for rejecting premise (1), i.e. [If the greatest being possible does not exist, then it is possible that there exists a being greater than the greatest being possible.] when interpreted as 1d from version D [If X does not exist, then it is possible that there exists a being greater than X.]

Where is what I have called the “apparent methodological confusion”? The methodology that our authors have adopted is to show that premise 1 of Version A is false by focusing on another argument of the same logical form, namely Version F as an instance of logical form G. [I claim that this involves a methodological mistake in the sense that one can’t show one proposition false simply by pointing out that another proposition of the same logical form is false.] The contrast here is between premise 1a of Version A:

> If the greatest being possible does not exist, then it is possible that there exists a being greater than the greatest being possible.

and premise 1f of Version F:

> If the most obscene possible being does not exist, it is possible that there exists a being more obscene than the most obscene possible being.

Our authors believe correctly that the second is false and that the falsity “casts doubt on premise 1 [of version A]”. (p. 245) My point here is that except in cases where inconsistency is the issue, you can’t impugn one proposition simply by pointing out that another proposition of the same logical form is false. Thus, you can’t show that “All beagles are mammals” is false by pointing out that it has the same logical form as the false “All mollusks are mammals.”

I want to hasten to note at this point that I am not myself inclined to defend the ultimate truth of Anselm’s premise 1a of Version A, nor for that matter the conclusion of his argument. My only point here is that one doesn’t succeed in showing that premise false by either of the following methods: Showing that the original argument is an instance of some other logical form which is invalid, or showing that another argument of the same valid logical form has a false conclusion and thus a false premise.

Anselm’s stance would be that his argument has the logical forms of Version D and of Version E and that for each of those forms there is only one substitution instance for X, namely “the greatest being possible” which allows the second premise to be true. Any other substitution turns that premise into a falsehood

IV

The final issue of this paper turns on the question of burden of proof. Our authors would like to shift the burden of proof upon Anselm and his defenders in the following sense. They say: "If . . . Anselm were to reply . . . his argument applies only to the one adjective 'great,' we could reply in turn that there seems to be no difference between the adjective 'great' and many others relevant to existence. If a defender of the ontological argument thinks that there is, then it is up to him to show it" (p. 245).

The strategic situation here is that Anselm is defending Argument A, the second premise of which is an instance of 2d, viz., "It is not possible that there exists a being greater than X." Anselm's point is that there is only one substitution instance of X, which makes the premise true, viz., "the greatest being possible." If "the most obscene being possible" were substituted for X, then premise 2d would be false, as would any other substitution instance for X. Thus, when the burden of proof is placed upon Anselm to show how the adjective "great" is different from any other adjective, there **is** an answer that can be made. And that answer is that the use of "great" makes premise 2d true, whereas the substitution of any other adjective would make premise 2d false.

When the shift is made to the logic of relations strata of logical form in Version E and when "X" is taken to be "the greatest being possible," the same difference still holds. If "great" is substituted for "Y" then premise 2e is true whereas the substitution of any other adjective for "Y" makes premise 2e false. Thus, our authors' assertion that the burden of proof falls upon Anselm has been satisfied.

An attempt has now been made to satisfy the charged burden of proof, which demanded that the Anselmian show how the adjective "great" differed from any other adjective. But it is not obvious to me that that charge concerning where the burden of proof lay was well founded. This brings me back to my claim that there was an apparent methodological confusion. What led up to putting the burden upon Anselm was the suggestion that since Argument A is an instance of Argument Form G and since instances of G, such as Argument F are unsound – it must follow that Argument A has been shown suspect. By my lights, the mistake here is that you simply don't impugn or refute the premises of one argument by showing false the distinct premises of another argument which is an instance of the same argument form.

The only circumstance in which the consideration of another argument of the same form is relevant is the case where the validity of the original argument is in question. Thus, an argument form – not a concrete argument – can be shown to be invalid by showing that another instance of the same form has true premises and a false conclusion. But you cannot show that an actual argument is unsound by showing that it is an instance of an invalid form. As already established in Part I, every valid argument is an instance of some invalid forms. Given the great difficulty of ever showing an actual argument invalid (as shown above), the easiest way to try to show an actual argument unsound is to show one of its premises to be false. And to do that you must show the falsity of one of the actual premises themselves. No consideration of other arguments of the same form can do that unless, of course, a premise of the original argument implies or is implied by the new premise. As a final example, consider the argument:

1. Narwhals are cetaceans.
Therefore, 2. Narwhals are mammals.

Most people would not know whether this argument was valid, invalid, sound or unsound. Suppose then we consider the patently unsound argument that:

1. Snakes are avians.
Therefore, 2. Snakes are mammals.

Each of these arguments is an instance of the argument form:

1. As are Bs.
Hence, 2. As are Cs.

Given that both arguments share this logical form, does the unsoundness of the second establish the unsoundness of the first? Of course it doesn't establish anything of the sort. The best proof of that fact is that the first argument really is sound at the level of intensional logic, despite the unsoundness of the second argument, which is really doubly unsound in that both its premise is false and the argument form mentioned above is invalid. The attack upon Anselm's reconstructed argument does no better in establishing the unsoundness of the Version A of Anselm's argument.

In conclusion, my criticism of Cornman, Lehrer and Pappas can be expressed in the form of a dilemma, which is:

1. Either Anselm's argument **A** is claimed to be unsound because it is invalid or it is claimed to be unsound due to a false premise.
2. If Anselm's argument **A** is claimed to be unsound because it is invalid, then they are wrong because it is an instance of *Modus Tollens*.
3. If Anselm's argument **A** is claimed to be unsound because it has a false premise, then their attempt to establish that claim involves a methodological mistake.

Therefore, 4. The claim that Anselm's argument is unsound is either mistaken about the argument's form or else the attempt to establish the falsity of a premise involves a methodological mistake.

Another way of expressing my point about the methodological mistake would be that there is a great difference between showing an argument unsound and showing that there is some presumption in favor of viewing an argument as unsound. My claim is that it is a methodological error to think that the method employed by Cornman, Lehrer and Pappas could establish premise falsity unsoundness. It remains much more controversial whether their method could establish the weaker appraisal of there being some presumption in favor of Anselm's argument A being unsound due to having a false premise.

Part III
Philosophical Logic

Chapter 10
Essay #9: Kant's Analytic/Synthetic Distinction

Kenneth G. Lucey

Abstract The purpose of this essay is to undermine several standard objections to the analytic/synthetic distinction. It proceeds by quoting Kant's formulation of the distinction, and then reviewing the English renderings by several noted translators. Three of Kant's contemporary critics, W.V.O. Quine, Stephen Körner, and Richard Robinson criticize Kant on two points, viz. (1) his restriction of the distinction to subject predicate judgments, and (2) the specific formulation that he gives to the distinction. W.V.O. Quine, in "Two Dogmas of Empiricism" finds two faults with Kant's formulation. The first is its limitation to statements of a subject-predicate form, and secondly to the notion of containment, which Quine considers metaphorical. Stephen Körner, in his book Kant, makes the same criticism, to which he adds a charge of vagueness. Richard Robinson endorses the same critiques, to which he adds the claim that Kant's formulation requires a Leibnizean formula for distinguishing necessary from contingent propositions as a reconstruction.

The positive aspect of this essay defends Kant's formulation by distinguishing four different contexts of containment, viz. temporal, mathematical, set-theoretic, and auditory. Also, two fundamentally distinct meanings of 'to contain' are distinguished. It is shown that a plausible reason why Kant's critics have thought Kant over-dependent upon a spatial metaphor lies in the identity conditions for limits of application. Spatial limits are the easiest kind of limit to specify. In conclusion the Kantian issue is linked to the problem of philosophical semantics, i.e. the problem of identity conditions of intensions. The final section of the paper argues against Körner and Robinson's claim that Kant's formulation requires the Leibnizean formulation as a reconstruction.

The purpose of this paper is to undermine a criticism of the analytic/synthetic distinction, which seems to have acquired the status of the standard objection to it. The strategy in the following will be to first quote Immanuel Kant's formulation of the distinction, and then quote it as it has been rendered by several translators. Then we shall review the remarks of three contemporary critics of the distinction between the analytic and the synthetic. Each of these writers criticize Kant on two

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_10

points, namely (1) his restriction of this distinction to subject predicate judgments, and (2) the specific formulation that he gives to the distinction.

It comes out at B 19 of the "Introduction" to The Critique of Pure Reason that the whole problem giving orientation to the first critique is summed up in one question, namely "How are *a priori* synthetic judgments possible?" For Kant this is a "transcendental" question in the following sense: There can be no doubt (he argues) that all our theoretical sciences contain principles which are actually *synthetic a priori* judgments. He argues (by a sort of argument from analogy) that there must be some "unknown = x" (p. 51, A 9, B 13)[1] which provides the support that is required to make the synthetic *a priori* judgment possible. The analogy is to the case of what happens when one knows the truth of a synthetic *a posteriori* judgment. On Kant's account what happens in such a case is that predicate **B** is connected in thought with a subject **A**. But since the judgment is synthetic the concept **B** is not contained in the concept A (nor *vice versa*), and thus for the synthesis of these concepts to take place in judgment, there must be something else which connects them. In the case of the synthetic *a posteriori* judgment this "something else" is experience. Yet in the case of the synthetic *a priori* judgment, experience by definition cannot be appealed to for the simple reason that it is *a priori*. In this latter case the "something else" is experience, which by definition cannot be appealed to for the simple reason that it is a priori. In this latter case the "something else" is the "unknown = x" in search of which Kant wrote his Kritik der reinen Vernunft.

Kant first makes the analytic-synthetic distinction at (p. 48, A7, B10)[1] the IV sub-section of the "Introduction" to the Critique. He says:

> Entweder das Prädikat **B** gehört zum Subject **A** als etwas, was in diesem Begriffe **A** (versteckterweise) enhalten ist; oder **B** liegt ganz außer dem Begriff **A**, ob es zwar mit demselben in Verknüpfung steht. Im ersteren Fall nenne ich das Urteil analytisch, in dem *andern* synthetisch.[2]

Kemp Smith renders this passage as follows:

> Either the predicate **B** belongs to the subject **A**, as something which is (covertly) contained in this concept **A**; or **B** lies outside the concept **A**, although it does indeed lie in connection with it. In the one case I entitle the judgment analytic, in the other synthetic. (p. 48)[1]

Slight, but interesting differences are manifest in the F. Max Müller translation which runs thus[3]:

[1] All references to Kant, unless specifically state otherwise, refer to Norman Kemp Smith's translation of: Immanuel Kant, *Critique of Pure Reason* (New York: St. Martin's Press, 1929, 1965).

[2] Immanuel Kant, Kritik der reinen Vernuft (Hamburg: Felix Meiner, 1956), p. 45* (B10, linen 7–12).

[3] F. Max Müller's translation of Immanuel Kant, Critique of Pure Reason, 2nd Ed. Rev. (New York: Dolphin Books Ed., 1961), p. 29.

> Either the predicate **B** belongs to the subject **A**, as something contained (though covertly) in the concept **A**; or **B** lies outside the sphere of the concept **A**, though somehow connected with it. In the former case I call the judgment analytical, in the latter synthetical.

The crucial word for the distinction between analytic and synthetic judgments in the clause "gehört ... als etwas, was in diesem Begriffe **A** enthalten ist ..." is of course "enthalten". Both Kemp Smith and Müller translate this term as "contained," which perhaps (as we shall see below) is not the subtlest possible choice. This latter point will be clarified as we proceed. We now turn to the first of our three critics of Kant.

The first of Kant's critics to be examined is Willard Van Orman Quine. In his justly well-known article of 1951 entitled "Two Dogmas of Empiricism", Quine says:

> Kant conceived of an analytic statement as one that attributes to its subject no more than is already conceptually contained in the subject. This formulation has two shortcomings: it limits itself to statements of subject-predicate form and it appeals to a notion of containment which is left at a metaphorical level.[4]

Our second contemporary Kantian critic is Stephen Körner, who in his 1955 book entitled Kant says:

> The main objections to this Kantian distinction between synthetic and analytic judgments are first that Kant considers only subject-predicate judgments and secondly that his definition of an analytic judgment as one whose subject contains its predicate is metaphorical and therefore too vague.[5]

Körner goes on to say that this second criticism is not "so serious as it may appear at first sight" since Kant's distinction can be reconstructed in other terms. But this reconstruction turns out to be just a return to the formula that Leibniz had used for distinguishing necessary and contingent propositions. In our concluding argument below we shall attempt to give a reason why this formula of Leibniz', which Körner prefers, is no more satisfactory than the Kantian formulation of the analytic/synthetic distinction (i.e., in terms of conceptual "containment".)

The relationship between Leibniz' formula for distinguishing necessary from contingent propositions, and Kant's formula for distinguishing analytic from synthetic judgments, has been illuminatingly discussed by Richard Robinson in his 1958 article entitled "Necessary Propositions". Although making several original points, Robinson follows the orthodox view in indicting Kant for undue use of metaphor. He also goes on to say:

> There are disadvantages in this manner of making the distinction ... Secondly, Kant's words are much less clear and unambiguous that those of Leibniz.[6]

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[4] Willard Van Orman Quine, "Two Dogmas of Empiricism" Philosophical Review (1951), & elsewhere, pp. 21–22.

[5] Stephen Körner, Kant (Baltimore, Maryland: Penguin Books, 1955), p. 22.

[6] Richard Robinson, "Necessary Propositions", Mind Vol. 67 (1958), 289–304; p. 297.

In this quotation Robinson is making a further critical claim besides the standard charge of excessive dependence upon metaphor, namely that there is only one way that the Kantian distinction can be given a "clear interpretation". Whereas Körner saw the Leibnizean formula as a possible reconstruction of Kant's distinction, Robinson would require it as necessary for any intelligible interpretation thereof whatsoever. As already indicated we think this view is false, and the final argument below will attempt to show this.

By now it should be abundantly clear that there is a standard or orthodox criticism of the Kantian formulation of the distinction between analytic and synthetic judgments. None of these critics and commentators deny the crucial role that this distinction plays in Kant's critical philosophy, yet none of them find any inconsistency between the crucial nature of this distinction and the claim that Kant would construct his most fundamental dichotomy solely upon a metaphor, spatial or otherwise.

Having now concluded a brief review of three of Kant's distinguished contemporary critics, we now turn to the discussion of a series of issues, which when taken together, question the truth and even the plausibility of the orthodox criticism of which we have just seen three versions. These questions are:

1. What are the possible English translations of the verb '*enhalten*' in the passage quoted above?
2. Are there diverse contexts in which this word is meaningfully used?
3. Is there more than one meaning expressed in English by this word?
4. Is there any justification for taking any of the diverse contexts of use as primary, while considering other contexts as derivative or metaphorical? And finally,
5. Is there any explanation for the fact that Kant's current critics have taken the context of spatial "containment" as the preferred usage? We do not mean to imply that these are totally distinct questions, for they are obviously interwoven.

In answer to the first of these questions it can be determined from any of the standard German-English dictionaries that the verb "*enthalten*"[7] can be translated "to hold" or "to contain". As noted above Kemp Smith translates it as "contained" when he rendered Kant's formula as:

> Either the predicate B belongs to the subject A as something which is contained in this concept A; or B lies outside the concept A, although it does indeed stand in connection with it. (p. 48, A-6)[1]

But in reading Kant's critics one would be led to believe that there was only one such sense in which A can contain B, and that this is a spatial sense of containment.

[7] There is both another phrase and another word in this Kantian formula which are of relevance to the issue at hand. There is "liegt außer" and "Verknüpfung", which Kept Smith translates respectively as "lies outside" and "connection". We do not deal specifically with these words, but shall rather just assume that the same type of analysis would apply to them that we are about to apply to "*enthalten*".

Körner, for example, makes a point with which Quine and Robinson would no doubt agree when he points out that:

> It is perfectly true that the subject of a judgment cannot contain its predicate in the same sense in which one box can contain another.[5]

Körner is not baldly suggesting that Kant maintained a formulation of the analytic/synthetic distinction in terms of this spatial sense of containment. Rather he is setting up the disjunction that either Kant was committed to this spatial sense of "containment" or else he really meant nothing more than the Leibnizean formulation. Our task in the following will be to show that Kant is not committed to either of these disjuncts. Quine and Robinson, on the other hand, do not make explicit their charge that Kant was too metaphorical.

As a contrast to this one overworked sense of "contain" let us now review some of the numerous other non-spatial contexts in which this word can be used:

(A) Temporal context: e.g., the month of February usually *contains* 28 days.
(B) Mathematical context: e.g., the series of natural numbers contains an infinite number of odd numbers.
(C) Set-theoretic context: e.g., the set of all philosophers that ever lived contains Plato, Aristotle, Kant and numerous others.
(D) Auditory context: e.g., the closing bars of this symphony contains a subtle variation on the work's overall theme.

There are probably numerous other contexts of "contain" that we have omitted from this review, but at least it should now be clear that not every context of the verb "to contain" is an elliptical or metaphorical substitute for "spatially contains".

The third question above asked whether there is more than one meaning that is expressed in English by the words "to hold" or "to contain"? Our response is that there are at least two (& perhaps more) fundamental meanings in English that "*enthalten*" might be translated to convey. The most fundamental sense of "to contain" might be "*to exist as fixed limits for*". This sense leaves unspecified what kind, or type, of limits are being dealt with. In one case it might be spatial limits, in another case numerical limits, in yet third case temporal limits, or even as yet another case "conceptual limits (of application)". It is this last type of limit that is of course most relevant to Kant's formulation of his analytic/synthetic distinction. But more about such conceptual limits when we attempt to answer the fifth question below.

It was asserted that there are at least two fundamental meanings that "*enthalten*" can be translated as having in English. The second of these can be distinguished by contrasting certain uses of "to hold" and "to contain". In this second sense there is more of a stress upon *capacity*. For example, "the lifeboat *contains* three people, but it *holds* a larger number." The second sense of "*enthalten*" might be taken as meaning "*has the capacity to exist as fixed limits for*." The phrase "to hold" is sometimes used in this second sense, while at other times no such distinction is drawn. Yet we do not for this reason suggest that Müller and Kemp Smith would have done better to have translated "*enthalten*" as "to hold" rather than "to contain", despite the fact that with respect to concepts it seems more appropriate to talk in terms of capacities than in terms of actualities; for "to hold" would probably be even more susceptible to being viewed as overly metaphorical.

Our fourth question asked whether there is any justification for taking one or another of the various types of context in which "to contain" occurs, as somehow primary or fundamental and any further justification for accounting the other types of context as metaphorically derivative? We answer, in opposition to Kant's current critics, that it is just not the case that one particular context (such as "spatially contains") is primary, whereas others (such as "conceptually contains"), as in ("*in disem Begriffe enthalten ist*"), are metaphorical or derivative. The point is that the meaning of "*enthalten*", "*contains*", or "*holds*" is pretty much the same from context to context, i.e., "*to exist as fixed limits for*". What varies from context to context is the *type* or *kind* of limits being referred to. In the case of the Kantian dichotomy between analytic and synthetic judgments the type of limits being referred to are "limits of application or predictability". To say that the concept of length is contained in the concept body is to say that the limits of application of the concept length are wholly contained within the limits of application of the concept of body. Or to say the same thing without using the word "contained", everything of which the word "body" is predicable is something of which "length" is predicable.

Turning now to our fifth and final question, we suggest that there is a quite intelligible explanation for why such Kantian critics as Quine, Körner, and Robinson have thought that Kant was over-dependent upon a spatial metaphor. The reason is that the ease of specification of identity criteria varies from one kind of limit to another. And perhaps the easiest type of limit, to specify identity criteria for, are spatial limits. For example, the identity criterion for the spatial limit between two pieces of real estate is no more (or less) difficult to specify than is the building of a fence, and the reaching of an agreement that "The land to the North of the fence is yours, and the land to the South of the fence is mine." It is far more difficult to specify identity criteria for other types of limits, and perhaps the most difficult of all is the specification of identity criteria for the limits of application of concepts.

The above point concerning identity criteria for concepts was very well expressed in 1958 by Arthur Pap, when he said:

> The problem of philosophical semantics which is implicit in Kant's statement about the relation of subject and predicate in analytic judgments is simply the problem of what a suitable criterion of identity (total or partial) *of concepts* might be. That Kant failed to solve this problem is surely a forgivable sin if one considers that the entire problem of identity conditions of intensions (when are two properties identical, when are two propositions identical?) is still highly controversial nowadays in spite of the professed rejection of "psychologism" in philosophical semantics.[8]

As the final argument of this essay we shall attempt to give a reason why the Leibnizean formula (which Körner and Robinson prefer) is no more satisfactory

[8] Arthur Pap, Semantics and Necessary Truth (New Haven: Yale University Press, 1958), pp. 30–31.

than the Kantian formulation of the distinction between analytic and synthetic judgments in terms of conceptual "containment". Körner is mistaken in thinking that the one is clearer than the other. After rehearsing the orthodox criticism concerning excessive dependence upon a metaphorical notion of containment, he says:

> But Kant's meaning is clear: the subject of a judgment contains its predicate if, and only if, the negation of the judgment is a contradiction in terms.[5]

Our reason for rejecting this Leibnizean formulation is simply that the understanding and employment of it presupposes a prior understanding and application of the Kantian formulation. In other words, if you don't already know (by some such means as underlies the Kantian formulation) that the limits of application of the concept of length is contained within the limits of application of the concept of body, then you are not going to have any way of knowing that the negation of the judgment that "All bodies have length" gives rise to a contradiction. Analogously, you have to know whether "p implies q" in order to determine whether "p and not-q" is a contradiction. The sense of "contradiction" that is being employed in the Leibnizean formulation surely isn't going to be a straightforward instance of "p & ~p", that can be simply observed to be determined a contradiction.

So in conclusion, we have shown that there is little if any justification for the orthodox criticism of the Kantian formulation of the analytic/synthetic distinction. As this charge is sometimes made, the critic does not even attempt to say in what sense the formulation is too metaphorical. At other times it is hinted or vaguely implied that Kant was caught up in a spatial metaphor. We have seen that there is no ground whatsoever for this charge, or for a charge that the Kantian sense of conceptual containment is derivative from some other sense of "*containment*".

Thus, we have supported Kant's use of the analytic/synthetic distinction by exploding the notion that the distinction is excessively metaphorical due to its supposed reliance upon a spatial sense of containment. In doing so, of course, we have made certain assumptions. We have assumed that people simply do *know* what the limits or range of applicability of various predicates are.

On the explication of the analytic/synthetic dichotomy that we have been defending, it is simply assumed that people, just as a matter of fact, do *know* the range of applicability of certain common words, and are on the basis of that knowledge able to make the analytic/synthetic distinction. The fact of the existence of borderline cases in which we aren't sure how to apply the distinction surely doesn't negate the fact that in a great many cases we can apply it.[9]

But on what basis do people know the range or limits of the applicability of words, so as to allow them to be able to relate judgments, on that basis, as analytic or synthetic? One answer might be that these ranges are known because we have a prior understanding of the meanings of the terms involved. But how good an answer

[9] Cf. H. P. Grice & P. F. Strawson, "In Defense of a Dogma", Philosophical Review vol. LXV #2 (April 1956), pp. 377–388; & John Searle, Speech Acts (Cambridge: A The University Press, 1969), p. 6.

is this? It is surely no better than our ability to give an account of the nature of the meaningfulness of words. There are in the literature many attempts to give an explication of the concept of meaning. We cannot at this time hope to decide among these various accounts. Our far more modest goal has been to show that there is a fundamental distinction which every such account must be able to preserve. And if a given account of meaningfulness cannot preserve the analytic/synthetic distinction, then it must ultimately be unacceptable.

Chapter 11
Essay #10: A New Counter-Example to *Modus Ponens*

Kenneth G. Lucey

Abstract The primary purpose of this paper is as follows: It has been understood since Aristotle that the assessment of the truth and falsity of sentences, thoughts or propositions often require consideration of the **context** of an utterance in order to determine the truth or falsity of that utterance. This essay proposes to show that the context of an argument can also influence the evaluation of an argument as valid or invalid. Obviously *Modus Ponens* is a valid argument form. Yet in certain contexts, specifically in contexts of self-reference, we seem to encounter an invalid instance of *Modus Ponens*. This essay explores the intellectual cost of avoiding such a counter-example. One of the main conclusions of this essay is that the primary intellectual cost of preserving the validity of *Modus Ponens* is that we must rethink some of our intuitions concerning premises involving self-reference and also (possibly) concerning the traditional definition of what it is to be a tautology.

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A familiar psychological occurrence is that the commonest words begin to look bizarre when we focus upon them for an unusually long time. Another purpose of this note is to invite the reader to sense that sort of strangeness with regard to the

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_11

concept of validity. My task is to give the standard definition of validity a closer than usual scrutiny, by applying it to an unusual argument. I shall examine two uncommon cases, namely (1) a logical puzzle, and (2) an apparent counter-example to *Modus Ponens*.

A Logical Puzzle

Could there be any such argument as the following? The argument consists of a single premise. This sole premise is a sentence – call it ‘p’. The argument has a conclusion, which is a different sentence - call it ‘q’. So, this argument has the logical form: p/ ∴ q. My puzzle argument is further characterized as having the property of being both valid and bi-valid, which is to say (roughly) that it is valid in both directions, i.e. necessarily, if the premise is true then the conclusion is true and necessarily if the conclusion is true then the premise is true. So far there is nothing very puzzling about any argument so described - a simple solution would be the argument: No dogs are cats. / ∴ No cats are dogs. The real puzzle come with the second stipulation. Now the argument is rearranged so that the conclusion sentence becomes the premise sentence, and *vice versa*, yielding the argument form: q / ∴ p. The properties of this new argument are that it is both invalid and bi-invalid, i.e. (roughly) that it is invalid in both directions. The puzzle again is whether there could be such an argument, and if so, what it would be.

To say it again: can there be an argument of the form: p/ ∴ q which is valid in both directions, but which when rewritten as q/ ∴ p is invalid in both directions? A solution to the puzzle will be given at the end of this essay. It shall also be seen that the same considerations we shall need to muster to try to preserve *Modus Ponens* shall have impact upon the solution to this puzzle.

A Counter-Example to *Modus Ponens*?

Most who value argumentation (and I would count myself as one such) would sooner give up anything rather than grant the plausibility of a counter-example to the argument form called *Modus Ponens* (if p then q; p / ∴ q). This essay exhibits an apparent counter-example in the sense of an instance of that form which seems to have true premises and a false conclusion, and explores some of the intellectual cost of denying the soundness of that argument. Consider the following generalities:

(G1) Every instance of an invalid argument form is an invalid argument.
(G2) Every instance of a valid argument form is a valid argument.

Reflection upon the hierarchical nature of logical form leads to the conviction that whereas (G2) is assuredly true, (G1) is undoubtedly false. Part of the purpose of this essay is to view the argument form called *Modus Ponens* as an instantiation of principle (G2), and to consider whether there is a counter-example to that principle. The instantiated generality is as follows:

(G2-MP) Every instance of the Modus Ponens argument form is a valid argument.

The operative notion of validity and soundness herein are those expressed by the following definitions (which Stephen Read calls the classical accounts):

(D1) An argument A is valid = Df. argument A has a logical form such that it is impossible for all the premises of A to be true while the conclusion of A is false.

(D2) An argument A is sound = Df. argument A is valid and all of its premises are true.

So, the task being considered is whether there are any instances of the argument form *Modus Ponens*, which have true premises and a false conclusion.

Before considering an apparent counter-example to *Modus Ponens*, I would ask the reader to pause to consider the sentence:

(S1) This sentence is true.

The most famous quote about this topic is Wittgenstein's claim at Tractatus 4.442 that "It is quite impossible for a proposition to state that it itself is true." Nevertheless, the literature on self-reference generally accounts sentence (S1) to have none of the paradoxical implications of the sentence:

(S2) This sentence is false.

The point here is to ask the reader to stop to reflect upon your own intuitions about (S1) and to consider, prior to proceeding, whether there is any presumption for or against it.

For my own part I find the truth of (S1) less evident than say

(S3) This sentence is in English.

but nothing like as defective as (S2), or as:

(S4) This sentence is in Chinese.

Sentence (S1) says of itself that it is true and there seems to be no *prima facie* reason to consider that it is wrong about itself. (This is not to say that there are not theoretical considerations that count against (S1), such as those raised by philosophers who baldly assert: "Sentences don't refer, people do!" Incidentally, on page 3 of "Liar Syllogisms", Theodore Drange makes a persuasive case against seeing such sentences as truthvalueless.

In any case, there is a positive case to be made for concluding that sentence (S1) is not only true, but in fact logically true. This can be seen by examining more closely the logical relationship between (S1) and (S2). In The Cambridge Dictionary of Philosophy, in the entry entitled "Tautology" by John Corcoran, the opening lines express the following traditional definition of tautologousness:

(D3) For any proposition p, p is a tautology = Df. p is a proposition whose negation is inconsistent, or (self)-contradictory.

Where (S1) is ‘This sentence is true’ the negation of (S1) would be ‘This sentence is not true’, which on an assumption of bivalence, would be equivalent to (S2): This sentence is false. And precisely to the extent that (S2) is seen to be inconsistent or self-contradictory, via traditional Liar considerations, there has thereby been made a case for saying that (S1) is a tautology, or logical truth. And if (S1) is a logical truth then it is a truth, which is the case which was here to be made. [As an aside, I am aware that the piece of dialectic just engaged in involves questionable issues of indexicality. At the end of this essay we shall return to this issue.]

With this preliminary consideration out of the way, I turn now to the exhibition of an instance of the *Modus Ponens* argument form and to the question of whether that instance is a counter-example to it.

The instantiation of that form we wish to consider is as follows:

Argument A1

(A Counter-Example to *Modus Ponens*?)

1. If [(premise 1 is true) and (premise 2 is true) and (the conclusion 3 is false)] then (this argument, A1, is invalid).
2. (Premise 1 is true) and (premise 2 is true) and (the conclusion 3 of this argument is false).

Hence, 3. (This argument, A1, is invalid).

In reflecting upon this argument there are several points to be made. The first premise is necessarily true and is clearly implied by the definition of validity (D1) presented above. Next, upon noting that the argument is patently an instance of *Modus Ponens*, the obvious inclination is to say that the conclusion which says “This argument is invalid” is false. These two points have bearing upon the truth-value of the second premise which is a conjunction composed of three conjuncts. The points already made bear upon the second premise in that they show the first and third conjuncts of it to be true. The second conjunct of the second premise which says “premise two is true” amounts simply to saying “This premise is true”, which is the very one considered & supported as true earlier. So, on the assumption that the sentence “This sentence is true” is true, we now have all three conjuncts of the second premise true, which is sufficient for saying (again) that premise two is true.

Where does this leave us? Where it would seem to leave us is with an instance of *Modus Ponens*, which has true premises and a false conclusion, in a word, a counter-example to *Modus Ponens*, and an example showing G2 [Every instance of a valid argument form is a valid argument] to be false.

What reaction is to be expected here? Certainly not some form of meek acceptance. As noted at the beginning, it is reasonable to expect philosophers to sacrifice almost any intuition if it is the cost of preserving *Modus Ponens*. To anticipate, there are obviously some points to be made about this argument.

If argument A1 has true premises and a false conclusion, then quite independently of its form, we should say that it is an invalid argument, and hence that the conclusion [This argument is invalid] is true, and further that this would make the third conjunct of the second premise [the conclusion of this argument is false] false, thus insuring that the argument is unsound. But just a moment! The soundness of argument A1 has never been the primary issue concerning this example. The key issue here is whether every instance of the *Modus Ponens* argument form is a valid argument, not whether every instance of such is a sound argument. Note also that the condition upon which this response is founded starts with an antecedent that assumes that the argument A1 (our instance of *Modus Ponens*) has true premises and a false conclusion, which was the very item to be demonstrated.

So, does this argument yield the paradoxical result that A1 is both valid and invalid? Or, that A1 is valid if and only if it is invalid? If that should be the conclusion here then that in itself is an interesting result in that, so far as I know, it has not been previously shown that the sentence "This premise is true" has paradoxical consequences. If this is what this example shows then at the very least principle (G2) must be revised to say:

Every non-paradoxical instance of a valid argument form is a valid argument.

which, by my lights, is a significant modification.

Yet, is there any quicker way to dispose of argument A1? And to be sure there may well be. The middle conjunct of premise 2 says of itself that it is true, and so the quickest way to dispose of this apparent counter-example may just be to conclude that that conjunct (contrary to our initial intuitions and subsequent argument) must be false. If the middle conjunct of premise 2 [premise 2 is true] is false, then the premise as a whole is false, and hence we don't have an instance of *Modus Ponens* with true premises and a false conclusion. When forced to choose between our belief that *Modus Ponens* is a valid argument form and our intuition that "this premise is true" is true, we obviously have a much greater commitment to the validity of the argument form than we have to the truth of the self-referential sentence.

Prof. John Kearns of the University of Buffalo has pointed out a problematic maneuver early on in this dialectic. My claim was that a case can be made for thinking that (S1) ['This sentence is true.'] is itself necessarily true, because its negation (S2) ['This sentence is not true.'] is contradictory or inconsistent. Kearns' claim is that it is a simple mistake to take (S2) to be the negation of (S1). The presence of the indexical 'this' in each of these sentences determines that each is talking about itself, and that being the case, (S2) is not the negation of (S1). While it is certainly the case that this point holds for sentence tokens, it would seem to be a more difficult question to ask whether the sentence type of the one token is the negation of the sentence type of the other.

To ultimately determine the force of this objection it seems to me that one needs to get clearer about what exactly it is for one sentence to be the negation of another sentence. But this question must be deferred, for at this point our dialectic takes another direction.

It is worth noting that argument A1 can easily be reformulated without being explicitly self-referential, i.e. without having a premise that refers explicitly to the very premise which is itself. Consider such a revision:

Argument A2

1* For any argument, if all of its premises are true and its conclusion is false, then that argument is invalid.
2* In argument A2, all of the premises are true and the conclusion is false.

Therefore,

3* Argument A2 is invalid.

