KNOWLEDGE, TRUTH AND JUSTIFICATION

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by

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Abstract

In this thesis I have devoted my attention to the adequacy
of the traditional analysis of "S knows that P".

Traditionally, a material condition, the truth of 'p',
a psychological condition, belief or acceptance or sureness that p,
and an evaluative condition, justification in believing that p or
having adequate evidence for p, are adduced as individually necessary
and jointly sufficient conditions for the truth or applicability of
the locution "S knows that p."

The adequacy of this analysis has been challenged in two
ways. It has been alleged that one or more of the existing conditions
is not necessary. It has been suggested that counter-examples exist
which demonstrate that these conditions are not jointly sufficient.

In the first part of my thesis I have attempted to show that
the traditional conditions are at least necessary. The second
chapter is devoted to a defense of the material condition (which I
have also called "the semantic condition") and an attempt to elaborate
a co-extensive property of knowledge in non-normative terms. The
third chapter is an analysis and defense of the other two conditions.
I conclude that the traditional conditions are analytically necessary
for the truth of "S knows that P".

Chapter IV is devoted to a consideration of counter-examples
designed to show that the analysis does not provide a set of jointly
sufficient conditions, and in particular the counter-examples put
forward by Edmund Gettier and commentators upon the Gettier counter-

examples. I show to begin with that the recent counter-examples were anticipated by G.E. Moore (in 1905), Bertrand Russell (in 1948) and by A.D. Woozley (in 1949).

Three conclusions are reached with regard to these counter-examples: (1) they are genuine, and dictate the addition of further clauses to the analysis; (2) the additions required are not entailed analytically or synthetically by any of the existing clauses; (3) it is possible that all of the additions required might be entailed synthetically by a normative condition that is worded in non-pragmatic or non-subjective terms.

Leaving aside (3), an attempt is made to provide an analysis of "S knows that P" that entails the traditional clauses and all of the necessary additions dictated by the existence of the counter-examples. I have argued that any adequate analysis must be able to obviate counter-examples generated by violating a condition which is formulated in 4-23 as the model for generating "Gettier-type" examples. Necessary and sufficient conditions for "S knows that P" which are impervious to such examples are alleged to be stated in 4-29.

ACKNOWLEDGEMENTS

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CHAPTER I

PROLEGOMENA

§ 1.1. The stimulus for re-appraisal.

In a recent article[1] Edmund Gettier has made a rather

startling contribution to epistemology. He presents there a

very simple challenge to the traditional analysis of "S knows

that p". Traditionally, three conditions are adduced as

individually necessary and jointly sufficient for the truth or

applicability of the locution "S knows that p":

    (1) It is true that p.

    (2) S believes that p.

    (3) S is justified in believing that p.

Gettier's challenge comes in the form of two sorts of counter-

example, designed to show that this analysis, while providing us

with necessary conditions, fails to provide us with a set of suffi-

cient conditions.[2]

A good deal of response has been elicited by Gettier's article

and it has provided the occasion for a contemporary re-appraisal of

the traditional pattern of analysis.[3] The consensus of opinion seems

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[1] Edmund Gettier, "Is justified true belief knowledge?" Analysis, Vol. 23, No. 6, June 1963, p. 121.

[2] These counter-examples will be found on page 142 below.

[3] We shall take (1), (2) and (3) above as representative of this traditional pattern which is more fully characterized in §3.3.

to be that Gettier's counter-examples are genuine and that Gettier
has shown the traditional analysis to be defective in some way.
Those who are of this opinion have attempted to repair the existing
analysis by adding further conditions. A minority opinion has been
registered, however, which holds that these are only _prima facie_
counter-examples to the traditional analysis. It will be important
to state as clearly as possible what this position amounts to.

Those who take the position that the Gettier counter-examples
do not represent a genuine threat to the traditional analysis, but
only _seem_ to do so, must claim that there are some further conditions
packed away in one of the existing clauses or in some combination
of these clauses. For they do not claim that it is perfectly _obvious_
that the counter-examples fail to discredit the traditional analysis.
They admit that a _prima facie_ difficulty in connection with these
conditions has been exposed, but a difficulty which will evaporate
once the meaning of these traditional conditions has been adequately
elaborated.

It is, of course, _prima facie_ plausible to withhold the claim
to know under the circumstances stipulated by the Gettier counter-
examples. Thus if the _prima facie_ plausibility of withholding the
claim to know will disappear when certain clauses are added to the
analysis, then these clauses, whatever their locical status _vis-a-vis_
the original three, are genuinely necessary to account for unquestioned
pre-analytic data. All that the dissenters can maintain here is that
the extra conditions only seem to be, but are not logically independent.

All that they can suggest is that these additional conditions are implicit in one of the existing conditions. What their position ultimately reduces to is that the traditional clauses, while overtly defective, are _covertly_ sufficient. Accordingly, what they are required to do is to make these clauses _overtly_ sufficient by unpacking from them the conditions that are needed to block Gettier's examples.

Four questions naturally arise at this point. (i) How many and what sorts of additional clauses can be unpacked from the traditional set of conditions? (ii) How many and what sorts of additional clauses are required to obviate the sorts of counter-example proposed by Gettier? (iii) Do the conditions which we can unpack include the additions that are required under (ii)? The fourth question concerns the degree of independence of (i) and (ii), _viz.._ Can we be quite comfortable in pursuing the answer to any one of these independently of the other?

I think that it is tolerably clear that we can answer (i) without bothering about (ii). For one thing, we do not have to consider at all the applicability or the meaning of "S knows that p". Our only concern is with the meaning of "justified" and "true" and "belief" and the way in which these words are used in the three relevant clauses. It will be a sheer coincidence, so far as we are concerned, if the results of our activities under (i) have any bearing on the extra conditions that are required under (ii). Still, someone may argue that we do not have complete independence because the same freedom of operation does not hold for (ii).

In the case of (ii), it might be argued, we <u>could</u> proceed
by the piecemeal addition of various clauses to handle each counter-
example as it comes up. But it is not as if we had to deal only
with the cases presented by Gettier. It seems that Gettier has
stimulated the production of a <u>genre</u> of counter-instances which
proliferate and multiply at a bewildering rate. There are those
who argue that these have only a family resemblance to one another.[4]
(And if this can be demonstrated the answer to (iii) will certainly
be negative.) Still, let us suppose what is equally possible, that
there is some <u>systematic</u> resemblance which we can exploit in order
to get our hands on a rule for generating an infinite number of them.
This systematic property might be precisely co-extensive with what
can be generated from one of the clauses in the traditional analysis.
And there may be no way of <u>saying</u> what this property is except in
terms of this clause.

Such an eventuality cannot be ruled out. But even if all
of the above were true, it would have no tendency to show that the
answer to (ii) was not <u>logically</u> independent of (i). It would just
mean that when answering (ii) we should <u>in fact</u> be answering (i).
In that case, we should simply have to wait and see whether this
happened.

But so long as we are agreed that these two questions are
logically independent, we can show that there are some very good

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[4] John Turk Saunders and Narayan Champawat, "Mr. Clark's
definition of "Knowledge", <u>Analysis</u>, Vol. 24, No. 1, October 1964,
p. 8.

practical reasons for answering (ii) ahead of (i). One advantage
is that we shall be able to avoid the more controversial areas for
as long as possible. People do not have as many philosophical axes
to grind when considering (ii). We can all agree that some further
set of conditions must be added to the analysis, and we can certainly
agree on the necessity of various piecemeal additions (even though
we are all quite understandably anxious for parsimony). We only
begin to part company when the logical status of these admittedly
necessary conditions is considered vis-à-vis the clauses in the
traditional analysis. And this question can be postponed until
(iii) is considered. On the other hand, if we were to begin with
(i), we should almost immediately be plunged into the most diffi-
cult and complex philosophical problems connected with normative
discourse, an area fraught with bitter controversey and subtle
philosophical traps.

Beginning with (ii) has the further advantage of permitting
us to remain neutral with respect to various alternative programs
for a solution to the problems which have been raised by Gettier's
examples. Before we consider any attempts at solving the problems
we had best be clear on exactly where the problems are. What we
want is a list of the defects in the traditional analysis which
are exploited by the various instances cited against it. Nor
do we intend "a list of defects" to refer to a theory that
attempts to explain the force of these counter-examples in any
systematic way. There will be some fact about any given counter-
example to the traditional analysis in the absence of which it

would no longer pose any problems for that analysis. If this feature
were no longer present, the judgments which we are prepared to make
on the analysis would coincide with our intuitive judgments. Or, to
put it another way, the presence of this feature makes the judgments
which we are prepared to make on the strength of the analysis counter-
intuitive. Now we might ask: What clause tailor-made to this feature
of the example and only this feature would suffice to block this counter-
intuitive judgment? What is the weakest ad hoc addition to the analysis
that will render this troublesome feature inoperative? The absence
of this tailor-made necessary condition is a defect in the analysis
that is being exploited by the counter-example under consideration.
By "a list of defects" then, I mean a list of conditions the addition
of any one of which would neutralize the effect of at least one
counter-example, and, in particular, the weakest set of such conditions.

Such a list will provide us with a partial answer to (ii) and a
least upper limit on the possible answers that might be given. It is
an upper limit because, in the absence of further data, all of the
other possibilities for the number of additions required will be fewer
than this. It is a least upper limit because none of the possible lists
of this sort which might be forthcoming in the presence of new data
could contain fewer defects of this basic variety. Now of course, if we
knew that all of the data were in, we could simply state that this list
of minimal stop-gap measures was the upper limit on the number of addi-
tional clauses that might be required. The only possibilities then
remaining would consist of reductions in the total number of required
additions brought about by the introduction of more powerful conditions

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Naturally, our theoretical ideal is to produce the smallest number of such additions which will entail the original set of minimal requirements. But we then run the risk of excluding cases which we would like to consider as _bona fide_ instances of knowledge. We might thus wind up with a set of conditions which, while now jointly sufficient, would no longer be individually necessary.

For these reasons, although I shall begin by answering (ii), I think that it will be best to shun considerations of parsimony until we have provided an elementary list of the defects in the analysis which have been exploited by the various counter-examples. This will enable us to obtain the widest possible basis for consensus before embarking upon more hazardous theoretical ventures. However, even when we do begin to investigate possible logical relationships among these piecemeal additions, there will be no reason to commit ourselves to any particular program of solution or dissolution. For we would have to reserve our final judgment on this matter until we had answered (i) and were ready to tackle (iii). But these two questions fall outside the scope of the present work. Hence we shall leave it an open question whether given an adequate analysis of "knows" in explicit form, the original three clauses entail the new explicit clauses (either analytically or synthetically).

We want to begin, then, with the question, How many and what sorts of additional clauses are required to obviate the sorts of counter-example proposed by Gettier? We have discussed, to some extent, the question of the _number_ of additional clauses that will be required. In turning to the question, What sorts of additional clauses are required?, there is

a natural tendency to expect that they will simply be more of the same sorts of clauses as are found in the traditional analysis. This might, of course, be a mistake. It would be a mistake if, for example, the clauses in the traditional analysis had been developed in response to radically different sorts of situation than those envisaged in Gettier's examples or if Gettier had introduced some strikingly novel feature into examples which were otherwise quite orthodox. Indeed, I shall maintain that Gettier has done just that and that in order to neutralize the effect of his examples it is prima facie necessary to add a very peculiar sort of clause to the traditional analysis quite different from the sorts of clauses already present.

Apparently, therefore, it will be a useful thing to ask this question of the traditional analysis itself. What sorts of clauses are there in the traditional analysis? Moreover, we shall want to know whether these clauses might have developed by accretion from weaker sets of conditions in response to counter-examples of the sort put forward by Gettier. At any rate, in order to appreciate the significance of our inquiry and to provide an intelligible orientation for the various moves which we shall be making, we shall want to examine the data that are appealed to in the traditional analysis before considering the new data that have been supplied by the contemporary counter-examples.

Furthermore, we shall discover, surprisingly enough, that the history of the analysis of "S knows that p" contains certain anticipations of the difficulties raised by Gettier and others.

G. E. Moore (in 1905)[5], Bertrand Russell (in 1948)[6] and A. D. Woozley (in 1949)[7] raised doubts about the viability of the orthodox sort of analysis and addressed themselves to problems virtually indistinguishable from those being considered today by Gettier and the contemporary critics Moore attempted to salvage a traditional sort of analysis by exploiting a normative conditions. Russell pinpointed the problem by examples of precisely the Gettier variety, commenting that we would withhold the claim to know under those circumstances. (But he then drops the matter as peripheral to the main topic that he had been discussing.) Woozley explicitly rejected the analysis as defective on grounds somewhat analagous to Gettier's and offered a more complicated substitute.

It is a constant source of amazement to me that no one writing on this problem has given the slightest hint of being aware of this earlier work. And not only did these three men anticipate the problems, they made what I would consider to be important steps in the direction of a solutions. Accordingly,

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[5] G. E. Moore, "The Nature and Reality of Objects of Perception," <u>Proceedings</u> <u>of</u> <u>the</u> <u>Aristotelian</u> <u>Society</u>, 1905-6; later anthologized in <u>Philosophical</u> <u>Studies</u> (Paterson, New Jersey: Littlefield, Adams and Company, 1959), pp. 31-96. All page references are to the later edition.

[6] Bertrand Russell, <u>Human</u> <u>Knowledge</u>: <u>Its</u> <u>Scope</u> <u>and</u> <u>Limits</u> (London: George Allen and Unwin Ltd., 1948), p. 445.

[7] A. D. Woozley, <u>Theory</u> <u>of</u> <u>Knowledge</u> (London: Hutchison and Company, 1949), pp. 176-193.

as a _further_ preliminary to the introduction of Gettier's counter-examples, after we have completed our discussion of the data and methodology of the traditional analysis, we shall consider in some detail the work of Moore, Russell and Woozley which bears directly upon the sorts of defects in the analysis uncovered by Gettier.

We will now be in a position to look at the Gettier counter-examples and their subsequent transformation, and to draw up a list of the basic necessary additions sufficient to neutralize them. This will constitute the first stage of answering question (ii).

An attempt will then be made to restructure the problem of analysis both through modifications of and additions to the data as well as through some revisionary methodological proposals.

One datum that we shall lean heavily upon in attempting to provide a set of necessary conditions which are jointly sufficient for the correct use of "S knows that p" is provided by the adaptive criterion which is developed in 2.2. This is intended to state a characteristic, 'C,' that is common and peculiar to the instances in which we may correctly claim that S knows that p. Moreover, the statement that this characteristic C is present in all and only those cases in which S knows that p is intended to be (1) non-normative, and (2) synthetic.

We shall also employ data concerning epistemic expressions other than "S knows that p". Among these will be "How do you know that p?", "S has a way of knowing that p", "S could not have known

that p", and so on. We shall refer to these as "non-canonical epistemic locutions" (which is not to imply that they are in any sense derivative or secondary to the canonical form, "S knows that p"). In an attempt to solve the problems raised by Gettier we shall then investigate the relationship between these epistemic locutions and expressions belonging to what may be described as "the quasi-causal idiom". Among these are "Why is it the case that p?", "What makes it the case that p?", "It is the case that p because it is the case that q", and "The reason that p is that q".

On the basis of these new data supplemented by some peculiar facts about the Gettier counter-examples (expressible only in the quasi-causal idiom), I will propose two rather strong conditions as necessary for the correct use of "S knows that p", one a semantic or material condition and the other a normative requirement. The former entails the traditional doxastic condition as well as the traditional material condition. The latter is entailed by the conjunction of the traditional normative condition and the strong material condition. These two conditions I will put forward as possibly sufficient as well as necessary for the correct use of "S knows that P". My only argument will be that they seem to be capable of excluding counter-examples based on the adaptive criterion as well as those patterned after the peculiar principle in the Gettier cases.