This version clearly still has a self-referential character in that it refers to itself as a whole, but due to the generality of premise 2*, it no longer has a conjunct which explicitly claims "this premise is true". We may still decide to reject premise (2*) as false, but that can no longer be simply on grounds of explicit self-reference. After all, a man who asserts that "all men are mortal" has in some sense clearly attributed mortality to himself by implication, but that implication is no grounds for judging his claim to be defective or false. Likewise, premise 2* implies its own truth, but that is not alone sufficient grounds for rejection of it.

The proponents of *Modus Ponens* cannot be expected to give up without a further fight. Consider again the representation of the alleged counter-example:

Premise 1: If [(1 is true) & (2 is true) & (3 is false)] then (this argument is invalid).
Premise 2: [(1 is true) & (2 is true) & (3 is false)].

Therefore, 3: (This argument is invalid).

Now by way of counter-attack consider the following dilemma. Either Premise 2 is true or Premise 2 is false. If Premise 2 is true then that makes the antecedent of premise 1 true. And since its consequent is false, premise 1 is false, and the argument is unsound. If premise 2 is false, then that itself shows that the argument is unsound. Therefore, come what may, the argument has a false premise, is unsound, & therefore there is no counter-example to *Modus Ponens*, in the sense of an instance of that form which has true premises and a false conclusion.

The moral of this story is that our attachment to the validity of *Modus Ponens* is of sufficient strength that whatever intuition must be sacrificed to preserve it is counted to be worth the cost. As we have seen the main intuition that we must forfeit is our ability to take the sentence (S1), "This sentence is true", to be true.

And the necessity of giving it up might, pending resolution of the negation issue, require the abandonment of the traditional definition of 'tautology', which was considered earlier. If that is what it costs to preserve the validity of *Modus Ponens*, then so be it!

A Solution to the Puzzle

Consider the following argument: (1) The conclusion of this argument is true. / Therefore, (2) The premise of this argument is true. Clearly this argument is both valid and bi-valid, in that necessarily, if premise 1 is true, then the conclusion 2 must be true also. And vice versa.

Yet consider what happens when the order of these sentences is reversed, namely: (1) The premise of this argument is true. / Therefore, (2). The conclusion of this argument is true. By contrast this argument, at first blush, seems to be both invalid and bi-invalid. Is there any way out of this appearance?

Each of these sentences amounts to a version of "This sentence is true." If the original dialectic were correct, then each of these sentences would be accounted necessarily true, and thus the original validity would be restored. If Kearns' criticism of that dialectical maneuver is accepted, then the original appearance of invalidity seems to be restored. In any case, the general moral of our reflections upon *Modus Ponens* has been that the contention that such sentences are true has the consequence of putting the validity of *Modus Ponens* in peril. So, again, if giving up such intuitions is the cost of preserving the validity of *Modus Ponens*, then that cost should be counted worth the savings.

Background to the Essay

In 1979 Stephen Read showed in Synthese that self-referential arguments yield contradictory results. Read was following in the footsteps of Pseudo-Scotus and none of his paradoxical arguments exhibited any of the traditional valid argument forms. Writing in his article "Liar Syllogisms" in Analysis (January 1990) Theodore M. Drange proposed to show that the same sort of paradoxes also arise as instances of traditionally recognized argument forms. In particular Drange exhibited paradoxical instances of *Modus Tollens* and Disjunctive Syllogism.

Why those particular argument forms rather than any others? Drange never explained why he had chosen those particular valid forms. One obvious feature that both of those argument forms share is the negation in the second premise. And my suspicion is that most paradoxes have their most fertile breeding ground in the semantic swamp provided by combined instances of negation or falsity and self-reference. (In passing it should be noted that Stephen Yablo, writing in Analysis Oct. 1993, has questioned the necessity of self-reference for paradoxical results.)

In any case, the Drange article inspired me to wonder whether it would be possible to construct a paradoxical argument out of an argument form with no apparent surface level negation. The obvious target seemed to me to be *Modus Ponens*. Hence, the quest for paradoxical instances of *Modus Ponens*. (It was only later, after devising two apparent counter-examples of my own, that it occurred to me that Prof. Drange's paradoxical instance of Disjunctive Syllogism is also equivalent to a paradoxical *Modus Ponens*.

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Chapter 12
Comments on Lucey's "An Invalid Instance of Modus Ponens" by Ted Sider

Kenneth G. Lucey

Abstract Sider concludes that Lucey's counter-example to *Modus Ponens* fails. Sider argues that what Lucey has done is produce not a counter-example to that argument form, but rather a paradoxical argument. Sider discusses the sentence (T), viz. "Sentences of the form 'this sentence is true' are true.," and challenges Lucey's attempt to argue that T is true. Sider's claim is that (S2) "This sentence is false" lends no support to (T). Sider produces what he calls "The Counter-Argument" to show that Lucey's second premise is not true. At bottom Sider argues that Lucey's attempt to provide a counter-example to *Modus Ponens* "has the characteristic features of semantic paradoxes" and that "it would be rash to conclude anything about (T), i.e. "Sentence of the form 'This sentence is true' are true."

Professor Lucey argues that we must reject one of the following two claims:

(MP) Every argument that has the form modus ponens is valid.
(T) Sentences of the form "This sentence is true" are true

because of the fact that if (T) is true, we would be able to construct a counter-example to (MP). Since each is, according to him, plausible, this presents us with an uncomfortable choice.

I think we can relieve some of the discomfort by noticing that the support Lucey gives to (T) is mistaken. First, he seems to claim that (T) commands prima facie intuitive support. As Lucey notes, there seem to be no paradoxes that show it to be inconsistent to hold that:

(S1) This sentence is true.

is true, but this doesn't make it intuitive to me that it *is* true. More importantly, I reject Lucey's positive argument for (T), which he states as follows[1]: "... the

[1] One might object to Lucey's assumption of bivalence, which is controversial in this setting, but he doesn't really need that assumption. The sentence 'This sentence is not true' is just as paradoxical as the sentence 'This sentence is false'.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_12

negation of (S1) would be 'This sentence is not true', which on an assumption of bivalence, would be equivalent to (S2): *This sentence is false*. And precisely to the extent that (S2) is seen to be inconsistent or self-contradictory, there has thereby been made a case for saying that (S1) is a tautology, or logical truth."

It seems to me that this argument confuses the notion of a sentence's being self-contradictory with the notion of a sentence's being paradoxical. In the case of a paradoxical sentence like:

(S2) This sentence is false

both the supposition that the sentence is true, *and* the supposition that the sentence is false lead to contradictions. But in the case of a contradictory sentence, such as Russell's (R) "There is a barber who shaves all and only those who don't shave themselves" or, more simply, (C) "It is raining, and it is not raining", while the supposition that the sentence is true leads to a contradiction, no contradiction results in supposing that the sentence is false.

Contradictory sentences, like (R) and (C) are false, and so their negations are true. A case for sentence's being contradictory is thus a case for its negation being true. But just as we cannot consistently suppose that a paradoxical sentence like (S2) is true, neither can we suppose that it is false. For if it is false, then since it says that it is false, then it would be saying something true, and thus it would be true, and not false after all. Since we can't consistently suppose (S2) false any more than we can suppose it true, we have no case for taking its negation to be true. Thus, the paradoxical nature of (S2) lends no support to (T).

Since we have not been given reason to accept (T), we have no reason to accept his counter-example to (MP), which is based on (T). Even in the absence of an argument for (T), however, it would be interesting to learn that its acceptance would commit us to denying the universal validity of modus ponens. But even granted (T), I think that Lucey's counterexample to (MP) fails. Lucey claims that while the premises of the following argument

Argument A1

1. If 1 and 2 are true, but 3 is false, then A1 is invalid
2. 1 and 2 are true, but 3 is false
3. Therefore, A1 is invalid

are true, its conclusion is false; since the argument has the form *modus ponens*, we have our counter-example to (MP). (T) is needed for this counterexample because Lucey uses it in his argument that premise 2 is true. The problem is that even granting (T), there is an equally powerful argument that premise 2 of this argument is *not* true:

The Counter-Argument

(i) If 2 is true then A1 is valid. A1 is valid (since the denial of 3 is a conjunct of 2, and 3 says that A1 is invalid)

(ii) If 2 is true then A1 is invalid (since 2 says that A1's premises are true and it conclusion false)
(iii) Therefore, 2 is not true

Lucey notices a line of reasoning like this, and responds as follows:

> The soundness of argument A1 has never been the primary issue concerning this example. The key issue here is whether every instance of the *Modus Ponens* argument form is a valid argument, not whether every instance of such is a sound argument.

But Lucey's goal is to provide a counterexample to (MP). To do that, he needs to claim that A1's premises are true and its conclusion false. So the counter-argument is *relevant* – if it is cogent then Lucey has no counter-example. Later in the paper Lucey returns to this sort of challenge and says a different thing: "The moral of this story is that our attachment to the validity of *Modus Ponens* is of sufficient strength that whatever intuition must be sacrificed to preserve it is counted to be worth the cost. As we have seen the main intuition that we must forfeit is our ability to take the sentence (S1), 'this sentence is true', to be true."

That is, Lucey claims, we must give up (T). But the objection is that rejecting (T) isn't a cost of preserving the validity of *modus ponens*: even if we grant (T), we can't consistently suppose that premise 2 is true, in light of the counter-argument, which shows that the assumption of 2's truth leads to a contradiction. What we would have is a paradox, not a counterexample to *modus ponens*.

One might conclude that this itself gives us reason to reject (T), on the grounds that it leads to paradox. But this would be hasty. The semantic paradoxes are not merely paradoxes for the notions of truth and falsity – there are paradoxes involving reference, exemplification, and even validity itself, as in the paradoxical argument:

Argument A2

1. A2 is valid
2. Therefore, A2 is invalid

(To get the paradox, we argue first that A2 is valid, and then that this implies that A2 is invalid. To show it valid, suppose its premise true; since that premise says that A2 is valid, the argument is valid, and thus sound, and so the conclusion is true. Since the truth of the conclusion follows from the assumption that its premise is true, we may conclude that A2 is valid. But then, since this premise says that it is valid, the premise is true, and so the argument is sound. Thus its conclusion is true, and so the argument is invalid – a contradiction.)

Lucey's argument A1 has the characteristic features of the semantic paradoxes – the argument is self-referential, and the argument involves a semantic notion: validity. The paradox, therefore, may very well be due to these features, and not to (T) at all. It would be rash to conclude anything about (T) from the paradox, just as it would be rash to conclude from the paradox of the liar that there is no such thing as lying.

Chapter 13
Essay #11: The Ancestral Relation Without Classes

Kenneth G. Lucey

Abstract From the very beginnings of modern logic there has been an interest in offering an analysis of the concept of the ancestral relation. Frege offered one such in 1879, as did Peirce, Dedekind and W.V.O. Quine. This long tradition of logicians have explicated the ancestral relation in terms of classes. In Quine's view the introduction of quantification over classes brings with it a new power of expression, namely the ability to translate the schema 'x is an ancestor of y'. Part of the purpose of this essay is to make the point that Quine's analysis is at best an explication or rational reconstruction of the ancestral relation, in that it asserts too much. In sum, Quine's analysis is too broad, in that it asserts that one's ancestors to be a member of many larger classes than just classes of one's ancestors.

The positive part of this essay offers an alternative analysis of the ancestor relation. A distinction is introduced between direct and indirect generational removal. The alternative offered to Quine's translation of 'x is an ancestor of y' employs an existential quantification over numbers. The essay concludes with a discussion of the alternative ontological commitment of the two proposed analyses of 'x is an ancestor of y'. This choice amounts to a decision of whether classes are more fundamental than numbers, or vice versa.

This essay is an exploration of two alternative analyses of the ancestral relation. One reason for undertaking this exploration is that concern with the ancestral relation dates from the very beginnings of modern logic. A long tradition of logicians have explicated the ancestral relation in terms of classes. This tradition dates at least from Gottlob Frege's Begriffsschrift of 1879,[1] and is to be found in the writings of C.S. Peirce, Richard Dedekind, and continues down through the 1972 edition of W. V. Quine's Methods of Logic.[2]

[1] Gottlob Frege, Begriffsschrift. Translated in Jean van Heijenoort (ed.) From Frege to Gödel, Harvard University Press, Cambridge, Massachusetts (1967), Cf. p. 4.

[2] Willard Van Orman Quine, Methods of Logic. Holt, Rinehart and Winston, New York (1972), pp. 235–240. All quotes will be followed by page references in parentheses.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_13

In Quine's view the introduction of quantification over classes brings with it a new power of expression, which in the present instance is displayed by the ability it gives one to translate the schema 'x is an ancestor of y'. The translation that Quine gives of 'x is an ancestor of y' is 'x is a member of every class which contains y and all parents of members'. One task of this essay is to examine the character of this translation. It is seen that this translation is at best an explication or rational reconstruction, in that Quine's translation of this relational term tells us something which need not at all have been obvious to one that understood the *definiendum*, namely, that x is thus asserted to be a member of many larger classes than just the classes of y's ancestors. The constructive portion of this essay proposes a new explication of the ancestral relation, which lacks the defect just noted in the traditional definition. The new explication is developed in terms of a relation called "generational removal". The concept of this relation is developed in such a way as to allow for degrees of generational removal. And a further distinction is introduced between direct and indirect generational removal.

As has already been mentioned, the claim has been made that one of the advantages of adopting an ontology committed to a realm of classes is that the relational predicate 'x is an ancestor of y' cannot be translated into any of the known logics which do not contain terms for classes. In the third edition of his Methods of Logic Willard Van Orman Quine provides a brief discussion of the schema 'x is an ancestor of y'. He there asserts that he is following Frege when he provides a translation of this schema into the logic of classes. He is justifying this translation when he says:

> But this power of expressing irreducibly new laws would of itself justify little interest in class theory, were it not accompanied by a corresponding increase of power on the side of application. A good example of this effect may be seen in the definition of the predicate or relative term 'ancestor' on the basis of 'parent'. (p. 237)

Having first introduced the machinery for class logic, Quine then says:

> Now the problem is to write 'x is an ancestor of y' using only 'F' and our various logical symbols. (p. 238)

'Fxy' here translates 'x is a parent of y'. The translation that Quine gives of 'x is the ancestor of y' is more of an explication or rational reconstruction (in Carnap's sense) than a straightforward translation. For Quine's translation of this relational term tells us something which need not at all have been obvious to one that understood the *definiendum*. His translation is again that: x is an ancestor of y if and only if x is a member of every class which contains y and all parents of members. The symbolic version of this is:

$$(\alpha)(\{y\varepsilon\alpha \,\&\, (z)(w)[(w\varepsilon\alpha \,\&\, Fzw) \supset (z\varepsilon\alpha)]\} \supset x\varepsilon\alpha)$$

The above schema has been translated out of Quine's dot notation into a notation of parentheses, brackets and braces. What Quine is saying in the above schema can best be seen by examining the near limiting case of a universe of discourse which has just three members. Let the names of the three members be 'a', 'b', and 'c', and further specify that b is the father of c. In this limiting case, 'α' is the class that is uniquely determined by the individuals a, b and c as members. Quine's schema, which in this instance is meant to be a translation of 'a is an ancestor of c' then becomes:

$$(\alpha)(\{c\varepsilon\alpha \,\&\, [(c\varepsilon\alpha \,\&\, \mathrm{F}bc) \supset (b\varepsilon\alpha)]\} \supset a\varepsilon\alpha)$$

When the above instantiation is simplified to eliminate redundancies, what remains says:

$$(\alpha)(\{(c\varepsilon\alpha) \,\&\, [\mathrm{F}bc \supset (b\varepsilon\alpha)]\} \supset a\varepsilon\alpha)$$

Or, in other words: for every class α, if c is a member of α and b is the parent of c only if b is a member of α, then a is member of α. Expressed in a slightly different idiom this becomes: if someone is a member of a class, which has every parent of a member as a member, then any ancestor of that one is a member. What has been done in this limiting case is to universally instantiate the '*z*' and 'w' of the original schema for 'b' and 'c' respectively, and then simplify.

That Quine's translation "says" more than would usually be meant by one who said that 'a' is an ancestor of c', is seen from the fact that since 'α' is universally quantified, the ancestor a is asserted to be the member of many other (e.g., larger) classes than just the class of c's ancestors. For example, a is thus asserted to be a member of c's "ancestors and neckties; for, neckties being parentless, their inclusion does not disturb the fact that all parents of members are members." (p. 238) This is no surprise to Quine – nor does he consider it a serious defect in his definition. Even if Quine is correct and this feature of his definition is not cause for rejecting it, the absence of this feature in an alternative definition of 'a is an ancestor of c' would provide grounds for choosing between them. Now we turn from Quine's translation of the ancestral to the task of translating the ancestral relation without referring to classes.

First, let us determine one ordinary meaning or definition of the word 'ancestor'. One such definition provides us with the following starting point. It defines an ancestor as "One from whom a person is descended, whether on the father's or the mother's side, at any distance of time." With this definition in mind we can make the simple observation that if x is an ancestor of y, then y is a descendant of x. The property of an ancestor that I wish to capture here is expressed by the inelegant but descriptive phrase "order of generational removal." What this means is very simple and can best be explained by an illustration. If x is the father of y, then x is one generation removed from y, i.e., x is of the first order of "generational removal" with respect to y. I now introduce the convention that the capital letter 'G' is to abbreviate the relational predicate 'order of generational removal'. A number within parentheses following 'G' is taken as specifying the degree of a given generational removal. The generational removal that is involved in x's being the father of y is expressed in this notion as: G(1). If so desired, this notation can be supplemented by an enumeration or ordered listing, of the individuals involved.

The convention might be adopted that the leftmost variable or constant picks out the temporally earliest individual. Thus 'G(1,x,y)' may be taken as expressing the fact that 'x is of the first order of generational removal earlier than y." Or in other words, x lived temporally one generation earlier than y. With orders greater than one, say 'G(n)', there will by definition always be n generations separating the individuals x and y. Generational removal is thus a tertiary relation holding between a number and two other individuals.

We have not as yet uniquely captured the ancestor relation with 'G', for not everyone of the generation previous to y is an ancestor of y. All of y's parents' contemporaries have a generational removal of order one from y. Thus we must take one step further and distinguish direct from indirect generational removal, abbreviating them as 'DG' and 'IDG'. Using these terms there is a direct generational removal of order one between x and y if and only if either x is a parent of y or y is a parent of x. There is a direct generational removal of order two between x and z if and only if x is a parent of a parent of z, or vice versa. There is a generational removal of order *n* between x and z if and only if 'parent of a' gets repeated *n* times between x and z.

Consider an example which illustrates this notation. Suppose that w is the great-grandfather of z. The relationship between w and z would then be expressed in the above notation as DG(3,w,z). This notation may be extended even further by introducing a superscripted 'x' between the first and last terms, e.g., DG(2,w,x^2, z). This superscripted 'x' would specify the number of ordered individuals that occur between 'w' and 'z'. Obviously, the superscript of 'x' would always equal the first argument of 'G' (or 'DG') minus one. The first example above could thus also be expressed as 'DG(1,x,z^0,y)' and the last example as 'DG(3,w,x^2,z)'. Now how would one express the relation "x is an ancestor of y" in the above notation? The most obvious difference between the sentence schema 'x is an ancestor of y' and 'x is the great-grandfather of y' is that the latter is such that the order of "generational removal" can be determined just by an inspection of the meaning of the terms involved, whereas in the former case we cannot so determine it. Thus in asserting that 'w is an ancestor of z' all that is being expressed is that: (∃n) DG(n, w, z), which is to say, there is a number n such that w has a generational removal of order n from z. To ask for a more specific translation of 'w is an ancestor of z' is to ask for a more specific account of the order of generational removal, and this is to ask for information not given by the original statement itself. Therefore, we see that there is a way of translating that 'a is an ancestor of c' without having to say that a is a member of the class of "c's ancestors and neckties".

One ontological comment is called for in concluding this essay. Quine's translation of 'x is an ancestor of y' required him to quantify over classes, and by his reckoning that committed him to an ontology of classes. The alternative translation just exhibited employed the existential quantification'(∃n) DG(n, w, z)' where n was taken to be a number, namely the number of generations one individual was directly removed from another individual. And so this second definition, by Quine's lights, would seem to be committed to an ontology of numbers. At this point, if one takes classes to be more fundamental than numbers, or if one believes numbers to be ontologically derivative from classes, it would appear that little progress has been made. But it is by no means obvious to everyone that one must take classes as ontologically more fundamental than numbers and so for such dissenters my definition of ‘x is an ancestor of y’ opens a new option where none was explicitly seen before.

Chapter 14
Essay #12: Laws of Excluded Middle and a Temporal Dilemma

Kenneth G. Lucey

Abstract This essay begins with a brief discussion of Borges' short story "The Garden of Forking Paths". The interest of the story is that it imagines a world in which the protagonist violates logical laws by simultaneously both performing and not performing a certain action at the same time. The essay proceeds by formulating a four-fold taxonomy, for understanding laws of excluded middle, viz. (I) Pragmatic versions, (II) Semantic versions, (III) Syntactic versions, and (IV) Ontological versions. Drawing on Aristotle, Gottlob Frege, Bertrand Russell, G.E. Moore, and Nicholas Rescher instances of these four categories are compared and contrasted.

A middle section of the paper introduces a latent controversy between W.V.O. Quine and Roderick M. Chisholm over the status of propositions. Quine is quite outspoken concerning propositions, calling them "futile", "a hollow mockery", "shabby" and a "philosophical extravagance" Quine names no names, but it is shown that Chisholm holds exactly the theory that Quine mocks. Returning to the topic of Laws of Excluded Middle, it is shown that Quine's own sentential versions require detailed modifications that he has not provided. The entire Quine/Chisholm controversy over the ontological status of propositions turns on the issue of identity conditions, which as Plantinga notes, apply just as much to sentences as to propositions.

The final section of the paper focused upon ontological versions of the Law of Excluded Middle, which Chisholm has endorsed. The discussion proceeds by making a distinction between two temporal features, namely the possession of a property *at a time* and the possession of a temporal property. This discussion poses a conceptual challenge to any ontological version of the law of excluded middle. The difficulty crystallizes into an argument of the complex constructive dilemma form, yielding the conclusion: Either there is no real change or becoming, or there is a violation of the law on non-contradiction.

> The notion that propositions are or can be, in and of themselves, such that the principle of excluded middle applies is probably the source of more fallacious reasoning in philosophical discourse and in moral and social inquiries than any other one sort of fallacy. (John Dewey, [4])
>
> I therefore accept the law of excluded middle without qualification. (Bertrand Russell, [11])

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_14

In his story "The Garden of Forking Paths" Jorge Luis Borges has depicted the vision of a reality which is philosophically intriguing. His world diverges from our own common sense conception of reality. As we live our lives we are perpetually faced with what seem to be mutually exclusive alternatives, both of which we assume are open possibilities. With regard to any apparently possible action, we believe that either we shall do the act or it is not the case that we shall do the act. In Borges' world the character both does the act and doesn't do it. It is not just that they are both possibilities, but rather that they both become actual. The appeal of the story is in its attempt to bring alive for us as a possible world one which in our more sober moments we would assess as patently impossible. Or is it impossible? The Borges' story seems to violate basic logical principles, to the consideration of which I now turn.

There is no such thing as the law of excluded middle, despite the fact that most who have reflected on the subject have written as if there was some such unique entity. Upon closer examination, all that the multitude of alleged laws that have claimed the title "the law of excluded middle" have in common is the characteristic that they employ a disjunctive sentence to express some form of dichotomy.

As a first approach to the great variety of laws of excluded middle extant in the literature, a fourfold division can be imposed. Without implying any great significance for the choice of labels or claiming that the categories are either exhaustive or exclusive, one could sort laws of excluded middle under these headings:

I. Pragmatic versions, formulated as a dichotomy amongst kinds of assertions.
II. Semantic versions, stated in terms of truth and falsity.
III. Syntactic versions, which utilize an explicit negation operator upon propositions, statements, judgments or sentences.
IV. Ontological versions, employing or implying quantification over predicates or properties and using some specific form of predicate or property complementation.

Even if one grants that some such set of distinctions as the above can be made, the question remains, "Why should one bother?" The short answer to this question is just that (a) it is not the case that all four types of formulations are logically equivalent, and (b) furthermore, some of them are simply false.

A similar sorting could be performed with respect to Laws of Non-contradiction. With regard to those I would maintain the same sort of contention, namely that (contrary to common assumption) there is no such entity as the law or principle of non-contradiction.

It is not intended to give here anything like an exhaustive survey of various versions of laws of excluded middle. Rather I shall just exhibit a few samples and note some of the differences between them. An example of what I am calling a pragmatic version of a law of excluded middle is found in Aristotle's Metaphysics, Book Gamma, Chapter 7, 1011b23, where he says:

> Nor, on the other hand, is it possible that there should be anything in the middle of a contradiction, but it is necessary either to assert or to deny any one thing of any one thing. (Kirwan, p. 23)

As a logical law this version, taken at face value, is a dismal failure. In a word, it is simply false and not merely, as Christopher Kirwan would have it, an "incautious" formulation. (Kirwan, p. 116). At the pragmatic level we are not restricted to the possibilities of assertion and denial. An equally legitimate stance to take with regard to the possession of any one thing by any one thing is to simultaneously refrain from assertion and refrain from denial. The withholding of judgment is often the most rational stand to take. Thus, at the pragmatic level there is no exhaustive dichotomy of just this sort.

In On Interpretation, Chapter 9, 18b Aristotle gives (without necessarily endorsing) a different formulation. He says:

> It may therefore be argued that it is necessary that affirmations or denials must be either true or false. (McKeon [8], p. 46)

This formulation underlines the looseness of the four categories outlined above, for in this case we get a blending of the pragmatic and the semantic elements as well as a modal component (of necessity), which I shall ignore. My justification for treating these formulations as at least in part pragmatic is their inclusion of assertion and denial, which presupposes acts of someone asserting or someone denying.

I shall now, without extensive comment, review some of the other wide variations that have been called "the law of excluded middle". In volume ii, section 56 of the Grundgesetze der Arithmetik, Gottlob Frege says:

> The law of excluded middle is really just another form of the requirement that the concept should have a sharp boundary. Any object that you choose to take either falls under the concept or does not fall under it; tertium non datur. (Geach and Black, p. 159)

In his 1912 The Problems of Philosophy Bertrand Russell gave what I would call the Hamlet formulation. He considered it a self-evident logical principle that:

> The law of excluded middle: "Everything must either be or not be." (Russell [12]), p. 72

At about the same time (1910–1911) G. E. Moore gave a series of lectures which were published in 1953 as Some Main Problems of Philosophy. In the chapter on "Existence in Time" Moore said:

> There is another logical law, which seems just as certain, and which is called the Law of Excluded Middle: and asserts that, if two propositions contradict one another, one or other of them must be true. The Law of Excluded Middle, therefore, involves the conclusion that two contradictory propositions cannot both be false. (G.E. Moore, 1953, 182–183)

Nicholas Rescher has illuminated these issues in an article entitled "Truth and Necessity in Temporal Perspective," which appeared in 1967 in The Philosophy of Time, edited by Richard M. Gale, and subsequently in 1969 in Rescher's Essays in Philosophical Analysis. Rescher distinguishes a "Law of Bivalence" from an "Excluded Middle." He gives them as follows:

1. The "Law of Bivalence," which holds that propositions must be either true or false: N [Tp v Fp] and
2. The "Excluded Middle" Principle, which holds that of a proposition and its contradictory one must be true: N [Tp v T(~p)]" (Rescher [10], p. 273)

In the same passage Rescher goes on to say "What is called the Law of Excluded Middle is perhaps best and most standardly formulated as the Principle "N [p v ~ p] without any overt reference to truth or falsity." (Rescher [10], p. 273). Rescher's Law of Bivalence is a pure case of my second category, the semantic version. His third principle "N (p v ~ p)" is an example of my third category of syntactic versions. Rescher's (2) is another mixed case, which in this instance combines both the semantic and syntactic features.

In his 1970 Philosophy of Logic W. V. Quine has likewise distinguished several versions of tertium non datur. What gives his variants a particular interest is that unlike all of the previously quoted philosophers, Quine rejects the notion that propositions are the proper bearers of truth-values. He says that such a theory "shows disturbing signs of philosophical extravagance" (p. 1), that "as a theory it is a hollow mockery" (p. 1 and p. 33), and that furthermore such a theory is "futile," "shabby" and "an imaginary projection from sentences" (p. 10) It is somewhat unusual to see a philosopher using such inflammatory language in opposition to a rival theory. In other contexts the resort to such spleen is usually camouflage for one's inability to produce any reasonable arguments against the opposing view. But, in any case, our primary interest lies in Quine's treatment of laws of excluded middle. He formulates three versions which he claims are logically equivalent, viz.:

1. Every closed sentence is true or false.
2. Every closed sentence or its negation is true
3. Every closed sentence is true or not true. (Quine [9], p. 83)

Quine's contention that these three are logically equivalent is based on his view that "Logical equivalence . . . holds indiscriminately between all logical truths" (p. 83)

What would it take to show that one of Quine's formulations of the law of excluded middle was false? The appropriate counter-example S would have to satisfy one of the following conditions.

(1′) S is a closed sentence which is neither true nor false.
(2′) S is a closed sentence such that neither it nor its negation is true.
(3′) S is a closed sentence which is not true and not not true.

Since my main efforts at questioning the truth of version of the excluded middle will center on my fourth category, i.e. on ontological versions of the law of excluded middle, I shall not linger very long over these. Quine's main criticism of propositions concerns the question of a principle of individuation for propositions. His claim is that such a principle presupposes a notion of sentence synonymy, or equivalence, which has no objective basis. (cf. p. 8) I shall not pursue his main lines of support for these contentions, which concern the indeterminacy of translation and the under-determinacy of theory by data.

It is enough at this point to note that Quine's versions of tertium non datur are obviously false and that it is childishly simple to produce sentences which satisfy one or more of (1′) through (3′). Any question such as "Is someone coming?" is an example of a closed sentence which is neither true nor false. My purpose here is not to try to achieve a "cheap" refutation of Quine, but rather to point out that there are clearly some important qualifications that are missing from his formulations. At the very least Quine's (1) would have to be something like: Every grammatically well-formed meaningful declarative sentence of a language stage **L** at time **t** is true or false. In light of the difficulties inherent in providing identity conditions for the required modifiers, Quine's criticisms of the proposition ontologist seem like an open invitation for a *tu quoque*[1] response.

In launching his vitriolic attack upon propositions Quine abstained from pointing his philosophical finger at anyone in particular and thus refrained from naming names. While such a strategy can be construed a civility or politeness, it also tends to turn the opposition into a bit of a strawman. It also has the peril that the opposing view never gets a sympathetic hearing of its case. So who holds this so-called "shabby," "hollow mockery" of a theory that Quine has denounced? One doesn't have to look very far afield to find a proponent of this allegedly "futile" theory. The same *Foundations of Philosophy Series*, published by Prentice-Hall, which brought us Quine's Philosophy of Logic (1970), also contains R.M. Chisholm's Theory of Knowledge (1st ed. 1966, 2nd ed. 1977, 3rd ed. 1989). Chapter 5 entitled "Truth" contains a detailed exposition of the very theory that Quine opposes. The view Quine calls "a hollow mockery" is described by Quine thus:

The meaning of the sentence is that snow is white, and the fact of the matter is that snow is white. The meaning of the sentence and the fact of the matter here are apparently identical, or at any rate they have the same name: that snow is white. And it is apparently because of this identity, or homonymy, that the German (speaker of "Der Schnee ist weiss") may be said to have spoken truly. His meaning matches the fact (Quine, [9], p. 1)

Chisholm's view is that certain sentences express propositions, that propositions are a subspecies of states of affairs, and that a fact can be identified with a true proposition (Cf. Chisholm [3], pp. 87–91).

Nevertheless, it is not my purpose here to try to adjudicate this latent debate between Quine and Chisholm. The point is that their different theories about the ultimate bearers of truth-values give rise to differences in their formulations of tertium non datur. Chisholm's view can accommodate referring to sentences as true or false, but that is only because those sentences express propositions, which are true or false, in the first instance. "A proposition, we may now say, is true if and only if it obtains. And it is false if and only if it does not obtain." ([3], p. 88) Chisholm's own version of tertim non datur thus becomes:

> Propositions ... are necessarily such that either they always obtain or they never obtain (p. 88)
>
> Or again,
>
> Every proposition is either true or false and that no proposition is both. (p. 89)

[1] Cf. Alvin Plantinga, The Nature of Necessity, p. 1, "Some find propositions objectionable – on the grounds, apparently, that they lack a 'clear criterion of identity.' ... the alleged debility ... is one that propositions ... share ... with sentences."

Chisholm's theory is actually far richer in content than I have so far indicated. It allows for the formulation of various de dicto and de re beliefs, as well as de dicto and de re sentence tokens.

As part of the same discussion Chisholm also formulates an instance of what I was previously calling an ontological version of a law of excluded middle. He formulated it thus:

> We may also say that, for everything and every property, either the thing has the property or the thing does not have the property, and the thing is not such that it both has and does not have the property. (Chisholm [3], p. 89)

This quote obviously also contains an ontological version of a law of non-contradiction.

A schematic version of this Law of Excluded Middle (of the ontological variety) would be as follows: Every entity **x** and every property **Φ** are such that either x has **Φ** or **x** has non-**Φ**. An associated Principle of Non-contradiction would thus be: Every entity **x** and every property **Φ** are such that it is not the case that both **x** has **Φ** and **x** has non-**Φ**. What is often not appreciated by people who accept these principles, is that in each there are distinct temporal components that need to be made explicit. Two such tacit temporal features are (i) the possession of a property at a time, and (ii) the possession of a temporal property. I shall refer to these two features as the time of possession of a property *versus* the possession of a temporally indexed property.