This is not to be taken, however, as an answer to the combined questions (i), (ii) and (iii). For here we did not ask whether there are strong conditions which entail all of the required additions as well as the traditional clauses, but, rather, whether the

traditional clauses are strong enough to entail all of the required
additions. I will give a partially affirmative answer to the latter
question. For I shall hold that in conjunction with the stronger
material condition the traditional normative condition will suffice
to generate any further evaluative clauses that may be required.
But I will contend that I have _completely_ answered question (ii);
providing (a) a list of the weakest conditions the absence of which
is exploited by the counter-examples, and (b) a parsimonious set
of stronger conditions which, while entailing the totality of
requirements in (a), does not exclude any of the desired cases.
But it is not without trepidation that I make this claim. For any
claim for joint sufficiency in such a context involves an insane
epistemic leap into the dark in which one predicts that no one
will ever uncover any refuting counter-instances, a prediction that
may be, however, neither more nor less rash than the prediction that
the sun will rise tommorrow, and as I hope to show, no stronger than
the claim that we quite commonly make when we take the position that
we _know_ that something is the case.

Now assuming the correctness of the analysis provided, it
will be appropriate to raise certain questions similar to (i) and
(iii) concerning the relationship between our strong semantic
condition and the normative condition. Can we _infer_ the semantic
condition from the normative condition in some way, effecting a
further reduction? Or is the semantic condition related to the
normative condition in the same way as "right-making characteristics"
are supposed to be related to rightness in the theory of morals? But

these questions will not be dealt with in this work. It should be clear in any case that even if the conditions stipulated in one of the clauses should be related to those laid down in another just as the right-making properties in moral theory are related to rightness, this would have no tendency to alter the truth of the bi-conditional which links "S knows that p" and the conjunction of the clauses so related.[7]

1.2 The system of classification. It has become traditional to state necessary and sufficient conditions for knowledge in terms of a semantic condition, stipulating that if S knows that p, then 'p' is true, and two pragmatic conditions, one doxastic and the other a normative condition relating to the doxastic requirement. In dealing with the Gettier counter-examples, however, it will be necessary to examine clauses of much greater complexity than those found in the traditional analysis. It is therefore necessary to introduce a more powerful system of classification.

The differentiation of three aspects of sign behaviour, the syntactic, the semantic and the pragmatic, introduced by Chalres W. Morris, has served as a point of departure for our system of classification.[8] In any sign situation three elements were singled out for analytical attention: the sign, the referent, and the

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[7]There might, of course, be some phenomenological differences betwen the linguistic oddity apparent when we combine "S knows that p" with the denial of a condition that is analytically necessary for knowledge and the oddity apparent when we combine "S knows that p" with the denial of a synthetically connected condition. But if there are any, they must be very slight; because no one has seriously suggested that we solve such problems by a simple little experiment with the canonical epistemic locutions.

[8]Charles W. Morris, Foundations of the Theory of Signs, International Encyclopedia of Unified Science, Vol. 1., No. 2.

organism who produces or reacts to the sign. Morris described the
fact that in any sign-situation there are relationships to be
examined among the signs themselves independently of the referent or
the organism, by saying that there was "a syntactic aspect" to the
sign situation. The relationship between the sign and the referent,
excluding consideration of the organism, was subsumed under the
"semantic aspect". Finally, the "pragmatic aspect" involved a
consideration of all three, the sign, the referent and the organism.
(As for the last, I would like to extend pragmatics to include any
relationship involving the organism.)

This taxonomic orientation will be quite adequate if one
has, as Quine would say, "a taste for desert landscapes". But for
our purposes it will be necessary to start with a somewhat finer
initial breakdown. This will involve (1) a symbol user, whom we
may look upon qua symbol user, but also as a transmitter of meanings
or encoder, (2) an act or process of meaning something, expressing
something, intending something, intentionally referring or encoding,[9]

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[9]This is the inverse of interpreting or construing or decoding.
We might describe the act of encoding the proposition that p into the
form of words 'W' at t_1 as "meaning p by 'W'" and the corresponding
act of decoding as "understanding that p by 'W' (or from 'W')." (In
this context "understanding" is clearly not functioning as a success
verb.) What took place could be correctly reported by the agent
at a later time t_2 by saying, "By 'W' I meant that p." and by the
addressee as "By 'W' I understood that p." But this does not mean
that either of these acts are "mirrored" by occurrent mental states
in the persons involved in the transaction.

 In the process of communication we may distinguish four
sequentially occurring pragmatic elements or processes; encoding,
transmission, reception and decoding. (Perhaps in the course of
ordinary verbal exchanges the first two stages and the last two would
collapse operationally, while remaining analytically distinct.) But
each of these is analyzable in terms of the aspects of the sign-
situation outlined above.

(3) the meanings themselves, the "intentions" or intensions or

propositions expressed, the "content" of what is being communicated

or conveyed, (4) the Chisholmian-Meinongian "intentional object,"[10]

that which, in Lewis' terminology, is comprehended by a term,[11] and,

when actual, denoted (or the states of affairs envisaged by a

proposition which, when actual, make it true); and, finally, (5) the

sign vehicle by means of which the encoded meanings are conveyed,

the tokens or marks of physically and conventionally distinguishable

type which the symbol user employs to perform his acts of intentional

reference and meaning.

The way in which these symbols are used, the regularities of

combination and association governing their occurrence comprise the

conventional division of syntactics. But then why not consider

the sociological relationships among the symbol users, the relation-

ships among the acts of encoding in (2) or among the intensions or

propositions in (3) or among the referential or intentional objects

in (4)? Indeed, we can profitably single out two of these for

special attention: the relationships among the elements in (3)

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[10] Chisholm following Meinong points out the "intentional
inexistence" of the object of an intentional verb such as "looks for"
or the various doxastic verbs. (Quine would refer to the situation
as providing a "referentially opaque context.") But the referential
opacity, Chisholm would want to maintain, is of a special variety
to be distinguished from that produced in modal contexts for example.
It is peculiarly endemic to matters psychological. This is discussed
in Perceiving: A Philosophical Study (Ithaca: 1957), p. 168

[11] C.I. Lewis, An Analysis of Knowledge and Valuation
(La Salle, Illinois: 1946), p. 39. "The comprehension of a term
is the classification of all possible or consistently thinkable
things to which the term would be correctly applicable."

which we can refer to as _intensional syntactics_, and the relationships

among the elements in (4) which we shall subsume under the term

extensional syntactics.

Furthermore, let us refer to the traditional division of

semantics (governing the relations between (4) and (5)) more

specifically as _physical semantics_. We may then discuss the

relationship between the elements in (3) and those in (4) as

intensional semantics. _Pragmatics_, which would cover the relationships

between the elements in any category and the symbol user, would then

become divided up into (a) expressive and interpretative pragmatics,

(b) intensional pragmatics, (c) extensional pragmatics and

(d) (the conventional division) physical pragmatics. In short, we

shall subsume any relationships involving (4) under semantics, any

relationships involving (1) under pragmatics and any relationships

within a category under syntactics.

But we can also extend the use of the term "syntactics" to

cover any systematic regularities governing the relationships among

elements drawn from different categories. Thus we would have

syntactic physical semantics and so on. Similarly we shall retain the

customary use of "pragmatics" in connection with larger gruops of

relata. Thus the relationship between the symbol user and the pair

(3) and (4) would be labelled as _pragmatic intensional semantics_.

Let me add, parenthetically, that I wish to avoid any ontological

committment with respect to the totality of elements that I have

listed as possible factors in the "sign-situation." I am only

committing myself ontologically to the existence of _talk_ about all

of these elements. And if talk about some of them can be shown to be equivalent to talk about others, I will be as enthusiastic as the next philosopher in wielding Occam's razor. So long as no drastic reductions are contemplated (such as eliminating both (2) and (3)) the points that I shall be making should be pretty neutral ontologically speaking.

The doxastic condition in the traditional analysis of knowledge may be formulated both as an _intensional pragmatic_ condition and as a _physical pragmatic_ condition. The last is perhaps more accurately described as a _pragmatic physical semantic_ condition. The intensional pragmatic version stipulates only a certain relationship between a subject, S, and a proposition p.

    (2)   "S believes that p"

The pragmatic semantic version is formulated with reference to the sentences in a language.

    (2) (a)   "S takes the sentence A of the language L to
               express a true proposition "

                    or

          "S takes the sentence A of the language L to
          express the true proposition that p "[12]

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[12]Rudolf Carnap distinguishes these two forms of belief statements in "On some concepts of pragmatics," in _Philosophical Studies_, 6 (1955), pp. 89-91.
    "The concept of belief is sometimes construed, e.g., by Church, as a relation between a person and a proposition. I previously made an attempt at explicating it as a relation between a person and a sentence."... Let us write 'B' for the first, 'T' for the second. Let a sentence of the form
(1) $B(X,t,p)$
say that the person X at the time t believes that p. ... Let a sentence of the form
(2) $T(X,t,S,L)$
say that X at t takes the sentence S of the language L to be true (consciously or not)."
    I have modified Carnaps relations 'B' and 'T' so as to include propositions among the relata.

The truth condition in the traditional analysis is an intensional semantic condition stating a relationship between a proposition (an element in (3)) and "truth" or "the facts" or "what is actually the case" which are elements in (4), actualized possible states of affairs. But this might also be phrased as a language dependent clause.

(1) (f) "The sentence A of the language L expresses a true proposition "

or

"The sentence A of the language L expresses the true proposition that p "

Normative requirements are usually adjusted to the doxastic condition that is being used, although there is some flexibility. A normative condition corresponding to

(2) (a) "S takes the sentence A of the language L to express the true proposition that p"

would be formulated in a similar justification-clause.

(3) (a) "S is justified in taking the sentence A of the language L to express the true proposition that p "

Another variation of the doxastic requirements is introduced by Chisholm.[13]

(2) (b) "S accepts p "

The normative requirement that he employs, however, is related once more to "believing". Rather than stipulate that S is justified in accepting p, Chisholm sets down

(3) (b1) "p is more worthy of S's belief than not-p "

_____

[13]Roderick M. Chisholm. Perceiving: A Philosophical Study (Ithaca, New York: Cornell University Press, 1957), p.16.

He also sets down another condition which he takes to be analytically indistinguishable from the above.

(3) (b_2) "S has adequate evidence for p "

But this seems to me to be mistaken; accordingly, I have treated it as a separate condition. Indeed, it seems to me to be pretty obvious that if p is only _slightly_ more worthy of belief than not-p, S does _not_ have adequate evidence for p.[14] But more of this later.

Another doxastic requirement is suggested by Ayer.[15]

(2) (c) "S is sure that p "

Again there is a corresponding normative condition.

(3) (c) "S has the right to be sure that p "

There seems to be no reason for not crossing these various doxastic and normative strains producing results such as

(3) (d) "S is justified in being sure that p "

(c) "S has adequate evidence for believing that p "

However, "S has a right to believe that p" seems unacceptable. Perhaps this is because a moral flavour is detectable. This is the sort of thing one might say in defense of religious freedom rather than in an epistemological context.

Some further normative conditions are

(3) (f) "It is reasonable for S to believe that p "

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[14]A.J. Ayer, _The Problem of Knowledge_ (Edinburgh: Pelican Books Inc., 1962), p.35

(g) "In believing that p S is being rational (or fully
rational or ideally rational)."

(h) "S has conclusive reasons for believing that p."

(i) "S is completely justified in being absolutely
sure that p."

1.3. Symbolic conventions.

As is customary , we shall use the letters 'p', 'q', 'r',
and 's' as variables ranging over propositions. 'S' and 'X' will be
used as variables ranging over persons. The latter will have as
substituends singular terms such as proper names, personal pronouns
or definite descriptions. For the former we will substitute the
names of sentences which express propositions (the name of a sentence
which expresses the same proposition being substitutable for each
occurrence of the same variable).

In order to circumvent the objection that such a statement as

(1) (a) 'p' is true.

which uses quotation conventions in the standard way cannot make
sense (For, taken literally, it states that the sixteenth letter
of the English alphabet is true.), we shall adopt Quine's quasi-
quotations or "corners". These will be represented by double-
quotes. In adopting Quine's convention, however, let my stipulate
the interpretation that I shall adhere to. Whenever letters such as
'S' or 'p' occur in an expression flanked by double-quotes, we shall
read the result of their replacemtn by a name of whatever it is
that they stand for. Single quotes will be used simply to refer to
the expression occurring within them.

We have considered some possible variations in the formulation

of pragmatic conditions. There is also some variation in the sorts

of clauses which might be used to formulate the semantic condition.

One interesting possibility is based upon Tarski's semantic definition

of truth.[16]

  (1) (c) "p" is satisfied by all objects.

Thus if Tarski's definition

  <u>a</u> <u>sentence</u> <u>is</u> <u>true</u> <u>if</u> <u>it</u> <u>is</u> <u>satisfied</u> <u>by</u> <u>all</u> <u>objects</u>,
  <u>and</u> <u>false</u> <u>otherwise</u>[17]

Has some reportive merit, there will be a way of eliminating the

word "true" from the semantic condition.

  Another way of formulating the condition dispenses with the

use of quotations altogether. Either the extensional statement

prefix "it is true that" is used as follows:

  (1) (d) It is true that p.

or, even more simply one just says

  (1) (e) p.

  It should be pointed out that using quasi-quotations, we

can express the conditions in the traditional analysis only with

the explicit introduction of quantifiers. This would be done as

follows:

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[16]Tarski explicates the notion of satisfaction "by saying
that given objects satisfy a given function if the latter becomes
a true sentence when we replace in it free variables by the names of
given objects," and rejecting this as circular, tries for a recursive
formulation. A. Tarski, "Semantic Conception of Truth," in
L. Linsky ed., <u>Semantics</u> <u>and</u> <u>the</u> <u>Philosophy</u> <u>of</u> <u>Language</u> (Urbana:
University of Illinois Press, 1952), p. 353.
  [17]<u>Ibid</u>.

For any p and for any S "S knows that p" is true if and only if

(1) "It is the case that p"

(2) "S believes that p"

(3) "S is justified in believing that p"

§1.4. <u>Material</u> <u>and</u> <u>logical</u> <u>equivalence</u>. If we take justified, true

belief or the conjunction of (1), (2) and (3) as the paradigm of

the traditional analyses of "S knows that p" we may note that

something much stronger than material equivalence is usually

stipulated. Over and above this, it is held that the three conditions

mentioned constitute the criteria of application or the <u>definiens</u> of

"S knows that p." Hence, they are held to be <u>logically</u> necessary and

sufficient conditions for knowledge.

Now we might wonder if there is any way of deciding if they

are equivalent at all before bothering ourselves with the much

stronger logical claim. Surely, we might think, there is a way of

settling the more modest proposal quite independently. Yet this

possibility seems to be ignored.

Rather than directly engage the material issue of whether

there is any characteristic that is common and peculiar to the

instances of knowledge that p, it has become intellectually <u>de</u>

<u>rigour</u> to infer this by indirection from the judgments of native

speakers of a natural language such as Englis concerning the

oddity or non-oddity of various epistemic utterances.[18]

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[18]We may characterize the class of epistemic utterances
by means of a basic list of epistemic terms, a synonymy criterion
for extending the list and a generating principle according to
which any utterance is an epistemic utterance if, and only if
it contains an epistemic term.

The method usually employed consists in asking whether it would
sound odd or semantically anomalous or semantically deviant[19]
to claim that S knows that p and at the same time assert the denial
of some specific candidate for inclusion as a clause in the analysis.
If the resulting combination is diagnosed as deviant, confirming the
need for such a clause in the analysis, it will be taken to express
an analytically necessary condition for knowledge. But whether the
instances of knowledge share any distinguishing marks that are
logically separable from the fact that they are instances of knowledge
becomes at best a moribund option with this kind of myopic methodology.

In view of this question-closing, contemporary tendency to
place almost exclusive reliance upon lexicographic interpretations
of the data and, furthermore, to attribute covert lexicographic
pre-suppositions to earlier investigations, it is important to guard
against uncritically accepting and using as purely linguistic
date, data which constitute direct evidence, not for a logical or
analytic thesis, but for _material_ implication or equivalence. And
eventhen there is the danger of misconstruing semantic anomaly that
is a function of contextual implication as evidence for _either_ analytic
or syn hetic co-extensiveness.

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[19]We shall refer to utterances which sound odd to native
speake of a language, L, but which do not violate any of its
grammatical rules, as "semantically deviant utterances" or "semantically
anomalous". The expression "deviant utterance" is used by Paul Ziff
in _Semantic Analysis_ (Ithaca, New York: Cornell University Press, 1960)
in a more complicated way which I shall not attempt to emulate. For
Ziff an utterance is "deviant" if it deviates from some difficult
to specify, semantically relevant regularity. I shall simply
assume that, however the deviation is specified, it will be
phenomenologically apparent to native speakers as a kind of linguistic
oddity that is taxonomically distinct from the garden ungrammatical
variety.

Thus, in examining the procedures that have been used to establish the different versions of each of the three sorts of condition, we shall have to pay attention to (1) distinguishing between arguments for (a) logical and (b) material necessity, and (2) arguments to show that no further conditions than the three adduced are necessary. For (2) we shall similarly distinguish between arguments for (a) logical, and (b) material, sufficiency. We shall begin with arguments designed to establish the necessity of each of the three conditions. Naturally, on the level of the individual clause, arguments for sufficiency are confined to the contention that no further clauses of the same _sort_ are required. Although it has been traditional to treat arguments for joint sufficiency as part of the discussion of the evaluative or normative condition, it seems best to abandon this practice. This is the easiest way to avoid any insinuation that the normative condition is more intimately related to the problem of joint sufficiency than any of the other conditions. This _may_ turn out to be true. But we shall leave it an open question.

CHAPTER II

THE SEMANTIC CONDITION

> If someone knows the way to Larissa, or where
> you will, and goes there and guides others,
> will he not guide rightly and well?[25]

If someone knows the way to Larissa, then the way that he

knows <u>is</u> the way to Larissa. Or in terms of <u>knowing</u> <u>that</u> something

is the case, if he knows that W is the way to Larissa, then W <u>is</u> the

way to Larissa. If it is <u>not</u> the case that p, then it is false

that anyone <u>knows</u> that p. So we want to assert the truth of the

material conditional

2-1   "(S knows that p) $\supset$ p"

But what is it, exactly, that leads us to affirm this material

implication? What is our evidence? And what kind of evidence is

it?

Well what evidence did Socrates cite to persuade Menon?

He seems to be asking Menon whether it is not reasonable to have

certain expectations with regard to the performance of someone

who has knowledge. If someone knows that p we will expect him to

be able to carry off performances which <u>depend</u> upon the truth of p.

If all other conditions are favourable to doing an action A and the

feasability of A now hinges only on the efforts of the agent and

its being true that p, then if the agent <u>knows</u> that p and he <u>tries</u>

to do A, then A will occur. If the man says "I know that p" and

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[25]Meno 96, <u>op.</u> <u>cit.</u>, p. 64

tries unsuccessfully to do A, we will demur that he "couldn't have known" and that at best he only _thought_ he knew. Knowledge, in other words, is supposed to be useful for the successful management of our affairs. And part of its usefulness will depend upon its reliability in laying claim to truth. This has been echoed by C. I. Lewis:

> The primary and pervasive significance of knowledge
> lies in its guidance of action: knowing is for the
> sake of doing.[26]

He also emphasizes the extra-psychological factor involved in the evaluation of a knowledge claim.

> First, it is requisite that knowing be an assertive
> state of mind; it must intend, point to, or mean
> something other than what is discoverable in the
> mental state itself. Further, this believing attitude
> lays claim to truth: it submits itself to appraisal as
> correct or incorrect by reference to this something
> which it intends. Its status as knowledge is, by such
> intent, not determinable through examining the state of
> mind itself but only by the relation of it to something
> else.[27]

The assertive attitude involved in knowing "submits itself to appraisal as correct or incorrect by reference to this something which it intends" in the sense that there is an implicit understanding that one must recede from this cognitive position if the states of affairs to which one is thus oriented do not

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[26]C.I. Lewis, _An Analysis of Knowledge and Valuation_ (LaSalle, Illinois: Open Court Publishing Co., 1962), paperbound edition, p. 3. First published in 1946.

[27]_Ibid._ p. 9.

materialize.

§ 2.1 The retraction phenomena

There are a number of things which Socrates and Lewis might be aiming at in these behaviouristic suggestions. One is the rather familiar fact that if someone claims to know that something is the case and it turns out later that he was wrong, we cause him to retract or withdraw his previous claim to know.[28] His turning out to be wrong is sufficient for us to conclude that it is false that he knew. Since we now have the datum

2-2   "$-p \supset -(S$ knows that $p)$"

we arrive at 2-1 by simple contraposition. But can we uncover something more than material implication from an examination of this retraction phenomenon?

How are the criteria governing the retraction of some expression or a statement related to what it means and whether it is true? Let us consider a commonplace instance where "retraction" is called for. A newspaper publishes an account

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[28]In this respect the logic of "knows" is very similar to the logic of having a right to say "I told you so!" Indeed, we might very well utter on the same occasion, "You see, I knew. I told you that would happen." (And the counter which demands a retraction on other grounds--"You couldn't have known. You must have guessed." But this is another story. Anticipating, notice that if you just guessed not only didn't you know but you have (again) no right to say "I told you so!") The functional relationships between the logic of these two sorts of locution will be a useful criterion in the analysis of "knows" when we come to consider the Gettier counter-examples. It will help us to locate the damage. But we must then consider and reject arguments which use the quasi-co-extensiveness of the appropriate use of this locution with the correct use of "knows" as evidence for a performative analysis of "S knows that p."

in which there is a slanderous inaccuracy. An innocent person
is implicated in a crime. If this was not intentional the news-
paper may then print a retraction of its original statement.

Suppose the original statement was:

John Jones was arraigned today on charges of
drunken and disorderly conduct. There were
also charges of criminal negligence for driving
to the common danger and driving while
intoxicated.

What are the possible retractions?

(a)   It was Jim Jones not John Jones who was involved.

(b)   The charges were simply driving without a
licence and not drunken driving.

And so on.

Now what bearing does the necessity of these retractions
have on the meaning and truth of the original? Of course we can
conclude immediately that the original statement was false and
inaccurate. But what conclusion can we draw regarding the
criteria of application or the meaning of the original? Was
the newspaper mistaken in the criteria of application it had
employed in deciding to issue the original statement?

I take it that we would give a correct report of or
accurate instructions in the use of the criteria for uttering
some given statement 'S' somewhat as follows:

2-3   Whenever speakers of English (or L)
believe that a state of affairs of
kind K obtains, they express their
belief that this state of affairs
obtains by uttering 'S'.

or

> Speakers of L express the proposition
> that p by uttering the sentence 'S'.

Thus, provided that the speaker believed that p, we cannot accuse him of having misused the language in uttering 'S' even if p was not in fact the case. In other words, though at t conditions exist sufficient to require a later retraction of a given utterance at t, they need not impugn the criterial legitimacy of that utterance at t or rather the linguistic propriety of such an utterance, and they do not entail a revision of the criteria of application of the utterance but only a re-assessment of the applicability of those same criteria.[29]

Now we might wonder whether there are any linguistic expressions which are systematically subject to retraction in such a way that the conditions for retracting them impugn the criterial legitimacy of the original utterance of them. But this would seem to involve a logical absurdity. For how could conditions later than the time of utterance impugn the

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[29] We shall find, however, that in the case of the Gettier counter-examples conditions existing at t which are sufficient to require a later retraction of an utterance at t are not sufficient, if their presence is known at t, to require a revision of the original decision to apply the utterance under the circumstances. Thus the diachronic retraction phenomena are not analytically co-extensive with phenomena of revision given the synchronic addition of postulated new information. (The theoretical problems which are thus generated are beyond the scope of this work.) This is why we have not assimilated the present retraction phenomenon to the related datum that when a person believes at t that ~p he will also believe at t that it is false that anyone knows that p. In this case the two happen to go together (and this in itself is interesting).

criterial legitimacy of the utterance unless the speaker was aware of these conditions and deliberately ignored them?

In the case of our newspaper example we can imagine someone thinking that by the words "Jones was found driving while intoxicated" he had expressed the proposition that Jones had been poisoned and was found driving his car in that state. We might then point out that a criterial misunderstanding was responsible for the error and that the expression "intoxicated" did not mean "poisoned" but rather "drunk".

Here, then, we have an instance of retraction which is demanded on criterial or lexicographic grounds rather than for extra-linguistic or material reasons. But this is a case, notice, where it would have been possible to discover the mis-application at the time of utterance. A better speaker of the English language who wanted to express the proposition in question would have been able to supply the correct linguistic expression even though he had the same extra-linguistic beliefs and information as the faulty speaker. Thus an error which is due to a mis-application of criteria at the time of utterance falls into the class of those utterances which are theoretically subject to revision at the time they are being spoken.

But what we have been seeking after is the possibility of an utterance being considered criterially mis-applied because it was later necessary to retract it, even though at the time a better speaker of the language could not make the correction

given only the extra-linguistic information that was available to
the original speaker. It is due to information only available at
a later time that the need to retract the original statement
becomes evident. And we are wondering whether there are or could
be statements whose criteria of application are determined by, or
are a function of, conditions which might necessitate their
retraction, even though information concerning these conditions
may be unavailable at the time of utterance. I think that we
can sense the prima facie implausibility of such a suggestion.
A rigorous refutation, however, would involve some complex
considerations which would take us far afield.

What we want to know now is just how much we can infer
about the meaning of a statement from the fact that its retraction
was required by certain information. And we shall assume for this
purpose that the possibility mentioned above is untenable. In the
example that we considered the original statement was a conjunction
of the form

$$p \cdot q.$$

while the information necessitating the withdrawal of this
conjunctive claim consisted of facts entailing either the denial
of p or the denial of q.

Let us consider a different sort of example, however, in
which we are not told what the original statement was. We are
told simply that some statement X was issued and subsequently

retracted when it was learned that -p. All that we know, then, is that the falsity of p is a sufficient condition for the falsity of "X". (Or at least it is a sufficient condition if not known at the time of utterance and subsequently discovered. In this case, as we have mentioned, it is a synchronically sufficient condition as well; so we can use "sufficient condition for the falsity of "X" " without temporal sorts of qualifications.) Can we infer from this that in uttering 'X' the agent said at least in part that p?

But suppose that 'X' stands for the statement, "Jones committed a morally wrong action yesterday." whereas "p" expresses the proposition that the action the agent performed failed to conform to an impartial optimific rule. So learning that -p causes us to retract 'X' even though we did not say that p as all or as part of what we said in uttering 'X'. To cite such an example is not to beg any questions concerning synthetic necessary connections. As long as there are sufficiently uniform synthetic connections, conceptual or otherwise, which remain unquestioned in our thought patterns and our language practices, people will continue to recognize truth conditions for various utterances which are analytically unrelated to them.

For example, if 'X' stood for the sentence, "This is a bar of copper" and we learned that this bar failed to expand when heated, we should withdraw our claim that the bar was composed of copper. But in saying that it was a bar of copper we did not say that it would expand when heated. It is just that we believe that

all bits of copper expand when heated just as some think that all right actions conform to certain sorts of rules or that they are all optimific or that they have characteristic C. I think that it is clear, then, that the retraction phenomenon is direct evidence for nothing more than material implication, and that we shall require further evidence to corroborate the claim that "(S knows that p) $\supset$ p" is logically and analytically true. This is not to deny that we now have <u>indirect</u> evidence for a logical thesis insofar as we have imposed extensional constraints upon the range of possible definitions.

Now we might want to supplement the evidence provided by the phenomenon of retraction by pointing to the existence of a number of semantically deviant utterances. We might, for example, cite the following.

2-4.   "It is false that p. And I know that p."

2-5   "p. Moreover, I know that -p."

But, then, we also have the following anomalous doxastic conjunctions:

2-6.   "It is false that p. And I believe that p."

2-7.   "p. Moreover, I believe that -p."

We are not at a stalemate however. The epistemic combination

2-8   "p. Moreover, <u>you</u> know that -p."

retains the semantic anomaly of 2-5. But its doxastic counterparts

2-9   "p. Moreover, you believe that -p." (said accusingly)

                                    or

            "You believe that -p. But it is in fact the case
            that p." (said by way of revelation)

are not semantically deviant. Moreover, the same pattern is
repeated when we substitute third person pronouns or proper names
in place of 'I'. For example

2-10   "She knows that p. But it is not the case that p."
           "p. Moreover, John knows that -p."
                      etc.

are anomalous. Yet none of the doxastic counterparts are anomalous.
Accordingly, we can conclude that the first person anomalies in the
case of the doxastic sentences may be attributed to contextual
implication. On the other hand, this is hardly plausible in the
case of the epistemic locutions.

Thus it seems fair to conclude that the evidence provided
by the semantically deviant epistemic utterances in conjunction
with the weaker evidence of the retraction phenomenon constitute
a sound basis for the claim that

2-1   "(S knows that p) $\supset$ p"

is logically true and, more specifically, that the truth of the
consequent is an analytically necessary condition for the truth
of the antecedent.

2.2 The adaptive criterion.

Another thing which Plato hints at in his example of the
guide to Larissa and that C.I. Lewis deals with more explicitly
is the intuitive conviction that many of us have that knowledge
is, at least in principle, useful. It must have at least
potential utility for achieving an adaptive response to external
stimuli. Thus Lewis, after saying in conformity with the

tradition

> Knowledge is belief which not only is true but also
> is justified in its believing attitude.

adds

> Whoever knows or claims to know must admit the
> pertinence of the challenge, "How do you know; what
> warrants you in believing?" And he must also find answer
> to the even more fundamental challenge, "What do you
> mean; what fact or state of affairs do you point to;
> and how will what you indicate disclose itself?"
> Implicitly he agrees that he should recede from his
> assertive attitude if either of these two challenges
> cannot be met.[30] [The second emphasis is mine.]

This second "more fundamental" challenge is what concerns

us here, because it entails the satisfaction of a semantic

condition; but perhaps something that goes beyond the simple

semantic condition in the traditional analysis. What might be

required is a systemic semantic condition.

Lewis takes the second to be the more fundamental challenge

because of his contention that the "primary and pervasive

significance of knowledge lies in its guidance of action." And

if knowledge that p is to function as a guide to action, antici-

pation of the fact that p must involve some quite definite

expectations in future experience. How, in concrete experiential

terms, will the fact that p disclose itself?

In the sense that such questions are more immediately

relevant to our continued existence and our ability to maintain

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[30] C.I. Lewis, op. cit., p. 9

beneficial and desirable transactions with environmental forces,
one must admit that this is a "more fundamental" challenge. But,
of course, for theoretical purposes in epistemology, we shall
just take this as providing a possible synthetic criterion or
test for the existence of genuine instances of knowledge. What
we should like to have is a co-extensive property of knowledge
or what John Hospers calls "a universally accompanying character-
istic."[31] Now it would be rather simple-minded to believe that
"being adaptive" is co-extensive with knowledge, since, presumably,
knowledge can be used for self-destruction. This is why we spoke
originally of usefulness "in principle" or "potential utility"
for adaptive behaviour. But I think it will be best if we stay
within the framework of the naive thesis for a little while
longer. When we have some idea of the common-sense rationale
behind this proposal then we shall be able to introduce the
necessary qualifications.