If the time of possession of a property is not taken account of, then this version of the Excluded Middle would immediately come into conflict with the stated version of Non-Contradiction. For example, at first John does not know how to speak Spanish and later John does know how to speak Spanish. From these facts it is not to be concluded that there has been a violation of the specified version of Non-Contradiction such that John both does know how to speak Spanish and does not know how to speak Spanish. The obvious solution here is to note that the apparent contradiction dissolves when the unstated times of possession are made explicit. Thus, there is no contradiction involved in it being the case that John does not speak the language in the Fall and John does speak the language in the Spring.

The second temporal feature to be distinguished is the fact of the possession of temporal or temporally indexed properties. What is often overlooked, by those who accept the ontological version of the Excluded Middle, is that the range of the predicate variable includes not just properties like is green or is dry, but also temporally indexed properties as well, such as green in the Spring, and dry in the Summer. Thus, a given field might possess during the Winter (the time of possession) the temporally indexed properties of being green in the Spring and dry in the Summer.

So by taking account of each of these types of temporal features this Law of Excluded Middle may be reformulated as follows:

(L.E.M.) For all times **s** and all times **t** and for every entity **x** and every property **Φ**, at **s** either **x** has the property **Φ** at **t** or **x** has the property non-**Φ** at **t**.

The corresponding formulation of this Law of Non-Contradiction would be:

(L.N.C.) For all times **s** and all times **t** and for every entity **x** and every property **Φ**, at s it is not the case that both **x** has **Φ** at **t** and **x** has non-**Φ** at **t**.

A philosopher who accepts this ontological version of a Law of Excluded Middle is thus holding that corresponding to every property that he ever has had, does have or shall have, it is **now** the case that he has the property of having it at that time. Thus, if it is going to be the case that our philosopher will be swimming next Saturday and it is now the previous Monday, then on Monday he has the property of swimming on Saturday. This is a straightforward consequence of the stated law (L.E.M.) namely that on Monday either **x** has the property of swimming on Saturday or **x** has the property on non-swimming on Saturday.

But isn't this result terribly counter-intuitive? What we have seen is that to keep from violating the stated law of non-contradiction it was necessary to (i) note the different times of possession of properties, and (ii) to perform a temporal operation wherein the times of possession are logically transferred into the predicate or property being possessed. (I shall call this operation the temporal indexing of properties.) So, for anything that persists through time to keep from violating non-contradiction, all of its properties must be temporally indexed.

It seems to me that there are actually two aspects of the counter intuitive consequence that emerge from this version of tertium non datur. The consequences are that:

1. At any moment of existence an entity possesses a temporal indexed version of every property that it will ever have.
2. If there is no gain or loss of properties for an entity, then there is no real change or becoming for it.

Our student John, prior to registration in September, already possesses both the property of not speaking Spanish in the Fall and the property of speaking Spanish in the Spring, if this version of the excluded middle is true. Common sense would have it that in studying to learn Spanish, John is striving to *change* his language abilities. Yet the only way in which this appearance of change can be preserved is by viewing his properties in an abbreviated non-temporal fashion. But in following that course we run afoul of the ontological version of non-contradiction.

In another context Chisholm formulated the presupposition of common sense. He said:

> I shall make three metaphysical assumptions . . . (2) that every individual thing is such that, for any two moments of its existence, it has some properties at the one moment it does not have at the other. (Chisholm [2], p. 17)

This metaphysical assumption seems to amount just to saying that there is real change and becoming for entities which persist through time. Chisholm's assumption echoes the following from Leibniz's Monadology 10: "I take it also for granted that all created beings, consequently the created monads as well, are subject to change, and that this change is even continual in each one."

It seems to me that all of the foregoing creates a dilemma for us, viz.:

1. Either all our properties are temporalized or they are not all temporalized.
2. If all of our properties are temporalized, then there is no real change or becoming.
3. If not all of our properties are temporalized, then there is a violation of the *ontological version* of the Law of Non-contradiction.

Therefore, 4. Either there is no real change or becoming or there is a violation of non-contradiction.

Is this a sound argument? It obviously has a valid form, so all that remains for our consideration is the truth of the premises. The irony of this dilemma is that the only reason one might have for considering the first premise true is the prior acceptance of a syntactic version of the Law of Excluded Middle. If the price of preserving our intuition that real change occurs in the world is giving up the syntactic version of the Law of Excluded Middle, that seems to me a price worth paying.

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Chapter 15
Essay #13: The Logic of ‘Unless’

Kenneth G. Lucey

Abstract This brief essay explores the logic of the connective ‘unless’, as in the example of a person just bitten by a poisonous snake, i.e. ‘He will die *unless* he gets treatment’. The essay explores the connection between ‘unless’ and ‘or’. Just as there is a distinction between a strong and a weak sense of ‘or’, there is also a corresponding distinction between a strong and a weak sense of ‘unless’. The weak ‘or’ means ‘p or q, or both’, whereas the strong ‘or’ means ‘p or q, but not both.’ Another issue explored in the essay is the connection between the connective ‘unless’ and both the corresponding conditional, and that conditional’s inverse, where the inverse of ‘if p then q’ is ‘if not p then not q’. The essay demonstrates the somewhat surprising result that in the case of the weak ‘unless’ statement, the order of the terms can be reversed without changing the truth-value of the statement.

What is the logic of the word ‘unless’? This is an issue that has been discussed by several philosophers and logicians (e.g., Quine, Rescher, Salmon, and Schagrin) and several quite different logical translations have been given of this connective. Any correct accounts of the meaning must accommodate our ordinary intuitions about various propositions expressed using the word ‘unless’.

Consider as a first example what one might say about a person who has just been bitten by a poisonous snake, viz. ‘He will die **unless** he gets treatment.’ Clearly this at least means: ‘If the victim does not get treatment then the victim will die.’ But does it also logically imply the inverse of that conditional, viz. ‘If the victim does get treatment then the victim will not die’? [The inverse of a conditional ‘if p then q’ is what one gets by negating both the antecedent and the consequent of the conditional without altering the order of the terms, i.e. if not-p then not-q.] Just as with the English word ‘or’, which is ambiguous between the strong ‘or’ [either p or q, but not both] and the weak ‘or’ [either p or q, and possibly both], one can likewise distinguish between a strong and a weak sense of the term ‘unless’. The weak sense of ‘unless’ is equivalent to a conditional, but leaves open the issue of the corresponding inverse of that conditional. Consider the case of a pilot who has ejected from his plane with a single parachute. One could say of such an individual;

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'He will die unless his parachute opens.' But of course there are many other ways of dying on the way to the ground, such as a fatal heart attack. So it could well be that his parachute does open and he dies anyway. This possibility is what makes for the weak sense of the word 'unless', i.e. 'p unless q' implies 'if not-q then p', but does not imply its inverse, i.e. 'if q then not-p'.

What then of the strong sense of 'unless'? What is of particular interest about the strong sense of the word 'unless' is that it resembles the biconditional '. . .if and only if —' in that it implies both a conditional <u>and</u> the inverse of that conditional. Consider the example: 'a number is odd unless it is divisible by 2'. This strong sense of 'unless' implies both the conditional and its inverse. That is, 'if it is odd then it is not divisible by 2' and 'if it is not odd then it is divisible by 2.' So, 'p unless q' [in the strong sense] implies both 'if not-q then p' and 'if q then not-p', which is the inverse of the first conditional.

How does the strong 'unless' relate to the strong 'or'? It is easily shown that the strong 'or' [p or q, but not both] is materially equivalent to the negation of the material biconditional. I.e., (p v q) ≡ not (p ≡ q). The strong 'unless' is in turn materially equivalent to (p ≡ not q). But these two bi-conditionals are in turn materially equivalent to one another. That is, not (p ≡ q) is equivalent to (p ≡ not q). **So, what this shows is that the strong 'or' is logically equivalent to the strong 'unless'**!

Now the question arises whether the weak 'unless' is likewise equivalent to a weak 'or'? We have already seen that 'p unless q' in the weak sense is equivalent to the single conditional 'if not-q then p', and leaves undetermined the corresponding inverse 'if q then not p'. Treated as an instance of material implication 'if not q then p' is itself materially equivalent to 'either q or p', which is the standard form for the weak 'or'. That means that the statement about the snake bitten person: 'he will die unless he gets treatment' is logically equivalent to 'either he will die or he will get treatment, or both'. Hence, the weak 'unless' is logically equivalent to the weak 'or'.

What is the relationship between the two statements: 'he will die unless he gets treatment' and 'he gets treatment unless he dies'? By the line of reasoning in the previous paragraph they are both equivalent to the weak 'or' statement: 'Either he gets treatment or he dies, or both'. Which implies that the two unless statements are in turn logically equivalent. Translated into material conditionals the two 'unless' statements come out as follows: 'if he does not get treatment then he will die' and 'if he does not die then he got treatment'. [Note that there is a shift in tense in these two statements.] Clearly these two conditionals are contrapositives of one another and as such are logically equivalent. [The contrapositive of 'if p then q' is the converse of the inverse, i.e., if not-q then not-p.] **This demonstrates the somewhat surprising result that in the case of the weak 'unless' statement, the order of the terms can be reversed without changing the truth-value of the statement**.

Does this result likewise hold for the strong 'unless' statement?

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Chapter 16
Essay #14: Frankfurt on Why We Care About Truth: The Worlds of the Two Harrys

Kenneth G. Lucey

Abstract This essay offers a summary and critique of the position that Harry Frankfurt has taken in On Truth for why we care about truth. Frankfurt is a great champion of objective truth, while at the same time holding a noncognitivist position concerning normative issues. The critique offered by this essay concerns the interface between these two realms. Frankfurt's view is that objective truths can serve as premises for valid or invalid arguments in support of normative conclusions. This essay argues that Frankfurt is mistaken about that, and through the use of several concrete examples seeks to make that case.

Frankfurt considers the situation of the postmodernist, who is characterized as denying that there are any objective truths or objective falsehoods. He expresses puzzlement that postmodernists are not troubled about characterizing their own beliefs as true. But why should this be troubling? One who denies that there are any objective truths, can still recognize other species of truth, such as subjective truth. So, when the postmodernist embraces some proposition as true, what they must mean is that such a proposition is true to them, or true from their subjective perspective.

The paper ends with a speculation concerning what Frankfurt calls the prevalence of bullshit in our culture.

> "All truth passes through three stages. First it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident." Arthur Schopenhauer

Harry Potter and Harry Frankfurt each live in quite interesting worlds. Harry Potter lives in a world occupied by witches, wizards, warlocks, muggles, and a vast variety of magical creatures, including centaurs, giants, poltergeists werewolves, and not least of all The Dark Lord, Lord Valdemort, and his legion of death-eaters. By contrast Harry Frankfurt, as depicted in two of his books, On Bullshit and On Truth, lives in a world occupied by phonies, fakers, humbugs and hokum, bullshit artists and postmodernists, posers, bluffers and garden variety liars, as well as a number of truth seekers and truth tellers.

In the first of these two books, On Bullshit, Harry Frankfurt "offered a provisional analysis of the concept of bullshit: that is [he] specified the conditions that [he] considered to be both necessary and sufficient for applying the concept

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correctly." (OT, p. 3) On pages 34–35 of that book Frankfurt gives his answer. He has been discussing an incident between Ludwig Wittgenstein and a friend of his named Fania Pascal, where Wittgenstein reacted rather dismissively to something she said. Ms. Pascal has been in an accident and she reports that "she felt like a run-over dog." In commentary Frankfurt says: "Her statement is grounded neither in a belief that it is true nor, as a lie must be, in a belief that it is not true. **It is just this lack of connection to a concern with truth – this indifference to how things really are** – that I regard as of the essence of bullshit." (pp. 34–35)

In the Introduction to the second book, On Truth, Frankfurt says that in the first book he was making "an important assumption" which he thought most of his readers would share, namely that "being indifferent to truth is an undesirable characteristic, and bullshitting is therefore to be avoided and condemned." (OT, p. 5) So, his purpose in On Truth is to give his justification for that previously undefended assumption, and to try to say in detail **why we care about truth**. My purpose in this essay is to give that justification a review, and to critique what I take to be some of its more interesting details. Specifically my critique consists of showing, through a series of examples, exactly why Frankfurt's view about the importance of why we care about truth does not conceptually mesh with his non-cognitive approach to normative propositions.

Frankfurt says on page seven of On Truth that his editor pointed out to him "the rather paradoxical circumstance that while no one has any trouble recognizing that there is plenty of *bullshit* around, quite a few people remain stubbornly unwilling to acknowledge that there might – even in principle – be such a thing as *truth*." Frankfurt then goes on to characterize the opposition in a different way, namely as a debate between those who do and those who do not accept the reality of a meaningful distinction between being true and being false. Frankfurt then sums up the paradox by noting that "In any case, even those who profess to deny the validity or the objective reality of the true-false distinction continue to maintain without apparent embarrassment that this denial is a position they do truly endorse. The statement that they reject the distinction between true and false is, they insist, an unqualifiedly *true* statement about their beliefs, not a *false* one." (OT, pp. 8–9).

It seems to me that Frankfurt has conflated two quite different positions in this discussion, and that it would be well worth our while to sort them out. Ten pages later Frankfurt gives a name to one position, namely folks who call themselves "postmodernists" [who] "rebelliously and self-righteously deny that truth has any genuinely objective reality at all." (OT, p. 19) So, the postmodernist holds that the predicate 'is true' never means 'is objectively true'. So, anyone who holds this view, and while holding it, goes ahead and uses the term 'true' concerning their own beliefs simply must mean that their belief is true in some other sense, such as 'subjectively true', or 'true for me'.

So, anyone holding such a view is not precluded from calling certain beliefs true. When they do so we just need to understand that they are using the term elliptically for 'true for me'. A postmodernist, in denying any objective reality to the predicate 'is true', is not automatically convicted of confusion or inconsistency if that person goes on to talk about one of their beliefs as being true. All that is obvious is that they must be using the term in some other (nonobjective) sense. Clearly some sentences fit exactly in this mold. For example, the sentence 'sweet wines are preferable to dry wines' might well be true for one person and false for the person standing next to him. So, we can say that this sentence is true for Jim and false for Charlie. Why any postmodernist would want to say that this holds of every proposition remains for me a mystery. To say that the proposition 'eight is divisible by two' is only subjectively true seems absurd.

There is a second position that can be extracted from Frankfurt's opening remarks. That is the position of the person who wants to reject "the true-false distinction". One doesn't have to be a postmodernist to take this second stand. What this position amounts to is the rejection of bivalence, or rejection of the notion that there are just two truth-values. A philosopher may easily say – "when I say 'true' I mean 'objectively true' and when I say 'false' I mean 'objectively false', but then go on to hasten to add that he understands the terms to be contraries, rather than mutually exclusive." So, on this understanding, the philosopher who rejects "the true-false distinction" is just denying the Law of Excluded Middle, according to which: every proposition is true, or if not true, then false. (Aristotle seems to be considering exactly this middle status for future contingent propositions in *De Interpretatione*.)

There is a bit of irony to be had here because, although Frankfurt never acknowledges the fact explicitly, he himself is one of the philosophers who "rejects the true-false distinction" in exactly this sense. On page 28 of On Truth Frankfurt says: "many people manage to convince themselves – sometimes rather smugly – that normative (i.e. evaluative) judgments cannot properly be regarded as being *either* true or false. Their view is that a judgment of that kind does not actually make any factual claim at all – i.e. any claim that would be either correct or incorrect. Rather they believe, such judgments ... are, strictly speaking, neither *true* nor *false*." (OT, p. 28) The irony here is that what Frankfurt is describing is his very own view. I don't know if he shares or eschews the mentioned smugness, but Frankfurt says at the top of page 29 "Okay. Suppose we concede this." What that concession amounts to is that Frankfurt has just himself joined the ranks of the philosophers who "reject the true-false distinction." He has not thereby joined the ranks of the postmodernists. He has not precluded himself from continuing to distinguish the objectively true from the objectively false. All he has done is recognize that there are some judgments that are neither objectively true nor objectively false. Rejecting the Law of the Excluded Middle leaves the Law of Non-contradiction alive and well. So Frankfurt has not fallen into any logical inconsistency, rather only the rhetorical one of finding puzzling the view of those who reject the "true-false distinction", while engaging in that very rejection himself.

What I want to do now is explore the consequences of Frankfurt's non-cognitive stance concerning normative propositions for his overall case concerning why we care about truth. So, Frankfurt concedes that normative judgments cannot properly be regarded as either true or false. Suppose someone expresses the judgment that killing infidels is a good thing. Another person claims that murder is a bad thing.

Both persons have expressed a normative or evaluative judgment, and on the basis of Frankfurt's concession neither has expressed a judgment that is either true or false. In such a situation what does "accepting or rejecting an evaluative judgment" mean? I suppose that all that it could mean would be coming to share the same attitude or feeling. One person says that killing infidels is a good thing, and by that he just means: I approve of killing infidels. Someone else who accepts that evaluative judgment, presumably just means something like: I also approve of killing infidels and also feel that it is a good thing to do so.

Now we get Frankfurt's attempt to mitigate the results of his non-cognitive stance. On p. 29 he says: "It remains clear nonetheless that accepting or rejecting an evaluative judgment must depend upon other judgments that are themselves straightforwardly non-normative – i.e., statements about facts." He continues "Thus, we cannot reasonably judge for ourselves that a person has a bad moral character except on the basis of factual statements describing instances of his or her behavior that seem to provide concrete evidence of moral deficiency". What he has in mind might go something like this:

Tom has killed three infidels. / Therefore, Tom is a murderer. / Therefore, Tom has a bad moral character.

But now Frankfurt makes the point which gives me a swallowing difficulty: He says: "Moreover, these factual statements concerning the person's behavior must be true, and the reasoning by which we derive our evaluative judgments MUST BE VALID." (Emphasis added.) He concludes "Otherwise, neither the statements nor the reasoning can effectively help to justify the conclusion. They will do nothing to show that the evaluation resting on them is reasonable."

I have some serious problems with what Frankfurt is claiming here. Frankfurt wants to be able to say that evaluative or normative judgments can be reasonable or unreasonable, while "conceding" that they are neither true nor false. Suppose Tom says that he likes rum raisin ice cream, and Mary says that she does not like rum raisin ice cream. Tom likes something that Mary does not like. Can we say that either Tom or Mary is being reasonable or unreasonable? My view is that reasonableness or unreasonableness has nothing to do with it. Their taste in ice cream flavor is a purely subjective matter, and reason has nothing to do with it.

But now comes the really serious problem for Frankfurt: Frankfurt thinks that we can use the notion of validity and invalidity in this context. The standard concept of validity says that an argument is valid if and only if it is logically impossible for the premises to be true and the conclusion false. Now, if the conclusion is understood to be evaluative or normative, and as such neither true nor false, it is hard to see how the concept of validity, or invalidity, has any application in this context. Suppose the inference goes as follows:

1. Tom has killed three infidels. / Therefore, 2. Tom has a bad moral character. [or suppose the conclusion is 2' Tom has a good moral character.]

Now, Frankfurt is prepared to "concede" that both 2 and 2' are neither true nor false", yet he still wants to be able to talk as if an argument which has one of these statements as a conclusion could be valid, or invalid. My own view is that the concepts of validity and invalidity have no application in a context where the conclusion is neither true nor false. Similarly, to say of an evaluative or normative conclusion, that it is reasonable or unreasonable seems to me to be elliptical for "reasonable to believe to be true", or "unreasonable to believe to be true." But, if Frankfurt is prepared to concede that normative and evaluative statements are neither true, nor false, then it is hard to see what "reasonable" or "unreasonable" can mean in such a context.

Tom, who likes rum raisin ice cream, is not likely to claim that Mary's dislike of that flavor is unreasonable. Their likes and dislikes are simply different and truth and falsity only enters the case as true or false statements about what their likes and dislikes consist of. Tom dislikes infidels and presumably that is why he kills them. That Tom dislikes infidels only logically implies that infidels are bad when 'bad' has the connotation 'are disliked'. That Mary dislikes rum raisin ice cream means that 'rum raisin ice cream is bad' just when 'bad' mean 'disliked by someone.'

Yet is seems to me that there are cases where the simplistic view of normative statements that I have been considering just doesn't work. Suppose that Mary says that Mormons are bad people. When asked why Mary thinks Mormons are bad people she replies that they are bad because they are bigamists, and that all bigamists are bad people [which here means "I dislike or disapprove of bigamists.] Since it is false that all Mormons are bigamists, it would seem that this evaluative judgment is unreasonable because it is based on a false assumption. The validity or invalidity of the inference doesn't touch the source of the unreasonableness.

Or, consider a different case. Suppose Tom asks Mary why she dislike rum raisin ice cream, given that he thinks that she has never tasted that flavor of ice cream. Suppose that she dislikes rum raisin ice cream because she is opposed to the consumption of alcohol, and she believes that rum raisin ice cream contains the alcohol called rum. In this case, Tom might suggest that her stated dislike of rum raisin ice cream is unjustified, or unreasonable, because it is based upon a false assumption, namely that this flavor of ice cream contains any actual rum, which he thinks is false. Again, if Mary's normative judgment is unreasonable, it is because it is based upon a false assumption, not because of the validity or invalidity of any inference that she is making.

If Tom says "I like rum raisin ice cream" and he really does like that ice cream, then he has said something true. If Tom says "Rum raisin ice cream is good" then Frankfurt is prepared to "concede" that this evaluative statement is neither true nor false. If such a statement has no truth-value, then presumably it can't be expressing Tom's like of rum raisin ice cream, because such a report is a true report of Tom's likes. I cannot see how a statement which has no truth value can logically imply a subjective report which does have a truth-value. The controversy here is really over the status of evaluative statements such as "killing infidels is good', "murder is evil", & "rum raisin ice cream is good". The primary issue here is whether any of these evaluative statements have an objective truth-value, or whether they express statements which have a subjective truth-value, or whether they have no truth-value whatsoever.

I shall now try to summarize the critique that I have been offering of Frankfurt's position in On Truth, and in doing so shall have to touch upon a major theme of his that I have not yet mentioned. Frankfurt's basic answer to the question of why we should care about truth comes out in Chapter IX, the last chapter of that book. His view is that "Truth possesses instrumental value" (p. 94) and that the "recognition and understanding of our own identity arises out of, and depends integrally on, our appreciation of a reality that is definitively independent of ourselves." (p. 100) He continues: "It is only through our recognition of a world of stubbornly independent reality, fact, and truth that we come both to recognize ourselves as beings distinct from others and to articulate the specific nature of our own identities." (p. 101) So, Frankfurt is taking the Greek injunction to *Gnothe se auton* (or know thyself) as the most important task we have, and that objective truth has instrumental value in allowing us to do that. I don't disagree with any of that. Where I part company with Frankfurt is with his idea that objective truths play a crucial role in the valid (or invalid) support of our evaluative judgments. And in this I think he is wrong, in that validity and invalidity can have no application in contexts where the conclusion of the inference in question simply has no truth-value. By contrast, those objective truths and falsehoods are important when we learn that our evaluative judgments are based upon objectively false beliefs. When Mary learns that it is false that all Mormons are bigamists, or learns that rum raisin ice cream contains no rum, she may well seriously reconsider her evaluative judgments, and rightly so, but Frankfurt is simply wrong in thinking that those truths function as premises of valid or invalid arguments.

I am going to conclude by engaging in a piece of playful philosophical speculation. In various places Frankfurt poses the question: *Why is there so much bullshit in our culture at large?* As previously mentioned Frankfurt has identified the essence of bullshit as "a lack of concern with truth – this indifference to how things really are." (OB, p. 34) My speculation is that Frankfurt's own normative non-cognitivism is related to the very prevalence of bullshit. If one is truly convinced that our most fundamental value judgments simply have no truth-value, then why should one be concerned about truth or how things really are? So, my admittedly wild speculation is that Frankfurt's own deepest philosophical commitments with regard to the normative fosters the very prevalence of bullshit about which he expresses so much concern. Maybe this is what Frankfurt is hinting at in the last line of On Bullshit, when he speculates that "sincerity itself is bullshit." (p. 67).

Part IV
Causality and the Mind

Chapter 17
Essay #15: An Analysis of Causal Contribution (with co-authored Carol A. Lucey)

Kenneth G. Lucey

Abstract The cause and inspiration for this paper is Roderick M. Chisholm's assertion that the concept of *causal contribution* cannot be defined in terms of the concept of sufficient causal condition. This paper is the result of a many years of effort to understand the basis of Chisholm's opinion about the concept of *causal contribution*. Quite independently of whether the endeavor was successful, this paper is a demonstration of the great difficulty involved in offering an adequate analysis of the concept of *causal contribution*. The analysis proceeds by exhibiting multiple attempts at providing individually necessary and jointly sufficient conditions for something's being a *causal contributor* to an event e, such as a ball striking the ground.

J.L. Mackie and others have approach this problem via the concept of a *minimal sufficient causal condition*. This paper proceeds by examining a whole sequence of causal concepts, (D1) through (D9). The most difficult part of this endeavor is in finding an adequate definition of the concept of a *minimal sufficient causal condition*. Each new attempt encounters a new counter-example, which causes the analysis to vacillate between being too broad and too narrow, i.e. too permissive and too restrictive.

Quite independently of whether the ultimate analysis of the concept of *causal contribution* is successful, the paper demonstrates the excruciating difficulty involved in attempting to give an analysis of this concept. The paper concludes by applying the proffered analysis to a variation of the famous canteen puzzle concerning causal contribution.

Surely one of the most fundamental concepts for the philosophical enterprise is that of causality. This is of course beyond doubt and widely recognized. Yet it is not at all well known that there is an important unsolved issue concerning causality. The issue in question is the need for an analysis of the concept *p causally contributes to e*. Part of the purpose of this essay is to try to convey a sense of the enormous difficulty involved in achieving such an analysis.[1]

[1] This essay is a direct descendant of several previous unsuccessful attempts at constructing an analysis of causal contribution, in particular "On Causal Contribution", co-authored by

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The chief credit for the recognition of this problem must go to Roderick M. Chisholm. In his Person And Object[2] Chisholm says: "It might be supposed that *causal contribution* could readily be defined in terms of sufficient causal condition . . . I am convinced that no solution to this problem is at hand." (p. 205).

The concept of *causal contribution* is one of those slippery ones, which everyone thinks he understands until he tries to state in some precise fashion what it amounts to. The second purpose of this paper is to propose a solution to Chisholm's unsolved problem of defining the concept of *causal contribution*.

The importance of *causal contribution* can best be seen by noting the important connections that this concept has with other key philosophical ideas, such as action, moral responsibility and knowledge.[3]

The philosophical journals have of late been rife with causal analyses of knowing, perception, memory, intention, justification, action, reference, and many other things besides. Consider for example the relationship between the idea of a human action and the concept of *causal contribution*. Suppose that there is a human act e that is the act of a subject **J**. An event that occurs to an individual but to which he doesn't *causally contribute* is accounted something that happens to him, but not an action of his. The connection that is being claimed here is that it is *a necessary condition* for e being an act of a subject **J** that **J** *contributes causally* to the act event e. If this is true, then an understanding of the whole topic of human action presupposes some understanding of the concept of *causal contribution*.

In attempting to analyze *causal contribution* we must at least begin by assuming that we understand the idea of one thing being a sufficient causal condition for another thing. Consider a simple act like the release of a baseball several feet above the ground and the subsequent event of the ball's striking the ground. In assuming that we understand the notion of a sufficient causal condition S of an event e, we are simply assuming that it will always be true that if S occurs, then e occurs. Assuming

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Carol A. Lucey, was presented to the Fifth International Congress of Logic, Methodology & Philosophy of Science, and appeared in the Proceedings thereof August, 1975. A yet earlier version had been presented to the New York State Philosophical Association (The Creighton Club) in October 1974. This paper has benefited considerably by an extended correspondence with Prof. Roderick M. Chisholm, in which he generously demonstrated the failure of more of my previous analyses than I care to remember.

[2] Roderick M. Chisholm, Person And Object A Metaphysical Study (La Salle, Illinois: Open Court Publishing Company, 1976).

[3] The connection between causality and knowledge is discussed by Alvin I. Goldman, "A Causal Theory of Knowing" Journal of Philosophy Vol. 64, #12 (June 22, 1967), pp. 357–372, which is reprinted in G.S. Pappas & M. Swain (eds.) Essay on Knowledge and Justification (Ithaca: Cornell University Press, 1978). For perception see H.P. Grice, "The Causal Theory of Perception" Proceedings of the Aristotelian Society 35 (1961). For the relationship of causality to action see Chapter 2 "Agency" in Chisholm's Person And Object; Alvin I. Goldman, A Theory of Human Action (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970); & various papers in Action Theory edited by Myles Brand and Douglas Walton (Dordrecht-Holland: D. Reidel Publishing Company, 1976). For the relationship of causality to intentionality see Chapter 10 "The Internal Causality of Practical Thinking" of Hector-Neri Castaneda's Thinking And Doing The Philosophical Foundations of Institutions (Dordrecht-Holland: D. Reidel Publishing Company, 1975).

a primitive notion of physical necessity Chisholm has proposed the following definition: "p is a *sufficient causal condition* of q = df. p and q are events which are such that it is physically necessary but not logically necessary that, if p occurs at any time t, then q occurs at t or after t." (p. 58) For purposes of the following I shall accept Chisholm's definition of *sufficient causal condition* with the one further assumption, namely that any sufficient causal condition S is always logically consistent.

Furthermore, it is quite natural to assume that if S is a sufficient causal condition for e, then the parts (or components or constituents) of S, whatever they may be, *contribute causally* to e. But this natural assumption is erroneous, and in coming to see why it is erroneous, one starts to understand the difficulties involved in analyzing the concept of a *causal contribution*.

The first difficulty is that if the state of affairs S is a sufficient causal condition for e, it may yet be that some parts of the state of affairs S are irrelevant to the occurrence of the event e. It may be that only some distinguishable part of the state of affairs actually was efficacious in the production of the result e. For example, suppose that the state of affairs S is the complete state of the world for the 5 min leading up to the event e which was the ball's striking the ground. If S is the complete state of the world then S surely is a sufficient causal condition for the ball's striking the ground. But in such a case, knowing that S was a sufficient causal condition for e doesn't bring us very close to an understanding of what it was that *contributed causally* to e occurring.

The next natural move is to try to separate the relevant portions of S, i.e. from the parts of S that are irrelevant to the occurrence of the event e. This task then amounts to an attempt to define the concept of what Konrad Marc-Wogau, J. L. Mackie and others[4] have called a *minimal sufficient causal condition* S* which constitute some proper part of the causally sufficient state of affairs S. Here then is the analysts' first great hurdle standing between him and an analysis of *causal contribution*, namely that of providing an adequate definition of the concept of *minimal sufficient causal condition*.

Another example will bring this first problem into perspective and will provide the first set of data in terms of which to evaluate the forthcoming analysis. Let us suppose that the state of affairs T is a sufficient causal condition for an event e. In this case T is the conjunctive state of affairs p & q & r & s, where p = (the ball has mass and is located near the surface of the Earth); q = ((the ball has a clear path to the ground); r = (the ball is released 3 ft above the ground); and s = (the ball is red). The caused event in question, e, is then (the ball's falling to and striking the ground). It might be wondered whether this conjunction should include a conjunct L, which would state the relevant laws of nature, such as gravitation. There is no stricture against doing so, but if such laws of nature are to be included then we

[4] J.L. Mackie, "Causes and Conditions" American Philosophical Quarterly Vol. 2 #4 (Oct. 1965), pp. 245–264, & reprinted in Ernest Sosa (ed.) Causation And Conditionals (London: Oxford University Press, 1975), see p. 17 ff.

would need to drop the clause of Chisholm's definition of *sufficient causal condition*, which kept the sufficient condition from logically implying the occurrence of e. Our assumption then is that the conjunctive state of affairs (p & q & r & s) is a sufficient causal condition for the event e occurring. It is also assumed that the state of affairs (p & q & r) alone is a *minimal sufficient causal condition* for the event e occurring, and that the portion of T which is the ball's being red is really irrelevant to the occurrence of e. The ball's being red then is not what Mackie elsewhere[5] calls a "causally relevant feature". So we reduce the problem of defining the concept of *causal contribution* to the problem of formulating definitions such that p and q and r each *contribute causally* to e, and such that s does not *contribute causally* to e.

What is needed then is a definition of *minimal sufficient causal condition* which is formulated in such a way as to allow it to be determined that p and q and r are states of affairs[6] that *contribute causally* to e, but that s is not a state of affairs that *contributes causally* to e. Towards the achievement of this end we now need to introduce a technical term, namely the notion of an *inverse* of a conjunctive state of affairs.[7] An *inverse* of a conjunctive state of affairs is another state of affairs which contains all the same conjuncts as the first, except that one or more of them has been replaced by the negation of the original conjunct. (The reader sensitive to problems of individuation will have noted that this characterization of an inverse presupposes a criterion of 'same conjunct'. This criterion is made explicit below.)

Consider, for example, the conjunctive state of affairs: p & q. For this conjunction there are then at least three inverses, namely: p & ~q, (2) ~p & q, and (3) ~p & ~q. In terms of the previous example the first of these inverses would be the conjunctive state of affairs that the ball has mass and is located near the surface of the Earth and that the ball does not have a clear path to the floor.

Using the notion of an *inverse* of a conjunctive state of affairs we can now consider an initial attempt to define the concept of a *minimal sufficient causal condition*. Such would be:

(D1) The conjunctive state of affairs A is a *minimal sufficient causal condition* of an event e = df. (i) A is a *causally sufficient condition* for e, and (ii) none of the *inverses* of A is a *causally sufficient condition* for e.

The crucial idea underlying this definition is that a conjunctive state of affairs which is a sufficient condition for e, but which has an *inverse* which is also a sufficient

[5] J.L. Mackie, The Cement of the Universe A Study of Causation (Oxford: The Clarendon Press, 1974), p. 260.

[6] This paper is not specifically concerned with the ontological status of states of affairs nor with the question of whether (a) concrete events, (b) states of affairs, (c) propositions, and (d) facts are four distinct and irreducible ontological categories. In Chapter IV entitled "States of Affairs" of Person And Object Chisholm develops the thesis that concrete events can be dispensed with and that events and propositions are subspecies of states of affairs. The analysis of causal contribution offered in this essay clearly presupposes an ontology of events and states of affairs, but I don't believe it requires that one take a stand about the reducibility of the former to a species of the latter.