If we held that knowing is for the sake of doing then
perhaps we might want to add that it is primarily for the sake of
doing better, so that we may change our behaviour from a less to
a more beneficial and survival-promoting form. Thus no belief
would count as knowledge if that belief leads to an increased
chance of future error. If the burned child does not dread the
fire that will lead to his being burned again. His false belief

that the fire is not dangerous seems to be a non-adaptive doxastic posture, increasing the possibility of future error and of harm to himself. Would we not say of a child who rushes towards the fire, eagerly, after having been burned, that he has not learned, that he should know better?

As a first approximation, let us say that a belief is adaptive if it maintains the possibility of future error within certain tolerable limits. At best, it lessens the possibility of such error, but under no circumstances does it increase this possibility. In that case we might want to say that knowledge is co-extensive with adaptive belief, belief which minimizes the possibility of future error or, at any rate, maintains it within such bounds that, at the very least, it does not increase it. This would synthetically require the traditional semantic condition, since the possession of a false belief ensures the recurrence of the same error. Now when we speak of lessening the possibility of future error, although this might be taken to include possibilities for error in various conceivable circumstances, we refer essentially to possibilities for error should the same circumstances recur. We are primarily interested in the improvement of the child's behaviour the next time he encounters a fire.

Here someone might quite correctly point out that placing an adaptive requirement upon belief does not seem to make it co-extensive so much with knowledge as with true belief simpliciter. Going back to the Meno, we find Socrates saying

> And so long as he has a right opinion about that
> which the other has knowledge, he will be quite as
> good a guide as the one who knows, although he does
> not know, but only thinks, what is true.[32]

And this is an unanswerable objection so long as we confine our
attention to the belief which is a candidate for knowledge.

But whatever reasons we may have for believing something,
they constitute, together with this belief, the more complex
belief that something is true for certain specifiable reasons.
It is clear that in order for someone's belief that p to count
as knowledge that belief must have a particular relationship to
some set of his beliefs. These need not be other beliefs. For
we may want to consider the case in which the set has one member,
the belief that p itself, and the relationship is the reflexive
one of self-evidence. This total complex of beliefs including
the belief that p might be conveniently divided into (1) the
doxastic basis, the set of beliefs which the agent takes to be
evidentially related to p and on the basis of which he believes
that p, and (2) the proximate doxastic outcome or conclusion,
the belief that p, a psychological state the acquisition of which
is an outcome of the existence of the doxastic basis either in
some causal sense or as a result of "rational activity" on the
part of the agent. But another doxastic outcome which we might
describe as the terminal doxastic outcome is the complex belief
that "p" is true for the reasons to be found in (1) or on account
of the fact that the beliefs in (1) are true.

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[32] Meno 97, op. cit., p. 64

In other words, whenever we believe that p on the basis of a set of beliefs R, we believe (1) it is the case that p, (2) it is the case that R, and (3) (a) it would not be the case that R unless it were the case that p, or (b) it is not likely to be the case that R unless it were the case that p. Now we would not adhere to the conclusion, viz. (1) if we did not adhere to the complex belief consisting of the conjunction of (1), (2) and (3). But if the complex belief were false it would not follow that the conclusion is false. Nor if we reject the complex belief as non-adaptive need the same fate attend the conclusion.

However, we can show that if the complex terminal outcome is adaptive, then it follows that the conclusion is so as well. Similarly if (3) is true it follows that the conclusion is true. This follows directly, since (3) states that it is the case that p. But it will also follow indirectly from the fact that the terminal outcome is adaptive, provided that we can show that this is a sufficient condition for the adaptiveness of the conclusion. For we have already shown that adaptive belief must be true belief. But the fact that the conclusion may be adaptive even though the complex belief is not corresponds to the fact that true belief need not count as knowledge.

We shall suggest, then, that the adaptiveness of the terminal outcome, viz., (3), is co-extensive with knowledge that p. And I think that it is now time, given the importance of this claim, to tighten up our characterization of adaptiveness,

so that we shall be able to see exactly what this claim amounts
to. What I shall attempt to do is to provide an artificial
concept similar to our intuitive notion of "adaptive behaviour"
on the basis of which we can state a co-extensive property of
knowledge that p. We can then say that a belief is adaptive if
it leads to adaptive behaviour. A belief will then count as
knowledge if and only if its associated terminal doxastic outcome
is adaptive.

We said as a first approximation that a belief is adaptive
if it is able to minimize the possibility of future error or at
least to maintain the possibility of such error within certain
limits. This was a way of saying that the belief will lead to
adaptive behaviour. Now the belief cannot of itself lead to
any sort of behaviour. But we want to say that action based
upon such beliefs will have or lack an adaptive character in
virtue of the nature of these beliefs. In dealing with the
adaptive character of the agent's behaviour on an intuitive
level we are probably harbouring some evaluative pre-suppositions.
To adapt or adjust to one's environment is to act in such a way
as to maximally exploit environmental forces for one's own benefit.
This involves avoiding conditions which are harmful or noxious,
seeking those which are beneficial and perhaps more or less
actively manipulating and interfering with the external world in
order to bring about a desirable relationship. But in that case
the judgment that one's behaviour is adaptive is very similar to

the judgment that such behaviour is prudent or wise. Adaptive behaviour would then be behaviour that is in the genuine interest of the agent.

But we wish to avoid any normative characterization of adaptiveness so that our co-extensive property will be specifiable completely in purely descriptive terms. To this end we might look for a concept of adaptiveness which is analagous to a concept of subjectively prudential behaviour, behaviour that is prudent relative to idiosyncratic conceptions of the desirable that may be harboured by the agent. We might then have a use for such terms as "a prudentially good motive" and "a prudentially right action" which when in combination would characterize the objectively prudential agent who habitually performs prudentially good actions. However we shall carry this program out without having recourse to this terminology, because there are certain things that would be lost if we abandoned the idioms connected with the concept of adaptation and there are certain irrelevant elements which we want to ignore lodged in the concept of prudential behaviour. What we are after is a particular relationship that is specifiable in non-normative terms and which holds between (i) the beliefs of an agent, (ii) his actions on the basis of these beliefs, (iii) the goals which he seeks to obtain by means of these actions, and (iv) the environmental conditions which obtain in the situation of action. When these four are related to one another in a specific way we shall say that the behaviour in (ii) is adaptive with respect to the goals in (iii)

and that, derivatively, the beliefs in (i) are adaptive beliefs.
Or in short, we will say that the beliefs are goal adaptive.
Any normative or prudential considerations imported into this
context will constitute a red herring.

Nevertheless, arguing on a common sense prudential level
will be a useful tool for the isolation of the elements in the
relationship which we wish to focus attention upon. One aspect
of the relationship is brought out by a simple prudential example
taken from Lewis. If we know that an explosion is going to take
place in a certain spatio-temporal region, our behaviour will be
adaptive if we take precautions to be elsewhere at the time or
if we make provision for confining its effects. The point is
that no categorical prediction of any experience is contained in
the fact that p. And similarly no categorical anticipation of
any experience is contained in the belief that p. All the same
"the utility of knowledge lies in the control it gives us,
through appropriate action, over the quality of our future
experience."[33]

But this control is only available because <u>hypothetical</u>
predictions of particular experiences contingent upon particular
actions <u>are</u> "contained" in the fact that p. And similarly,
hypothetical anticipations of particular experiences contingent
upon particular actions are "contained" in the <u>belief</u> that p.

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[33] C.I. Lewis, <u>op. cit.</u>, p. 4

The relationship between these two sets of hypotheticals, which is a semantic relationship, will determine the adaptiveness of behaviour predicated upon the belief that p. It is this antici- pation of future experiences contingent upon action on the basis of present experiences which enables us to develop more complex modes of consciousness in which present experiences are invested with more than momentary significance.

In this connection Lewis cites Spencer's suggestion that animals lacking distance receptors (senses of sight or hearing or smell) are restricted in the range of their adaptive responses to simple reflexes determined by the harmful or beneficial nature of the immediate stimulus-object.

> The animal with distance receptors has a use for more complex modes of reaction, and for the capacity to respond to stimuli as signs rather than merely to their character as immediate; because what is perceived at a distance is not at the moment affecting the organism either beneficially or harmfully, and whether it will later work some benefit or harm may depend upon the mode of action which is adopted.[34]

But it must be added that it will also depend upon whether the organism wishes to avoid harm and seeks to benefit itself, and it also depends upon what the organism thinks is harmful and what the organism believes to be noxious. Now given that the organism wishes to avoid harm and it believes that an explosion in its immediate neighbourhood will be harmful and an explosion in its immediate neighbourhood would be harmful, then true

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[34] Lewis, op. cit., p. 13.

beliefs as to where and when the explosions are going to be are
certainly adaptive beliefs and they will have utility for the
choice of a prudent course of action suitably adjusted to pre-
vailing conditions. They will also be goal adaptive beliefs in
the sense that they will enable the agent to avoid what he wants
to avoid whether rightly or wrongly. False beliefs in connection
with the explosions will be both prudentially non-adaptive and
goal non-adaptive, since they might lead to errors, such as
getting oneself blown up, especially when this is what one wanted
to avoid.

However, even being right about where and when an
explosion will take place is both prudentially non-adaptive and
goal non-adaptive when one is right for the wrong reasons. For
example, if we are in a mine field in which all of the mines have
been disguised as black rocks but we believe that they have been
disguised as white rocks, we might fortuitously avoid an
explosion by keeping away from a white rock that was adjacent
to a black one. Let us describe the sort of thing that has
happened here as "being right for the wrong reasons". (We shall
see in a little while that this is what Moore would call a case
of believing what is true for a bad reason. See §4.11.) Now
in this particular case, what would be the terminal doxastic
outcome, to use our previous terminology? The agent would be
harbouring the complex resultant belief that (1) an explosion
will occur at a particular location, (2) because of the presence

of a white rock, and (3) because all of the mines have been
disguised as white rocks. This complex belief is non-adaptive
and will lead to future errors of two sorts: (a) avoiding,
unnecessarily, pleasant and beneficial circumstances because of
the supposed harmful presence of explosive white rocks, and (b)
the fatal non-avoidance of black rocks, except fortuitously.
Thus although the conclusion was adaptive, the complex terminal
outcome is non-adaptive and we shall, on these grounds, withhold
the claim that he knew that an explosion would take place at the
location in question. (Whether we have a right to deny that he
knew on the basis of what we mean when we say that a person
knows that p, will not be argued now. All that we are trying to
do now is to illustrate some of the knowledge claims which would
be excluded by our criterion. The one above corresponds with
one of the Gettier counter-examples (not to mention Moore and
Russell and Woozley). We shall attempt to show later on that
our synthetic criterion is co-extensive with all of the acceptable
knowledge claims, omitting only those which are excluded by valid
counter-examples.)

We can explore some of the ramifications of this concept
of the adaptiveness of the terminal doxastic outcome by
considering a slight variation on the above situation. Let us
suppose that the situation is the same as before except that by
some coincidence the white rocks are located at all and only those
places where there are black rocks. We might now want to say that
the complex belief which constitutes the terminal doxastic

outcome is adaptive, although we would still not want to count

it as knowledge. It is prudentially adaptive insofar as it

leads to behaviour that is beneficial and survival promoting

and it is goal adaptive with respect to the goal of seeking

peaceful and non-explosive surroundings. For with respect to

any particular location, the belief that an explosion will occur

at that location because of the presence of a white rock which

is in fact a disguised land mine, is, although a false terminal

outcome,[35] uniformly associated with a true conclusion or proximate

outcome concerning the explosiveness of the situation at that

location. And this will lead to perfectly appropriate prudential

behaviour and consistently goal adaptive responses with respect

to the goal of avoiding the exploding land mines.

This is an unwanted result which we shall be able to

obviate completely when we remove our discussion from the

intuitive level connected with the concept of prudential adaptive

behaviour to a related but largely stipulative and precised

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[35] The fact that the terminal doxastic outcome is false
here may immediately put the reader in mind of a systemic-
semantic condition which we shall present in §4.3 as one of a
proposed set of three conditions which are individually necessary
and jointly sufficient for knowledge that p. But as we have said,
we are not here concerned with exploiting the pre-analytic data
concerning the use of "knows" to produce an analysis of 'knows"
but rather to provide a synthetic universally accompanying
characteristic of knowledge which, if reasonably well established,
will serve to defend and corroborate our subsequent analysis.

concept of goal adaptiveness. Moreover, as we have seen, the concept of goal adaptive behaviour with respect to a <u>particular</u> goal, lands us in the same difficulties. Accordingly we shall have to introduce a more generalized concept.

Since we want to avoid both the question of the actual coincidence of the organism's beliefs about what is harmful or beneficial with what is <u>indeed</u> harmful or beneficial and the teleological restriction to a particular goal, while at the same time capturing the specific contribution that is made by knowledge to adaptive behaviour when such coincidence and restrictions are present, let us introduce a generalized concept of goal adaptive belief in the following way.

We can state, to begin with, a more specific version of the elements in the situation the relationship between which we shall consider relevant to this generalized concept. These will be (i) the beliefs of the agent, (ii) his possible actions on the basis of these beliefs, (iii) the goals (a) which he actually seeks to obtain by means of these actions, and (b) which he <u>might</u> seek to obtain by means of these actions, and (iv) the environmental conditions which obtain in the situation of action. Where these are related in a particular way to the agent's belief that p we shall say that his belief that p is goal adaptive (which will now be construed in the generalized sense). Let us now stipulate a condition of adequacy for a formalized conception of goal adaptive belief.

2-11.   <u>Convention</u>. A belief is goal adaptive under specified

circumstances if and only if it would function to minimize the
possibility of error in acting to achieve any arbitrarily selected
goal under such circumstances, or at least would fail to increase
the possibility of such error.

Taking this as an informal formulation of a condition
which any proposed formalization of the concept of goal adapt-
iveness must fulfill, we can sense some immediate advantages.
We are tempted, for example, to say now that a true belief, no
matter what it is about, cannot possibly <u>increase</u> the chances of
making a wrong move towards the attainment of a goal; at least
so long as it is considered in isolation from the possible
effects of accompanying false beliefs. At worst the true belief
will be irrelevant. At best it will be exploitable. We might,
of course, have to construe a doxastic posture somewhat as Lewis
does so as to involve an accurate conception of how some state
of affairs will "disclose itself".

Our problem here is that it <u>is</u> possible to come to a
false conclusion on the basis of a true belief because of other
beliefs which are false or because of faulty inference procedures.
But let us lay down dogmatically, for the time being, that we
are less likely to arrive at a false conclusion on the basis of
a true belief than on the basis of a false belief. Nothing
much will turn upon this assumption because we shall eventually
be able to dispense with it. And the above problem is only a
problem, anyway, because we think that false beliefs <u>are</u> likely

to lead to teleological errors and further false beliefs, in
contrast with the teleological utility and fruitfulness in
generating truths of true beliefs. It would be no objection
that false beliefs might be generated unless we thought it was
prima facie plausible to suppose that these might be non-
adaptive.

In order to explain what is meant by a belief functioning
to minimize the possibility of error in acting towards an
arbitrarily selected goal, let us go back to the idea of the
feasability of an action depending upon its being true that p
and its actual accomplishment upon the exertion of an effort
upon the part of the agent. Previously, in considering the
expectations that we have with regard to the behaviour of some-
one who has knowledge, we suggested that if all other conditions
are favourable to the performance of the action A and the
accomplishment of A now hinges only on the efforts of the agent
and its being true that p, then if the agent knows that p and
tries to do A, he will succeed.