[7] The credit for the recognition of the need for this concept belongs to Dr. Carol A. Lucey.

condition for e, has a component which is thereby shown to be extraneous, superfluous, or irrelevant to the causation of e.

Having gotten a definition of *minimal sufficient causal condition*, it is then a short step to get a definition of *causal contribution*. Namely:

(D2) p *contributes causally* to e = df. p is a conjunct of a *minimal sufficient causal condition* for e that occurred.

Turning back to the original example that was used to state the problem, it can be seen that the state of affairs: p & q & r & s is not a *minimal sufficient causal condition* for e, since it fails to meet the second condition of (D1), in that one of the *inverses* of the original conjunctive state of affairs is a *sufficient causal condition* for e. For the conjunctive state of affairs: p & q & r & s there are at least 15 inverses, that is at least $2^n - 1$, where n is the number of distinct conjuncts. But the only one that matters here is: p & q & r & ~s, i.e. the state of affairs where the ball has mass and is located near the surface of the Earth and the ball has a clear path to the ground and the ball is *not* red. This conjunctive state of affairs is an *inverse* of the original in that it contains the negation of the state of affairs s, and furthermore it is (as we assumed) a *sufficient causal condition* for e. And so it might seem that a solution to the original problem, which was the need for an analysis of the concept of *causal contribution*, is at hand. But unfortunately this is not the case. We now turn to the consideration of several hopefully illuminating counter-examples.

Consider the case of John at the Saratoga race track. John is planning how he is going to bet in the first three races of the day. He decides to bet on the horse with the post position on the inside rail in both the 1st and 2nd race. Let the state of affairs of the rail horse winning in the 1st race be p, and the rail horse winning in the 2nd race be q. Let e be John's betting on the rail horse in the 3rd race of the day. Let us assume that for idiosyncratic reasons of his own John decides that if the rail horse wins in both the first and second race then he will bet on the rail horse in the third race. He also decides that if the rail horses lose in both the first and second race then he will bet on the rail horse in the third race. But if the rail horse wins in the first and loses in the second, or loses in the first and wins in the second, then he will not bet on the rail horse in the third race. Thus, the example is envisioned as a case in which p & q is a *causally sufficient condition* for e, and ~p & ~q is a *causally sufficient condition* for e. But neither p & ~q nor ~p & q is a *causally sufficient condition* for e.

This perfectly straightforward case is a counter-example to the proposed analysis of *causal contribution*. For on the proposed analysis p & q can be a *minimal sufficient causal condition* for e if and only if (along with the first condition) none of the *inverses* of it are also causally sufficient for e. But in the example just given ~p & ~q is one of the *inverses* of p & q, and furthermore it has been assumed to be *causally sufficient* for e. (If one is troubled by the element of human decision making in this example one could as well imagine a dual gate electrical circuit which actuates e when and only when both gates are open or when both gates are closed.)

To meet this counter-example what we need to do is draw a distinction between two forms of *inverse* of a conjunctive state of affairs. The distinction is between what we shall call *simple* and *multiple inverses*.

A *simple inverse* of a conjunctive state of affairs is an *inverse* in which exactly one of the conjuncts has been replaced by the negation of the original. A *multiple inverse* of a conjunctive state of affairs is an *inverse* in which more than one of the original conjuncts have been replaced by the negation of the original. That is to say, a *multiple inverse* of a conjunctive state of affairs is an *inverse* in which more than one of the original conjuncts have been replaced by the corresponding negated states of affairs. What the above counter-example requires us to do is to modify the second clause of the definition (D1) of a *minimal sufficient causal condition*, to give the following: (ii*) None of the *simple inverses* of A is a *causally sufficient condition* for e. In the case of John's bets, none of the *simple inverses* of any of the causally sufficient conditions are also sufficient conditions, and hence the present counter-example has been met. But are there other counter-examples to this modified version? To find one we turn back to our original example of the dropped baseball.

Consider the conjunctive state of affairs: p & q & s & (~s **v** r), where the fourth conjunct is the state of affairs of either the balls being not red or the ball's being released 3 ft above the ground. The whole conjunctive state of affairs is a sufficient causal condition for e, given the original assumptions. Yet, given our latest version of definitions (D1) and (D2), it also qualifies as a *minimal sufficient causal condition* for e, which is enough to fault those definitions as too permissive, for our criterion of a successful analysis of the notion of *causal contribution* is that the definition arrived at allow that p and q and r each be shown causal contributors, but that s be excluded from being such. So to meet this counter-example some real modifications of the definitions is required.

While none of the inverses of p & q & s & (~s **v** r) constitute causally sufficient conditions for e (be those *inverses* simple or multiple), it may yet be that the examination of some of those *inverses* could point the way towards how to reformulate our definition of *minimal sufficient causal condition*. The key to this counter-example lies in the redundant occurrence of the state of affairs s in the third and fourth conjuncts, and perhaps the examination of *inverses* will expose that redundancy. In particular consider the *multiple inverse* which negates both the third and fourth conjuncts of that conjunctive state of affairs. That *inverse* may be represented as p & q & ~s & ~(~s **v** r). What is of interest about this particular *multiple inverse* is that it is inconsistent. This may best be seen by noting that it is equivalent to the contradictory state of affairs p & q & ~s & s & ~r. Taking this particular inverse as our cue, we can revise our definition (D1) by adding a third necessary condition, yielding a revised definition as follows:

(D3) The conjunctive state of affairs A is a *minimal sufficient causal condition* for an event e = df. (i) A is a *causally sufficient condition* for e, and (ii) none of the *simple inverses* of A is a *causally sufficient condition* for e, and (ii) none of the *inverses* (simple or multiple) of A is inconsistent.

Have we now arrived at an adequate characterization of *minimal sufficient causal condition*? Unfortunately, there is still yet another counter-example lurking in the woodwork.

Consider the conjunctive state of affairs which has p & q & s as its first three conjuncts, but which has as its fourth conjunct the state of affairs of the ball's being such that it belongs to Sean and is either not-red or is released 3 ft above the ground. For convenience let us call this fourth conjunct the state of affairs w. It is clearly the case that the conjunctive state of affairs p & q & s & w is a *causally sufficient condition* for e. Furthermore, none of the (at least) 15 *inverses* – four simple and 11 multiple – of p & q & s & w is a *causally sufficient condition* for e. But are any of the *inverses* of it inconsistent? In the previous counter-example the *multiple inverse*, which negated the third and fourth conjuncts, was inconsistent. But in this case the negation of the fourth conjunct yields the state of affairs that it is not the case that the ball is such that it belongs to Sean and is either not red or is released 3 ft above the ground. But neither of these equivalent states of affairs is inconsistent with the original third conjunct s or with the *inverse* which contains ~s. So again we are confronted with a refutation of our definitions, for this counter–example is a state of affairs which satisfies all three conditions of the definition (D3), in that it is a sufficient condition for e, none of its *simple inverses* are a sufficient condition for e, and furthermore none of its (simple or multiple) *inverses* are inconsistent. Faced with such a counter-example, we have no choice but to see whether the definitions can be reformulated so as to avoid this sort of counter-example. Again perhaps we can take our cue from the counter-example itself in seeking to revise the definitions.

Consider again the fourth conjunct w, which was that the ball is such that it belongs to Sean and is either not-red or is released 3 ft above the ground. The solution to the problem posed by this counter-example lies in seeing that the state of affairs w is equivalent to another conjunctive state of affairs which has the structure (t & (~s v r)), where t = (the ball is such that it belongs to Sean). That is to say (t & (~s v r)) is equivalent to the conjunctive state of affairs that the ball is such that it belongs to Sean and either the ball is not-red or the ball is released 3 ft above the ground.

Thus the original counter-example p & q & s & w is seen to be equivalent to the state of affairs p & q & s & t & (~s v r). Now it is the case that this latter conjunctive state of affairs should not be judged *minimal sufficient* as a causal condition for e, in that it does not satisfy the clause that requires that none of the *simple inverses* constitute a causally sufficient condition for e. Specifically, the *simple inverse* negating t is *causally sufficient* for e. And having noted that a state of affairs equivalent to the original doesn't constitute a *minimal sufficient causal condition*, we can now see how to revise our definition to meet this counter-example.

What we need to do is to revise the second clause of the definition of *minimal sufficient causal condition* so as to insure that no conjunctive state of affairs that is equivalent to A has a simple inverse which is also a *sufficient causal condition* for e. To that end we revise clause (ii) of Definition (D3) thus:

(ii*) For any B, if B is a conjunctive state of affairs that is equivalent to A, then no *simple inverse* of either A or B is a *causally sufficient condition* for e.

It might be thought that the third clause concerning inconsistency should also be revised with regard to the *inverses* of B, but that would be a mistake. Suppose for a moment that a state of affairs p is a *minimal sufficient causal condition* for an event e. In that case an equivalent state of affairs B might be the conjunctive state of affairs (p **v** q) & (p **v** ~q). But for that state of affairs B there is a *multiple inverse,* which negates both conjuncts, yielding ~(p v q) & ~(p v ~q). But that is clearly inconsistent, for it is equivalent to the contradictory ~p & ~q & q. So it would be disastrous to require that none of the states of affairs equivalent to A have inconsistent *multiple inverses*, for that would require us to say (falsely, in this case) that p was not a *minimal sufficient causal condition* for e. So we have arrived at the definitions:

(D4) The conjunctive state of affairs A is a *minimal sufficient causal condition* for e = df.

i. A is a causally sufficient condition for e, and
ii. For any B, if B is a conjunctive state of affairs that is equivalent to A, then no *simple inverse* of either A or B is a causally sufficient condition for e, and
iii. None of the *inverses* (*simple or multiple*) of A are inconsistent.

(D2) p contributes causally to e = df. p is one of the conjuncts of a *minimal sufficient causal condition* for e that occurred.

The first counter-example considered above concerning John at the races showed that definitions (D1) and (D2) were too restrictive in that they didn't allow the conjuncts of p & q to be *causal contributors*, because there was an *inverse* of p & q (namely, ~p & ~q) which was also sufficient for e. The last two counter-examples have aimed at showing that the second and third sets of definitions were too permissive in that they allowed the irrelevant conditions s (the ball's being red) and t (the ball's belonging to Sean) to *causally contribute* to e (the ball's striking the ground). Having arrived at the new set of definitions (D4) and (D2) one might very well hope that they are no longer too permissive. But one might well wonder whether we haven't gone too far and made the definitions too restrictive again. Several more counter-examples show that precisely that has happened.

The next counter-example shows that (D2) and (D4) are too restrictive in that they won't allow the conjuncts of p & q & r to *contribute causally* to e, for there is a conjunctive state of affairs that is equivalent to p & q & r which has a *simple inverse* which is sufficient for e. The conjunctive state of affairs A, i.e. p & q & r, was that the ball has mass and is located near the surface of the earth (p) & the ball has a clear path to the ground (q) and the ball is released above the ground at a height of 3 ft (r).

The equivalent conjunctive state of affairs B is: p & q & ~l (the ball is released above the floor at a height of not less than 3 ft), and (~m) (the ball is released above the floor at a height of not more than 3 ft). So the first step of the counter-example is that A, (p & q & r) is equivalent to B (p & q & ~l & ~m). But this second conjunctive state of affairs B has a *simple inverse*, namely (p & q & ~l & m) which is also *causally sufficient* for e. That is the conjunctive state of affairs of the ball's having mass and being located near the surface of the Earth and having a clear path to the ground and being released above the ground at a height of not less than 3 ft and of more than 3 ft, is *causally sufficient* for the ball's striking the ground (e). Thus, clause (ii) of definition (D4) is violated, and p & q & r is not to be accounted a *minimal sufficient causal condition* for e. And from this it follows that the conjuncts p and q and r do not *causally contribute* to e (at least via their occurrence in p & q & r), which is what established that the definitions (D2) and (D4) are defective. Hence, we must revise (D4) so that it won't be too restrictive.

This problem has arisen here because of the fact that the ball being released at 3 ft above the ground r is logically equivalent to the conjunction that the ball is not released at more than 3 ft and not released at less than 3 ft above the ground (~m & ~l). The difficulty arises here from the fact that while r is logically equivalent to (~l & ~m), it is not equivalent in the stronger sense of *intensional equivalence*.

The intuitive basis of the notion of strong (or *intensional)* equivalence is that two states of affairs are *strongly equivalent* if and only if every property involved in the one is also involved in the other. Thus, the state of affairs expressed by 'Napoleon was defeated by Wellington' is strongly equivalent to that expressed by 'Wellington defeated Napoleon'.

The fact is that in the last counter-example there are properties explicit in m and l that are not explicit in r. Thus, what is wanted in clause (ii) of (D4) is a sense of equivalence stronger than logical equivalence. Such a stronger sense is hopefully captured by the following:

(D5) p is *strongly equivalent* to q = df. necessarily p occurs if and only if q occurs and anyone accepts p if and only he accepts q.[8]

Clause (ii) of the definition of minimal sufficient causal condition would then be modified as follows:

(ii*) For any B, if B is a conjunctive state of affairs that is *strongly equivalent* to A, then no *simple inverse* of either A or B is *a casually sufficient condition* for e.

This can be seen to meet the last counter-example in that while p & q & r is logically equivalent to p & q & ~l & ~m, they are not *strongly equivalent* in that one can clearly accept the former without accepting the latter, in that one may not even have considered the states of affairs m and l.

[8] This definition of strong equivalence is closely related to what Chisholm calls a "non-trivial criterion of identity" for states of affairs. He gives it as follows: "if a state of affairs p is identical with a state of affairs q, then p entails q and q entails p." This criterion of Chisholm's presupposed his definition of entailment which was: "p entails q = df. p is necessarily such that (a) if it obtains then q obtains and (b) whoever accepts it accepts q." Both quotes were from Person And Object (p. 118).

On the other hand this modification of clause (ii) still allows the ruling out of the counter-example concerning the state of affairs w in the previous case, in that there the equivalent states of affairs were clearly *strongly equivalent*.

One final problem faces this analysis of *causal contribution*. That is the question which has been with us from the very beginning of this investigation, namely "What is a *conjunct* of a conjunctive state of affairs?" This is the problem of individuation of conjuncts that was alluded to earlier. The question can be posed in terms of another apparent counter-example to the forgoing analysis of *causal contribution*. Consider, for example, p, which throughout has been the conjunct that the ball has mass and is located near the surface of the Earth. Now it should be obvious that this conjunct itself has further conjuncts. The crucial questions here are – how many conjuncts does it have and how does one tell whether or not something is a distinct conjunct? Clearly "the ball has mass" is one conjunct of p, i.e. of "the ball has mass and is located near the surface of the Earth". But is "something is a ball" a further conjunct of p? This question is important because if it is a conjunct then there is a counter-example to clause (iii) of the definition of minimal sufficient causal condition, for there is then an inconsistent simple inverse of p & q & r, namely p & q & r & (it is not the case that something is a ball). Thus, what is needed is a concept of conjunct, which rules out this counter-example. Thus, the following completes the analysis of the concepts presupposed by our analysis of *causal contribution*:

(D6) p is a conjunct of a state of affairs q = df. q logically implies p and whoever accepts q entertains p.

The point here is that while the ball has mass clearly logically implies that something is a ball, nevertheless one can accept the former without having entertained the latter. The utility of this characterization of *conjunct* can be seen by the way it allows us to meet one final apparent counter-example. Consider the conjunctive state of affairs A which is p & q & s & (if s* then r), where s again is that the ball is red and s* is that the ball is colored. This state of affairs would appear to be a counter-example showing our analysis too permissive, for it is sufficient for e and there doesn't appear to be any *inverses*, *simple or multiple*, that are sufficient or that are inconsistent. The multiple inverse that negates the third and fourth conjuncts is equivalent to the ball is not red and the ball is colored and the ball is not released at 3 ft above the ground. But this appearance is an illusion, for given the above definition of "*conjunct*" (D6) it can be seen that there is an inconsistent *simple inverse*. Since whoever accepts (if s* then r) must entertain s*, and given that the whole state of affairs implies s* because of the presence of s), it thus follows that s* is a conjunct of the whole conjunctive state of affairs. The inconsistent *simple inverse* thus contains the conjuncts that the ball is red and the ball is not colored, which shows that the example is not a true counter-example to this analysis of *causal contribution*.

The utility of our definition of a *minimal sufficient causal condition* is shown both in its use in defining the concept of *causal contribution* and in its applicability to other causal concepts. Three such general causal concepts are:

(D7) A is a cause of e = df. A occurs & A is a *minimal sufficient causal condition* of e.
(D8) B was the total cause of e = df. B is a state of affairs that consists of a conjunction of all the *minimal sufficient causal conditions* of e that occurred.
(D9) p is a necessary causal condition for e = df. p is a conjunct of every conjunctive state of affairs that is a *minimal sufficient causal condition* for e.

We conclude this paper with an application of the above analysis of *causal contribution* to a puzzle case. The following is a version of the famous canteen example. Imagine that Mr. Jones has a serious heart condition for which he has to take medicine regularly. Only the regular dosage of his medicine keeps him from having a fatal heart attack. Mr. Jones doesn't know it, but he has two enemies who are independently of one another trying to kill him. The first enemy surreptitiously sprays a colorless, odorless and tasteless poison on Mr. Jones's heart pills, which is a poison of a sort that would kill him instantly just by ingesting it. The second enemy subsequently steals Mr. Jones' pills. Thereafter our victim dies of a heart failure, which would have been prevented had he taken his original pills.

At the inquest the action of the two enemies comes to light and they are subsequently brought to trial. The first enemy admits that he attempted to poison Mr. Jones, but denies that he is the murderer, for his attempt at poisoning was foiled by the second enemy. The second enemy denies that he murdered Mr. Jones, for he claims that in depriving him of those very pills he wasn't taking from him anything that would have done him any good, since he would never have been able to benefit from taking it. So, who *caused* Mr. Jones' death?

Let p be the act of poisoning the pills, and q be the act of stealing the pills. With regard to Mr. Jones's death we can distinguish several descriptions of that event. Let e be the event of Mr. Jones's dying, f is the event of his dying of a heart attack, and g is what would have been the event of his dying of poisoning.

The application of our analysis of *causal contribution* to this case is that both enemies could have been *causal contributors* to e, Mr. Jones' death. While p & q isn't a *minimal sufficient causal condition* for e, p and q, independently constitute conjuncts of conjunctive states of affairs that could have been *minimal sufficient causal conditions* for e. But only the second enemy, according to definition (D7), can be said to be part of the *cause* of Mr. Jones' death, for the first enemies' *minimal sufficient causal condition*, which would have resulted in g, a poisoning, didn't occur. The second enemy's *minimal sufficient condition*, namely being deprived of his heart medicine, did occur and so the stealing of the pills did *causally contribute* to Mr. Jones' death.

Chapter 18
Essay #16: The Testability of the Identity Theory

Kenneth G. Lucey

Abstract The main thesis of this essay is the claim that it is conceivable that one can empirically test the psycho-physical identity theory. The dialectical target of the essay is Jaegwon Kim's contention that "There is no conceivable observation that would confirm or refute the identity but not the associated correlation." (American Philosophical Quarterly, 1966, 227–228). In an essay "The Logic of the Identity Theory" Richard Brandt and Jaegwon Kim offered a criterion for event identity, which I employ in making a case for the empirical testability of the identity theory. Employing a second level version of W.V.O. Quine's axiom of identity, I demonstrate how one can test the event identity, without having any bearing upon the associated psycho-physical correlation. The argument essentially turns upon the issue of second-order properties, i.e., upon the question of whether two allegedly identical properties both share all of their second-order properties.

In the concluding section of the essay a distinction is made between two theses (K1) It is *conceivable* that there are observations that would test a thesis of psycho-physical identity, but not test the associated psycho-physical correlation statement." And (K2) *There are* conceivable observations which would test a thesis of psych-physical identity, but not test the associated psycho-physical correlation statement. By the end of the essay a defense has been offered of not just (K1), but also of (K2) as well.

The *psycho-physical* identity theory is really a group of philosophical theories, each of which asserts roughly that the mental aspect of man is identical with some part or aspect of the physical side of man. This essay argues that one important version of the theory – the version that presupposes a "structural" theory of events – may be shown to be an empirical theory which in principle is capable of confirmation or disconfirmation.

In their article, "The Logic of the Identity Theory", Richard Brandt and Jaegwon Kim offer a criterion of event identity. They introduce a triplet of the form '(U, t, L)' to describe the instantiation of a property U at a specified time t and location L. Brandt and Kim try to formulate a criterion of event identity which will apply to

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_18

whatever individuals L (whether they be substances, phenomenal objects, etc.) that a particular philosopher takes to be the ultimate constituents of the world. Given this notational machinery, Brandt and Kim then specify the following criterion for event identity:

One event (U, t, L) is the same as another event (U*, t*, L*)
if and only if U = U*, t = t*, L = L*[1]

I have simplified their notation slightly by using asterisks, where they made use of subscripts.

Kim and Brandt restricted their discussion of the psycho-physical identity theory to this structural account of *events*, and I shall here do the same. I shall be referring exclusively to mental events, such as the having of a sharp stabbing pain at time t, or to physical events, such as the electrical stimulation of the hypothalamus at time t – and in each case I am presupposing a *structural* theory of events.

At the heart of the identity thesis is the question of the nature of the relationship that holds between psycho-physical correlation statements and psycho-physical identity statements. But one piece of totally non-controversial data is that there exist *some* systematic correlations between certain mental events and certain physical events. Kim gives us the following formulation of psycho-physical correlation:

For every x, x is in pain at time t if and only if x is in brain state B at time t.[2]

We may express this as a universally quantified bi-conditional, viz.:

(1) (x) [P x t ≡ B x t]

'B' is taken as a schematic predicate letter expressing a physical property, 'P' as expressing a phenomenal property and 'x' as a variable ranging over individuals, which in Kim's case are taken as persons. Take 'b' as an individual constant instantiating the variable 'x'. (An assumption is being made here: namely that b is an individual having both material and phenomenal properties. Of course, such an assumption would not be accepted by a psycho-physical dualist.) A straightforward instantiation of (1) yields the psych-physical correlation:

(2) P b t ≡ B b t

Which says "the individual b has the phenomenal property P at time t if and only if b has the physical property B at time t".

I turn now to the crux of this essay: whether the structural event version of the psycho-physical identity thesis is in any sense empirically confirmable or disconfirmable? Kim has said that:

> It is often emphasized that a particular psycho-physical identity (e.g., pain and brain state B) is a factual identity. From this some philosophers seem to infer that the Identity Theory is an empirical theory refutable or confirmable by experience. This is misleading, however.

[1] The Journal of Philosophy LXIV (1967), p. 518.

[2] "On the Psycho-Physical Identity Theory", American Philosophical Quarterly Vol. 3 (1966), p. 227.

> To begin with, a particular psycho-physical identity statement is not confirmable or refutable *qua* identity statement; it is confirmable or refutable as, and only insofar as, the corresponding correlation statement entailed by it is confirmable or refutable by observation or experiment. There is no conceivable observation that would confirm or refute the identity but not the associated correlation . . . Thus, the pain-brain state B identity statement is not an empirical hypothesis *vis-à-vis* the corresponding correlation, interaction, and double aspect statements.[3]

The claim that is the nerve of Kim's argument is that "*There is no conceivable observation that would confirm or refute the identity but not the associated correlation*." If this statement can be shown to be false, his entire thesis on this question will have been shown to be erroneous. I shall now attempt to show that there are conceivable observations that confirm or refute the identity thesis without in any way being relevant to the associated psycho-physical correlation. This is not to say that such refuting or confirming statements would not be relevant to *any* correlation statement. Rather, that given a particular mental event, say (U, t, L), and a particular physical event (U′, t, L), there are empirical statements which are relevant to the statement identifying those events, but not relevant to the correlation statement formed with respect to the properties constituting those events.

The correlation statement in question would be:

(2*) (x) [x has U′ at t) ≡ (x has U at t)]

As the identity statement we may use Brandt and Kim's own criterion for event identity, namely:

(3) (U = U′) & (t = t′) & (L = L′)

Now to see that there are conceivable empirical statements that confirm or disconfirm the identity statement, but not the corresponding correlation, one need only reflect upon the requirement that U = U′, i.e. that the property of being in a certain pain is identical with the property of being in a certain brain state. Brandt and Kim do not discuss in any detail the meaning of this identification, but it is fairly certain that no matter what else it may mean, it must mean that any *non-intensional* property that belongs to the property U must also belong to the property U′. This amounts to nothing more than the application to the second level of what some logicians call an "axiom of identity".[4]

1st Level Axiom of Identity: (x) [(x has U) & (x = y). (y has U)]
2nd Level Axiom of Identity: (U) [(U has K) & (U = U*). (U* has K)]

This takes 'U' and 'U*' as variables ranging over first-order properties, and 'K' as a schematic predicate letter naming some second-order property. All that is meant by "second-order property" is a property which is a property of some other property. In this formulation 'U has K' would say that the property U has the further second-order property K. Now to see that it is possible for there to be an empirical statement

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[3] Ibid., pp. 227–228.

[4] Willard Van Orman Quine, Methods of Logic Third Edition (1972), p. 225.

that would confirm or disconfirm the identity statement, but be neutral toward the correlation statement, one need only consider some second order property (say the one expressed by ‘K’) and understand that it is *possible* for the statement ‘(U has K & U* does not have K)’ to be true. The main argument of this essay stands or falls with my next point. It is that ‘(U has K & U* does not have K)’ would refute the psycho-physical identity statement, that contained as a part ‘(U = U*). Or, on the other hand, the truth of a statement ‘(U has K & U* has K)’, if the other conjuncts of the criterion were true, would tend to confirm the identity. The crucial consideration here is that both of these statements are completely neutral with respect to the psycho-physical correlation statement: (2*) (x) [x has U at t) ≡ (x has U* at t)].

The crucial pattern of inference establishing my point may be displayed as follows:

(3) (U = U*) & (t = t*) & (L = L*) (Criterion for the psycho-physical event identity)
(4) (U has K) ≡ (U* has K)
(5) (L has U) ≡ (L has U*)
(6) (U has K) & (U* does not have K)

The symbols ‘U’ and ‘U*’ are meant to be taken as abbreviations for expressions that would be names of properties, such as the property of being in pain or the property of being in brain state B. The flow of implication in (3) through (6) is as follows: The first conjunct of (3), ‘U = U*’ implies (4) by a transformation of the 2nd level axiom of identity mentioned above. The third conjunct of (3), ‘L = L*’, implies (5) which corresponds to the thesis of psycho-physical correlation, inasmuch as it is a universal instantiation of it. (6)’s truth would contradict (4) and thus refute the psycho-physical identity thesis (3), in that the falsity of the first conjunct is enough to falsity the whole compound statement. The key point here is that philosophers, such as Kim, have asserted that no observation could test (3), the identity, and not also test the associated correlation, which is the universal generalization of (5). But this is now seen to be false, since (6) is clearly able to test (3) without thereby confirming or disconfirming the correlation thesis (5).

At this point one might object that two claims have been confused, namely:

(K1) It *is conceivable* that there are observations that would test a thesis of psycho-physical identity, but not test the associated psycho-physical correlation statement.
(K2) *There are* conceivable observations which would test a thesis of psycho-physical identity, but not test the associated psycho-physical correlation statement.

The claim here might be that while the above argument has successfully established (K1), it has not established (K2). This line of objection might be summed up by saying that while we can conceive that there should be such second-order ‘K-type’ properties, we cannot conceive of any! That is to say, (K1) could be true, and yet (K2) could still be false. The relationship between these theses is that the truth of (K1) is a necessary condition for the truth of (K2), but not *vice versa*. And so, if we were to think that establishing (K1) somehow proved (K2), we should be committing the fallacy of affirming the consequent.

So in order to go beyond demonstrating (K1) to actually establishing (K2), we must actually produce an example of a conceivable observation of the specified type. If thesis (K1) were all that was at issue then there would be no need for examples of second-order empirical properties that would instantiate K. There is a great temptation to focus solely upon thesis (K1), and with regard to it, actual examples would only obscure the main logical point at issue. For example, Kim's difficulty did not appear to be that he had scruples about second-order properties (which he did not discuss), nor did he report that after diligent search he could not find any observations that would confirm or disconfirm the identity, but not the associated correlation. Rather, he said that he could not *conceive* of there being any such. In his words: "There is no conceivable observation that would confirm or refute the identity but not the associated correlation." (Loc. Cit) So thesis (K1) has been established purely as a logical point. My contention with regard to it has been *essentially a conditional* one, namely that if the notion of identity of properties is intelligible at all, then this must, at least in part, mean that the property named by one term of the identity 'U = U*' shall have all of the non-intensional (second-order) properties of the property named by the other term of the identity. Thus, if it makes sense to assume that there is a relation of property identity stronger than mere correlation or co-extensionality, then sentences such as '(U has K) & (U* does not have K)' will refute the claim that the psycho-physical identity statements are testable only insofar as the entailed correlations are testable.

By these considerations we have shown a way of conceiving of that which others have thought to be inconceivable. The only path left for the opponents of thesis (K1) would be the presentation of an *a priori* argument to the effect that it is impossible to empirically instantiate the statement '(U has K) & (U* does not have K)'.

Yet are there any such cases as these, which we are now able to conceive of so clearly? If the critic of the testability of the psycho-physical identity theory really meant to be denying (K2), then it will not suffice simply to establish thesis (K1). If (K2) is the thesis really at issue, we have to show that there actually **is** some such conceivable observation by which to make the test.

First let us review the assumptions to which such an example must conform. In the following, (D) is the identity thesis, (C) is the correlation thesis, and (T) is the statement which is supposed to test the identity thesis while being neutral to the correlation statement (C). (D*) is the same as the earlier criterion for event identity, (3), by which (D) is to be tested.

(D) the event of L being U at t is identical with that of L* being U* at t*.
(D*) (U = U*) & (L = L*) & (t = t*)
(C) (x) (x has U at t) ≡ (x has U* at t)
(T) (U has K) & (U* does not have K), which is to say that the property U has the further property K, and that the property U* lacks it.

The following are the assumptions to which our required example must conform:

(1) The correlation statement (C) is true.
(2) The property U is physical and the property U* is psychological.
(3) The times, t and t*, and the locations L and L* (e.g., persons) remain constant throughout.
(4) The second-order property K is empirical.
(5) K is also non-intensional. (That is, K could not be the property of being Sean's favorite property).

Let U be the property of being some specified pain, and let U* be the property of being a certain nerve net excitation of the central nervous system. Having made assumption (C), we are assuming that the particular correlation holds and thus that the individual x possesses U at some time if and only if x also possesses U* at that time. Consider an instance of the ''K-type' property which might be used to test (D*), and which is at once non-intensional and empirical. Such a K would be the 'topic neutral' property of increasing in intensity. The test statement (T) i.e., '(U has K) & (U* does not have K)'. would be the case where the property of being in pain (which is assumed true of x) has the further property of increasing in intensity, whereas the property of being a certain nerve net excitation (which is also assumed true of x) lacks the property of increasing in intensity. On the other hand, if whenever U displays an increase in intensity, U* also displays an increase in intensity, then this would tend to confirm the first conjunct of (D*). Then, if assumption (2) is correct, and we have other grounds for believing the second and third conjuncts of (D*) to be true, then the possession of K by both U and U* tends to confirm the psycho-physical identity (D).

Hence, we can not only conceive of there being examples which would test the identity but not the associated correlation, but now we can also see that there is a conceivable example in terms of which to actually conduct such a test. And just one example is all that is needed to establish thesis (K2).

The objection might now be raised that I have not really specified a single second-order property K. The objection is that the increasing intensity of pains is not the same second-order property as the increasing intensity of nerve net excitations. But this neglects to note that K was assumed to be "topic neutral". Also, this objection may beg the question concerning one of the key issues in dispute, namely the proposed identity of U and U*. If these really are identical properties, then it surely follows that an increase in intensity of the one is also an increase in intensity of the other.

So we can not only conceive of confirming or disconfirming the structural event version of the psycho-physical identity theory; we can in principle also conceive of what the observation would be that would allow such a testing.

Chapter 19
Essay #17: On Being Purely Psychological

Kenneth G. Lucey

Abstract This essay begins with a brief review of R.M. Chisholm's quarter century of attempted analysis of what it is to be psychological. This process begins with his endeavor to support Brentano's Thesis, which essentially connects the psychological and the intentional. My main objective is to give an exposition of his essay "On the Nature of the Psychological", which has to be the deepest and most sustained analysis of the psychological of which I am aware. (This effort of Chisholm's is not recommended for anyone unwilling to engage in sustained & deeply entwined conceptual analysis.)

Chisholm's endeavor essentially involves nine distinct definitions, D1 through D9, which get summarized at the end of my essay. The whole superstructure of Chisholm's analysis centers upon three conceptual relations that he distinguishes, viz. implication, inclusion and involvement. The ultimate outcome of this intensive conceptual investigation are Chisholm's final two definitions of D8 a psychological attribute, and D9 of a purely psychological attribute. The latter gets defined as follows: P is a purely psychological attribute = df. P is psychological and every property it implies involves something qualitative. (Each of the underlined terms gets analysed and defined in their own turn.)

The critical component of this essay consists of a counter-example to Chisholm's analysis of the purely psychological. The counter-example consists of an instance of the psychological, which is not purely psychological because it involves abstract entities, such as thinking about being a prime number. So, essentially my thesis is that Chisholm's analysis of the purely psychological is too broad or too permissive, in that it labels as pure psychological states which, while admittedly psychological, are not purely so because of their involvement with the realm of the eternal or of abstract entities.

> At a meeting a self-made man got up and talked at length about how thankful he was that he had never come into contact with the pernicious influence of any schools. He had no formal education and was proud of it.
>
> Do I understand," inquired the chairman at the conclusion of these remarks, "that you are thankful for your ignorance?
>
> Well," said the speaker, "I suppose you could put it that way.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_19

Then," continued the chairman, "I just want to point out that you have a great deal to be *thankful* for."