Now take any set of circumstances in which the agent
finds himself at some particular time t_0. We can then specify a
set of actions at least one of which the agent must perform at
that time.

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36 If we were to exclude the possibility of "disjunctive
actions" we would say "exactly one". We have logically excluded
non-performance of any member of the set by counting "total
inaction" as an action in the set. This would be the complement
of a disjunctive action; i.e., not either A, or A_2, or ....
or A_3.

Furthermore, given any action that is a member of the set, say A_i, a sufficient condition for its performance at t_0 is that the agent tries to perform A_i at t_0. Let us refer to this set of actions as the actions which are "circumstantially available to the agent in the initial phase of behaviour". They are "circumstantially available" in the sense that they are the actions which, given the facts of the situation, can be accomplished simply by exerting an effort to accomplish them. Efforts to accomplish other actions are not favoured in this way by the exigencies of this particular situation. By the "initial phase of behaviour" we refer simply to the stretch of time occupied by the performance of an action at t_0. We may assume, without loss of generality, that each of the circumstantially available alternatives takes the same amount of time to perform.

Similarly, with regard to any set of circumstances in which the agent finds himself at t_0, there will be a set of actions which the agent believes exhausts the alternatives available to him at t_0. And for any member of this set, say A_j, the agent believes that a sufficient condition for its performance at t_0 is his attempting to perform it at t_0. We can refer to these as the "doxastically available" alternatives in the initial phase of behaviour. Assuming that the agent tries to accomplish only what he believes he will be able to succeed in accomplishing, then if the doxastically available alternatives coincide with the circumstantially available ones, the agent will succeed in performing

at t_0 exactly those actions which he tries (at t_0) to perform
at t_0.

Now for any arbitrarily selected goal which the agent
might adopt under the circumstances obtaining at t_0, there will
be (a)(i) a set of actions which have utility for that goal,
(ii) a set of actions which are either irrelevant or have dis-
utility for that goal, (b)(i) a set of actions which the agent
believes to have utility for that goal, (ii) a set of actions
which are such that it is false that the agent believes that any
of them have utility for that goal; he either disbelieves that
they have utility, believes that they have disutility or are
irrelevant, or the question of their possible utility for this
goal has not been entertained. The divisions (i) and (ii) under
(a) represent an exclusive and exhaustive classification of the
circumstantially available alternatives, in the sense that all
of these will fall into one or the other of these two divisions
and none of them will be classified under both. On the other
hand, there may be members of either (a)(i) or (ii) which are
not among the available alternatives. For there may be actions
which, for example, would have utility for the goal in question
if they were performed, but which, under the circumstances, no
efforts will produce.

Similarly, the divisions (i) and (ii) under (b) are an
exclusive and exhaustive classification of the doxastically
available alternatives, even though the latter do not exhaust

the range of these categories. Once again it is easy to think of cases in which the agent might believe that a particular action would have utility for the goal in question if it were performed, while at the same time he is convinced that no efforts on his part will suffice to accomplish the action.

According to our informal convention 2-11, an agent has a goal adaptive belief, in effect, just in case he will behave adaptively on the basis of this belief relative to any arbitrarily chosen goal. Now we want to show that for an agent satisfying a certain set of conditions a true belief will be goal adaptive in this way. We shall then suggest that a belief that p on the part of any epistemic agent constitutes knowledge if and only if the associated doxastic terminal outcome would be goal adaptive in the sort of agent who satisfies the conditions.

Let us assume, first of all, that the agent is such that the sets (i) and (ii) in (a) coincide with their doxastic counterparts in (b); so that whenever the agent believes that an action would have utility for a particular goal he would be right, and whenever it is false that the agent believes of some action that it would have utility for some goal, then the action would either have disutility for that goal or be irrelevant. And we may also assume that the agent is so constituted psychologically that at any one time he has exactly one goal. So if an action is irrelevant to his current purpose it is irrelevant to his purposes in general. This will ensure that the actions which are irrelevant

to the goal in question do not have disutility for some other goal, making them non-adaptive.

Relative to our assumption that the two sets in (a) coincide with their doxastic counterparts in (b), we can now speak of two sets, U and non-U, corresponding to any goal the agent might select under the circumstances at t_0, such that any action that is a member of U would have utility for that goal and is believed by the agent to have utility for that goal, whereas both these things are false for every member of non-U. Now suppose that the agent selects the goal G_i and that the corresponding sets are U_i and $\overline{U}_i$. Consider any belief that p and any member of U_i, say A_i.

2-12. Assumption. If the agent believes that p and he believes that the accomplishment of A_i depends only upon its being true that p and a certain effort W and if he wants to attain G_i (he has selected this goal), then he will exert the effort W (i.e., he will try to do A_i).

It is not necessary to add that the agent believes that A_i has utility for G_i since this is guaranteed by our assumption that A_i is a member of U_i. That A_i is a member of U_i, however, does not guarantee that it belongs to the set of circumstantially available alternatives; although, by the above assumption, it is one of the doxastically available alternatives. A point that wants clarification here is the relationship between its being true that p and the accomplishment of A_i. Presumably, if it is

true that p, then A_i is among the alternatives made available to
the agent in the initial phase of behaviour. But we have said
that except for the exertion of an effort by the agent, the
accomplishment of A_i depends only upon the truth of p. So if
A_i is feasible at t_0, it is just in virtue of the fact that it
is the case that p at t_0.

Now let us stipulate a similar condition with regard to
the set $\bar{U}_i$. Again consider any belief that p and any member
of $\bar{U}_i$, O_i.

2-13   Assumption. If the agent believes that p and he
believes that the accomplishment of O_i depends only upon its
being true that p and a certain effort W and he wants to attain
G_i, then he will not exert the effort W.

The assumptions 13 and 14 might be referred to as the
postulates of "perfectly rational determination by wants".
However, the word "rational" here would be misleading, since we
have been able to formulate these assumptions in completely
descriptive terms (except possibly for "true" and "false").
Essentially, what we have described here is a conative-doxastic
automaton that is unperturbed by the vagaries of the decision-
making process. But we might well imagine that a perfectly
rational being would behave in exactly the same way. After all
what could be more rational than trying to get what you want by
doing whatever seems feasible towards the accomplishment of your
ends? Let us call these assumptions "the postulates of perfect

conative efficacy". With these assumptions we are in a position

to explicate a more precise concept of goal adaptive belief in

terms of which we shall state a property that is common and

peculiar to the instances of knowledge and is not just analy-

tically tantamount to their being instances of knowledge.

We may state what this property is quite simply as follows:

2-14.   The epistemic criterion of doxastic adaptivity.

S knows that p if and only if the doxastic terminal outcome

associated with S's belief that p is goal adaptive.

What needs to be shown is that (1) if the doxastic terminal

outcome associated with S's belief that p is goal adaptive then

S's belief that p is goal adaptive, (2) if S's belief that p is

goal adaptive then "p" is true, (3) if S knows that p then the

doxastic terminal outcome associated with S's belief that p is

goal adaptive, (4) if "p" is true then S's belief that p is goal

adaptive. And in each case a belief is goal adaptive just in

case it would be goal adaptive in an agent satisfying the

conditions we have laid down. (1), (2) and (3) in combination

entail the traditional semantic condition

2-1 .   "(S knows that p) $\supset$ p"

It will of course be pointed out that if we wish to demonstrate

our bi-conditional then we must also show that (5) if the

doxastic terminal outcome associated with S's belief that p is

goal adaptive then S knows that p. But this is something that

we can only presume, and we can only do so after we have considered

the philosophical nuisance value of the counter-examples. We

can presume this only after we have considered these, because in

order for a condition to be sufficient for knowledge it must be

able to account for any exceptional cases. And we can only presume

that it is sufficient even after we have accounted for the existing

counter-instances, unless we have a way of knowing that human

ingenuity will never devise a new kind of counter-example. The

best that we can do is to argue that we have been able to account

for an entire genus of counter-examples by producing further

species of this genus by means of our criterion, and by showing

that all of the existing exceptions can be generated by the same

process.

Let us begin by showing that if S satisfies the stipulated

conditions and he believes that p and it is the case that p, then

his belief that p is goal adaptive in a sense which satisfies the

informal convention 2-11.

Now the way we have set things up, whenever an agent

believes that an action would have utility for some goal he is

right. He may be wrong, however, in thinking that conditions

exist which will enable him to perform this action or in thinking

that conditions are such that they will prevent him from

performing this action. And so he may try to do something which

he cannot do, or he may fail to attempt a feasible action which

he would like to do. Let us construe both these sorts of error

as involving a belief that some action A_i is feasible or that

some action O_i is not feasible, because of circumstances believed

to obtain at t_0.. And we may express this fact by saying that S

believes that the accomplishment of A_i depends upon its being

true that p (or by saying that the non-accomplishment of O_i is

believed by S to be inevitable due to the fact that p), where

"p" is a proposition to the effect that the circumstances in

question obtain at t_0.

But there is an ambiguity connected with the relationship

between the accomplishment of A_i and its being true that p

similar to the one that we examined in the case of the assumptions

of conative efficacy. Does the agent believe that the accomplish-

ment of A_i depends upon anything else besides the truth of "p" and

a certain effort upon his part? Does he believe that O_i could not

be accomplished even if he tried just because it is the case that

p? And we shall want to ask the same questions about the actual

dependency relationship between the accomplishment of A_i and the

truth of "p".

Let us answer these questions as before. We shall assume

that if A_i is feasible at t_0, it is just in virtue of the fact

that it is the case that p at t_0, and similarly with the non-

feasibility of O_i. (We are using "feasible" to signify that the

action is such that the exertion of an effort W to perform it is

sufficient for its production. Otherwise the action is non-

feasible.) The reason for answering the questions in this way is

that we want to select from the circumstances obtaining at t_0 just

those facts which are essential to the feasibility or non-feasibility of the action in question.

Under the circumstances obtaining at t_0 we may assume that everything that is the case may be exhaustively enumerated by a set of propositions such as the following.

$$p_1, p_2, p_3, \quad \cdot \ \cdot \ \cdot \quad , p_n$$

Thus we could express the facts which obtain at t_0 by a conjunction P_k of this set of propositions. Now if we associate with the particular sort of effort that is required to accomplish some given action a subscript corresponding to that used for the action, we can represent the set of circumstantially available alternatives as a series of true conditionals of the following form:

$$(P_k . W_1) \supset A_1$$
$$(P_k . W_2) \supset A_2$$
$$\cdot$$
$$\cdot$$
$$\cdot$$
$$(P_k . W_n) \supset A_n$$

But for any particular action, it may not be the case that all of the facts represented by the conjunctive proposition P_k are essential to its feasibility. When we say that A_1 is an available alternative and depends upon its being true that p, then it follows that p is included in P_k. But just how does this follow? When we say that the feasibility of A_1 depends upon its being true that p, what we are saying is that given

W_1, A_1 will occur only if it is the case that p at t_0. In other words, if W_1 occurs at t_0, then if A_1 will occur then it is the case that p at t_0, or symbolically,

2-15.
$$W_1 \supset (A_1 \supset p)$$

or

$$(A_1 . W_1) \supset p$$

When we are told that A is an available alternative we are given

2-16.
$$W_1 \supset A_1.$$

But 16 is equivalent to

$$W_1 \supset (A_1 . W_1)$$

So we have in conjunction with 15

2-17.
$$W_1 \supset p$$

Of course this is a misleading formulation due to the paradoxes of material implication, since it appears that W_1 is somehow efficaceous in bringing about the fact that p. This is more like the idiomatic "If you want to do it, then you now have the opportunity", which does not admit of contraposition, and is simply a way of saying that you have the opportunity.

Accordingly, perhaps it will be best to construe the information that A_1 is an available alternative as follows:

2-18.
> There exists a proposition p such that it is the case that p and if S tries to perform A_1 when it is the case that p then A_1 will occur.

or

Now we have taken "the feasibility of A_1 depends upon its being true that "p" as

2-15. $$W_1 \supset (A_1 \supset p)$$

But in stating our assumptions of conative efficacy and in stipulating what it is that the agent believes when he believes that A_1 is feasible in the case of the set of doxastically available alternatives we stated the stronger condition that the agent believes that the feasibility of A_1 depends <u>only</u> upon the truth of "p". Then we would have

2-20. $$W \supset (A_1 \equiv p)$$

Thus when an agent believes that an option is open to him, say A_1, there exist a proposition p such that he believes that p and that the truth of p is not only a necessary condition for a successful attempt to do A_1 but also sufficient. If there did not exist such a proposition either a simple one or a conjunctive one, then our doxastic-conative automaton would not act. Nor would a perfectly rational being act if he thought that <u>only</u> a necessary condition for successful performance was fulfilled, although he might act if he only thought that a necessary condition was fulfilled but perhaps not <u>only</u> a necessary condition. But the agent we have characterized will <u>not</u> act on the off chance that a sufficient condition is present as well as a necessary one. So we might want to say that he is excessively prudent and deny him the title of "perfect rationality".

Schematizing the information that an action A_1 belongs to to the set of doxastically available alternatives, we would have, using 'Bp' for 'S believes that p',

2-21. $$(\exists p)[Bp.B(W_i \supset (A_i \equiv p))]$$

Now to say that an action was both circumstantially and doxastically available would simply involve the combination of 2-18 and 2-21.

2-22. $$(\exists p)[p.Bp.((W_i.p) \supset A_i).B(W_i \supset (A_i \equiv p))]$$

Assume that 2-22 is true of an agent who also satisfies the stipulated conditions. Let A_i be a member of a set U_i which has utility for some selected goal G_i. In that case the fact that $Bp.B(W_i \supset (A_i \supset p))$ will guarantee the occurrence of W_i given the assumption 2-12. Then from the fact that $W_i.p$ and $(W_i.p) \quad A_i$ it would follow that A_i.

On the other hand, if we suppose that A_i is a member of $\overline{U}_i$ assumption 2-13 will produce $-W_i$. This would seem to demonstrate that true belief as instanced in the pair of beliefs in 2-22 must be goal adaptive. But what if

2-23. $$(\exists q)[q.((-W_i.q) \supset X)]$$

where either $X = A_i$ or $X \neq A_i$? There are two sub-cases here. Either X is a member of U_i or X is a member of $\overline{U}_i$.

On the first alternative, an action that has utility for G_i will be performed unexpectedly. Nevertheless S's behaviour has been adaptive.

But on the second alternative we seem to have non-

adaptive behaviour on the basis of a true belief since the agent will unwittingly perform an action in $\overline{U}_i$. Accordingly it must be demonstrated that the non-adaptive behaviour is not <u>on the basis of</u> the true belief. If we imagine O_i a member of U_i performed, then the following must be false.

$$(a)\{[(W_i \cdot q) \supset O_i] \supset [Bq \cdot B(W_i \supset (O_i \equiv q))]\}$$

It must be that

$$(\exists q)\{[(W_i \cdot q) \supset O_i] \cdot -[Bq \cdot B(W_i \supset (O_i \equiv q))] \cdot q\}$$

And the second conjunct is logically equivalent to

$$(\exists q)[-Bq \lor -B(W_i \supset (O_i \equiv q))]$$

If $-Bq \cdot q$ it would be the absence of a true belief that q that is responsible for the non-adaptive behaviour. Similarly with $-B(W_i \supset (O_i \equiv q)) \cdot ((W_i \cdot q) \supset O_i)$. But here we might introduce a simplifying environmental assumption without loss of generality.