The purpose of this essay is to review Roderick M. Chisholm's latest analysis of what it is to be a psychological attribute, such as *being thankful*, and to demonstrate what I take to be several counter-intuitive consequences of his theory.

In "On the Nature of the Psychological"[1] Roderick M. Chisholm returns again to a topic he has investigated several times during the past 30 years. The recurring issue during these three decades has been the task of providing necessary and sufficient conditions for the psychological or mental, which differentiates and demarcates that from the non-psychological or the non-mental.

Chisholm's topic has remained the same, but his research program or general strategy has changed radically. In the classic 1956–1957 paper "Sentences About Believing"[2] Chisholm's program was to defend Brentano's thesis that the intentional is the criterion or mark of the psychological. An intermediate step is found in Chisholm's 1966 essay "On Some Psychological Concepts and the 'Logic" of Intentionality."[3] In that paper Chisholm seriously (although somewhat ruefully) entertains the suggestion that the defining mark of the psychological is the ability to believe a contradiction. By 1967, in an Encyclopedia of Philosophy article entitled "Intentionality" (Vol. 4, p. 204) Chisholm considered that "Another possible view, however, is to say that intentionality is at least a sufficient if not a necessary condition of the psychological" (p. 204).[4]

Chisholm's latest contribution to the analysis of the psychological makes no mention of intentionality, except to refer to his primitive relation of conceiving as an intentional relation. The new strategy is to analyze psychological attributes in terms of what he calls the "purely qualitative." What Chisholm is trying to capture here is the feature which he says has traditionally been associated with psychological or mental properties, viz., "that of being internal or non-relational"[1] (p. 157). The end product of Chisholm's insightful analysis is the following, which is Definition 9 of his study (p. 163).

P is a purely psychological attribute = Df. P is psychological and every property it implies involves something qualitative.

(The underlined words are each technical terms with precise characterizations of their own – emphasis added.) This definition emerges from Chisholm's investigation

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[1] Roderick M Chisholm, "On the Nature of the Psychological," Philosophical Studies. 43 (March 1983), pp. 155–164.

[2] "Sentences About Believing," Proceedings of the Aristotelean Society (1956–1957), revised and reprinted in Ausonia Marras (ed.) Intentionality, Mind and Language (Urbana, Chicago, London: University of Illinois Press, 1972), pp. 31–51.

[3] "On Some Psychological Concepts and the 'Logic' of Intentionality," in Hector Neri-Castaneda (ed.), Intentionality, Minds, and Perception (Detroit: Wayne State University Press, 1967), pp. 11–35.

[4] "Intentionality," in Paul Edwards (ed.), Encyclopedia of Philosophy (Macmillan Publishing Co., Inc., 1967), Vol. 4, pp. 201–204.

like the tip of an iceberg whose bulk is 99 % below the water, in that the definition presupposes prior definitions of the terms "psychological"," "property," "implies," "involves," and "includes." (See the summary of definitions at the end of this essay.) It is the definition of "purely psychological" that I shall target below and attempt to show to be counter-intuitive.

Chisholm's article begins by employing a somewhat unusual use of the term "individual," but I don't think this oddity is of any significance. In articulating the first of his three metaphysical presuppositions he says, "It is necessarily the case that there are entities that are not individual things; examples are such abstract entities as propositions, attributes, and numbers" (p. 155). This usage is initially jarring for one is in the habit of thinking of the number seven as just as much an individual as any of the middle sized dry goods of reality. Upon closer examination it seems to me that Chisholm's use of "individual" corresponds to the traditional use of 'concrete'. In the writings of G.F. Stout[5] and others, the traditional terminology employs "abstract" and "concrete" in such a way that it was necessarily the case that for any x, x is abstract if and only if x is not concrete, and x is concrete if and only if x is not abstract. Chisholm may have his own reasons for so using the term 'individual', but he doesn't say what they are.

Chisholm's second metaphysical presupposition is that "The ontological thesis of materialism ('Every individual thing is a material thing') even if it is true, is not necessarily true" (pp. 155–156) If numbers are individuals then it would be necessarily false that every individual thing is a material thing. But such doesn't conform to Chisholm's usage. His second presupposition here amounts to denying the necessity of the thesis that every non-abstract entity is a material thing. Similarly, only the most metaphorically minded would turn it into a necessary truth that every concrete entity is a material object. Some standard criteria for being concrete are either the possession of spatio-temporal locus, or the ability to enter into causal relations. The point of all this, I believe, is that for Chisholm it is not necessarily false that there could exist mental or psychological individuals which are not material objects. This is in accord with a dogma of modern materialism stemming from J.J.C. Smart and U.T. Place that psycho-physical identities, if true, are contingently true at best. Whereas the oddity of Chisholm's use of "individual" seems to me inconsequential, the same cannot be said for his use of the term "property." Chisholm uses the terms attribute and property in such a way as to make attributes and properties stand in a genus/species relationship. Thus, by his usage, every property is an attribute, but not every attribute is a property. Chisholm characterizes his usage of the term "property" as "entirely arbitrary" (p. 156), but one should not, for that reason, be misled into thinking the term unimportant. On the contrary, it seems to me that this stipulative definition of the term "property" is one of the most crucial components of Chisholm's analysis of the psychological. That analysis is given in Definition 2 (p. 156) as follows:

P is a property = Df. P is an attribute which is such that:

[5] George Frederick Stout, God and Nature, Alan Stout (ed.) (London, 1952).

(a) only individual things can have it;
(b) anything that can have it, can have it, or fail to have it, at any time it exists; and
(c) it can be such that some individuals have it and some do not.

This definition of "property" seems to me crucial to Chisholm's analysis of the psychological because it is his first line of defense against most purported counter-examples to the correctness of his analysis. This defense usually consists of showing that a key attribute in the proposed counter-example is not a property because (a) abstract entities can have the attribute, or (b) there are times when the individual cannot have or fail to have the attribute, or (c) it is a universal attribute of all individuals.

The next crucial maneuver of Chisholm's paper is his distinguishing three different relations in which attributes can stand to one another, namely relations of D3 implication, D4 inclusion, and D5 involvement. Implication and inclusion are modal relations amongst attributes, and as it turns out, implication is a special case of inclusion. That is, every instance of attribute inclusion is an instance of attribute implication, but not vice versa. Attribute involvement, on the other hand, is a thoroughly psychological notion in that it essentially employs the concept of conceiving. Some examples here would be: being a father *implies* the attribute of being an offspring, but *includes* the attribute of being a male. Being an even number *implies* the attribute of being an odd successor, but it *includes* the attribute of being divisible without remainder. The formal definitions are as follows:

Def. 3: P *implies* Q = Df. P is necessarily such that if anything has it then something has Q. Ignoring the niceties of the distinction between de dicto and de re necessity, this could be symbolized:

P *implies* Q = Df. $\Box$ (x) (Px $\supset$ ($\exists$y) (Q y))

Def. 4: P *includes* Q = Df. P is necessarily such that whatever has it has Q. Symbolically, we would have: P *includes* Q = Df. $\Box$ (x) (Px $\supset$ Qx)[6]

Property *involvement* gets defined by Chisholm in Definition 5 thus:

Def. 5: P involves Q = Df. P is necessarily such that whoever conceives it conceives Q.

Thus the attribute of being a brother or a sister *involves* the attribute of being a brother, but it neither *implies* nor *includes* that attribute. The introduction of the relationship of attribute *involvement* is what keeps Chisholm's analysis free of the charge of having reduced the psychological to a complex of non-psychological alethic modalities.

Using just the defined notions of property *implication*, *inclusion* and *involvement*, Chisholm proposes to specify a sufficient condition for being a psychological attribute. Chisholm stresses that the following simple formulation provides just a

[6] The special case in which implication collapses to inclusion occurs when y is identical to x.

sufficient condition, but not an account of being a necessary condition, for being a psychological attribute. His formula is (pp. 155 and 159):

> Any property which is possibly such that it is exemplified by just one thing and which *includes* every property it implies or *involves* is psychological.

Chisholm shows that this analysis only captures a sufficient condition for the psychological by using the example of thinking about one's brother. The point here is that the attribute of thinking about one's brother involves the attribute of being a brother, but it neither implies nor includes that attribute. Since one can think about one's brother without there actually being someone who is his brother, it neither follows from the thinking that one is a brother nor that anyone else is.

A counterexample to a sufficiency condition must satisfy the definiendum but not satisfy the definiens, so in a section of his paper entitled "Some Test Cases" (pp. 160–162) Chisholm considers 32 cases of attributes to see whether they satisfy the complex antecedent condition, while still being non-psychological. The defect that Chisholm finds in most of the cases is that the non-psychological attribute in question does not satisfy his stipulated requirement for being a *property*. This should again serve to underscore the centrality of the characterization of *property* for Chisholm's analysis.

The sufficiency condition is taken by Chisholm as the definiens for the concept of a *purely qualitative attribute*. Thus (p. 162):

Definition 6: P is a *purely qualitative attribute* = DF. P is an attribute which (a) is possibly such that it is exemplified by just one thing, and (b) *includes* every property it *implies* or *involves*.

This then gets broadened in Definition 7 (see attached summary) to capture the notion of a *qualitative attribute*, which is an attribute which is *purely qualitative* or equivalent to a disjunction of *purely qualitative* attributes.

Finale

Chisholm is now ready to propose his account of a necessary condition for being a psychological attribute. The definition of qualitative or purely qualitative attribute does not yield an equivalence between that and the notion of the psychological. Thinking is *purely qualitative*, but thinking about one's brother is not, since it *involves* a property it doesn't *include*.

In the final section of his essay Chisholm characterizes a broad sense of the psychological and also the notion, mentioned near the beginning of this essay, of a *purely psychological* attribute. The broader notion is just that (p. 163):

Definition 8: P is a psychological attribute = Df. P *includes* an attribute that is *qualitative*.

On the other hand, to be a *purely psychological attribute* is to be such that:

Definition 9: P is a *purely psychological attribute* = Df. P is psychological and every property it *implies involves* something *qualitative*. (p. 163)

Unpacking this somewhat gives the following fuller characterization: P is *purely psychological* if and only if P *includes* an attribute that *includes* every property it *implies* or *involves* and every property it *implies involves* something which *includes* every property it *implies* or *involves*.

Thus, wanting a sloop is psychological because it includes wanting, but wanting a sloop is not *purely psychological* because it *involves* but does not *include* the property of being a sloop. Similarly, judging that there are unicorns is not *purely psychological* because it *involves* but does not *include* being a unicorn.

Critique

I would now like to show what I take to be certain counter-intuitive consequences of Chisholm's ingenious analysis of psychological attributes. I've mentioned earlier that a critical element in this analysis is the characterization of the subspecies of attributes which Chisholm calls properties. This account of properties is very restrictive and as such is Chisholm's first line of defense against counterexamples.

The counter-intuitive consequences, which I shall now display also stems from this very restrictive account of properties. Consider now several examples, which Definition 8 would count as psychological attributes, namely: thinking about being a prime number

knowing about being a prime number
dreading the attribute of being a prime number

Because of Chisholm's definition of property it turns out that each of these examples is counted as a *purely psychological attribute*. The reason for this is because the attribute of being a prime number is not a *property*. Recall that to be a *property* is to be an attribute that only individual things can have, whereas only abstract entities can have the attribute of being a prime number. Thus in thinking about a prime number there is no *property* involved which is not also included in the thinking. Thus, having a psychological attitude towards an abstract object is judged to be a purely psychological attribute.

For the realist who holds abstract entities to have an objective existence independent of the mind, thinking about being prime is no more nor less psychological than thinking about a dragon or a sloop. Only the conceptualist who holds abstract entities to be a species of mental entities would fail to find this result counter-intuitive.

But now consider the case of the following attributes:

being thankful for one's ignorance about being a prime number
knowing about fearing a prime number
knowing about fearing the attribute of being a prime number

The disciple of Abnormal Psychology has discovered many bizarre phobias including fear of the number 13. This example is just a possible exotic variant of such a phobia. By Chisholm's theory

knowing about fearing being a prime number

is not a purely psychological attribute. It implies the properties of believing and fearing, but it does not include the property of fearing, in that it is not necessary that whatever has the property of knowing also has the property of fearing.

What is counter-intuitive about this result is that we start with an attribute which intuitively would seem to be psychological, but not purely so, since it contains an apparently non-psychological attribute – being a number. From this, by the addition of another obviously psychological attribute, we turn an attribute which Chisholm would count as *purely psychological* into one which is not *purely psychological*. I find it counter-intuitive that thinking about being a prime number should be counted as *purely psychological* in the first place, and that the addition of another psychological attribute should make it count as less psychological. Thus, in conclusion it seems to me that Chisholm's analysis of being a *purely psychological attribute* is too broad, and that this defect stems directly from his characterization of what it is to be a property.

Summary of Definitions

From: Roderick M. Chisholm, "On the Nature of the Psychological," Philosophical Studies, 43 (March 1983), 155–164.

A Sufficient Condition for the Psychological Any property which is possibly such that it is exemplified by just one thing and which includes every property it implies or involves is psychological.

D1. P is an *attribute* = Df. P is possibly such that there is something that exemplifies it.

D2. P is a *property* = Df. P is an *attribute* which is such that:

(a) only individual things can have it;
(b) anything that can have it can have it, or fail to have it, at any time it exists; and
(c) it can be such that some individuals have it and some do not.

D3. P *implies* Q = Df. P is necessarily such that if anything has it then something has Q.

D4. P *includes* Q = Df. P is necessarily such that whatever has it has Q.

D*. P is a relational property only if P implies a property it does not include.

D**. P is a non-relational property only if P *includes* every property that it *implies*. (Synonyms: non-relational property and internal property.)

D5. P *involves* Q = Df. P is necessarily such that whoever conceives it conceives Q.

D6. P is a *purely qualitative attribute* = DF. P is an *attribute* which (a) is possibly such that it is exemplified by just one thing, and (b) *includes* every property it *implies* or *involves*.

D7. P is a *qualitative* attribute = Df. Either (a) P is *purely qualitative attribute* or (b) P is a disjunction of *attributes* each of which is *purely qualitative attribute*.

D***. An attribute D is a disjunction of two attributes, P and Q, provided only D involves P and D involves Q, and D is necessarily such that, for every x, x has D if and only if either x has P or x has Q.

D8. P is a *psychological attribute* = Df. P *includes* an attribute that is *qualitative*.

D9. P is a *purely psychological attribute* = Df. P is *psychological* and every property it *implies involves* something *qualitative*.

Chapter 20
“Comments on Lucey’s Paper” by Roderick M. Chisholm (April 16, 1984)

Kenneth G. Lucey

Abstract R. M. Chisholm begins by reporting that Lucey has expounded his views perfectly accurately. Chisholm says that Lucey has attributed to him a view that he did not intend to endorse. The key issue lies in Chisholm’s characterization of what it is to be “purely psychological”. Lucey has provided a counter-example to Chisholm’s theory, and Chisholm basically accepts the counter-example and abandons the terminology of calling any states “purely psychological”. Chisholm uses the occasion of his response to Lucey for further developing his theory to distinguish three types of psychological property which he calls “Cartesian properties”. Chisholm stresses that Cartesian properties are properties to which we have privileged access but that he is not defining them in terms of such access. Chisholm concludes his response by giving a characterization of what it is for a person to be in a conscious state.

Introduction

It is gratifying to hear one’s views expounded perfectly accurately – especially in connection with a topic like the present one. For nowadays it would almost seem that philosophers do their best not to understand what other philosophers say about the nature of the psychological.

As for those points that I intended to make, then, Professor Lucey has interpreted me entirely correctly. But he seems to have attributed to me certain additional things that I did not intend to say. This is at least as much my fault as it is his.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_20

"Purely Psychological" Properties

My choice of the expressions "property" and "purely psychological" was not altogether fortunate. My purpose, in the paper that he criticizes, was to characterize those attributes that may be called "psychological." My strategy had been (1) to capture a somewhat more narrow concept – a concept I called "purely psychological" – and then (2) to define the broader concept of the psychological by reference to the purely psychological. And my strategy in singling out this more narrow psychological concept was to single out still another concept – what I called, entirely arbitrarily "properties" – and then to note that the purely psychological may be characterized by reference to properties, so defined.

Lucey interprets the terms, "purely psychological attributes" and "properties," in a way that is quite different from what I had intended. If he was misled by my terminology, then, I am sure, other philosophers may have been as well.

I think Lucey took "purely psychological" to mean something like this: an attribute is purely psychological if it related only to that which is psychological. Now a consequence of my definitions, as he points out, that the attribute of thinking about the attribute of being a prime number comes out as purely psychological. And Lucey objects: "For the realist who holds abstract entities to have an objective existence independent of the mind, thinking about being prime is no more nor less psychological than thinking about a dragon or a sloop." I happen to be such a realist myself and would concede therefore that a person who thinks about the attribute of being a prime number is not restricting himself to that which is psychological; he has a thought which is directed upon something which is entirely non-psychological.

The properties that I had called "purely psychological" are properties that are purely Cartesian. They are psychological properties which are such that the subject can know directly and immediately that he has those properties. (But I was not defining those properties by reference to such privileged access.) They may also be said to be "Purely psychological" in that they don't logically include any properties that are not qualitative – and in this sense, therefore, they may be said to be free of any admixture with the physical. I had marked off this sense of "qualitative" in the definition that Lucey refers to:

(D6) P is a purely qualitative attribute = Df. P is an attribute which (a) is possibly such that it is exemplified by just one thing and (b) includes every property it implies or involves.

I used the word "qualitative" because I thought that those philosophers who have spoken of the psychological as being "qualitative" must have had something of this sort in mind. What is "purely qualitative" in this sense is that which has no peculiar relations to individual things – beyond that of being such that it can be exemplified only by individual things that are persons.

Purely qualitative attributes, then, pertain to no individual other than the subject who has them and they are thus free of any admixture with other individual things.

But, as Lucey points out, they are not similarly free of any admixture with the eternal – with those abstract objects that are neither psychological nor physical. And therefore, he concludes, we should not call them "purely" psychological. I certainly do not want to quarrel about that point, and so I would be happy to withdraw the term "purely." I needed the term only as a label to mark off a distinction of three types of psychological property. What term shall we use, then? Perhaps "Cartesian" will do. But if this is also objectionable, we don't need to use this type of label at all. We could just speak of psychological properties of type (1), of type (2), and of type (3). The important thing is to mark off the three types of property by reference to their structure.

What, then, are the three types of psychological property?

Three Types of Psychological Property

The psychological properties that belong to the first group are those that both imply and involve certain properties they do not include. Examples are: (a) judging truly that there are nine planets; (b) perceiving that there is a cat on the roof; and (c) successfully endeavoring to raise one's arm. Thus judging truly that there are nine planets implies and involves but does not include the property of being a planet; perceiving that there is a cat on the roof implies and involves but does not include the property of being a cat; and successfully endeavoring to raise one's arm implies and involves but does not include the property of being an arm.

The second type of psychological property may be derived by generalizing upon those of the first type. The resulting property is implied and involved by the corresponding property of the first type. But it does not imply everything that the first type of property implies. Corresponding to our examples of the first type of psychological property, we have the following: (a) judging that there are nine planets; (b) taking there to be a cat; and (c) endeavoring to raise one's arm. These properties involve certain properties they do not include but they do not imply those properties. Thus believing that there are nine planets involves the property of being a planet but does not imply it. And analogously for the other examples.

The properties of the third group may be arrived at by generalizing upon those in the second. But unlike those in the second, they neither imply nor involve any properties they do not include. They are: (a) judging; (b) taking; and (c) endeavoring. With these examples in mind, we are now in a position to characterize the distinction between those properties that are psychological and those that are not.

The members of the third set of properties that we have just singled out are all thus purely qualitative: judging, taking and endeavoring. So, too, for believing, being pleased, wishing, wanting, hoping, sensing, feeling. Each of these properties is purely qualitative in the following sense: (i) it is possibly such that only one thing has it; and (ii) it includes every property it implies or involves. These two features provide us with a sufficient condition of the psychological.

Although the property of judging is purely qualitative, the property of judging that there are nine planets is not purely qualitative. For the latter properly involves but does not include the property of being a planet.

Some psychological properties, then, are purely qualitative and some are not. But every psychological property includes a property that is purely qualitative. And indeed we may take this fact as the defining mark of the psychological: a psychological attribute is a property that includes a purely qualitative property.

The members of each of our three groups of psychological properties all satisfy this description, for each such property includes a property that is purely qualitative. But the members of the second and third groups, unlike the members of the first group, are what I had called "purely psychological". But in response to Lucey's criticism, I have withdrawn this term and have proposed to call such properties "Cartesian," if this term is acceptable. What would be the relevant sense of "Cartesian property"? We may say that a Cartesian property is a psychological property which is such that every property it implies involves a property that is purely qualitative.

Cartesian properties are those properties to which we have privileged access. Every such property is necessarily such that, if a person has it and if he attributes it to himself, then his attribution is evident in the strongest sense of the term. (But note that we have not defined the concept of a Cartesian property in epistemic terms. That is to say, such expressions as "evident", "certain", "self-presenting," and "privileged access" do not occur in our definition of the Cartesian.)

We may say that the conscious state of a person at any time is the conjunction of all the Cartesian properties that that person has at that time.

Chapter 21
Essay #18: On Ontological Parasites: Are Persons *Entia Per Se*?

Kenneth G. Lucey

Abstract Here is a summary of the first three parts of this essay: I have tried to show that (1) It is not obvious how the concepts of *entia per se* and *entia per alio* are logically related. (2) It is not obvious which half of this distinction "wears the pants." (3) It is not obvious whether *entia per alio* are supposed to exist. If they do exist, then some ways of characterizing them have the unhappy consequence that all *entia per alio* are also *entia per se*. This could be avoided, following J.L. Austin, by giving primacy to the concept of e*ntia per alio,* and by defining *entia per se* in terms of them. But this maneuver was based on the assumption that *entia per alio* do exist, whereas Chisholm for the most part seems to be committed to their not existing at all. Yet, (4) If *entia per alio* do not exist, then it is not obvious what entity possesses the temporal properties that successive entities are usually supposed to possess. Finally, (5) If *entia per alio* do exist, then all contingent states of affairs are *entia per alio*.

The final section of this essay begins by discussing the methodology of common sense that Chisholm, following Thomas Reid and G.E. Moore presupposes in his discussion of the issue of whether persons are *entia per* se. His methodological principle is that "whatever we are justified in assuming when we are not doing philosophy, we are also justified in assuming when we are doing philosophy". In Person And Object Chisholm formulates six categories of pre-philosophic data concerning ourselves. The different categories have different epistemic levels of justification – some are certain, some are evident and as such are known to us, and yet others are merely beyond reasonable doubt. Chisholm uses his methodological presupposition to hold that all six of his categories are true of "one and the same entity throughout", and thus he concludes that persons are *entia per se*. But this conclusion depends upon the question of whether *entia per alio* do exist. I believe that it is Chisholm's own view that they do not, but this interpretation is undermined by many of his own statements about them.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_21

This essay has five parts. The first four are devoted to consideration of the concepts of *entia per se* and *entia per alio*. The fifth part turns to the question of "whether persons are ontological parasites or *entia per se*?"

Part I

What is an *ens per se*? A closely related question is: what is a thing in itself? There are subtle differences here, which I shall ignore in the following. It is hard to see how any really enlightening exposition can be given of the concept of an *ens per se* without presupposing some more primitive concept. The primitive concept that I am presupposing in the following is the concept of existence. In this paper I shall be considering a series of definitions in term of the bi-conditionals that they entail. A simple definition of "*ens per se*" would thus entail:

(1) Necessarily, for any entity x, x is an *ens per se* if and only if x does exist.

This is of course equivalent to the following:

(2) Necessarily, for any x, x is not an *ens per se* if and only if x does not exist.

An obvious feature (defect?) of these bi-conditionals is they seem to be using existence as a predicate. An alternative formulation of (1) would be:

(3) Necessarily, for any entity x, x is an *ens per se* if and only if there exists a y such that y is identical to x.

Another approach to the explication of this concept is made by contrasting *entia per se* with *entia per alio*. *Entia per alio* have recently been interpreted as "ontological parasites," and a standard example that has been given is the category of shadows. A shadow is held to be an ontological parasite in that the being (if any) of a shadow depends upon the continued existence of the shadowed object. As soon as the distinction has been introduced between things in themselves and ontological parasites, the inevitable question to be asked is "What is the relationship between *entia per se* and *entia per alio*?" Are these two categories mutually exclusive? Are they mutually exhaustive of the totality of being? Are they contrary categories, which can both be inapplicable to some item or other? The first possibility would be expressed by the following:

(4) Necessarily, for any entity x, x is an *ens per se* if and only if x is not an *ens per alio*.

This of course would be equivalent to:

(5) Necessarily, for any entity x, x is an *ens per alio* if and only if x is not an *ens per se*.

Suppose one baptizes a certain shadow with the name "Albert." If shadows are *entia per alio*, then Albert is an *ens per alio*. From this assumption together with assumption (5) and definition (2), it readily follows that Albert does not exist. But why did we bother to baptize that shadow "Albert", if it did not exist, and more to the point, what was being baptized if the shadow didn't exist? And, if shadows can be seen, how can they not exist?

Perhaps what is wanted here is some more liberal characterization of what it is to be an *ens per alio*. Such would be:

(6) Necessarily, for any x, x is an *ens per alio* if and only if there exist a z and there is a y distinct from x such that necessarily if y ceases to exist then z ceases to exist, and z is identical to x.

This characterization seems to be an improvement over (5) in that it captures the "parasitic" character of the *entia per alio* and makes explicit the ontological dependence of them upon other existents, which would presumably be *entia per se*. Yet (6) has another feature which may or may not be a defect. According to (6) it turns out that all *entia per alio* are also *entia per se*, and this would require the rejection of (4) and (5) above. This follows because by (6) whatever is an *ens per alio* exists as long as its "host" exists, and thus is an *ens per se* by virtue of its existence – according to (1). But this may be an unacceptable result. Whether *entia per se* and *entia per alio* are mutually exclusive or merely contraries, it is not obvious that it should turn out that all *entia per alio* are also *entia per se*.

At this point we could make a fresh start using an observation of J.L. Austin's. In Sense and Sensibilia (pp. 70–71) Austin comments concerning the terms "real" and "unreal" that the latter term "wears the trousers" in ordinary usage. For example you check to see that a piece of money is real by checking to see if it is counterfeit (i.e., not real money). Following Austin we might avoid the embarrassment of its turning out that all *entia per alio* are *entia per se* by replacing definition (1) above, which has said: Necessarily for any entity x, x is an *ens per se* if and only if x exists. By letting *entia per alio* "wear the pants" we may revise the definition of an *ens per se* as follows:

(7) Necessarily, for any entity x, x is an *ens per se* if and only if x exists and x is not an *entia per alio*.

Spelled out completely this would give:

(7*) Necessarily, for any entity x, x is an *ens per se* if and only if x exists and it is not the case that there is a y distinct from x which is necessarily such that if y ceases to exist then x ceases to exist.

Thus, what it is for something to be a thing in itself is for it to exist and not of necessity to depend for its existence upon the existence of something else. For example, consider the fact that there is a causal dependence of a child upon its parent. That is, had the parents never procreated or had they been killed as infants, then their child surely would not have come into being. But, nevertheless, the child is not an *ens per alio* with regard to its parents, for subsequent to the child's birth the destruction of the parents does not necessitate the destruction of the child. I believe it is a virtue of (6) and (7), as characterizations of *entia per se* and *entia per alio*, that it does not turn out that all *entia per alio* are also *entia per se*, and so I hereby adopt them.

Part II

Yet there is at least one consequence of this characterization that should be noted in passing. Consider the status of *states of affairs* in relation to this distinction. According to one tradition, states of affairs are entities and as such have an ontological status. Consider the state of affairs of Peter being a father. Is such a state of affairs an *ens per se* or an *ens per alio*? By definitions (6) and (7) the concept of an *ens per alio* has primacy, and thus we should look to it first. Is the state of affairs of Peter being a father an *ens per alio*? The issue here is not the ontological status of the person Peter, but rather that of the state of affairs, which in some sense involves Peter.

I believe that it turns out on definitions (6) and (7) that the state of affairs of Peter being a father is an *ens per alio*. At least part of the same tradition which holds states of affairs obviously to exist has also distinguished a state of affairs existing from it obtaining (or occurring). The doctrine here is that every state of affairs exists, whereas only some of them obtain. Thus, the state of affairs of there being whales both exists and obtains (at least until they become extinct). On the other hand, while the state of affairs of there being griffins exists, it does not and likely never shall obtain. According to this view, states of affairs are akin to universals and thus a species of necessarily existent entities. This last point is of course controversial as is the very existence of states of affairs in the first place. But that controversy is not the issue in question. The issue is rather, supposing for the moment that states of affairs exist, are they *entia per se* or are they *entia per alio*? My claim here is that we can see that the state of affairs of Peter being a father is an *entia per alio* and that this can be seen by considering the further state of affairs of Peter being a parent. If the state of affairs of Peter being a parent were to cease to exist, then of necessity the state of affairs of Peter being a father would also cease to exist. The states of affairs ontologist who holds states of affairs to be necessarily existent entities might consider a revision of (6) that would go as follows:

(6*) Necessarily, for any x, x is an *entia per alio* if and only if x exists and there is a y distinct from x such that necessarily if y ceases to exist or obtain then x ceases to exist or obtain.

For some philosophers, the view that both Peter exists and that the state of affairs of Peter being a father exists gives them ontological heartburn. Such an ontologist would perhaps take comfort in the conclusion that states of affairs are *entia per alio*. But are we straying now from the original sense of *entia per alio*? The adoption of (6*) would seem to have the consequence that every contingent state of affairs is an *entia per alio*. The reason here would be that for any contingent state of affairs x there is some presupposed state of affairs y, the destruction (or negation) of which would bring about the non-occurrence of x. Yet it is not at all obvious that the distinction between *entia per se* and *entia per alio* should collapse into a distinction between necessary existence and contingent existence.

Part III

I now begin my movement towards the question of whether persons are *entia per se*. Roderick M. Chisholm has previously, in his Paul Carus Lectures entitled Person and Object[1] and in a subsequent article "Coming Into Being and Passing Away: Can the Metaphysician Help?"[2] offered powerful support for the conclusion that persons are *entia per se*. He has expressed that conclusion as follows:

> I say, then, that we have a right to assume that persons are *entia per se*, that there are persons, in the strict and philosophical sense of the expression "there are". (1977, p. 170)

My purpose in Part V below shall be to briefly review and to critically assess the support that Chisholm has given for the contention that persons are *entia per se*. The first point to be made here is that Chisholm is not claiming to be certain, or even to know, that persons are *entia per se*. Rather, in saying that "we have a right to assume" this, he is saying that it is beyond reasonable doubt [i.e. believing it is epistemically preferable to withholding it] without being evident, or in fact known to the individual in question.

Part of the difficulty involved in assessing Chisholm's support for his thesis is that he has not in either of these works explicitly explored the logical relations of the concepts of *entia per se* and *entia per alio*. Thus, before turning in Part V to his specific defense of the thesis that persons are *entia per se*, I shall review his few scattered characterizations of these concepts.

Chisholm's first use of "*entia per alio*" in Person and Object comes near the end of a discussion entitled "Inner Perception" (pp. 46–52) in which he is defending an adverbial account of sensations. He says:

> If this is correct, then appearances would be paradigm cases of what the scholastics called "*entia per alio*" and what we might call "ontological parasites." They are not entities in their own right; they are "parasites upon" other things. And what they are parasitical upon are persons or selves. (1976, pp. 50–51)

What does it mean to say that appearances "are not entities in their own right"? Does it mean that although they do exist, their continued existence depends upon the existence of something else? Or, does it mean that they simply do not exist at all? If the latter is meant then that would rule out my previous characterization (6) above, for that clearly presupposes that *entia per alio* do exist. The first interpretation just mentioned would correspond to that systematized in (6).

The next reference to *entia per alio* comes in his discussion of successive objects (or *ens sucessivum*) which are entities that have different parts at different times.

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[1] Roderick M. Chisholm, Person and Object: A Metaphysical Study (La Salle, Illinois: Open Court Publishing Company, 1976).

[2] Roderick M. Chisholm, "Coming Into Being And Passing Away: Can the Metaphysician Help?" in Stuart F. Spicker and H. Tristram Engelhardt, Jr. (eds.) Philosophical Medical Ethics: Its Nature and Significance (Dordrecht-Holland: D. Reidel Publishing Company, 1977), pp. 169–182.

They are entities such as the Ship of Theseus, which are not self-identical through time in any strict and philosophical sense. He says:

> . . . such things are *entia per alio*. They are ontological parasites that derive all their properties from other things – from the various things that do duty for them. An *ens per alio* never is or has anything of its own. It is what it is in virtue of the nature of something other than itself. At every moment of its history an *ens per alio* has something other than itself as its stand in (1976, p. 104)

This passage would seem to imply that an *ens per alio* never possesses any properties and that properties are possessed only by various *entia per se*. This would seem to imply that an *ens per alio* doesn't really exist, for surely anything that exists has some properties and in fact Chisholm has elsewhere argued that "No thing has any more or any less properties than does any other thing" (1977, p. 177) From this it would seem to follow that if an *ens per alio* did exist, it would have to have just as many properties as any *ens per se*. The main thrust here would seem to be that an *ens per alio* cannot really exist if it doesn't really have any properties. But then Chisholm seems to confound that interpretation with the very next line that follows the above quote, viz., "But if there are *entia per alio,* then there are also *entia per se*" (1976, p. 104) The antecedent of this conditional is clearly suggesting (hypothetically) the supposition that *entia per alio* might exist, if only to derive there from the consequent that *entia per se* would also exist. In any case, aren't there some properties that a successive entity (as an *ens per alio*) would have to have? What I have in mind here is the property of duration. If the Ship of Theseus persisted for a hundred years despite the fact that all of its parts were replaced any number of times, then surely something must have existed which has the property of being a century old ship. Clearly none of the successive parts had that property. And so, if *entia per alio* can have temporal properties, must they not exist? I don't admit any distinction between "existing" and "really existing," for by my lights anything that exists really exists. In another context, Chisholm has called Kant's view that different things have different degrees of reality a "monstrous hypothesis" (1977, p. 176). So the options here would seem to be just two, namely that *entia per alio* really do exist, or they really don't exist. If they really don't exist then there don't really exist any successive entities, and thus there simply isn't anything which is the Ship of Theseus, and which has the property of having persisted for a century. It is hard to see how any other putative successive entity (such as a symphony performance) could fare any better. (Of course, one can still say about the Ship of Theseus, that over a century long period there were a whole series of non-identical ships, sharing a variety of parts, which were all called by the same name. Presumably, the very same thing could be said of any human body.)

Two final quotes will complete this examination. In "Coming Into Being . . ." Chisholm says:

> Let us note that a shadow is a paradigm case of what some medieval philosophers called an *ens per alio* – and what we might call an "ontological parasite." *Entia per alio* were thought of as things that got all their being, so to speak, from other things. Thus a shadow has no being of its own. Anything we seem to be able to say about it is something that really is a

truth just about some shadowed object or other. The shadow is entirely parasitical upon its object (1977, p. 175).

This would surely seem to settle the matter (to the extent that Chisholm is endorsing the medieval doctrine), for if a shadow is a paradigm case of an *ens per alio*, and if a shadow has "no being of its own," then a shadow is surely a paradigm case of something which really doesn't exist. Yet the only conclusion that can be reached here is that Chisholm simply may have no consistent position. For in laying out his "minimum philosophical vocabulary" in Person And Object Chisholm says the following: "I will use 'thing' in a very broad sense. Whatever there is may be said, in this sense to be a thing: hence properties and relations are themselves things, and so are physical objects, persons and shadows [sic]" (p. 20) A shadow is thus: (a) "a thing" in the broad sense of 'thing' (b) something that "there is," and (c) something that "has no being of its own." If this is a consistent position then there are some things, viz., shadows, which have no being and which thus do not exist.

Part IV

Before turning to Part V, I'll attempt to briefly summarize the main conclusions of the previous three parts of this essay. I have tried there to show that (1) It is not obvious how the concepts of *entia per se* and *entia per alio* are logically related. (2) It is not obvious which half of this distinction "wears the pants." (3) It is not obvious whether *entia per alio* are supposed to exist. If they do exist, then some ways of characterizing them have the unhappy consequence that all *entia per alio* are also *entia per se*. This could be avoided, following J.L. Austin, by giving primacy to the concept of e*ntia per alio,* and by defining *entia per se* in terms of them. But this maneuver was based on the assumption that *entia per alio* do exist, whereas Chisholm for the most part seems to be committed to their not existing at all. Yet, (4) If *entia per alio* do not exist, then it is not obvious what entity possesses the temporal properties that successive entities are usually supposed to possess. Finally, (5) If *entia per alio* do exist, then all contingent states of affairs are *entia per alio*.

Part V

In this final section I shall attempt to summarize the considerations which Chisholm uses to support his conclusion that, while falling short of knowledge, it is nonetheless beyond reasonable doubt that persons are *entia per se*, and that we each have a right to assume that we are such. Chisholm is presupposing a methodological principle here, which traces its ancestry back to G.E. Moore, and perhaps back even further to Thomas Reid. In Person And Object Chisholm expressed this principle thus: "whatever we are justified in assuming, when we are not doing philosophy, we are also justified in assuming when we are doing philosophy" (p. 16) Elsewhere he restates this methodology as follows:

> I assume that, in our theoretical thinking, we should be guided by those propositions we presuppose in our ordinary activity. They are propositions we have a right to believe. Or, somewhat more exactly, they are propositions we should regard as innocent, epistemically, until there is positive reason for thinking them guilty (1977, p. 169).

Against the background of this methodology Chisholm sets about formulating the presuppositions of common sense, which he calls pre-philosophic or pre-systematic data. In Person And Object (pp. 16–18) he formulates six categories of such data. They are (1) Cartesian facts –present, (2) material facts – present, (3) teleological or intentional facts – present, (4) Cartesian facts – past, (5) material facts – past, and (6) teleological facts – past. A sample list would be: (1) I am now thinking about the arrival of spring, (2) I now have a body that weighs 180 lb, (3) I am now purposefully looking for my fountain pen, (4) I was yesterday hoping for the melting of the snow, (5) I have a body that previously was heavier, and (6) I yesterday abstained from dessert.

Chisholm holds that there are various degrees of justification for the different categories, but that in every case the items are such that for the individual reporting them it is more reasonable to believe the item than to disbelieve it, in the sense of believing its negation. Category (1) he would hold to be absolutely certain, whereas category (2) would not be justified that strongly, albeit something that is known to the individual. In any case, Chisholm adds a seventh category to his list which is that "the various items on our list pertain to one and the same entity throughout. We begin with the assumption that we are not concerned with many different things . . ." (1976, p. 17) He does not specifically address himself to the degree of epistemic justification of his seventh category. But that is really the crucial issue, for if the first six categories are indeed true of "one and the same entity throughout" then that is precisely to say that they are true of something that remains self-identical through time and such a thing is surely an *ens per se*.

This seventh proposition is not something that Chisholm claims to know to be true, but he does claim that it is epistemically innocent until it has been shown to be guilty.

Yet what has been shown here? The seventh proposition asserts that there is, i.e., there exists something that is the referent of "I" in the first six propositions. And from that existence it is inferred that the referent of "I" is an *ens per se*. But here is the rub. This inference only holds on the assumption that *entia per alio* don't exist. And that was precisely the perplexing issue encountered in the first three parts of this essay. In "Coming Into Being And Passing Away . . ." Chisholm formulates his view thus:

> These are some obvious truths about myself, then, which it is now reasonable for me to accept. But these truths, if we take them at their face value, imply that I am an *ens per se*; that is to say, they imply that, in the strictest sense of the word "is," there is a certain thing which is I (1977, p. 170).

The difficulty I am posing here is this. Chisholm and I both want to reject the doctrine that there are different grades of reality and different senses of "existence." He also wants to say both that shadows are *entia per alio* and that shadows are things (i.e., there are shadows). Thus, the tension I find in Chisholm's writings is that he both wants to say that there are *entia per alio* and that *entia per alio* don't strictly exist. One solution to this tension would be to grant that *entia per alio* do exist (in the univocal sense of "exist") and yet preserve the distinction between *entia per alio* and *entia per se* by further spelling out the parasitic character of the former. This is the procedure that was pursued in definitions (6) and (7) in Part I above. The difficulty with this suggestion is that if existence is granted to *entia per alio*, then it doesn't follow that persons are *entia per se* just because the referent of "I" exists!

The other possible solution to the tension here is simply to deny that *entia per alio* have any being or existence whatsoever. I believe that this is the tactic that Chisholm himself would adopt. The difficulty that then remains is to account for how I can look at a shadow (which doesn't exist), or to explain how successive entities (such as symphonies) can have temporal properties (or seem to have temporal properties) while not existing.

Chapter 22
Essay #19: Is There a Set of All Truths?

Kenneth G. Lucey

Abstract Patrick Grim has argued, as the title of his article indicates that "There Is No Set of All Truths." If one were to try to argue that there is no set of all dogs, one might take that as likewise an argument that there is no such property as the property of being a dog. Grim does not draw such a conclusion, but it would seem to follow that if there is no set of all truths, then there is no such property as the property of being true. Grim calls T the set of all truths, and calls P the power set of T, i.e. P is the set of all subsets of T. Grim appeals to Cantor's power set theorem to establish that P is larger than T, and thus concludes that there will be more truth than there are members of T, and from this result infers that there is no set of all truths. So, Grim's argument has the form of a *reductio ad absurdum*. As with any *reductio* argument, to escape the contradiction there are usually a variety of assumptions that can be questioned. My claim is that this is also the case with Grim's argument. One such assumption is that the original set T is not "dense". Also, there is the assumption that the members of the power set of T are not already members of T. But if T is really the set of all truths, then any truth in PU must already be members of T. I conclude that Grim has not shown that there is no such property as *being true*.

Polonius' advise to Laertes was "This above all: to thine ownself be true, and it must follow as the night the day, thou canst not then be false to any man." (Hamlet, Act 1, Scene 3). In the book of "John" we are told that "If ye know the truth, the truth will set ye free." (Chapter 8, verses 32–33) The point of juxtaposing these two quotes is to emphasize that there is not a simple relationship between "be true" and "truth".

There is a property of being true. And if there is a property of being true, then anything which has the property of being true is a truth. Any set of objects, each member of which has the property of being true would thus be a set of truths.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_22

Furthermore, if there is a set, every member of which is true, and which is such that there is nothing which is true which is not a member of that set, then it would seem appropriate to refer to that set as the set of all truths.

Patrick Grim[1] has discussed the question of whether there exists such a set as the set of all truths. He introduces the letter T as a name for the set of all truths, and is in effect arguing that 'T' is a nondesignating term, for his main point is given by the title of his article, which is: "There Is No Set Of All Truths".

There are many interesting questions to be asked about the set (if such there be). Not least of these is the ontological status of the members of T. Are they sentences, sentence-types, sentence tokens, possible sentences, statements, possible statements, eternal sentences, states of affairs, propositions, *concreta*, *abstracta*, or what? But, of course, if there is no set T, that doesn't keep us from asking any of those questions. But, nevertheless, there are questions we cannot ask and answer if T does not exist.

One question that cannot be asked and answered if T does not exist, is the question of how many truths are contained in T. Yet we don't really need to mention T to ask that question. All we need to ask is "How many truths are there?" Anyone asking that question runs the peril of having to answer the counter-question – "What is your principle of individuation for truths?" For example, how many truths are expressed by the sentences that "Tom loves Mary" and "Mary is loved by Tom"?

Pretending not to have heard that question, we might jump right in with the speculation that T must, at least, contain an infinity of truths. For, after all, any self-respecting ontology wants to embrace an infinity of integers, and corresponding to every integer **n**, there is the truth that **n** is an integer. But, since it is a common opinion that there are many degrees of infinitude, it is plausible to suggest that the cardinality of the set of all truths must be as large as the largest degree of infinity that one can construct a concept of. So obviously, T, if it exists, is no puny set. It clearly has more members than anyone ever dreamed of in one's wildest speculation.

Yet Patrick Grim has argued there is no such set as T, and he would have us believe that this is an important philosophical consequence of Georg Cantor's work. This is a most startling thesis, for if it is correct that there is no set of all truths, then it would seem to follow that there is no such property as the property of being true. What could be the argument for such a startling thesis?

Grim's argument begins by assuming that there is a set which is the set of all truths. Thus, $T = T_1, T_2, T_3, \ldots$. The point of the ellipsis is that the enumeration of truths goes on indefinitely. But by the line of reasoning concerning integers followed above, indefinitely clearly amounts to infinitely. Clearly T contains an infinity of elements, each of which are truths.

Grim's next step consists of considering the power set of T, called P, which is the set of all subsets of T. If we were correct before in thinking that T has an infinity of members, then there must be an infinity of sets as members of P. Grim's next move is to show that corresponding to every member of the Power Set of T there is a truth.

[1] Patrick Grim, "There Is No Set Of All Truths" Analysis Vol. 44 No. 4 (October 1984), pp. 206–208.

This just amounts to putting the original elements of T into one-to-one correspondence with the sets which make up the Power Set of T. This is intuitively jarring, but only because sets with infinitely many members are odd beasts. It is no stranger than being able to put the set of all integers into one-to-one correspondence with each member of the set of even integers, viz. (1 2, 2 4, 3 6, 4 8, . . .).

Grim's most important claim is that "But by Cantor's power set theorem the power set of any set will be larger than the original. There will be more truths than there are members of T." (p. 207) The Cantor result being invoked is that the size of the power set P is larger than the size of T itself.

So, does this really show that there is no set of all truths?

This is a contradiction. To see the contradiction that results from Grim's argument, think of the power set as a set of truths. On can think of it thus because the power set of T stands in a one-to-one correspondence with a set of truths. So in concluding that P is larger than T, Grim is concluding that there exists a set P, which is larger than the set of all truths. Having assumed that T is the set of all truths, and having arrived at an inconsistent conclusion, Grim take that as a *reductio ad absurdum* of his initial premise, and thus concludes that there is no set T, which is the set of all truths.

As with any argument of the reduction to absurdity form, the most one can conclude for certain is that at least one of the premises is false. It doesn't necessarily follow that the first assumption made (in this case that T is the set of all truths) is the false assumption that must be rejected. To see what other assumptions are potential candidates for rejection we must look closer at Cantor's argument.

When Grim says that "To each element of the power set will correspond a distinct truth . . ." he does not ask whether these distinct truths are or are not members of T. But if T is by definition the set of all truths, then of course it must be the case that these truths are also members of T. So if each member of the power set corresponds to a member of T, it must follow that either the set of all truths corresponds to the power set P, must be such that either P is a subset of T, or P is identical to T. So, when Grim concludes that "by Cantor's power set theorem the power set of any set will be larger than the original", he is in effect concluding that either the power set is larger than T itself or that the power set is larger than a set of which it is a subset. So Cantor's theorem cannot just baldly conclude that every power set is larger than every set that it is the power set of.

Suppose, for example, the original set U were the set of all sets. Would the power set PU of the set of all sets U be larger than the set of all sets? Surely not, for to be so would mean that PU contains a set not contained in U. But since U, by definition, contains every set, there cannot be a set which is a member of PU, but not a member of U. So it is false that every power set is always larger than the original set. Cantor's theorem must assume, to begin with, that the original set T is not "dense", where a set being dense means that between any two members there exists a third distinct from them, and which is also a member of the set. Since the set of all truths T probably is as dense as they come, there is no good reason to suppose that this assumption of Cantor's holds for T. So, Grim's assumption that T satisfies the presuppositions of Cantor's theorem is suspect, and the set of all truths appears to be vindicated.

Chapter 23
Essay #20: The Generalization Argument Defended

Kenneth G. Lucey

Abstract Marcus George Singer, in his book Generalization In Ethics gives a detailed defense of the Kant inspired generalization argument. Singer's formulation of the generalization argument consists of two premises, viz. the Principle of Consequences [If the results of everyone doing x would be disastrous, then no one ought to do x] and the Generalization Principle [If not everyone ought to do x, then no one ought to do x without adequate justification]. These premises taken together form a hypothetical syllogism yielding the conclusion which is sometimes called "the Generalization Argument" (GA): If the results of everyone doing x would be disastrous, then no one ought to do x without an adequate justification. The purpose of this essay is to defend the generalization argument from the vigorous attack that has been leveled against it by David Keyt. Keyt develops two lines of criticism which in the end dovetail into a dilemma of having either an unsound argument because of a false premise or an invalid argument. Keyt constructs three distinct counter-examples to Singer's argument. To properly appreciate Singer's defense of GA, it is necessary to understand the four restrictions that he places upon the argument. They involve (1) restricted generality, (2) invertability, (3) reiterability, and (4) the admission of exceptions, under conditions of non-reiterabilty. The dialectic of this paper consists in showing that each of Keyt's three counter-examples fails precisely because, in each case, he has not properly understood or appreciated the logical force of Singer's four restrictions.

The question "What would happen if everyone did that?" is often offered as a polite form of moral rebuke. In context, it is usually a prelude to saying "You know, if everyone did that, the consequences would be disastrous!" And from that it is supposed to be patently obvious that one ought not to be engaged in doing whatever it is that he is doing. This commonplace type of moral exchange has been painstakingly dissected, expanded and defended by Professor Marcus George Singer in

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_23

his seminal and highly controversial treatise Generalization In Ethics.[1] In the years since the appearance of that work, more than a score of articles and reviews have appeared, each claiming to have isolated the fatal flaw which establishes the unsoundness of Singer's formulation of the generalization argument. The purpose of this essay is to defend the generalization argument from one of the most vigorous attacks that has been leveled against it. The criticism of the generalization argument that I shall attempt to rebuff is Professor David Keyt's, as it occurred in his closely argued critique, "Singer's Generalization Argument."[2] The tightness of Keyt's critique stems from several sources. In the first place he develops his criticism in a painstaking manner, each step of which appears to follow inexorably upon its predecessor. Secondly, Keyt develops two lines of criticism which in the end he would have dovetail in such a way as to present Singer with the unsavory dilemma of either having an unsound argument or else of having an invalid argument. Keyt would appear to force Singer into a choice between the following two horns of a dilemma. Either (1) If Singer's two premises are interpreted in such a way as to make them both true, then he has committed a fallacy of four terms (and hence has an invalid argument), or (2) If Singer's premises are interpreted in such a way as to make then an instance of a valid argument form (hypothetical syllogism), then one of his premises, asserts Keyt, can be shown to be false (and hence yields an unsound argument). As already mentioned Keyt arrives at the horns of this dilemma from two different directions, or so to speak, by two different critical movements.

In the first of these movements Keyt's purpose is to develop a series of three counter-examples, any one of which (if successful) would be sufficient to show that the generalization argument has an invalid argument form. Keyt is here explicitly appealing to the impeccable logical principle that "If one instance of an argument form is invalid, the form itself is invalid." (Keyt, p. 469) From this it obviously follows that any adequate rebuttal of the first movement of Keyt's refutation must show, for each of his three attempted counter-examples, that it has failed to be an instance of the generalization argument with true premises and a false conclusion. My intention in the following will, in part, be to show that in each of these three cases Keyt has failed to provide a real counter-example to the formulation of the generalization argument with which Singer is concerned. The nerve of my argument against Keyt is that there is a recurrent error in these purported counter-examples. The recurrent error that vitiates each of his proposed counter-examples has two aspects. One of these aspects might easily be overlooked, but not because it involves some obscure Singer restriction. But quite to the contrary, this error stems from a restriction of which Keyt takes full cognizance. What then are these errors and what attention does Keyt give them? Before this question can be answered a review of Singer's restrictions on the generalization argument is required.

[1] Marcus George Singer, Generalization In Ethics (New York: Alfred A. Knopf, 1961). All quotes from this text will be followed by page citations of the form (Singer, p. 154).

[2] David Keyt, "Singer's Generalization Argument" Philosophical Review Vol. LXXII #4 (October 1963), pp. 466–476.

The heart of Singer's treatise is his Chapter IV in which he dissects the generalization argument into its premises, and discusses the qualifications, in terms of which he claims that it is a valid argument form. Singer breaks the argument into two premises, which he calls (1) "the Principle of Consequences", and (2) "the Generalization Principle". He casts the argument as a whole in the form of a hypothetical syllogism. The bare bones of the argument are as follows:

(1) *Principle of Consequences* (PC): If the results of everyone's doing x would be disastrous, then not everyone ought to do x.
(2) *Generalization Principle* (GP): If not everyone ought to do x, then no one ought to do x without an adequate justification.

Therefore (3) Sometimes called "*the Generalization Argument*: (GA): If the results of everyone doing x would be disastrous, then no one ought to do x without an adequate justification.

Singer readily admits that the argument as so formulated is unsound. It, of course, is obviously valid, since it is an instance of the valid argument form, viz. hypothetical syllogism. Singer formulates four restrictions in terms of which he is prepared to argue for the soundness of the generalization argument. These are: (1) restricted generality, which formulates the argument in terms of similar persons in similar circumstances, (2) restriction to acts which are not invertible, (3) restriction to acts which are not reiterable, and (4) statement of the argument so as to allow for the admission of exceptions, where non-reiterability becomes the test for an exception being adequately justified. Restated in terms of these restrictions the generalization argument becomes:

If the consequences of every member of some class K's doing some non-reiterable kind of act x in certain circumstances would be disastrous (or undesirable on the whole), while the consequences of no member of K's doing x (in those circumstances) would not be undesirable, then no member of K ought to do x (in such circumstances) without an adequate justification (the test of which is some non-reiterable circumstance about himself).

A sound argument is here understood as a valid argument all of whose premises are true. Professor Keyt proposes to support the horns of his dilemma first by the construction of a series of three counter-examples, any one of which (if successful) would be sufficient to show that the generalization argument is an invalid argument form. My intention in the following will in part be to show that Keyt has failed to provide a real counter-example to the formulation of the generalization argument (as Singer has qualified it). The nerve of my argument against Keyt is that there is a recurrent error in these purported counter-examples. Part of this error is that after an introductory survey of Singer's restrictions (Keyt, pp. 466–488) he then totally neglects the restriction that admits of justified exceptions. The second error that undermines Keyt's critique of the generalization argument is a mistake as to the actual purpose or function of the generalization argument.

The first of Keyt's examples concerns the application of the generalization argument to the question of the morality of the draft. The example presupposes that some country worth defending is being unjustifiably attacked. The political and military leaders have designated criteria which set apart a class (call it 'K') of men who are fit to serve the country and who are not involved in some other vital function. For the sake of the argument it is further assumed that: (1) if no members of K were to serve in the armed forces of this country, then the results would be disastrous, & (2) that the argument is not invertible or reiterable. The application of the generalization argument to this example would then proceed as follows: (This will subsequently be called Application 1). (P1) If the results of no member of K serving would be disastrous (as we are assuming they would), then not everyone (i.e., every member of K) ought to not serve. (P2) And, if not everyone ought to not serve, then no one (no member of K) ought to not serve without a reason or justification. (This clause "without a reason or justification" constitutes the restriction that I am claiming that Keyt fatally neglects. Wherever it occurs in the discussion of these proposed counter-examples, *it has been filled in by me*.)

From these two premises the conclusion is inferred that (C): If the results of no member of K serving would be disastrous, then no member of K ought to not serve without a reason or justification. This conclusion amounts to saying that every member of K has an obligation to serve his country. It is somewhat important for our purposes to spell out what it usually means to say that every member of a class K has an obligation to serve his country. It seems to me that no part of what this means is that every member of K must immediately rush to the battle front or to his local induction center. Rather it means that if and when the government's officials call upon a member of K to serve in a certain capacity, then it is his obligation to so serve or else to provide a justification for not serving that they will accept. In other words, the existence of the obligation as established by the generalization argument doesn't contain within itself the specification of the concrete manner or form of its fulfillment.

Keyt's attempt to establish a counter-example (as I interpret it) proceeds as follows. Suppose that the class K is divided into two complimentary sub-classes (call the 'KV' and 'KN'). Sub-class KV ('V' for volunteers) constitutes those members of K who would for one reason or another (patriotism, adventure, money, blood-lust, or whatever) volunteer to serve the country in its time of need. Sub-class KN ('N' for 'non-volunteers') consists of all those men who would not volunteer of their own free will to serve in the country's defense. It is assumed further that KV is numerous enough to fulfill the country's needs. This assumption is taken as entailing that: if all members of KV were to serve; then, if no member of KN were to serve, the results would not be disastrous. In constructing his attempted counter-example Keyt now applies the generalization argument first to the class KV and then to the class KN. Keyt suggest that these applications yield the following two conclusions: (Application #2) If the results of no members of KV serving would be disastrous, then no member of KV ought to not serve without a reason or justification. And (Application #3) If the results of no member of KN serving would be disastrous, then no member of KN ought to not serve without a reason or justification. The only premise of importance in the argument leading to these conclusions is the principle of consequences which is taken to be true for the application (#2) of the generalization argument to class KV and false for application (#3) to class KN. What this implies is that the generalization in these two particular applications does establish a *prima facie* (i.e., barring acceptable excuses or justifications) obligation for the members of KV to serve their country, but does not establish this obligation for the members of KN. This latter point contains a crucial distinction. To say that the application of the generalization argument directly to KN (given the mentioned assumption re KV) does not establish that they do have an obligation, is definitely not to say that it establishes that they do not have such a obligation! It is no part of the generalization argument's function to establish that someone *does not* have an obligation to do something or other. It sometimes establishes that one has an obligation *to do* x. Other times it establishes that one has an obligation *not to do* x. But never that one does not have an obligation to do (or not to do) x. Yet at the very heart of Keyt's first purported counter-example is his claim that when the generalization is applied to sub-class KN, it yields the conclusion that the members of KN do not have an obligation to serve their country. This mistake is clearly exemplified when Keyt says "But the conclusion that those who are not [attracted to pay and adventure] do not [have the duty to serve] is absurd." (Keyt, p. 471) This supposed absurdity dissolves when one clearly sees that it is no part of the function of the generalization argument to establish that certain classes do not have certain obligations. But what are we to say of class KN? Can we reach any conclusions about whether or not they have a duty to serve their country? We can, and as a matter of fact, we already have. In our initial application of the generalization argument to class K we concluded (given the mentioned assumptions) that "No member of K ought to not serve without a reason or justification." This initial application of the generalization argument established that all of K (which by hypothesis includes KN) has a *prima facie* obligation to serve. Even given the assumption that KV is numerous enough to serve the country's needs, and the further assumption that all of KV were willing to volunteer to serve, we must yet ask how this affects the *prima facie* obligations of the members of KN. Singer treated of this problem as follows:

> It is true, of course, that if a number sufficient to meet the need could be counted on to volunteer, either because they were attracted by adventure and the military life, or were induced by pay and other benefits – and not because they felt an obligation to – the question [whether one ought to serve or has the right not to serve] would . . . not arise. (Singer, pp. 175–176; quoted by Keyt, pp. 470–471.

After quoting this passage Keyt then goes on to give an interpretation of what Singer meant or what was implied by the phrase "the question . . . would not arise". He says:

> Now to say that this question would not arise implies that one has in this situation the right not to serve. But if this is so, we have a counterexample to the generalization argument. For, if we add to the situation imagined in the last paragraph [the country's being under attack, etc.] that enough men to meet the crisis will be attracted into the armed forces by the pay and adventure, the situation now imagined does not differ from the former situation in any respect that is relevant to the generalization argument. In this new situation, however, the

> premises of the argument [i.e., the application of the generalization to class K] we constructed are true while the conclusion is false. (Keyt, p. 471)

The conclusion that Keyt is calling false is the conclusion that "If the consequences of no member of K serving would be disastrous, then no member of K ought to not serve". Keyt interprets the phrase "the question . . . would not arise" as implying that one has a right not to serve, and he seems to be taking this latter to be falsifying the consequent of the conclusion just cited. And finally he seems to be taking the falsity of the consequent of the conclusion as sufficient to establish a counter-example. Since Keyt's interpretation of the phrase "the question . . . would not arise" seems essential for his establishment of the counter-example, one might well take an interest in Keyt's reasons or support for this interpretation. But one looks for such in vain, since Keyt gives no support for his interpretation of Singer's phrase. The mistake here is that the generalization argument does <u>not</u> establish in this case that one has a right <u>not</u> to serve, any more than it previously established the sub-class KN did <u>not</u> have an obligation to serve. And one need not seek far for an alternative (and justifiable) interpretation of Singer's assertion that "the question . . . would not arise."

Let us finally come to grips with the required analysis of the duties and obligations of sub-class KN in comparison and contrast to those of sub-class KV. Our initial application of the generalization argument yielded as a conclusion that "If the results of no member if K serving would be disastrous, then no member of K ought to *not* serve <u>without a reason or justification</u>." Given the assumptions that we have made, viz. that the principle of consequences is true with respect to K, and also an assumption of the truth of the generalization principle (Keyt is not questioning the truth of it at this stage of the argument), combined with the conviction that the argument certainly appears to be an instance of the valid argument form call "the hypothetical syllogism", this conclusion has all the appearance of following as the conclusion of a sound argument, i.e. a valid argument with true premises. So, as already mentioned several times, what this establishes is that the members of K (and hence of sub-class KN) have a *prima facie* obligation to serve their country. But now given the further assumption that the country's needs can be met by the volunteers of sub-class KV, what does this imply for KN? What follows is that the country doesn't immediately need their services, and hence that so long as this situation persists they have a perfectly good example of the "reason or justification" of which the conclusion made mention. What this implies is <u>not</u> that they do <u>not</u> have an obligation, nor (as Keyt would have it) that they "have the right not to serve," but rather that for the present they are simply excused from fulfilling the obligation that they share in common with all of the members of K. Keyt's conclusion that the members of KN "have the right not to serve" may be understood in a strong or a weak sense. It might mean (in the strong sense) that they have no obligation whatsoever to serve, or it might mean (in the weak sense) simply that it is "all right" for some reason for them not to serve. But the strong sense is clearly false for all members of K share the same *prima facie* obligation. The reason, excuse, or justification, which members of KN have for not now serving is still perfectly compatible with their yet having a common obligation to serve their country, if called upon to do so.

Were Keyt to mean that "they have a right not to serve" in the weak sense his statement would be true, but this would amount to nothing more than just to reiterate that the members of KN have an excuse for not immediately (or given the persistence of the assumed background conditions, as a logical possibility), not ever fulfilling their *prima facie* obligation to serve their country in the capacity of a soldier.

What then of Keyt's claim to have established a counter-example? Has he given us an instance of the generalization argument with two true premises and a false conclusion? If so, which of the three applications so far discussed would it be? Keyt's possibilities for the proposed counter-example are the applications of the generalization argument to (1) class K, (2) sub-class KV, or finally (3) to sub-class KN. So far as logical form is concerned, all three possibilities are straight forward instances of the valid argument form hypothetical syllogism. The first application has by hypothesis a first premise with a true antecedent, and likewise a conclusion with a true antecedent. The application to KV also by hypothesis has a first premise and a conclusion with true antecedents. The third case, the application of the generalization argument to the sub-class KN has by hypothesis a first premise and conclusion with false antecedents, so can hardly serve as Keyt's alleged counter example, since the conclusion could only be false if the antecedent were true and the consequent false. Given just the proceeding information, how can Keyt possibly claim to have constructed a counter-example? The only possibilities that are open for serving as the counter-case are the applications of the generalization argument to either class K or KV. But in order for either of these to serve as the counter example, it would have to have the consequent of its conclusion false. But the consequent of the conclusion in both of these cases occurs in the consequent of the second premise, and hence for that premise to be (as is needed for the construction of an argument with true premises and false conclusion), it must have a false antecedent. But in both of these examples the antecedent of the second premise occurs in the consequent of the first premise. But since we begin with the assumption that both of these applications of the generalization argument had true antecedents, we have now reached the conclusion that the consequent of the first premise must be false. Thus, in order for there to be a counter-example, it of necessity follows that the first premise must be false. But if the first premise must be false, then we conclude that Keyt's claim to have constructed a counter example must be false, since his counter-case would require true premises and a false conclusion, and we have just seen that given our initial assumptions, the conclusion can be false only if the first premise is false.

The only other alternative that Keyt could have had in mind for a counter-example would be the application of the generalization argument to the total class K, for this is the class that would be affected were he able, by some means, to establish that the members of KN did not have an obligation to serve. Let us momentarily (so to speak "counterfactually") suppose that the third application (to KN) established that the members of KN did indeed not have any obligation whatsoever to serve their country. The conclusion of the first application of the generalization argument said (given the assumption of certain consequences) that no member of K ought to not serve without a reason or justification. Thus, this supposed conclusion of the application of the generalization argument to the class KN would falsify the conclusion of the first application as well, thus providing Keyt's much sought after counter-example. The fly in the ointment is that the third application of the generalization does not yield either the conclusion that the members of KN have no obligation whatsoever to serve or the conclusion that they have a right not to serve. One might inquire, but what if Keyt could somehow establish this latter conclusion in the weak sense, that is that it is "all right" or "not something wrong to do" for the members of KN to not serve their county? The answer here is that Keyt would not have thereby created his sought after counter example, for it is perfectly compatible with the truth of the conclusion "no members of K ought to not serve without a reason or justification" that there actually be certain reasons that excuse members of K from fulfilling their *prima facie* obligations. For example, x being an only surviving son with dependent parents might excuse him from serving, despite the fact that he is a member of K and KV. But to say this isn't to say that x has no obligation whatsoever, nor is it to say that he has a right (in the strong sense) not to serve. It seems natural to say that he retains his *prima facie* obligation even in the presence of his having these excusing conditions. His circumstances might well alter, say by the death of his parents, and in such a case his *prima facie* obligation might well prevail by his being called upon to fulfill his obligation. To take the course of maintaining that prior to their death he had no obligation, but that afterwards he acquire such an obligation, is simply to abandon Singer's formulation of the very generalization argument that Keyt supposed himself to have refuted. Such abandonment seems to result from not giving excusing conditions their required place among the four restrictions that Singer places upon the elliptical and more common formulations of the generalization argument.

Keyt's next attempted counter-example is in its logical structure completely isomorphic with the example of the draft just examined above. It concerns the question of whether everyone with a legal right to vote has a moral obligation to vote. The example assumes that the political system under consideration, call it Φ, is worthy of being preserved. A class L is defined in such a way that it has as a defining property the characteristic of having the legal right within Φ to vote. The initial application of the generalization argument is then: (P1 = The Principle of Consequences): If the consequences of every member of L not voting would be disastrous, then not every member of L ought to not vote. (P2 = The Generalization Principle): If not every member of L ought to not vote, then no member of L ought to not vote without a reason or justification. And from these the conclusion is drawn that (C): "If the consequences of every member of L not voting would be disastrous, then no member of L ought to not vote without a reason or justification."

On the pattern of our approach to the previous example, the class L is then sub-divided into two complimentary sub-classes, call them 'LV" and 'LN". 'LV" is the sub-class of those people with a legal right to vote who would voluntarily take it upon themselves to exercise their legal right to vote. LN is the sub-class of L constituted by those members of Φ with a legal right to vote, but who would not take it upon themselves voluntarily to vote. The further assumption is made, in setting up the example, that LV is numerous enough for it to be the case that if all of the members of LV were to vote, the election would be legal and not harmful. A second and third application of the generalization argument is made respectively to the classes LV and LN. The applications give rise to the following conclusions, viz. (LV-C): If the consequences of every member of LV not voting would be disastrous, then no member of LV ought to not vote without a reason or justification. And (LN-C): If the consequences of no member of LN not voting would be disastrous, then no member of LN ought to not vote without a reason or justification.