2-24. <u>Assumption.</u> $(i)(p)[((W_i \cdot p) \supset A_i) \equiv (W_i \supset (A_i \equiv p))]$

This does not mean that we are attributing this assumption to <u>our</u> environment. But whenever we have a belief of some sort related in a given way to other beliefs that we have and we wish to consider this belief as a candidate for knowledge, we shall import the entire doxastic set into a conative-doxastic automaton satisfying the previously stipulated conditions and then watch its behaviour in a particular sort of environment. This belief will count as knowledge just in case the automaton behaves adaptively in that environment on the basis of the terminal doxastic outcome associated with this belief.

In order to satisfy the convention 1.2-11, _viz._, that a belief is goal adaptive under specified circumstances if, and only if it would function to minimize the possibility of error in acting to achieve any arbitrarily selected goal under such circumstances, or at least would fail to increase the possibility of such error, it is necessary to show only that a true belief _functions_ in this way and not that non-adaptive behaviour could not occur _despite_ the presence of a true belief given the existence of action on the basis of false beliefs or due to a lack of true beliefs. And in showing that the denial of 2-21 must hold if a member of $\overline{U}_i$ is performed we have demonstrated that non-adaptive behaviour occurs only if either

$$-Bq.q \text{ ∿r } -B[W_j \supset (O_j \equiv q)].[W_j \supset (O_j \equiv q)]$$

However, by strengthening our assumptions we can even set up our automaton so that it never behaves non-adaptively when it possesses a true belief. A formal proof of this without using the environmental assumption is to be found in appendix A. Either of these automata will serve the purpose of providing a synthetic criterion for knowledge that p. Having shown above that true belief is adaptive in the way specified by the informal convention 2-11, it will be useful to provide a shorthand way of diagnosing the presence of a true belief in our doxastic-conative automaton. It is here that the point of introducing a _generalized_ conception of goal adaptive belief begins to emerge.

Let us consider the conditions under which our d-c automaton would attempt, unsuccessfully, to act. A sufficient

condition for an attempt to act is

2-21 $\qquad (\exists p)(Bp \cdot B(W_i \supset (A_i \equiv p)))$

so long as A_i is a member of a set U_i with respect to some

selected goal G_i. This is also a necessary condition. But in

order for A_i to occur it is also necessary that

2-18. $\qquad (\exists p)(p \cdot ((W_i \cdot p) \supset A_i))$

It would then follow that

2-25 $\qquad$ (i) $\{A_i \supset (\exists p)[(p \cdot Bp) \cdot B(W_i \supset (A_i \equiv p))]\}$

showing that if an action in U_i is performed based on the

belief that p in 2-21, that belief is true. Moreover, a condition

necessary for the performance of an act in U_i is the existence of

at least one belief that is true. This demonstrates, in part,

that if S's belief that p is goal adaptive then "p" is true.

But now let us examine the conditions for the non-occurrence of

an unsuccessful attempt to produce an action A_i. We have shown

above that if S attempts to produce some action A_i and fails to

do so then

$$(Bp \cdot -p) \vee [B(W_i \supset (A_i \equiv p)) \cdot -(W_i \supset (A_i \equiv p))]$$

He either believes falsely that p or he believes falsely that

$(W_i \supset (A_i \equiv p))$. So it follows that a necessary condition for

no unsuccessful attempts to produce some particular action is

$$(-Bp \vee p) \cdot [-B(W_i \supset (A_i \equiv p)) \vee (W_i \supset (A_i \equiv p))]$$

$$\text{or}$$

$$\ulcorner -Bp \cdot -B(W_i \supset (A_i \equiv p)) \urcorner \vee \ulcorner -Bp \cdot (W_i \supset (A_i \equiv p)) \urcorner \vee [p \cdot -B(W_i \supset (A_i \equiv p))] \vee [p \cdot (W_i \supset (A_i \equiv p))]$$

Now if we suppose that the agent believes that p and that no

unsuccessful attempts to perform a particular action occur then

our concern will be with the last two disjuncts

$$(p.-B(W_i \supset (A_i \equiv p))) \quad v \quad (p.(W_i \supset (A_i \equiv p)))$$

If the second of these obtains this will ensure that if S attempts

to perform A_i he will succeed. The first seems to describe a

situation in which no unsuccessful attempt would be made because

no <u>attempt</u> would be made. (This was also the case with the

previous two disjuncts since they both contained -Bp and one, in

addition, $-B(W_i \supset (A_i \equiv p))$.) But neither would an attempt be

made if we supposed $-p.-B(W_i \supset (A_i \equiv p))$ since $-B(W_i \supset (A_i \equiv p))$

seems to be the inhibiting factor.

Indeed if either -Bp or $-B(W_i \supset (A_i \equiv p))$ no attempt to

act will occur and in either case a false belief could be held

which would not seem to be dysfunctional under the circumstances

since the same lack of an attempt would occur in the case of a

corresponding true belief. For if -Bp then it is possible to

believe that $(W_i \supset (A_i \equiv p))$ and be wrong or right without this

seeming to make any difference to the course of behaviour. And

similarly with respect to $-B(W_i \supset (A_i \equiv p)$ where one might believe

that p and again be correct or mistaken without this making any

difference.

Here we may bring out a difference by exploiting our

generalized concept of goal adaptive belief. Will it be the

case that for <u>any</u> arbitrarily selected goal the occurrence of

an unsuccessful attempt to act will be independent of whether the beliefs referred to are true or false? Consider, for example, the case where $Bp.-p$ and with respect to some goal G_i

$$-B(W_i \supset (A_i \equiv p))$$

But can it be the case that with respect to <u>every</u> goal G_i

$-B(W_i \supset (A_i \equiv p))$? It will be recalled that it is impossible for the agent to refrain from performing <u>some</u> action at t_0. Furthermore, under the circumstances in which the agent believes that p there will be a set of actions which the agent <u>believes</u> exhausts the alternatives available to him. So for any p such that Bp there is <u>some</u> action A_j (perhaps total "inaction") with respect to which the agent believes $(W_j \supset (A_j \equiv p))$. With respect to that action an unsuccessful attempt will occur provided that it belongs to a set U_j of actions having utility for a goal G_j and it is the case that $-p$. (Thus the agent might attempt to remain motionless and find himself moving forward; admittedly, an artificial possibility.) Since we can always let $G_j = A_j$ we can avoid an unsuccessful attempt in this instance only if the agent has a true belief that p. If $-p$ then the agent will attempt to act unsuccessfully.

So the non-occurrence of unsuccessful attempts to act on the basis of a belief no matter <u>what</u> goal is selected requires the truth of that belief. A parallel argument that will hold for $-Bp.B(W_i \supset (A_i \equiv p))$ is not available, since variation of the goal selected can have no effect on S's lack of belief that p.

(And we might have suspected this since there are no subscripts associated with that of the goal in the expression '-Bp'.) Let it be understood, then, that when we speak of an action "based upon a given belief" we must restrict our attention in the above generalization to beliefs not involving subscripted variables. The latter are, in any case, idiosyncratic to our doxastic-conative device. It is the former that require our attention since these have been, so to speak, "plugged in" for investigation.

This characteristic of action based upon true belief as we vary the selected goal was derived from an argument to establish

2-26 $$(p)(\exists i)(B(W_i \supset (A_i \equiv p))).$$

Having arrived at this conclusion, we were able to show that the non-occurrence of unsuccessful attempts to act remains invariant with respect to changes in the selected goal only if action is on the basis of a true belief. Another necessary condition, of course, is the truth of his belief that $(W_j \supset (A_j \equiv p))$ for any A_j that is a member of a set U_j having utility for a goal G_j.

Of the four items that we suggested would require demonstration after having stated 2-14, we have so far dealt with

(4)   If "p" is true then S's belief that p is goal adaptive

and to some extent with

(2)   If S's belief that p is goal adaptive then "p" is true.

A detailed treatment of all four of the items mentioned will not be given here. For our purposes it will suffice to consider

(3)   If S knows that p then the doxastic terminal
        outcome associated with S's belief that p is
        goal adaptive.

on an informal intuitive level appealing minimally to schematization. This will serve as a criterion for a strong material condition in the analysis of "knows".

The difficulty in our example of the exploding land mines which prompted us to consider a generalized version of the concept of goal adaptive belief will serve as a convenient point of departure. By means of our criterion of adaptiveness with respect to a _fixed_ goal we found that we were able to exclude certain cases from the title of "knowledge" that we would also exclude on the basis of "intuitive considerations" (Which will have to be made explicit later on). Other unwanted cases, however, were not affected; and it was to cope with these that stronger measures were taken.

We imagined that the agent was in a mine field in which mines disguised as black rocks have been randomly distributed. We suppose that all black rocks and only black rocks are land mines in this situation. If the agent does not believe this then this would seem to increase his chances of getting blown up. However, we suggested that an agent who did not believe this and believed falsely that all of the mines have been disguised as white rocks might fortuitously avoid an explosion by keeping away from a white rock that happened to be adjacent to a black one. Nevertheless, the terminal doxastic outcome would be non-adaptive. For the belief that (1) an explosion will occur at a particular location, (2) because of the presence of a white rock, and (3) because all of the mines have been

disguised as white rocks, is a belief which will lead to the

unnecessary avoidance of harmless terrain and the fatal non-

avoidance of explosions, except fortuitously. The problem was

that if by some coincidence the white rocks are located at all

and only those places where there are black rocks, this would

seem to make that complex belief adaptive, even though we are

still reluctant to admit that S knew that an explosion would

occur at some particular location that he had avoided, luckily.

Let us describe the goal of the agent in this situation

as

G_1: Now being injured in an explosion.

Bp, the agent's belief that p, is his belief that an explosion

will occur at L_1, a given location in his immediate vicinity.

Let A_1 be the act of moving out of the way of an explosion which

would be a member of a set U_1 consisting of all acts conducive

to the goal of non-injury in an explosion.

Assuming

2-21 $\qquad (\exists p)(Bp \cdot B(W_1 \supset (A_1 \equiv p)))$

where "p" is the proposition that an explosion will occur at L_1,

we are assuming that S believes that an explosion will occur at

L_1 and that he will succeed in moving out of the way of an

explosion if he tries, just in case an explosion will occur at

L_1. We may symbolize the doxastic terminal outcome as 'Bp/q/r'

which may be read as 'S believes that it is the case that p

because it is the case that q and he believes it is the case

that q because it is the case that r.'

Now 2-21 will in this case lead to behaviour that is adaptive with respect to G_1 since $p.(W_1 \supset (A_1 \equiv p))$. But because $Bp/q/r$ is non-adaptive we shall show that there is a goal G_i which is such that $Bp.B(W_i \supset (A_i \equiv p))$ will lead to non-adaptive behaviour with respect to G_i, even though "p" is true. For $Bp/q/r$ will function in this instance to make $B(W_i \supset (A_i \equiv p))$ false. In '$Bp/q/r$' we have used 'q' to stand for 'There is a white rock at L_1' and 'r' for 'All and only white rocks have been disguised as mines'.

Suppose that the agent selects the goal

G_2:   Destroying an approaching enemy soldier with an explosive missile.

He might then attempt to perform the action A_2 of hurling a land mine at the approaching enemy. Instead he will have hurled a white rock and the real land mine, much to his chagrin, will explode at his feet.

This is because it is not the belief that p alone but rather the belief that p _qua_ belief that $p/q/r$ which provides the agent with his entire set of expectations of events or experiences contingent upon various actions. Hence the point of Lewis's remark that a belief will count as knowledge only if it can be explained how the truth that is being claimed will disclose itself given particular actions.

Accordingly, a necessary condition for the agent's belief that p_1 to count as knowledge is that the doxastic terminal

outcome $Bp_1/p_2/ \ldots /p_n$ must lead to no unsuccessful attempts
to act in our doxastic-conative automaton no matter what goal
may be selected and given the truth of all other beliefs upon
which action is based. We have shown earlier that an unsuccessful
attempt to act under these conditions can be avoided only in the
absence of a false belief in the pair $Bp.B(W_i \supset (A_i \equiv p))$.

Whenever the agent believes a complex such as $p_1/p_2/ \ldots /p_n$
then he also believes the conjunction $p_1.p_2. \ldots .p_n$. So if one
of these conjuncts is false, we can show that there is an action
A_i such that $B(W_i \supset (A_i \equiv (p_1.p_2. \ldots .p_n))).B(p_1.p_2. \ldots .p_n)$
where A_i is a member of a set U_i with respect to some goal G_i.
However, since $-(p_1.p_2. \ldots .p_n)$, there will ensue an unsuccessful
attempt to perform A_i.

A necessary semantic condition for knowledge that p that
seems to follow from this is the truth of the conjunction
$p_1.p_2. \ldots .p_n$. A stronger condition that might be needed is
the truth of $p_1/p_2/ \ldots /p_n$. We shall consider these in 2.21.

The criterion of goal adaptive belief will require more
than this necessary condition which might turn out to be co-
extensive with a syntactic-semantic condition. We may show,
for instance, that if S's belief that p is not justified it will
not be goal adaptive. And this will go beyond the condition that
$Bp_1/p_2/ \ldots /p_n$ must be true. For it will require that this
belief is itself justified or highly credible, which will
presumably depend upon the credibility of each link in the chain.

This too will be discussed in 2.21

Let us close this rather long section, somewhat ironically, with the following quotation from C. I. Lewis.

> It is too evident to require discussion that
> cognitively guided behaviour is merely the
> farthest reach of adaptive response, and that
> without this function of the appropriate
> guidance of action, our complex modes of
> knowledge would not have come to be.[37]   (My
> emphasis)

Well, for my part, I found that it was not quite evident enough

to enable us to dispense with discussion altogether.

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[37] C. I. Lewis, op. cit. p. 12.

CHAPTER III

THE PRAGMATIC CONDITIONS

The vocabulary that is used to state the normative

pragmatic condition is traditionally parasitic upon a psycho-

logical vocabulary drawn from one of the clauses that state the

non-normative pragmatic condition. The view taken here is that

this is not simply an accidental feature of the traditional formu-

lations of the normative condition and that any adequate formul-

ation of the normative condition will have an ultimate psychological

reference. We shall argue that if any clause appears to state a

satisfactory normative requirement and is prima facie devoid of

psychological orientation, then it is incomplete (or syncategorematic

as it stands and becomes intelligible only when a psychological

reference is supplied or tacitly understood.

That the requirement that is derivative from the psycho-

logical condition is a normative requirement, however, is a supposition

which I am afraid some philosophers are capable of disputing. They are

prepared to dispute this point because of a more general antipathy to

the normative-descriptive dichotomy itself. Yet it seems to me that

such objections presuppose all that we require for our analysis, so

long as it is admitted that there is a prima facie difference that we

can sense with regard to the two broad classes of terms which some

philosophers name by referring to the members of one class as "normative

temrs" and those of the other as "non-normative" or "descriptive."

If this much is conceded, then I am prepared to waive discussion of

how "basic" such a distinction is or how "deep" it runs through the fabric of our language. And is it possible to deny that there is some sort of difference apparent in the two classes of terms given that philosophers have been able to arrive at a fair degree of consensus as to the membership of these classes? It will be irrelevant that there are disputable border-line cases. One might as well argue that because it is difficult to classify a virus as either an animal or as a plant there are no basic differences between animals and plants.

We shall assume, then, that all of these psychologically derivative terms are evaluative of a class of psychological conditions or activities and of the agents who are subject to these conditions and who engage in these activities. Although a large class of these phenomena may be described either in terms of someone adopting or assuming a doxastic posture or attitude, or in terms of a related dispositional state, there remains a stubborn group of them which seem to belong to the same genus and yet are not obviously amenable to the doxastic classification. Let us single out the class of doxastic terms, recursively, as containing (1) the verb "to believe" and its morphemic transformations ("belief", "believing", etc.), (2) terms which analytically entail members of (1), and (3) no other members than may be deduced from (1) and (2).