The example is by hypothesis set up in such a way that the antecedent of the principle of consequences (i.e., to LV: the consequences of ever member of LV not voting would be disastrous) is true, whereas the antecedent of the principle of consequences of the third application (i.e.: to LN: the consequences of every member of LN not voting would be disastrous) is false. It might be asked what the truth value of the principle of consequences as a whole is in the third application, given the falsity of the antecedent? Keyt might interpret the "if . . . then . . ." of the principles of consequences as the material conditional '$\supset$', in the sense that the entire conditional is counted as true when the antecedent is false. It will be recalled that this is the procedure that was followed in the previous example. If he did this, the falsity of the antecedent of the principle of consequences would, just as it did in the example of the draft, make that premise as well as the conclusion of the argument trivially true, and hence if he adopted this strategy it would certainly be impossible for him ever to construct a counter-example out of the application of the generalization argument to sub-class LN. The more plausible interpretation might well be to say that if the antecedent of the principle of consequences is false, then the whole attempt to apply the generalization argument in that case would be abandoned. Perhaps the next best alternative would be to interpret the principle of consequences with a false antecedent, as false, thus short circuiting, so to speak, the application of the generalization argument to that instance.

Following the same strategy as with the previous example, we point out that the consequences of no LV voting are assumed to be disastrous, and the consequences of no LN voting are not taken to be disastrous. Only by assuming that application (3) of the generalization argument to the sub-class LN warrants the conclusion that it is not the case that members of LN (i.e., the ones who wouldn't take the trouble to vote) have a duty or obligation to vote, could Keyt use such a result to make his point. His point is that the assumed falsity of the antecedent of the principle of consequences as applied to LN (i.e., the consequences of every member of LN not voting would be disastrous) falsifies the consequent of the conclusion of the original application of the generalization argument to class L (i.e., no member of L ought to not vote without a reason or justification.) Or to say the same thing with considerable less verbiage, only on such an assumption could Keyt falsify the consequent that "no member of L ought to not vote . . .". But as we have already pointed out several times, it is no part of the function of the generalization argument to establish that a certain class does not have some duty or obligation.

As might be predicted from Keyt's treatment of the draft case, in the example at hand, he gives absolutely no attention to Singer's restriction of the elliptical formulation of the generalization argument, which allows for exceptions in terms of reasons and justification. He makes much of the fact that it would probably be more disastrous to have certain members of LN voting, rather than to have them not voting. He asks:

> Who are the people with the legal right to vote who did not vote? Possibly they are the ill-informed, the lazy. Perhaps they are people who are cynics about politics and politicians. If these are the ones who do not vote, then the consequences might well be undesirable if everyone with the right to vote voted. After all, it is the wisdom, not the number, of those who vote that is important. [Keyt, p. 472]

What has to be pointed out here is that the conclusion of the application of the generalization argument to the entire class K by no means commits Singer to the desirability of (say) the ill-informed voting. Quite to the contrary, being ill-informed about the candidates and issues involved in a particular election constitutes a perfect instance of the type of counter-example to the generalization argument that Singer meant to rule out, by the addition of the clause of restriction ". . . without a reason or justification." Singer makes this point quite strongly when he says "As the rule just mentioned is subject to exceptions, so is the rule that everyone ought to vote, and there are many factors that would justify a failure or refusal to vote." (Singer, p. 173).

The last of Keyt's proposed counter-examples concerns the wild flowers that grow along a certain mountain road. We proceed by defining a class M which consists of all those who travel along this road. Class M is then sub-divided into two complimentary sub-classes, call them 'MP' and 'MN'. MP consists of all those who travel along this road who would go to the bother to pick the wild flowers. MN consists of everyone else who travels along the road, but who would not be bothered to pick the flowers, i.e., all the non-pickers. It is assumed that if everyone in M were to pick the flowers, they would soon be all gone, thus marring the beauty of the countryside. Therefore, from the first application of the generalization argument and from our assumptions, we get the conclusion that "Since the consequences of every M picking flowers would be undesirable, no M ought to pick them without a reason or justification. Keyt gives this conclusion as follows: "If the generalization argument is valid, it follows that no one ought to pick the wild flowers along this road." (Keyt, p. 471) The striking difference between these two formulations is Keyt's total omission of any allowance for exceptions. The example proceeds by assuming that MP (i.e., the pickers) is so very small that if every member of MP were to pick all he wished, the undesirable consequences would not arise. So in the second and third applications of the generalization argument to the classes MP and MN respectively, we assume that the first (i.e., the application to MP) is such as to have a principle of consequences with a false antecedent. It would be "If the results of every member of MP picking flowers would be undesirable, then not very member of MP ought to pick flowers." The application of the argument to the class MN would yield the following principle of consequences, which has a true antecedent: "If the results of every member of MN picking flowers would be undesirable, then no member of MN ought to pick flowers without a reason or justification. Just as in the previous examples, in order to succeed in constructing a counter-example with respect to the application of the generalization argument to the total class M, he would have to somehow extract from the application of the generalization argument to the sub-class MP, that the members of MP did not (because of their non-undesirable consequences) have an obligation not to pick the flowers. It will be noted that one of the significant differences between this last example, and the previous two, is that when sound, they establish that some one has an obligation to do something (barring excuses). The present example, on the other hand, when sound, establishes that one has an obligation not to do something (barring excuses). But to draw the conclusion that one has an obligation not to do something is still worlds apart from establishing that one does not have an obligation to do (or not to do) something. Our critic summarizes his proffered counter-case as follows:

> If the generalization argument is valid, it follows that no one ought to pick the wild flowers along this road. But let us suppose that most people do not pick the flowers, not because they think it to be wrong, but because they do not want to take the trouble or because they do not care for cut flowers, or for some similar reason. Consequently, the few who do pick the flowers do not pick enough to affect the beauty of the road. Are those who pick the flowers doing something wrong? It does not seem to me that they are [Keyt, p. 471].

What Keyt is overlooking here is that his moral intuition that those who pick the flowers are not doing something wrong may be perfectly correct without this constituting an instance of the generalization argument with true premises and a false conclusion. The point being made here is that there may be reasons or justification for certain members of M which allow them to be exceptions, without thus showing that the generalization argument in the form that Singer seeks to defend, must be an invalid argument. Note also that Keyt has not established a counter-example, i.e. shown that there is an instance of the generalization argument which has as a false conclusion the conditional "If the consequences of every member of M picking flowers would be undesirable, then no member of M ought to pick flowers without a reason or justification." All we have is Keyt' unargued intuition that some of those flower pickers aren't doing something wrong.

As a conclusion to my discussion of this last proposed counter example, let me discuss several excuses that might be offered by some member of M in justification of his flower picking. Suppose that one person offers the excuse "But not everyone or even a significant number of people will stop here to pick flowers", and let us further suppose that his claim is true. Does it constitute an excuse or justification for violating his *prima facie* duty not to do that which would be undesirable for everyone to do. Singer gives the following cogent rejection of this attempted excuse:

> . . . the fact that not everyone will act in a certain way is irrelevant to the question whether it is right or wrong to act in that way. It is not a valid objection to the generalization argument, nor can it ever justify anyone in acting in the way in question. For the argument does not imply that everyone will act in that way, nor is this assumed in its application; and if this

> fact, that not everyone will act in that way, could serve as a justification, it would justify anyone in acting in any way whatsoever. [Singer, p. 145]

One of the crucial requirements or tests for a proposed excusing condition is that it actually be a condition such as to make a difference. As Singer puts it, “if everyone, or practically everyone, is in the same situation, then the claim to be an exception has not been justified.” (Singer, pp. 146–147)

If an offered excuse is one that anyone could coherently make use of, then it is no excuse at all, for no exception has been made.

Consider another excuse that might be offered. Some flower picking member of M might cite in justification of his actions that he or she has an uncommon love for flowers. Could this excuse be cited truthfully by every member of M? The answer of course depends upon who the people are that make up M. If, for example, the road in question is a little used mountain road leading to the home of the Flower Lovers’ Benevolent Lodge, then most likely it couldn’t be used as an exception-making excuse or justification, for every member of M could make use of it. But if the “uncommon” in “uncommon love” is defined in terms of M, or if M is a random sample of a class that it is defined in terms of, then it certainly could be used as an exception-making justification.

Given these last assumptions, this excuse couldn’t be used coherently as an excuse by every member of M, for if every member of M could truthfully cite it, then it would no longer be an “uncommon love”. Thus, using such an excuse certain members of M might meet the formal requirements for being excused from their *prima facie* duty not to pick flowers. Even so, there may be other moral grounds for rejecting this “uncommon love” as a legitimate excusing condition, since there are no doubt other requirements for an excusing condition other than just that it not be an excuse that every member of the class could use. But in any case the possibility of these show that the fact that in picking some flowers one is “not doing something wrong” doesn’t by any means establish that Keyt has successfully constructed a counter-example to Singer’s formulation of the generalization argument.

Part Two

The second half of Keyt’s critique builds upon the first part of his paper. He says “Singer offers an alleged demonstration of the validity of the generalization argument. If the generalization argument is invalid, as I have argued, there must be a mistake somewhere in this alleged demonstration.” (Keyt, p. 473) To the extent that we have succeeded in showing Keyt’s failure to construct the above discussed counter-examples to the generalization argument, we have undermined his contention that “there must be a mistake” in Singer’s demonstration. Keyt’s strategy, as outlined at the very beginning of this essay, is to seize upon two formulations of the generalization argument that Singer claims to be logically equivalent, and to show that they are not equivalent. The two formulations that Keyt discusses are:

A

(P.C. #1) If the consequences of everyone's doing x would be undesirable, then not everyone ought to do x.
(G.P. #1) If not everyone ought to do x, then no one ought to do x.
∴ (C#1) If the consequences of everyone's doing x would be undesirable, then no one ought to do x.

B

(P.C #2) If the consequences of everyone's doing x would be undesirable, then not everyone has the right to do x.
(G.P. #2) If not everyone has the right to do x, then no one has the right to do x.
∴ (C. #2) If the consequences of everyone's doing x would be undesirable, then no one has the right to do x.

The first thing we should note concerning these two formulations of the generalization argument is that they completely omit any reference to the four restrictions which Singer places upon the generalization argument. If Keyt could show by some means or other that one or both of formulations **A** and **B** were invalid, he would not have done anything of significance by way of refutation of Singer's formulation of the generalization argument in its restricted form. For Singer readily admits that the generalization argument in its unrestricted form is patently unsound. So, in order for Keyt to touch Singer's restricted formulation critically, he must do two things. He must (1) somehow establish the invalidity of one or both of these formulations of the generalization argument, and (2) must show that this first criticism is unaffected by reformulating the generalization argument in terms of Singer's four restrictions.

Keyt first focuses his attention upon the consequents of the two Principles of Consequences. They are respectively "not everyone ought to do x" and "not everyone has a right to do x." He begins by asking concerning them whether or not these consequents are logically equivalent. Keyt gives us his opinion that they are not. He says: "Are these two formulas logically equivalent? I think not. For it makes sense to say: not everyone ought to do x although everyone has the right to do x. Not everyone ought to remain childless although everyone has the right to." (Keyt, p. 475) It is perhaps significant here that Keyt employs an example which Singer would never accept as a true application of the generalization argument. For the example is invertible. The results of every one remaining childless would indeed by disastrous, but likewise the results of no one remaining childless would also be disastrous. Overpopulation presents the contemporary world with a far graver threat then under-population. But setting this question aside let us concede for the sake of further argument that Keyt has established that formulations **A** and **B** of the generalization argument are not logically equivalent. But having made this assumption, what can Keyt establish concerning the validity of either of these formulations? The facts of the matter are that he doesn't thereby establish anything concerning the validity of the generalization argument. Nor does he establish anything concerning the validity of the generalization argument as it is modified by Singer's four restrictions. What then does this maneuver establish concerning the soundness of these formulations of the generalization argument?

Keyt's strategy from here on is to argue solely concerning soundness of the formulations of the generalization argument. He thinks that he has established the invalidity of the argument by his proposed counter-examples. So in this his second critical movement he devotes himself to questions of the truth & falsity aspect of soundness. He argues with respect to formulation **A**, that the principle of consequences [If the consequences of everyone doing x would be undesirable, then not everyone ought to do x] is false; and that with respect to formulation B that the generalization principle [If not everyone has the right to do x, then no one has the right to do x] is false. Our critic concludes "It follows, then, that the two versions of Singer's hypothetical syllogism are not two versions of one argument but two distinct arguments. Further, both arguments are unsound since each contains a false premise." (Keyt, p. 475) But in this case Keyt is wrong in his judgment, for an unsound argument by definition is either an invalid argument, or an argument with at least one false premise, or both. In this case, wrong, if Keyt thinks that either of these arguments is unsound solely because of the falsity of at least one premise. Singer, for one, simply would not claim that either **A** or **B** is a valid argument, concerning which to raise the question of soundness or unsoundness. Singer is more that willing to admit that the generalization argument in its unrestricted elliptical formulation is invalid, so it is doubtful that he would have any scruples worth respecting about the truth or falsity of the principles of consequences and the generalization principle in their unrestricted formulations.

How, if at all, does this purported unsoundness affect the generalization argument when it is taken in its restricted formulation, or more specifically, when the restriction allowing exception is incorporated into the formulations **A** and **B**? The answer is that then no unsoundness can be made out (or at least, none has been made out.) Consider the generalization principle corresponding to formulation **B**. When it is reformulated to embody Singer's restriction, it becomes: "If not everyone has the right to do x, then no one has the right to do x without a reason or justification." And once this restriction has been incorporated, Keyt can no longer muster examples in which both the results of everyone doing x would be disastrous and yet some of those people do have a right to do x (which is the purported falsifying condition for the applications to classes K, L, and M in the examples discussed in part **I** of this essay). What is needed for showing false (C#1) would be a case in which the antecedent is true and the consequent is false, or equivalently showing true the negation of the consequent (i.e., "some do have a right to do x" in the sense of 'right' where it means has no obligation whatsoever to not do x). But unfortunately for Keyt's critique, once the restrictions allowing exceptions have been incorporated into the generalization principle, Keyt can only conclude that "some do have a right to do x" is true in the weak sense of 'right', i.e. in the sense of "some do have a justification to do x" or "some would not be doing wrong to do x." But since the sense of 'right' used in the principle of consequences is the strong sense, Keyt can no longer establish that the **A** formulation of the principle of consequences is false.

As a conclusion to this essay, let us review our criticism of the two movements of Keyt's critique of Singer. In his first movement Keyt attempted to show by means of three purported counter-examples that the generalization argument as an argument form was invalid. We say that in each of his three examples Keyt could show that the application of the generalization argument to a class (say K) was such as to yield true premises and a false conclusion only if by another application of the generalization to a sub-class of K he could conclude that the members of that sub-class did not have a certain obligation. The problem that we found with this strategy is that it is no part of the function or purpose of the generalization argument to establish that a certain class or sub-class does not share an obligation, Rather, the only function of the generalization argument is to show that the members of some class have the obligation to do, or not to do, barring excuses, some action x.

Keyt's second critical movement began by attempting to show, concerning the two different formulations Singer gave to the generalization argument, that they were not logically equivalent. For the sake of the argument we conceded Keyt this point in order to get to the nub of his case. He then went on to argue that each of these different formulations of the generalization argument contained at least one false premise. Our rebuttal at this point showed that, since Keyt's demonstration applied to only the unrestricted formulations of the generalization argument, he did not thereby succeed in providing a refutation of the restricted formulation of the generalization argument, i.e. embodying all four of Singer's restrictions. The last point of our rebuttal was that with respect to the Singer's final (fully qualified) formulation of the generalization argument, Keyt could not establish that either formulation **A** or **B** contained a false premise (without again making use of the mistake concerning the function or proper outcome of the generalization argument). So to sum up, Keyt has not successfully shown that Singer is caught upon the horns of the dilemma of showing the generalization argument to be either invalid or unsound.

Chapter 24
Essay #21: Taxonomies & Teaching

Kenneth G. Lucey

Abstract This essay is a report after many years of teaching upon the use of multi-celled taxonomies in the process of teaching philosophy. A taxonomy, as the term is being used here, is a multi-celled matrix. Four such are discussed in the essay. The first such has been used in a variety of courses that involve the philosophy of religion. It contrasts faith-based positions with gnostic, or knowledge based views, and applies those heading to the positions of the theist, atheist, agnostic, and the positivist. The second matrix discussed concerns the topic of the human soul, where that is understood as an immaterial component of a human being. As with the previous matrix, an eight–celled array is generated. The third scheme has a different geometry and yields what I call "the Pentacle of Knowledge". It represents five possible positions concerning knowledge, or the lack thereof. The points of the pentacle combine to yield five quite distinct epistemic categories. The fourth and final matrix is both simpler, having only four cells, and yet much subtler. It involves crossing the ontological distinction of the abstract/concrete, with the logical distinction between universals and particulars. The discussion analyzes and illustrates each of the four categories and discusses their pedagogical usefulness, while providing some relevant bibliographical references.

In my 45 years of teaching philosophy I have found that the introduction of conceptual taxonomies has provided a useful tool for engaging my students' interest, while causing them to get personally involved with the conceptual material being presented to them. Once a taxonomy has been presented, in the form of a multi-celled matrix, the students are asked to find their own niche within the scheme, by a show of hands for each cell in turn, to indicate where their own intellectual sympathies fall. I have often found it effective to present such a matrix early on in a course and then again towards the end of the course, often on the last non-exam day of classes. Regularly, the students themselves have taken a lively interest in comparing the "before" and "after" results of their "niche" selections within the matrix, and in seeing how the progress of the course has changed their individual and collective views.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_24

In this essay I shall exhibit four examples of the sorts of taxonomies that I have employed over my teaching career. The first was used in both Philosophy of Religion and World Religion courses, the second and fourth in Metaphysics courses, and the third in Epistemology courses. Some could, and have been, used in Introduction to Philosophy courses as well. My fourth taxonomy draws upon the subsection of metaphysics called ontology.

The first taxonomy concerns doxastic and epistemic attitudes towards the existence of some entity or other, such as God. The four positions on the horizontal are those of the Theist, the Atheist, the Agnostic and the Positivist. These four get cross-hatched with two propositional attitudes on the vertical, namely of the Gnostic, who is claiming to have knowledge, and the Fideist, who is claiming a faith-based belief. These taken together yield the following eight-celled matrix:

Matrix #1

	Fideist	Gnostic
Theist	(1)	(2)
Atheist	(3)	(4)
Agnostic	(5)	(6)
Positivist	(7)	(8)

The eight positions thus arrived at are: (1) Fideist Theist (2) Gnostic Theist (3) Fideist Atheist (4) Gnostic Atheist (5) Fideist Agnostic (6) "Gnostic Agnostic" (7) Fideist Positivist (8) Gnostic Positivist. Category #6 regularly elicits a smile from students, and an erroneous suspicion that it is inconsistent.

The first step in interpreting the matrix is to specify a target. The target could be any purported entity that one cares to talk about, e.g. Zeus, YHWH, Lucifer, or whatever/ whoever. Regularly in my Philosophy of Religion course, the most common target is big "G", God, understood along the lines of Anselm's description of "that being a greater than which cannot be conceived." So understood the views embodied in Matrix #1 are explained as:

1. The *Fideist Theist* is the individual who has a **faith**-based belief that God exists.
2. The *Gnostic Theist* is an individual who claims to **know** that God exists.
3. The *Fideist Atheist* is the individual who has it as an article of **faith** that God does not exist.
4. The *Gnostic Atheist* is individual who claims to **know** that God does not exist.
5. The *Fideist Agnostic* is the individual who **doesn't know** whether or not God exists, and has that lack of knowledge as an article of faith.
6. The "*Gnostic Agnostic*" is the individual who claims **to know that he doesn't know** whether or not God exists.

The Positivist position is that of the logical positivist, who claims that the concept of God is **cognitively meaningless**, and who in consequence believes that the previous six views are all ill conceived.

7. The *Fideist Positivist* is the person who understands enough about logical positivism to take it as an article of faith that God-talk is **cognitively meaningless**.
8. *The Gnostic Positivist* presumably is a total convert to the verifiability principle of meaningfulness, and in consequence claims to know that God-talk is empty, vacuous, and **lacking in cognitive meaningfulness**. [E.g., A.J. Ayer, Language, Truth and Logic, 1936, 1946.]

My experience with using this matrix over numerous semesters is that at the beginning of the course the students surveyed exhibit a heavy subscription to the *Fideist* cells, and that after a semester of exposure to various arguments for and against the existence of God, the end of term survey tilts more heavily toward the *Gnostic* positions. Usually those initially attracted to *Positivism* find the standard critiques of that view sufficient to cause them to abandon their voting for either of those cells.

The Second Taxonomy

My second taxonomy concerns the topic of the human soul. One who believes in the existence of a soul or of an immaterial self, I call a *Soulist*. One who denies the existence of such, I call an *Asoulist*. Finally, one who doesn't know what to think about the topic, I call an *Agnosoulist*. Sometimes, but not always, I include a fourth view called the *Positivist Soulist*. As with the previous taxonomy, I add a vertical distinction between the *Fideist* and the *Gnostic*. Once again, these distinctions yield an eight-celled matrix, *which mirrors the distinctions in the previous example*, namely*:*

Matrix #2

	Fideist	Gnostic
Soulist	(1)	(2)
Asoulist	(3)	(4)
Agnosoulist	(5)	(6)
Positivist	(7)	(8)

The eight cells are: (1) *Fideist Soulist* (2) *Gnostic Soulist* (3) *Fideist Asoulist* (4) *Gnostic Asoulist* (5) *Fideist Agnosoulist* (6) *Gnostic Agnosoulist* (7) *Fideist Positivist Soulist* (8) *Gnostic Positivist Soulist*.

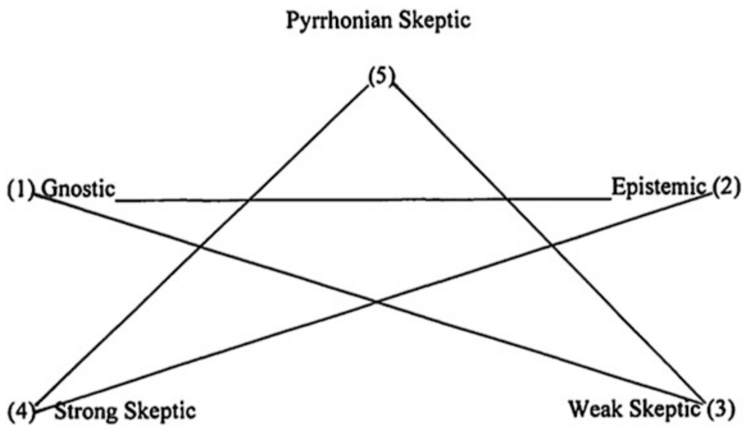
The eight positions perfectly mirror those of the previous example. For instance:

The *Fideist Soulist* is the student who takes it to be a matter of faith that every human has an immaterial soul, and so on, for the other seven positions. A good place to begin this discussion is with Socrates' argument for the existence of the soul in the "Alcibiades", (128b – 131b), e.g., as found in Antony Flew (ed.) Body, Mind And Death (1973).

The Third Taxonomy

My third taxonomy has a somewhat different geometry. This is a taxonomy that I have used in teaching a course in Theory of Knowledge. Here my scheme takes on the form of what I call "the Pentacle of Knowledge". The scheme is akin to a traditional Square of Opposition, except for the addition of a fifth position, which is designed to accommodate the Pyrrhonistic style of skeptical view, where what is advocated is a systematic withholding of judgment, rather than an active affirmation or denial of knowledge.

Pentacle: The pentacle of knowledge



Here, then, is the Taxonomy of Basic Positions Concerning Knowledge:

(1) Gnostic (dogmatist) – believes that some things are known for certain or infallibly.
(2) Epistemic (fallibilist) – believes that some things are known fallibly.
(3) Weak skeptic – believes that nothing is known for certain.

(4) Strong skeptic – believes that nothing is known fallibly.
(5) Pyrrhonist skeptic – believes that nothing is knowable because all arguments and evidence are counterbalanced, and thus every proposition ought to be withheld.

The points of the Pentacle of Knowledge are used in forming combinations of the above vocabulary. The five points of the Pentacle are used to form the five distinct combinations concerning knowledge.

[(1) & (4)] *The High Standards Knower*: This person combines the Gnostic (dogmatist) who claims to know some things for certain and the Strong Septic, who denies that there is any such thing as fallible knowledge. That is, the only knowledge worthy of the name is absolutely certain, and that nothing with a lower level of justification is worthy of being called 'knowledge'.

[(2) & (3)] *The Modest Standards Knower*: This is the individual who doubts that anything is absolutely certain. He combines the Epistemic (fallibilist), who believes some things are known fallibly, with the Weak Skeptic, who believes that nothing is *known for certain.*

[(1) & (2)] *The Many Standards Knower, or The Omni Knower*: The individual combines both the Gnostic (dogmatist) who believes that some things are known for certain, or infallibly, and the Epistemic (fallibilist) who believes that yet other things are known fallibly, i.e., with a level of justification less than certainty.

[(4) & (3)] *The Omni Skeptic*: This person combines the views of both the Strong and the Weak Skeptic, and thus asserts both that nothing is known for certain and that nothing is known fallibly.

[(5)] *The Pyrrhonist Skeptic* (*sui generis*, i.e. a class unto itself). This person, like Pyrrho and Sextus Empiricus, holds that nothing is knowable, because all evidence and arguments are counterbalanced, and thus one ought to both refrain from believing and refrain from disbelieving.

The Fourth Taxonomy

My fourth taxonomy is one that I have had much less opportunity to use in my teaching, simply because it is a far more difficult topic for students, and it is not a matter of the student reporting their own doxastic or epistemic stance on a certain issue. In this case it consists of a two by two classification, which yields a four-celled matrix. What are being classified here are concepts and objects, together with the ontological classification of the referents of those concepts and of those objects. On the vertical is the contrast of the Abstract versus the Concrete. On the horizontal is the contrast of the Universal versus the Particular. The four celled matrix that this gives rise to is as follows:

Matrix #4

	Abstract	Concrete
Universals	(1)	(2)
Particulars	(3)	(4)

The four categories that this gives rise to are:

1. Abstract Universals
2. Concrete Universals.
3. Abstract Particulars
4. Concrete Particulars.

For the purpose of this taxonomy, we can say that a Universal is anything that can have multiple instances, and that a Particular is anything which is one of those instances. So, for example, the concept dog is a Universal, and any instance of that concept is a Particular dog. The contrast on the vertical is between Abstract entities and Concrete entities. A Concrete entity is anything that has a specific spatial location, whereas an Abstract entity is anything which lacks any spatial location whatsoever. So, using these characterizations, we can say something more precise about each of our four categories. Our first category is that of the Abstract Universals. The concept of a dog, is an Abstract Universal. It is abstract in that the concept itself has no spatial location and it is Universal in that it has a multitude of instances. As another example, the concept of redness is another universal. Incidentally, I am treading lightly over an area of very ancient controversy, dealt with under the heading of "The Problem of Universals". A realist about universals would say that the universal is one thing and the concept of the universal is yet a different thing. By contrast a conceptualist would say that the universal is the concept itself. I have no interest is trying to sort out that controversy at the moment, so please excuse a little blurring of the distinctions for the moment, while I work on the components of Matrix #4. The second cell of this matrix is that of the Concrete Universal. A particular patch of redness has a specific spatial location and as such qualifies as something Concrete. Some philosophers will have a problem with this, in that to the extent this redness is Concrete, they think it is no longer a Universal. But suppose we have two swatches of cloth, both of the same color of redness. Each is a Concrete Redness, distinct from one another as distinguished by their different spatial locations, yet they each involve the same Universal redness, precisely to the extent that they are each instances of the same Universal. (G.E. Moore, in an Aristotelean Society symposium, has specifically argued against there being any such entities as Concrete Universals.) Ultimately, my purpose here is not to defend the ontological views embodied in this Matrix, but rather simply to deploy and explain them as a teaching tool.

The third cell of Matrix #4 is that of the Abstract Particular. Incidentally this category has its own treatise, viz. Keith Campbell, Abstract Particulars (Oxford: Basil Blackwell, 1990). The vertical category in its entirety also has a volume devoted to it, viz. Bob Hale, Abstract Objects (Oxford: Basil Blackwell, 1987). Amongst Abstract Particulars Keith Campbell recognizes particular properties, which he calls “tropes”. By the scheme I have been describing an Abstract Particular, would first have to lack any spatial properties in order to qualify as Abstract, but then it would also lack any instances in order to be Particular. An ontological realist concerning numbers would be comfortable with thinking of the number seven as an Abstract Particular. Of course, there is the property of having seven members, but that is a Universal, and not a Particular. But the number seven in itself (if there indeed is such an entity) would be an Abstract Particular. It is Abstract in that it has no spatial location and it is Particular in that it has no instances. There is an assumed distinction here between numbers and numerals, the latter of which certainly have many instances.

The fourth and final cell of Matrix #4 is that of the Concrete Particular. Except for A.N. Whitehead, and other process philosophers, the category of the Concrete Particular is the least controversial of all the categories of the matrix. Presumably any of the many substances of the world, along with all the various middle-sized dry goods, are the members of this fourth cell, which is that of the Concrete Particulars. These are the objects in the world, that each have the specific spatial location, which thereby qualifies them as Concrete, and they have the unique individuality that makes them Particulars.

Matrix #4 has pedagogical usefulness in that it can be set as an intellectual exercise by first, getting a student to think about alternative characterizations of the key distinctions between Universal/Particular and between Abstract/Concrete. Secondly, it can be used to generate considerable discussion about precisely what sorts of entities naturally fit into the four different cells of the Matrix.

This completes my brief survey of four of the numerous taxonomies that I have used in teaching philosophy. Their usefulness resides in succinctly capturing a set of conceptual distinctions, which are easily explained, and which can in very short order be used to organize a student’s thinking about various topics. Some of them have the further virtue of causing the student to think through for themselves the issue of where their own beliefs fall within in a particular matrix of possibilities.

Chapter 25
Essay #22: Rudolf Carnap on False Propositions & Specificity

Kenneth G. Lucey

Abstract The late Rudolf Carnap attempted to develop in Meaning and Necessity a purely "objective" meaning analysis, which he called *the method of extension and intension*. One task of the essay is to determine how Carnap understood the relationship between propositions, sentences, subjective mental entities, facts, truth, falsity and the physical world. My major criticisms are directed at Carnap's notion of the physical interpretability of false propositions and at his further notion of specificity.

The key question that is being addressed in this essay concerns whether Carnap can make a case for there being an objective entity corresponding to a false sentence, that can serve as the intension of that sentence. Carnap's goal is to offer an "objective meaning analysis" that eschews abstract entities or possible entities. The basic puzzle for Carnap is to make out a case for the objective physical existence (he admits no other kind) of the unexemplified false proposition. This essay argues that in attempting to establish the objective interpretability of false propositions Carnap has committed both the fallacy of composition and the fallacy of equivocation upon the term 'exemplified', i.e. ambiguously between 'in fact exemplified' and 'capable of being exemplified.' A strictly analogous criticism is applicable to Carnap's attempt to establish an objective interpretation for "empty properties".

In Meaning and Necessity Carnap followed C.J. Ducasse in identifying facts with true propositions. For a proposition to be a fact it must have three properties, namely be true, be contingent and be specific. The topic in the remainder of this essay is a critical discuss of Carnap's view of specificity.

Recent advances in semantics have brought about a renewal of interest in questions about the ontological status of events, states of affairs and propositions. Likewise the current literature has seen a renewal of interest in Fregean analyses of meaning in terms of sense and reference. These two concerns come together in the writing of the late Rudolf Carnap. Carnap was one of the few philosophers who attempted to develop a purely "objective" meaning analysis. Carnap's systematic account is

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy*, Logic, Argumentation & Reasoning 6, DOI 10.1007/978-3-319-08063-5_25

comprised by what he calls *the method of extension and intension*. This essay is a critical evaluation of a neglected aspect of his work, namely Rudolf Carnap's views concerning the function of predicates in language, and in particular his account of their relationship to propositions. Another part of the task of the essay is to determine how Carnap understood the relationship between propositions, sentences, subjective mental entities, facts, truth, falsity and the physical world. My major criticisms are directed at Carnap's notion of the physical interpretability of false propositions and at his further notion of specificity.

Rudolf Carnap's Meaning and Necessity[1] is an attempt to develop a semantical analysis of linguistic meanings through the method of *extension and intension*. Carnap applies this method in a systematic fashion to (1) subject expressions, (2) predicate expressions, and (3) whole declarative sentences, as well as other items. The following is primarily concerned with his account of the *intensions* of predicate expressions and sentences.

Carnap calls a predicate expression such as 'is human' a predicator. So Carnap seeks to give a semantical analysis of the meanings of predicators, and this he expects to do by specifying the *extension* and *intension* of them. As the *extension* of a predicator Carnap takes the class of entities to which that predicator truly applies. For the *intension* of 'is human' our author proposes to take the property of being human, using a convention by which he abbreviates the phrase 'the property of being human' as 'the property Human'.

Having now seen that Carnap proposes to take properties as the *intensions* of predicates, we should review what he means us to take as properties. Carnap's understanding of properties is that they are extra-linguistic entities. His own explanation of his usage is that "The term 'property' is to be understood in an objective, physical sense, not in a subjective, mental sense." (p. 16)[1] Carnap tries also to be very clear as to what he does not mean to have taken as a property. He stressed that 'property' is not to be understood as referring to linguistic expressions. As we have already seen he distinguishes between properties and predicators, where the latter are the predicate expressions which have the properties as their *intension*. Another way he has of indicating this relationship is by saying that a property is what is expressed by a predicator.