This recursive characterization will not involve an analysis of "believe" itself but only a consideration of which other expressions will require a synonym for "belief" as part of their

analysis. The larger genus of terms comprises those terms which function in psychological statement prefixes. Thus in addition to "S believes that p" or "S is sure that p" which are clearly doxastic, we have such expressions as "S hopes that p", "S fears that p", "S is surprised that p", "S is pleased that p", "S is disturbed that p" and so on.

It might be plausible to suggest that such expressions as "S hopes that p" are analyzable into a combination of believing plus some sort of affective orientation towards what is being believed, such as being pleased at the prospect. But we shall not commit ourselves to any such program nor deny that this might be feasible. It seems best to remain neutral in this respect and recognize the possibility that the doxastic terms are a proper subset of a larger class of terms which are able to function as intensional psychological statement prefixes. And, of course, having mentioned the intensional classification, we can show that the psychological statement prefixes are members of a family of intensional prefixes including the modal operators "It is necessary that" and "It is possible that".

It might be worthwhile to note in passing that some of the psychological prefixes we have mentioned function less like "believes" than like "knows". For example, "S is surprised that it did not rain today" seems to entail, like "S knows that it did not rain today", that it did not rain today. It is similarly plausible to posit a semantic condition for "S is pleased that p" or "S is disturbed that p". For example, it would sound odd to say "She is

pleased that Johnson has been elected president and I am disturbed

that he has been elected. But Johnson has not been elected."

With these reservations concerning the possibility of reducing

all of the psychological statement prefixes to the doxastic vocabulary,

I shall not attempt to produce a list of terms which would be

properly classified as doxastic. We may assume that the phenomena

described in this vocabulary are psychological attitudes or "postures"

of some sort or dispositions to assume such attitudes and that, for

the most part, these attitudes admit of degrees. We shall assume

further that these may be contrary to one another.

Taking literally the image conjured up by the expressions

"inclination to believe" and "disinclination to believe", we shall

speak of "positive and negative doxastic inclination" as well as

"doxastic neutrality". On the other hand, we shall take "entertaining

the possibility that p", as well as "entertaining the proposition

that p" as necessary conditions for the acquisition of any doxastic

posture and not amenable to representation on this scale. Thus,

for example, to entertain the proposition that p will involve no

doxastic commitment whatever (and no reading on the doxometer).

Now I am satisfied to use the phrase "entertaining a

proposition" in just the way it is used by H. H. Price.[38]   Price

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[38]H. H. Price, "Some Considerations About Belief",
Proceedings of the Aristotelian Society, Vol. 25, 1935, p. 2 1.

draws our attention to the fact that we are able to understand a
sentence such as "A thunderstorm is now occuring in Siam" or
"There will be a general election in September" while neither
believing nor disbelieving what is thus before the mind.

> The understanding of such a statement is something
> different from merely hearing or reading the words
> which compose the statement: it is what I call
> entertaining a proposition.[39]

Price provides a slightly different explanation in the following:

> I do not know whether Smith is or is not brushing his
> hair at this moment, and I neither believe that he is
> doing so nor disbelieve it (why should I?). But I can
> and do think of him "as" brushing his hair at this
> moment. This situation where we think of something
> "as" such and such is what I am calling entertaining
> a proposition.[40]

But it seems to me that to consider or entertain the
possibility that p involves something over and beyond merely
entertaining the proposition that p. Thus we can imagine someone
without much of a scientific imagination entertaining the
proposition that a man will someday land upon the surface of the
moon without for a moment entertaining this as a possibility.
That he understands the statement "A man will someday land on the
surface of the moon" and that he is able to think of a man "as"
landing upon the moon, has no tendency to bring him to the point
of entertaining the possibility that a man will actually land upon

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[39] H. H. Price, op. cit., p. 232

[40] loc. cit.

the moon someday. To .use a phrase coined by William James, he has not entertained the proposition that p as a "live hypothesis" or a "living option".

Not only are we all familiar with the experience of understanding a statement such as "A thunderstorm is now occurring in Siam" but we are also perfectly familiar with the process of considering the possibility that this is happening by thinking to ourselves, "I *wonder* if a thunderstorm is now occurring in Siam" and then trying to *decide* whether this is happening. We are then actively considering whether we shall assent to or dissent from the proposition that p or whether we shall **suspend** judgment as to p. And this is what I mean b, "entertaining the possibility that p".

We shall consider these two processes, entertaining the proposition that p and entertaining the possibility that p as necessary conditions for the acquisition of a doxastic posture or attitude. Or we might say, following Strawson, that in attributing any degree of belief on the doxastic scale to an agent we are presupposing the prior occurrence of these two processes. Let us now attempt to list the expressions which describe the various positions on the doxastic spectrum. We shall then consider how these are used in the formulation of the doxastic condition fro the analysis of "knows"..

§ 3.1. The doxastic vocabulary.

The expressions listed are all descriptive of an intensional pragmatic relation between a subject and a porpositional object.

The relationship between the subject of the doxastic psychological
condition and this non-psychological entity seems to be an
asymmetrical one. Or at least this is what one is _prima facie_
entitled to assume from the grammar of such expressions as "S
belives that p". The contexts that are produced have that peculiar
sort of non-extensionality that has led people like Chisholm
(following Meinong) to suggest the "intentional inexistence" of
their objects. Let us define a non-extensional statement prefix as
one which produces a compound statement the truth-value of which is
not a function of the truth-value of its constituent statements.
Now the problem Chisholm was trying to solve is that of distin-
guishing between the types of non-extensional contexts produced by
modal operators and those produced by psychological statement
prefixes,[41] and I am not satisfied that he has managed this. But,
at any rate, we shall not be concerned with this problem here.

What I want to draw attention to is the temporal relationship
that might exist between the psychological and non-psychological
relata in these doxastic expressions. This will be of assistance
in devising a system of classification. For example, the object of
a hope is clearly future to the time at which it springs in the
breast of the subject, whereas that of a regret is chronologically
prior. The former is a prospective and the latter a retrospective
psychological orientation of the subject. Similarly with "expect"

or "seeming to remember".

Let us refer to such states as "diachronically oriented psychological conditions" and the corresponding verbs as "diachronic psychological verbs". Now a verb such as "believe" need not contain or express any temporal relation between the psychological and the non-psychological components of the relation. We shall refer to such a verb as a "non-diachronic psychological verb. What follows immediately is a list of non-diachronic doxastic expressions. It is usual to draw from this list in formulating the traditional doxastic condition in the analysis of "knows". Russell, however, uses a diachronic doxastic term "expects" to formulate his doxastic condition. We shall list these diachronic expressions afterwards.

I. Non-diachronic doxastic terms.

    A. Doxastic neutrality

        1. suspend judgment, neither believe nor disbelieve

        2. The sort of agent who tends to neutral doxastic attitudes might be described as unwilling to commit himself or doxastically cautious, perhaps, indifferent

    B. Positive doxastic inclination.

        1. Varieties of positive doxastic assent:

            a. believe, believe in, admit, accept, credit, give credit or credence to, put credence in, have or repose confidence in, be sure that p, be confident that p, be convinced that p, place reliance in or on, think, opine, be of the opinion that p, consider, deem; have or hold or possess or adopt or imbibe or embrace or foster or nurture or cherish a belief or an opinion that p, espouse p, assent to p, hold that p.

b. (1) estimate,conjecture, guess, suppose, assume,
            presume, have it that p, take it that p, judge,
     (2) surmise, conclude, draw or come to or arrive at
            a conclusion, gather, infer, glean, deduce, (form
            an opinion) reason that p,

c. prefer, accept, select, opt for, fix upon, fasten upon,
    choose, secide

2. The following are terms descriptive of agents who tend to
the activities or dispositional states above. Although
some of these terms may have a normative or evaluative
sense, we shall be concerned now with their descriptive
sense only.

    a. credulous, gullible, easily convinced, ready or
        inclined to believe, naive, overcredulous (perhaps
        this is only used in a normative sense)

    b. Doxastic styles.
       (1) The doxastic adventurer.

           having a tendency to conjecture or make conjectures,
           conjecturer, speculator, theorizer, supposer,
           surmiser, guesser[42]

       (2) Doxastic hastiness of lack of caution.

           quick to form an opinion, tending to take things
           for granted, jumping or rushing to conclusions,
           coming to hasty conclusions

    c. We might refer to the person who tends to "fix upon"
        of "fasten upon" on opinion as "the prehensile
        believer". This is the sort of individual who tends
        not to prolong any process or entertaining various
        possibilities, but homes in immediately upon one of
        the alternatives and fastens upon it tenaciously. He
        has a dread of the insecurity which attends an
        undecided state of mind, an impatience with doubt and
        uncertainty, which causes him, without going through

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[42]It is natural that a person who has a tendency to hazard
or venture a quess or conjecture will also tend to invest whatever
it is that he conjectures with _some_ degree of credibility. Indeed,
one might well expect such a person to be extremely credulous with
respect to his own conjectures and be _very strongly_ inclined to
believe them. Thus from the point of view of his evidential base
he may often be out on a limb.

any motions which might be described as a process
of reasoning to a conclusion (hasty or otherwise),
to "fixate" spasmodically upon one of the alternatives,
quickly relieving the unpleasant doxastic instability.
This personality would probably have certain features
in common with b. (2) above. But he might in
addition be tenaciously opinionated, dogmatic and
unyielding to pressures rational or otherwise to
abandon the views which he has acquired (in order to
avoid another situation of doxastic instability
where he would have to think things through again).
On the other hand a person who jumps to hasty
conclusions (b. (2)) may turn out to be quite fickle
and capable of jumping in the other direction just
as hastily.

C. Negative doxastic inclination

    Varieties of doxastic dissent

    a. disbelieve, not believe, reject, refuse to believe,
        refuse to admit that p (implying, I suppose, that
        p), dissent from p, discredit, give no credence
        or credit to, put no credence in p

    b. doubt:

        (1) doubt that p, have one's doubts as to p,
            be doubtful whether

Here "doubt" seems to indicate an inclination to disbelieve

what is being doubted; so that to have one's doubts as to p to

doubt that p, to doubt whether p, and so on, is to suspect that-p.

        (2) have reservations regarding p, have some
            doubts with regard to p have, harbour or
            entertain doubts or suspicions as to whether
            p, be uncertain whether p, have some degree
            of uncertainty as to p.

In (2) we are using "doubt" in such a way that it is

compat ble with an inclination to _believe_ whatever it is that one

"has one's doubts about". Thus, doubts as to whether p, even though

I am inclined all things considered to believe that p, involve having

made some doxastic allowances for the possibility that -p. To

express one's doubts is to call attention to these considerations

and to attach some weight to them. Similarly, if I have some

degree of <u>uncertainty</u> with regard to p, this will be proportional

to the degree to which I am prepared to expect that -p, the

allowances that I have made, and the degree of weight that I am

placing upon the possibility that -p. Thus there might be some

justification for regarding "doubt$_2$" as a diachronic doxastic

expression (because of its connection with expectations and

anticipations of possibilities) This is discussed more fully

in 4.12.

The differences between "doubt$_1$" and "doubt$_2$" stem

principally from the fact that one is a qualitative, and the other

a more or less explicit quantitative, notion. If we represented

the degree to which we have made allowances for the possibility

that -p in (2) on a graduated scale, we could represent any reading

beyond a given point as an expression of "doubt" in sense (1),

insofar as beyond that point we have made so <u>much</u> allowance for the

possibility that -p that we are disinclined to believe that p and

suspect that -p. At a particular point on the scale we might be

willing to express a vacillating state of mind by expressing doubt

and uncertainty as to whether p or whether -p, being equally

disinclined (<u>and inclined</u>) to believe either.

      1. c.   raise a doubt as to p, bring or call p into
                question, question whether p, awake a doubt as
                to p; cause or start or suggest a suspicion or
                doubt with regard to p; challenge p, dispute p,
                be skeptical about p

This is somewhat analagous to the process of considering

the possibility that p in the first place; except that here

there is a suggestion that p has already been assented to. And

what is wanted is a re-examination and re-appraisal of the merits

of the previous decision. For this reason there are probably

evaluative connotations in 1. c. After all, if we are going to

call into question our previous acceptance of p, can we do this in

any other way than by calling into question its <u>credibility</u>?

      2. Negative doxastic expressions applying to agents.

          a.   incredulous, not credulous, hard or shy of belief,
              indisposed to believe, unwilling to admit or accept,
              unconvinceable, inclined to disbelieve

          b.   skeptical, skeptic, disposed to doubt, Humean
              (such an agent may be referred to as "a Humean
              being".) Pyrrhonic, Pyrrhonian, suspicious,
              mistrustful

          c.   doxastically unstable, indecisive, unsettled,
              tremulous, timid, irresolute, vacillatory, erratic,
              tergiversating

II. <u>Diachronic doxastic terms</u>.

    A. <u>Prospective orientations</u>

        1. Neutral prospective expressions
           We have discussed this neutral orientation in the
           comments on "doubt"" when we considered the point on
           the scale where the agent would be willing to express
           a vacillating state of mind with regard to the

possibility that p (see page   ). But there seems to be no specialized prospective expression which would function as the diachronic counterpart of the non-diachronic expression "doubt$_2$".

2. Positively prospective expressions

   a. The agent may

   expect, anticipate, look forward to, have in prospect, await, be expectant with regard to, plan on or upon, count on or upon, prepare for; (with affective components) hope that, be apprehensive that.

   b. That p is the case may for a given agent be

   expected, anticipated, foreseen, looked for, hoped for.

3. Negatively prospective expressions

   a. The agent may

   not expect, not anticipate, be inexpectant, unanticipative, unprepared, unsuspecting.

   b. That p is the case may for a given agent be

   unexpected, unanticipated, a surprise, contrary to his expectation (contrary to expectation may be normative), unforeseen, unlooked for; (with affective elements) a disappointment.

4. Psychological reactions that are a function of prospective orientations.

   If the agent expected that p and he found out that -p or he became convinced that -p or if the agent was inexpectant with regard to the possibility that p and he became convinced that p, then he would be surprised, taken by surprise, startled, astonished

Perhaps we should add that he would not be surprised if he very gradually became convinced that p. He must become convinced that p at a time when he is doxastically unprepared for p. Then it will appear that p unexpectedly and, therefore, as a surprise. We might also add that "it would be news to him" that p. He would

have a feeling that he had "learned a great deal" from finding out

that p. Before the fact he might say, "It would be very surprising

and hence significant if it should turn out to be the case that p."

But we are now in the normative realm. We have been using epistemic

terms such as "learn" and normative expressions such as "surprising"

and "significant". Perhaps, at this point, it will be a good idea

to examine the way in which the normative terms which function in the

analysis of "knows" derive from our doxastic vocabulary.

B. Retrospective orientations.

1. remember, recollect, review in retrospect

2. forget, lose into oblivion

2.2 The derived epistemic idiom.

The evaluative expressions which function in the formulations

of the normative condition in the analysis of "knows" may be

classified on the basis of transparent derivations from doxastic

vocabulary items. Accordingly, we shall use the same system of

classification as for the doxastic terms. Let us refer to these

terms that are evaluative of doxastic states or dispositions as

"d-evaluative terms". We may list these in a manner which parallels

the doxastic classification.

III. Non-diachronic d-evaluative terms.

A. Neutral d-evaluation

1. conjectural, suppositional, putative, moot, mooted,
    indifferent; uncertain, problematical.

2. An agent for whom most propositions are as above might
    be considered

a fence sitter, indecisive, irresolute, a moderate;
indifferent, poco-curante, judiciously skeptical.