Another distinction that Carnap is at pains to make is that between properties and the mental apprehension of properties. He say that:

> The properties of things are not meant as something mental, say images or sense-data, but as something physical that the things have, a side or aspect or component or character of the things (p. 20)[1]

If a desk top has the predicate 'is green' true of it and I am viewing it, then Carnap would say that the desk has the physical characteristic of being green,

[1] All the quotes contained in this essay are from Rudolf Carnap, Meaning and Necessity (Chicago: The University of Chicago Press, 1947, 1956). My thanks go to Professors Jack Kaminsky, Charles Lambros, and Marx Wartofsky for their comments upon and incisive objections to earlier drafts of this essay.

whereas the observer has the characteristic of Green-seeing. On Carnap's account, to understand predicators is to "know what properties they express." Thus the meaning which a predicator has is distinct from the fact of understanding that meaning. For a predicator to be meaningful, according to Carnap's scheme is for it to have an *extension* and an *intension*. For a person to understand the meaning of that predicator it is required, not just that the predicator have an *extension* and *intension*, but also that the person know what property constitutes the *intension* of it or that is expressed by it.

A crucial element in Carnap's analysis of predicators and properties is his discussion of compound predicates. He notes that we can form compound predicators out of "primary predicators" with an extended use of the logical operators of negation, disjunction and alternation. Carnap's claim is that we can understand such compound predicators because their "meaning is determined by the meanings of the component predicators and the logical structure of the compound expression." (p. 20)[1] That is, the understanding of a compound predicator is based upon the understanding of the component predicates, and it is only with regard to the components that we much have had experience. He sums this up by saying:

> Exemplification in experience is required only for primary predicators, with the help of which the others are interpreted. (p. 21)[1]

What Carnap wants to stress here is that our understanding of a compound predicate doesn't require observations of any things to which the complex property would apply. If there is no such thing to which such a complex predicator truly applied, then Carnap wants to "say of both the predicator and the property that they are empty." (p. 21)[1] Our author further assures us that there are many such empty properties! It seems to me that when Carnap makes this move from empty or non-applicative predicators to his notion of an empty property, his system of semantic analysis has acquired a serious problem. In the following, we shall exhibit this problem as we turn our discussion to Carnap's account of propositions.

In Meaning and Necessity Carnap says concerning the term 'proposition' that:

> It is used neither for a linguistic expression nor for a subjective mental occurrence, but rather for something objective that may or may not be exemplified in nature. (p. 27)[1]

He has also cautioned us earlier that if the entities which he is talking about (such as properties or propositions) are not exemplified, then they don't exist anywhere unexemplified, for he hastens to assure us that he doesn't mean to be hypostatizing, substantializing or reifying entities in Plato's heaven or any other such nonphysical realm, if those entities are not physically exemplified. (Cf. p. 22) The last passage quoted does a great deal to simplify our inquiry into the nature of Carnap's propositions, for it immediately eliminates two types of entities which Carnap might have taken as exlicata of the notion of a proposition.

Consider the sentence "It is raining." It is at once clear from Carnap's assertions that neither the entity identified as the sentence-token, nor its corresponding sentence-type, can be taken for a proposition. This is so since sentence-tokens and their correlated sentence-types are clear cases of linguistic entities, and linguistic entities have just been ruled out as explicata for propositions. Yet Carnap's use of the term 'proposition' is in line with one common philosophical usage of the concept proposition, for it is usually stated that synonymous sentences in different languages "express" the same proposition. For example, the Russian sentence, which has the literal translation "Goes rain", is similar in meaning to the English sentence "It is raining". But there the similarity stops, for on the linguistic level we have a different alphabet, a different grammatical structure (Predicate + object vs. subject + copula + predicate), and different sound patterns corresponding to each of these sentences. Yet, in spite of these differences on the linguistic level, we say on the semantic level, that the two sentences "express" the same proposition. These would seem to be the type of considerations Carnap had in mind when he said that propositions are not to be identified with linguistic expressions.

It is slightly more difficult to understand the sense in which Carnap denies that propositions are to be equated with "subjective mental occurrences." It is also far less a matter of accepted fact, since, for example, we find that Bertrand Russell at one stage of his thought took subjective mental occurrences as the explicata of propositions.[2] In order to get at what Carnap is denying let us consider an example: Suppose two people are standing before a window on a dark Fall evening. They both happen to comment upon the weather outside at the same time, but whereas the first says "It is raining", the other says "It is snowing." Let us suppose further for the sake of the example, that it is in fact raining and not at the same time snowing. Perhaps what happened here is that the first individual had certain perceptions or experiences such that he reacted by saying "It is raining", while the other person presumably had other mental experiences or perceptions such that he came out with "It is snowing". On Carnap's analysis we have here the occurrence of two different sentences, which, if both uttered on the same occasion, would express mutually incompatible propositions, given the further assumption that both mean to be referring to the same state of affairs. Also, we have in this instance the occurrence of two different "subjective mental occurrences." But according to Carnap, the two propositions expressed by the different sentences are not to be taken as equated or identified with the two different subjective mental occurrences. Carnap's view may be motivated in part by the belief that we need not refer to those subjective experiences in order to obtain the truth-value which he takes as the *extension* of the sentences.

The point to be stressed is that, for Carnap, propositions are "something objective that may or may not be exemplified in nature." (p. 27)[1] This point leads Carnap into a discussion of the relationship between propositions and facts, and subsequently into the crucial subject of false propositions. There can be little doubt that an explication of the notion of a proposition stands or falls according to its success in dealing with the topic of false propositions.

[2] Bertrand Russell, An Inquiry Into Meaning and Truth (Baltimore, Maryland: Penguin Books, 1940, 1962) Cf. Chapter 13.

As a prelude to the next point, we must note that Carnap appears to use the terms 'objective' and 'physical' as synonyms, and seems to treat them as undefined primitive terms. If he meant a distinction to be drawn between 'objective' and 'physical', I can't find where he drew it. Sometimes these terms are used in such a way that everything physical is objective, while some objective entities are not physical. At this point we understand Carnap as having predicated of propositions that they are non-linguistic, neither subjective nor mental entities, are objective (i.e., physical) entities which may or may not be exemplified in nature, and further have the property of being true or false. It is by no means clear exactly what is meant when one predicates of an objective entity that it is true, and it is even more difficult to understand what is meant by a false objective or false physical entity. This last alleged property of propositions might well give one pause enough to ask: Does Carnap ever really speak of false or true entities? Surely, truth and falsity attach only to those sentences which express propositions! But the latter assertion is inconsistent with Carnap's stated views for he certainly does speak of true and false propositions – and since he holds propositions to be objective entities exemplified in nature, he is thus speaking of true or false entities. And in fact on page 94 of Meaning and Necessity Carnap baldly states:

> The most natural properties of propositions to be considered would obviously be truth and falsity of propositions. In distinction to truth or falsity of sentences, these two concepts are not semantical but independent of language.

If propositions are non-linguistic entities then how does Carnap relate them to facts? Carnap declines to use the word 'fact' as a technical term, and further states that:

> The question of whether facts are propositions of a certain kind or entities of a different nature is controversial . . . and, the question is, to a certain extent, a terminological one and hence to be settled by convention. (p. 28)[1]

For our present purposes, we are interested in the conventions Carnap adopts, for they constitute an integral part of the relationships he posits between sentences and propositions. Carnap finally aligns himself with the views of C.J. Ducasse,[3] who "identified facts with true propositions." (p. 28)[1]

Carnap concludes that there are three properties which a proposition must have to be a fact, namely (1) truth, (2) factual contingency, and (3) specificity. Carnap examines these three requirements by looking at a sample proposition. His sample is the proposition expressed by the sentence: The sheet of paper before me is blue. Let us assume for the sake of argument that there really is such a sheet of paper, of such a color, and in just such a relationship to the speaker.

At this point we might be justified in demanding a tentative statement of what it is that Carnap wants to be recognized as the proposition. He does not come right out

[3] C.J. Ducasse, "Propositions, Opinions, Sentences, and Facts", Journal of Philosophy Volume 38 (1940), pp. 701–711; reprinted in C.J. Ducasse, Truth, Knowledge and Causation (London: Routledge & Kegan Paul, 1969), pp. 179–191.

and say exactly what it is that is to be so recognized, but it can be inferred with some plausibility from the above list of attributes what he wants taken as such. The proposition is the complex physical entity called paper, which reflects light in the blue area of the spectrum, together with the specified spatial relation between it and the person specified by the token-reflexive 'me'. Carnap does not want to be interpreted as identifying the proposition with anyone's sense perceptions, be they subjective or what have you. The proposition is not my perception of the blue paper now before me on my desk, but rather the physical object per se, together with its physical blueness and the objective relationship of beforeness by which it is related to the person referred to by the 'me' of the sentence.

On the other hand, this interpretation of what Carnap would mean by a proposition must remain tentative, for there are certain entailed complications. If the above interpretation is correct, then one might well ask, "Where is the property of trueness which has also been predicated of the proposition?" A plausible case may be made for the physical objectivity of the property of blueness of the object, but what of the trueness of the proposition? Care must be taken for presumably the blueness is a property not of the proposition, but rather a property of the paper. The blueness is an integral part of this particular entity which Carnap would have us identity as our proposition, rather than a property of the proposition. We do however seem to be compelled on Carnap's analysis to speak of a proposition as having the property of trueness. For while we do not after all speak of a blue proposition, we do speak of a true proposition. Likewise, we would seem compelled to speak of propositions, which are again objective physical entities, as having the property of falseness.

The crux of the above issue would seem to be this. We have first sentences similar in relevant regards to "The sheet of paper before me is blue", and secondly the objective complex physical entity as understood above. Furthermore, since the sentence expresses the proposition, and since we have agreed that the proposition exists, we can assert that the proposition has the further property of trueness, which (perhaps) somehow emphasizes or stresses that the proposition actually is "exemplified in nature." (p. 27)[1]

The difficulty in this is that it would seem according to the properties of propositions already enumerated, that as soon as we agree that a sentence is meaningful, we are assured that it has both an *extension* (i.e., a truth-value) and an *intension*, which is a proposition expressed by it. Yet once we agree that a proposition has been successfully expressed by a sentence, we are immediately conceding that the proposition objectively exists, since Carnap doesn't abide the reifying or hypostatizing of unexemplified propositions. Agreeing that a proposition has been expressed is tantamount to agreeing that a specific objective entity exists. Either a given proposition exists as an objective (i.e., physical) entity for Carnap, or it does not exist. The physical fact of rain falling, either objectively exists, or it does not. (This is perhaps to neglect the "open textured" nature of language as emphasized by Frederich Wismann.[4] But again it must be emphasized that Carnap's propositions aren't linguistic entities. Yet Carnap never to my knowledge addresses himself to the question of the status of true propositions which aren't facts because they lack specificity.) For Carnap a proposition is an objective entity, neither a linguistic expression, nor a subjective mental occurrence. From all this it would seem that once a proposition has been expressed, it is superfluous to maintain that in addition to being expressed, the proposition is true, if all we mean by truth here is that there exists an objective physical entity called a proposition which corresponds to that sentence. Since the only propositions which exist are the ones exemplified in nature, it would seem to follow that the only sentences which could succeed in expressing a proposition would be the true ones. So the further statement about a meaningful sentence to the effect that it espresses a true proposition does not seem to tell us anything we do not already know once we agree that the proposition has indeed been expressed. Yet surely this is counter-intuitive!

The foregoing leads us to the vital topic of how it is possible for there to be such an entity as a false proposition. The above analysis led to the conclusion that in Carnap's system it is redundant, or merely a matter of emphasis, to predicate truth of an entity we already accept as a proposition. From that it would seem to follow that to predicate falsity of a proposition, would be equivalent to in fact denying that any such entity as the proposition exists, or what is equivalent, to deny that the given sentence actually succeeds in expressing any such proposition. But since Carnap clearly does not think this is the case, we must now examine his argument.

Carnap recognizes all of the above problems, and says that "The greatest difficulty in the task of explicating the concept of the proposition is involved in the case of a false sentence." (p. 29)[1] Carnap concedes (as he must) that false sentences are in fact meaningful. We certainly do understand the sentence "The sheet of paper before me is green." before we check the facts and see that the paper is actually blue, or perhaps that there is no paper there at all.

Carnap thought that he could give "an objective interpretation to the term 'proposition', which is still applicable in the case of false sentences." (p. 30)[1] The next task in the following will be to explicate and critically evaluate Carnap's efforts in this endeavor. All of Carnap's subsequent argument on this question is built upon the following premise, namely:

> Any proposition must be regarded as a complex entity, consisting of component entities, which in their turn, may be simple or complex. (p. 30)[1]

I won't argue against this premise in the following, but only against what Carnap tries to accomplish with it.

Before following the argument out in detail, it might be well to state what is hoped to be accomplished in the critique. An attempt will be made to show that Carnap's argument is defective in that it contains two dubious elements. The first

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[4] Friedrich Waismann, "Verifiability" in Antony Flew (ed.) Logic and Language First Series (Garden City, New York: Doubleday & Company, Inc., 1951, 1965).

such element is a studied equivocation upon the word 'exemplified'. A close examination of the argument shows that this term shifts in meaning from the sense "exemplifiable" (i.e., capable of being exemplified) to the sense "exemplified" (i.e., in fact exemplified). The second dubious element to be pointed out in Carnap's argument is an instance of the fallacy of composition. An instance of this fallacy is exhibited when one simply assumes that the whole of a composition (i.e., Carnap's proposition as a complex entity consisting of component entities) must exhibit a particular property possessed by each of the parts of that whole. Carnap makes his case as follows:

> I believe that is possible to give an objective interpretation to the term 'proposition', which is still applicable in the case of false sentences. Any proposition must be regarded as a complex entity, consisting of component entities, which, in their turn, may be simple or again complex. Even if we assume that the ultimate components of a proposition must be exemplified, the whole complex, the proposition itself, need not be. . . . Analogously, the fact that some sentences are false does not exclude the explication of propositions as objective entities. Propositions, like complex properties, are complex entities; even if their ultimate components are exemplified, they themselves need not be. (p. 30)[1]

After discussing an example Carnap sums up his conclusion as follows:

> Thus the complex *intension* expressed by the sentence is the proposition . . . The whole *intension* is not exemplified; but it is, nevertheless, a proposition because it consists of exemplified components in a propositional structure . . . (p. 31)[1]

Thus, we see that Carnap tries to show that he can give an objective or physicalist interpretation to the proposition expressed by a false sentence by building upon the assumption that "Propositions, like complex properties, are complex entities; even if their components are exemplified, they themselves need not be." What this amounts to is that Carnap thinks that a false sentence has an objective interpretation, if the simples which combine together to form the complex whole of the proposition are each individually exemplified. It should be noted that 'exemplified' seems to here have the sense of "exemplifiable" (i.e., capable of exemplification, in the sense of having been in fact exemplified on some occasion or other, although not (of necessity) exemplified on this occasion). This point shall be elaborated upon further below.

Carnap tries to convey his argument by means of an example. He directs us to suppose that 'H' stands for the predicate 'is a man', and 'T' for the predicate 'is twenty feet tall', and 's' for a specific individual named Scott. The argument then proceeds as follows: H is exemplified (in fact) by the various individuals in the world that are men. Likewise, 'T' is exemplified (in fact) in the world by various objects such as trees that are 20 ft tall. The individual s, for the sake of argument, is taken to exist. Now we take under consideration the factually false sentence 'HTs', i.e., the sentence "Scott is a twenty foot tall man." What we mean when we say that this sentence is false is that there is no single individual who fits the specifications; that is, such an individual is not exemplified in fact. What Carnap tries to show with this example is that although the proposition expressed by this sentence is not exemplified in its totality, it is yet capable of objective interpretation, since each of its parts are exemplified (i.e., are now exemplifiable, in that they have been actually exemplified in some other case or on some other past or future occasion.) It must be acknowledge that Carnap never uses the term 'exemplifiable' in this context, although it is my claim that that is the sense in which he is using the term on several crucial occasions. One way of summarizing Carnap's argument is the following:

(1) All exemplified entities are objective entities.
(2) All the components of a false proposition are exemplified entities (in that their "primary parts" have been previously exemplified.)

Therefore,

(3) All the components of a false proposition are objective entities.

Therefore,

(4) A false proposition as a whole is an objective entity, even though not now exemplified as a whole.

The syllogism that has been identified as a reconstruction of Carnap's initial argument is formally valid, so all that remains to consider is whether its premises are true and whether its terms are unequivocal. Consider the first premise which says that "All exemplified entities are objective entities." In considering the truth of this premise we must keep in mind that since we are considering a sentence S which is here and now meaningful, we must be concerned to find a proposition for its *intension* which is here and now objective. Suppose that at time T we produce the sentence "Scott is a twenty-foot tall man." The sentence exists at time T and since it is meaningful at T, there must on Carnap's scheme be a proposition which exists at T which is its *intension*. Furthermore, since the sentence is false, we know that the proposition which is its *intension*, is not exemplified at T. In terms of this example, consider again Carnap's first premise which is that "All exemplified entities are objective entities." If this premise is given the reading (1a) "All entities exemplified at time T are objective entities at time T", then we could perhaps accept it. But suppose that we stipulate that at time T there is nothing now exemplified which is both human and exactly twenty feet tall, while conceding that there are non-human things which have been just that tall. So what are we to say about the property of being 20 ft tall at time T when it is not exemplified? Another plausible reading of Carnap's premise would be (1b) "All previously exemplified entities were objective entities at the time of their exemplification." This is of course just a past tense version of (1a). But (1b) doesn't help, for it is the objectivity of the unexemplified false proposition at the current time T that is at issue in Carnap's argument. What Carnap's argument needs is the premise (1c) which is that "All previously exemplified entities are now objective entities." But the objectivity in the present instance of the previously exemplified entity is just what is in question. It isn't enough just to assert than an entity must be objective now solely on the grounds that it was once exemplified. One line of defense of (1c) might be that since the entity has been exemplified in the past or at some other location, it is in the present instance exemplifiable or capable of exemplification, and thus objective now, even though not now exemplified. If one asks "Are dinosaurs now objective entities?" the temptation might be to say, "Well, they certainly were objective, so long as they existed." But their having been objective doesn't make them objective here and now, except in the counterfactual sense that they could be exemplified again now, and in that eventuality would be objective again now. Thus the conclusion I draw concerning Carnap's first premise is that it is clearly true only on readings (1a) and (1b) which employ the term 'exemplified' in the sense of 'in fact exemplified'. But when the premise is applied to the objectivity at the current time T of entities not now exemplified it appears to rely upon reading (1c), which employs 'exemplified' in the sense of 'exemplifiable' or 'capable of exemplification'. But it is not clear that Carnap is free to rely upon the reading (1c) since the move from entities which are not exemplified but are rather only exemplifiable seems to introduce a realm of abstract entities that Carnap would dismiss as hypostatizations or reifications. So for reading (1c) it is no longer clearly true that the unexemplified entity is still objective. For 'exemplified', when understood in the sense of 'exemplifiable', is a dispositional term. The fact that the components of the sentence '(HT)s' have the disposition to be exemplified at some time or other, i.e., that they have been previously exemplified at least once, doesn't at all guarantee or warrant that they are in fact objective in the present instance. What we are thus questioning is Carnap's justification in taking his first premise in the sense of (1d), namely "All exemplifiable entities are now objective entities."

Carnap's second premise is that "All the components of a false proposition are exemplified entities (in that their "primary parts" have been previously exemplified). The second occurrence of 'exemplified' in this premise is clearly used in the sense of "in fact exemplified". The first occurrence of 'exemplified' is susceptible to the same kind of equivocation noted in the first premise. Also, the same questions of temporal usage can be raised for the second premise. For the syllogism to be valid the term 'exemplified' must be used in the second premise in the same sense that it is used in the first premise. Is it to be given the reading (2a) "All the components of a false proposition are <u>now</u> exemplified entities" or is it to be read (2b) "All the components of a false proposition <u>have been</u> exemplified entities."? Or is it perhaps (2c) "All the components of a false proposition are now <u>exemplifiable</u> entities."? The requirement that the middle term be used in the same sense in both premises rules out reading (2a) since by hypothesis the components under consideration are not assumed to be exemplified in the present instance. The alternatives that seem to be open to Carnap are basically to take as premises (1c) and (2b), or (1d) and (2c).

(1c) All previously exemplified entities are now objective entities.
(2b) All the components of a false proposition <u>have been</u> exemplified entities.

This would yield the desired conclusion:

(4) All the components of a false proposition are now objective entities.

Carnap's second alternative is then:

(1d) All exemplifiable entities are now objective entities.
(2c) All the components of a false proposition are now exemplifiable entities.

This second reconstruction of the argument would also yield the conclusion:

(3) All the components of a false proposition are objective entities.

This introduces the question of the ontological status of exemplifiable entities.

The second difficulty for Carnap's argument comes in the derivation of the final conclusion (4): "A false proposition as a whole is an objective entity" from the first conclusion (3): "All the components of a false proposition are objective entities." The fact that the three parts of the sentence '(HT)s' have each been exemplified and thus were objective doesn't assure that a false proposition having the three components as parts is now objective (when not exemplified). The fact that the three have been separately exemplified at least once lends no guarantee of the objectivity to an instance in which it is known that they are not exemplified. My second criticism is that in passing to the conclusion (4) from the previous conclusion (3) Carnap is involved in the fallacy of composition, i.e., the fallacy of assuming that any property of all of the parts of a whole must be a property of the whole itself. It simply does not follow that because each of the components of the proposition are exemplified and thus have an objective interpretation, that the composition thereof also exists and is thus capable of objective interpretation. It is the existence of the unexemplified proposition that is at issue here, for Carnap's method of *extension* and *intension* asserts that for every meaningful sentence (whether true or false) there is a truth-value which is its *extension* and a proposition which is its *intension*. The problem with the inference from (3) to (4) is that the whole does not of necessity have all of the properties shared by each and every one of its parts. Furthermore, Carnap is not here involved in a discussion of logical possibility. The fact that it is logically possible that there might be a man named Scott who was 20 ft tall has no bearing upon this discussion.

Thus, I conclude that Carnap has failed in his attempt to establish a sense in which the propositions expressed by false sentences are objectively interpretable. To provide such an interpretation it is not enough just to show that the fundamental components corresponding to the false sentence are objective. The basic puzzle for Carnap is to make out a case for the objective physical existence (he admits no other kind) of the unexemplified false proposition. It has been my claim that in attempting to establish the objective interpretability of false propositions Carnap has committed both the fallacy of composition and the fallacy of equivocation upon the term 'exemplified', i.e. ambiguously between 'in fact exemplified' and 'capable of being exemplified'. A strictly analogous criticism is applicable to Carnap's attempt to establish an objective interpretation for "empty properties". If a compound predicate has nothing to which it is applicable, then Carnap thinks that there remains a physical interpretation of it, if each of the components that make it up has on some other occasion shown itself exemplifiable through having been exemplified. A case in point would be the compound predicate 'HT' of the example just reviewed. Exactly the same arguments (and defects) are at work in Carnap's attempt to establish the objective interpretability of both empty properties and false propositions.

The force of the critique of Carnap that I have been making can be expressed as a quasi-dilemma with a three disjunct conclusion:

(1) For Carnap, the meaningfulness of predicate expressions and sentences is accounted for in terms of their having both an *extension* and an *intension*.
(2) *intensions* are physical entities objectively existing in the world, which may or may not be exemplified.
(3) Yet, there are no physical entities corresponding to empty properties and false propositions.

Therefore,

(4) Either (a) empty properties and false propositions possess a derivative objectivity stemming from their components, or (b) *intensions* aren't physical entities (as would be the case if they were abstract entities), or (c) the meaningfulness of sentences and predicate expressions isn't (as Carnap supposed) to be accounted for in terms of *intensions* which are objective physical entities.

It isn't the intention of the present essay to suggest which alternative Carnap should have accepted here. We can note that alternative (b) would commit him to an expanded ontology. This alternative has been found attractive by philosophers like C.I. Lewis. Alternative (a) would avoid the ontological commitment of (b), but would seem to require some further support, such as an analysis of the notion of derivative objectivity. Alternative (c) would alter the basic character of the method of *extension* and *intension* as Carnap has developed it, as well as forfeit his claim to have offered an "objective meaning analysis".

In concluding his discussion of propositions in Meaning and Necessity Professor Carnap said the following:

> If someone is in doubt as to whether there are any non-mental and extra-linguistic entities which fulfill these conditions, he may take as propositions certain linguistic entities which do so. (p. 32)[1]

I hasten to add that it has not been any part of my critique above to deny that there are any objective propositions such as Carnap has been arguing for. The critique has rather aimed at isolating the argument by which one might conclude that there were such propositions, and at pointing out defects of that argument. It would take some further argumentation to establish that there could not be such objective propositions, and this essay has no such further argument to offer.

Up to this point my argument has primarily been directed against the first of these three disjuncts, i.e., against the thesis of the objective interpretability of empty properties and false propositions. If this critique is accepted, then there still remains the task of addressing ourselves to disjuncts (b) and (c). I hope the following will help in the consideration of them.

It was noted earlier that Rudolf Carnap followed C.J. Ducasse in identifying facts with true propositions. It was further noted that a proposition for Carnap is an objective, non-linguistic, "non-subjectively mental" entity. He holds that for a proposition to be a fact it must have three properties, namely:

> It must, of course, be true; second, it must be contingent (or factual); . . . I think that still another requirement should be added. The proposition must be specific or complete in a certain sense. (p. 28)[1]

My topic in the remainder of this essay is a critical discussion of Carnap's view of specificity. It will be shown that some of the things that Carnap says about specificity bring out further difficulties in his notion of a proposition as an objective physical entity.

It is only fair to point out that Carnap's discussion of the specificity of propositions is of an "informal" nature, since he does not wish to put the concept of a *fact* to any specific technical use in his construction of a semantical system. For this reason he never comes to any concrete conclusion, such as that a proposition will be taken as a *fact* only if it exhibits some "x" amount of specificity.

Carnap's entire discussion of specificity or completeness centers about an attempt to show what constitutes the specificity of a given sample proposition. His example is the same one seen earlier, namely the proposition expressed by the sentence "This thing (a piece of paper I have before me) is blue." (p. 28)[1] The proposition thus expressed is supposed to be true. He notes that this means that the object under discussion "has the property Blue."

Carnap next elaborates upon the fact that Blue is used to designate the various colors possessed by a wide range of different objects. He says:

> But the property Blue has a wide range; it is not specific but includes many different shades of blue, say Blue1, Blue2, etc. This thing, on the other hand, or more exactly speaking, a specific position c on its surface at the present moment has only one of these shades, say, Blue5. (p. 28)[1]

Actually Carnap makes no pretense of trying to show what would constitute a scientifically sophisticated degree of specificity as to what would really describe that abbreviated by Blue5. Such specificity could be obtained by a detailed spectrographic analysis, or more crudely by the calculation of seven different parameters, namely: (1) luminosity, (2) hue, (3) intensity, (4)–(6) three spatial coordinates, taking some point on the speaker as a reference point, and (7) a temporal coordinate. The first three values specify uniquely the color represented by Blue5, but they are not adequate alone; for the sheet of paper might not be of a uniform color and might vary with the time of day (e.g., taken as a function of the light in the room.)

Carnap continues his discussion by saying:

> Let p be the proposition that c is blue, and q the more specific proposition that c is blue5. It is the truth of q that makes p true. Therefore the nonspecific proposition p should perhaps not be regarded as a fact. (p.28)[1]

It does not seem to me that this is an accurate account of the distinctive function or use of property terms such as 'blue', or of the method by which the truth or falsity of predications is determined. In looking to the distinctive use of such property terms, it is seen that their generality, or non-specificity is an essential part of their being used as they are, and that they could not function as they do if they were anything but non-specific. For example, an ordinary piece of clothing is usually woven in such a manner that it contains several different shades such as blue4, blue7, & blue9, etc., or more likely it might contain different shades of several colors. Now it is not the truth of the propositions describing each of the various shades that makes the proposition expressed by "this coat is blue" true, but rather it is the combined or total effect (the gestalt) that leads one to affirm this proposition.

It is simply a psychological fact that the vast majority of the users of language are not trained to use their language to such a degree of exactness as is exhibited in the sentence that expresses the proposition q. Also, the apparent nature of the world we live in would seem to prohibit the practical use of such an exactness of description. For example, suppose I was to meet someone at the railroad station and had been told that I would recognize him by the fact that he would be wearing a hat of the color blue3. It might just happen that it was an overcast day, or that the lighting was poor in the station, and thus I would never make connection since his hat would appear blue6 or some other shade than blue3.

At this point Carnap might object that this is not a fair criticism, since he is not primarily concerned with the ordinary or distinctive use of property terms, but rather with an explication of the concept of the specificity of extra-linguistic propositions and their relationship to facts. Given this objection, let us continue our examination of Carnap's discussion.

From this point on its seems that Carnap not only carries the concept of a fact beyond the bounds of the useful, but also in doing so stretches the concept to the point of total impracticality. He says:

> Therefore, the nonspecific proposition p should perhaps not be regarded as a fact. Whether q should be so regarded remains doubtful; q is completely specific in some respects, concerning the color, but it does not specify the other properties of the given thing. (p. 28)[1]

But this need not be so, since above it was noted that it was not possible to completely specify the color in q, without also making reference to c's position (i.e., spatial coordinates) and the time of attribution (the temporal coordinate). Carnap capitalizes upon the necessity of these other coordinates, and expands the discussion out of all reasonable proportion. He asks:

> Should we require complete specificity with respect to all properties of the thing or things involved, and also with respect to all relations between the given things and all other things? It seems somewhat arbitrary to draw a line at any of these points. (p. 28)[1]

Arbitrary indeed?! It would certainly seem obvious why it would not be arbitrary to draw a line considerably short of specifying the relationships between this piece of paper and every other object in the world. Let us bear in mind that our original concern was to determine what degree of specificity would be required to identify the true proposition (objective entity) expressed by the sentence 'This thing (piece of paper before me) is blue', as a fact. The simple consideration of use and expediency shows that it would be absurd to require the specificity of this proposition with respect to "all the relations" of this object with all other things. If we had to do that we could never (being finite beings) get a true proposition equated with a fact.

Carnap concludes his discussion by saying:

> It we do not stop at some point but go the whole way, then we arrive at the strongest F-true proposition Pt, which is the conjunction of all true propositions and hence L-implies every true proposition. If we require of a fact this maximum degree of completeness (short of L-falsity), then there is only one fact, the totality of the actual world, past, present, and future. (pp. 28–29)[1]

My first reaction to the above discussion is that it is not clear exactly what is meant by the conjunction of two propositions, when a proposition is understood in Carnap's terms, i.e., in terms of an objective non-linguistic entity. Conjunction is understandable when it is interpreted as the truth-functional connection of conjoining two sentences. It means just that the entire compound sentence is true if and only if both of its component sentences are true, and false otherwise. But it is by no means clear what it means to conjoin two physical non-linguistic entities. Of course, we know how to conjoin two physical non-linguistic entities in the sense of bringing them together spatially, but that is surely no part of what it means to conjoin two Carnapian propositions or facts. If one were to suggest such a meaning, consideration of the following example would quickly eliminate it from further consideration. Consider the conjunction obtained from spatially conjoining the propositions expressed by the following two sentences which we shall take as true: (1) Jack Sprat is 81 years old. (2) The peak of Mount Everest is 29,028 ft above sea level. In the normal truth-functional use of conjunction, the conjunction of the two true sentences results in a compound true sentence. But on the interpretation we are considering, conjoining the objective entities which constitute the Carnapian propositions would imply bringing the aged Mr. Sprat to the top of Mount Everest, which obviously is a reductio ad absurdum for the proposed interpretation. But then what does it mean to conjoin two objective non-linguistic propositions?

Another, and perhaps more promising interpretation of this objective sense of conjunction would be that the objective entities are true only if we can truly say that q exists and truly say that p exists. Or, given the difficulties with false propositions, only if we can truly say that p is exemplified and that q is exemplified. In order to be able to say these things our language must contain names for each of these objective entities. But if this interpretation of conjunction for Carnapian propositions is correct, then in order to be able to express the conjunction constituting Carnap's "strongest F-true proposition Pt" we would have to have a language which contained a name for every objective entity which ever did, does or shall exist. But clearly we don't have such a language. We don't even know all the entities that shall exist in the future, let along possess a language which contains names for them. The lack of such a language no doubt underlines the fact that it is far from "arbitrary" to stop far short of the proposition Pt in establishing our requirements for specificity. In faulting Carnap's notion of specificity I am not arguing against the possible existence of an infinite conjunction, nor even against the notion that infinities can be referred to by suitable names. The main point has been to raise the question of how 'conjunction' is to be understood in the context of Carnapian propositions and the specificity of facts.

There are yet further difficulties in store for Carnap's discussion of specificity and for his account of the meanings of sentences in terms of the existence of objective propositions as their *intensions*. For these *intensions* must somehow be able to give objectiveness (i.e., physical existence) to the propositions expressed by sentences about the past. Take the sentence "Socrates smiled upon quaffing the hemlock", and lets us suppose that it is true. For Carnap, this sentence must right now have as an *intension* a proposition, which is in some sense a non-linguistic objective entity. It does not seem that the difficulties inherent in this example can be avoided merely by pointing out that the proposition did have an objective existence in fact in the year 399 B.C.E. This move does not succeed, for when someone utters a sentence-token of the same sentence–type right now we are obliged to say, according to Carnap's analysis, that an objective non-linguistic entity called a proposition at that very time exists and has been expressed. Yet where should we look for it if it exists? If Carnap's ontology embraced abstract entities he might here accuse me of confusing the existence of a proposition with the expression of it. But for one who counts propositions as objective physical entities no such distinction would seem to do in this context, for the method of *extension* and *intension* posits that there is an *intension* of every meaningful sentence, independent of whether it is true or false. This critique is an addition to our previous discussion of empty properties and false propositions. The sentence about the past is taken to be both meaningful and true right now, and hence should seem to be required to have an objectively existing *intension* to account for that meaning right now.

The conclusion of this essay is that Carnap failed on several counts in his attempt to provide a defensible meaning analysis of predicates and sentences in terms of the objective existence of properties and propositions. The main objections have been that there is no coherent account of the objective interpretability of false propositions, empty properties, and currently produced sentences about the past. I have further argued that in attempting to equate true propositions with facts Carnap has employed a defective notion of specificity.

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K.G. Lucey, *Pesky Essays on the Logic of Philosophy, Logic, Argumentation & Reasoning 6,* DOI 10.1007/978-3-319-08063-5