2. An agent who tends to entertain the possibility that p
or consider the possibility that p in the sense of dis-
playing an overall willingness to leave <u>open</u> the
question whether p, to consider p a "live option",
might be called

open-minded, broad-minded, wide-minded, latitudinarian,
accessible; (and perhaps) unbiased, unprejudiced,
unprepossessed, impartial, dispassionate, disinterested,
of unwarped judgment

B. <u>Positive d-evaluation</u>

1. That p is the case may be

a. believable, credible, plausible, worthy of belief;
S may have good reasons for believing that p, be
justified in believing that p, have a right to be
sure that p or be confident that p or believe that p.

b. (1) That p is the case may be

supposable, presumable, conjecturable, possible,
admissible; inferrible or inferable,
surmisable.

(2) Believing that p may be

logical, reasonable, rational, sensible, sane,
sound; justifiable, defensible, warranted.

The belief that p may be

justifiable, defensible, tenable, well-founded,
well-grounded, supported, warranted.

That p is the case may be

conclusive, decisive, demonstrable.

c. The belief that p may be
worthy of preference, acceptable.

2. The agent may be

a. credulous, gullible, a dupe, overcredulous, over-
trustful, naive,

b. (1) over-speculative, rash

(2) ideally rational, logical, reasonable, intelligent

C. Negative d-evaluation

    1. That p is the case may be

        a. unbelievable, not credible, inadmissible, implausible, unworthy or undeserving of belief, untenable, unsustainable, unsupportable;

        b. uncertain, unsure, doubtful, dubitable, dubious, supposititious, questionable, open to doubt or suspicion, problematical;

        c. open to question, deniable, disputable, debatable, contestable, exceptionable; controvertible, refutable, confutable, disprovable, defeasible.

    2. The agent may be

        a. incredulous, nullifidian, minimifidian;

        b. skeptic, dubitative, Pyrrhonic;

        c. argumentative, disputatious; iconoclastic, heretical; (These seem to be quite descriptive, but might evaluate.)

        d. irrational, unreasonable, illogical (normative); insane (possibly normative); stupid, unintelligent, (borderline cases).

We may add to B. 1. a. a set of positive d-evaluative expressions related to C. 1. b. and c. which function by means of "double negations".

    indubitable, unquestionable, indisputable, undeniable, incontestable, irresistible, irrefragable, irrefutable, incontrovertible, without or beyond a doubt or question, without or beyond a shade or a shadow of a doubt, past dispute, beyond all dispute or question, unexceptionable

IV. Diachronic d-evaluative terms

  A. Prospective evaluations

    1. Positively prospective evaluations
       That p is the case may be
       expectable, (probable, likely,) reasonable to expect, worthy of expectation, liable, apt, promising, hopeful

2. Negatively prospective evaluations

    That p is the case may be

    (improbable, unlikely,) contrary to all reasonable
    expectation, contrary to expectation

3. Evaluations based upon reactions to prospective
    orientations

    That p is the case may be

    surprising, astonishing, amazing, stupendous, staggering;
    extraordinary, striking, marvelous, preposterous,
    noteworthy,

    or

    unsurprising, unastonishing

B. <u>Retrospective evaluations</u>

    The only candidate for this category seems to be
    "memorable", or "unforgettable" and perhaps "noteworthy".

There is also a set of terms which seem to cash in on a

sensing idiom rather than the doxastic vocabulary.

V. <u>s-evaluative expressions</u>.

A. That p is the case may be

    manifest, apparent, evident, obvious, clear, plain;
    self-evident, self-evincing, self-evidential.

We exploit terms evaluative of sensing in such expressions

as "It is palpably false that p" (touch) or "It is evident or

apparent that p" (sight). (But we cannot say "It is palpably true

that p" indicating, perhaps, that although we can see the truth we

can never get our hands on it.)

V. B. An agent may be

    observant, discerning, perspicacious, perceptive, an ideal
    observer

    blind, incapable of seeing the truth, unobservant, a poor
    observer

There is explicit reference to sensing in such colloquial
epistemic expressions as

> "It is evident (or plain or apparent) to anyone who
> has eyes to see that p."

This would seem to be a good indication that a correct reportive
analysis of "evident" would be in terms of an observer (quite
literally). But not necessarily an ideal observer; since the
qualifications that are called for in the colloquial expressions
are minimal rather than maximal. What is wanted is a person who
comes up to minimal standards in respect of his powers of obser-
vation, corresponding to such expressions as

> "Anyone who is <u>not</u> <u>blind</u> can see that p"

Since "evident" is etymologically related to such success
verbs of perception as "see" it comes much closer to "knows"
than such an expression as "credible", and, indeed, in the
formulation of the normative condition, will bear close watching
for hints of circularity. Similarly for such a phrase as "adequate
evidence". For example, in saying "It is evident that p" we may be
saying something like "It is capable of being seen that p (by
anyone who is not blind)", and the latter may quite reasonably be
interpreted as saying in part "It is capable of being known that p"
or "There is a way of knowing that p".

The set of terms which seem to be nearly synonymous with or
very closely related to "knows" we shall call "k-epistemic terms".
These can be divided into two classes: those which are related to
success verbs of intellectual activity. The latter would seem to

be closely related to the Greek "phronesis".

VI. **k-epistemic terms.**

   A. positive k-terms

      1. know, have knowledge of, be cognizant of, be conscious that p, be aware that p.

         a. perceive, recognize, discern, apprehend that p,

         b. understand, comprehend, apprehend, realize, appreciate that p.

      2. An agent may be

      knowing, aware, cognizant, understanding, percipient

      3. An agent may

      inform, give to understand, tell, acquaint, impart, communicate to, convey the knowledge of to, make known to, apprize

      another agent that p.

      The "content" of such a transaction may be referred to as

      information, intelligence, knowledge, a communication, an intimation, a disclosure, a manifestation, a divulgence.

      The agent who receives an "item of information" may find it

      informative, revelatory, meaningful, significant, (surprising).

      4. That p is the case may be

      knowable, cognizable, ascertainable, discoverable, discernible, perceptible; understandable, comprehensible, intelligible, explicable (the latter group might best be prefaced with, "That p should be the case is --")

A necessary "phronesic" condition for knowledge suggests itself here, in that we would probably want to hold that if it is not intelligible for S that p should be the case then S does not know that p. We might then add that if it is not intelligible that p should be the case then it cannot be intelligible for S or anyone

else that it should be the case, and hence there is no way of knowing that p or p is unknowable.

We can see that a phronesic condition for knowledge would be very close to the traditional evaluative conditions. For we will probably hold that the only thing that can make it intelligible that p should be the case is the existence of good reasons for believing that p is the case under the circumstances. And we might hold the same view with regard to the conditions under which S is _justified_ in believing that p.

B. Negative k-terms

    1. If the agent does not know that p or is unaware that p then we might say that he is

       ignorant, nescient, incognizant, unknowing, unaware, unconscious; unacquainted, unapprized, unconversant, uninformed, unenlightened

       and that he is in a state or condition of

       ignorance, nescience, want of knowledge, incognizance, incomprehension, unconsciousness.

    2. That p is the case may be

       a. unknown, unapprehended, unascertained, uninvestigated; unsuspected, undisclosed, unrevealed, undivulged; undiscovered; (The middle group seems to contextually imply that p, for if I were to say "It has hitherto been unsuspected that p or undisclosed that p." you would be entitled to infer that I was claiming that p.)

       b. unknowable, incognizable, unascertainable, undiscoverable, indiscernible, imperceptible, indistinguishable, incomprehensible, unintelligible, inexplicable.

The "-ible" and "-able" morpheme in the k-epistemic expressions (as in B. 2. b. above or in I. A. 4.) may appear to have modal or dispositional significance only, as in "possible" or "breakable". But the epistemic stem provides a normative morphemic

constituent. Thus if it is intelligible that p for S, then S is able to understand that p, where "understands" is a "phronesic" success verb closely related to "knows". Hence the entire expression with the "-ible" or "-able" morpheme is evaluatively laden.

One might think that there are better prospects for such a view with a word like "defensible" in which the stem is not normative. But we do not consider S's belief that p defensible provided only that he is able to provide <u>some</u> sort of defense for believing that p. He must be able to provide an <u>acceptable</u> or <u>adequate</u> defense for his belief that p. A similar sort of explication might be applicable to "credible" or "believable". The usual normative analyses render these as "worthy of belief" and reject "capable of being believed" as descriptive. But this is not so obvious. It is also worth considering the possibility that "believable" has a sense in which it should be translated as "capable of being believed by a rational person". Such a rendering of "unbelievable" is suggested by the doxastic idiom:

> Do you expect me to believe that? That is absolutely unbelievable, incredible!" Nobody <u>in his right mind</u> could possibly believe that what <u>you are saying is</u> true! No rational, sane human being could put the slightest degree of credence in your story.

In that case we would have to recognize three possible renderings for our d-evaluative terms with the "-ible" or "-able" morpheme.

On one interpretation, in which the simple past tense inflection of the doxastic verb corresponding to the stem is

inserted into the context

3-1.   capable of being _ _ _ _ _

the expression is classed as descriptive. Making the same substi-

tution in the following two contexts

3-2.   worthy of being _ _ _ _

3-3.   capable of being _ _ _ by anyone who is sane
              and rational

would seem, on the other hand, to be normative in its effect.

§ 3.3. The traditional pattern of analysis.

        Our grouping of the doxastic and epistemic terms allows us

to make perspicuous a pattern running through traditional formu-

lations of the pragmatic conditions. For we can now state a simple

recipe for doxastic and evaluative clauses that conform to this

traditional pattern.

        For the doxastic clause take any descriptive term expressing

positive doxastic inclination, any item from I.B.1. or II.A.2.

Using its simple present tense in the environment

3-4.   "S _ _ _ _ that p"

produces the standard sort of clause used to state the doxastic

condition. Among the substitution instances of   3-4 that we have

already considered are

        (2) "S believes that p."

        (2)(d) "S is sure that p."

On the other hand the clause introduced by Chisholm

        (2)(b) "S accepts p."

cannot be generated in this way. Substituting in our schema would

yield

     "S accepts that p"

But given Chisholm's interpretation of (2)(b) we would be entitled

to dismiss this seeming exception because he will allow that

> "S accepts h" is replaceable by "S assumes that L is
> true"; and "S accepts the proposition or hypothesis
> that x is f" is replaceable by "S assumes that x is f."[43]

And since

     (2)(e) "S assumes that p"

is a substitution instance of 3-4, it does not seem worthwhile

to regard (2)(b) as an important independent construction peculiar

to the verb "accept". But the Chisholmian requirement has some

unwanted normative connotations which we shall consider shortly.

     To construct a pragmatic normative clause of the traditional

variety we need a positive d-evaluative or s-evaluative expression.

Choose any item from III.B.1. (with the sole exception of members

from 1.b.(1)), any double negative supplement of B.1 or any

prospective evaluative term in IV.A.1. Since most of the

d-evaluative expressions will have the "-ible" or "-able" morpheme

we may use the schema

3-.   "p is . . . . for S"

as our standard generating device. This will also do for some of

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[43]Roderick Chisholm, _Perceiving: A Philosophical Study_
(Ithaca, New York: Cornell University Press, 1957), p. 16

the s-evaluative expressions such as "evident".

The matrix

3-4.   "S . . . . . . that p"

used for the doxastic clauses will also yield a number of the

normative clauses such as

      (3) "S is justified in believing that p"

or

      (3)(c) "S has the right to be sure that p"

and others such as "S has good reasons for believing that p",

"S is warranted in believing that p", all of which constitute

intensional statement prefixes. It is probably the logical conven-

ience of having a clause which functions as a statement prefix that

has led to these being used most commonly in analyses of "knows".

Except for (3)(c) these may also be generated from

3-6.   "S . . . . .believing that p"

e.g. by substituting "is warranted in", "is justified in", "has

good reasons for".

      Another matrix for the normative clause

3-7.   "It is . . . . .for S to . . . . . . that p"

would be filled by the terms in III.B.1.b.(2) and doxastic verbs,

e.g. rational, reasonable, etc.; believe, accept, expect, etc.

But we cannot use a matrix such as

3-8.   "p is . . . ."

      This would yield such clauses as "p is credible" or "p is

probable", and these would fail to conform to the traditional

pattern of analysis. For these would not be _pragmatic_ normative

conditions. In the traditional analysis interest focusses upon the credibility _for_ S rather than credibility or justifiability considerations isolated from the actual evidential situation of the agent involved. Now when we say "It is probable that p" we may mean something like "Relative to what is now generally known or acknowledged as fact a rational person would be warranted in placing a high degree of confidence in the possibility that p". But when we say "It is credible that p _for_ S" we mean that relative to what S is justified in believing a rational person would be warranted in placing a high degree of confidence in the possibility that p." I will take the traditional analysis as requiring a pragmatic normative condition upon S's having a particular doxastic attitude with respect to p.

This raises the question whether a proposition may be worthy of, say, _Smith's_ belief, even though it is objectively _not_ worthy of belief. Let us consider this in terms of

$(3)(b_1)$ "p is more worthy of S's belief than $\bar{p}$."

We may suppose that if $(3)(b_1)$ is true then it would remain true no matter who the agent was, provided that he shared S's doxastic basis for believing that p. Could $(3)(b_1)$ be true even though if S had all of the facts at his command it would be false? Is it also possible that if S had all of the facts at his disposal $(3)(b_1)$ would be true, but that given his present doxastic basis it is false? The plausibility of these two eventualities would seem to provide the rationale for the traditional reliance upon a _pragmatic_ normative condition. And surely it is evident that as

the constitution of S's basis for believing that p varies our judgment as to the credibility of p for S will vary concurrently. Accordingly, whatever may be meant by saying, categorically, "p is credible", this would seem quite compatible with p not being credible for S given a particular doxastic basis.

§3.4 The necessity of the pragmatic conditions.

It will be best to consider in turn pairs of doxastic and evaluative clauses that have usually been taken together. The most common of these are

(2) "S believes that p"

(3) "S is justified in believing that p".

These will be found in the standard textbooks in analytic philosophy. They have been proposed by many philosophers and have been widely accepted until recently. The criticisms that are currently made of (2) will be our chief concern now. And I suspect that it is largely in response to such criticisms that Chisholm has modified his statement of the doxastic condition in terms of "accept" rather than "believe".

But I hope to show that (2) is not affected by the recent objections brought against it, whereas, oddly enough, Chisholm's revision is open to precisely these same objections. Before doing so we had best review the evidence originally adduced in support of

3-9.   (S knows that p) ⊃ (S believes that p)

As usual, the linguistic oddity of asserting the antecedent

together with the denial of the consequent is the most likely place
to begin. The locution

3-10.   "S knows that p, but he does not believe it" is clearly
deviant and suggests at least contextual implication. But since it
sounds deviant no matter which personal pronoun is inserted for S,
there seems to be good reasons for taking the conditional to be
analytic.

The phenomenological evidence for the relationship between
knowing and believing seems to be this. There is no introspectible
difference between a person who believes or is certain that p and
a person who turns out to have known that p. Thus if a person
thinks that he is in a position to claim that he knows that p, we
might ask him what sort of claim he would make if it should turn
out (per impossibile by his lights) that he is wrong, that -p.
Clearly he would fall back upon some doxastic claim such as "I am
convinced that p" or "I firmly believe that p" or "I am very sure
that p". Thus we want to say that there is an "internal"
psychological resemblance between knowing and believing at least
to the extent that the first involves the second.

Furthermore, there seems to be behavioural evidence
linking knowledge situations with belief situations. Whether a
person knows that p or believes that p his behaviour will be
guided by the same attitude towards the possibility that p. If
I believe that there is a chair behind me I will attempt to sit
down with the same alacrity as in the situation where I know that
there is a chair waiting to support me. In the case of both

belief and knowledge that p there will be the same tendency towards

an affirmative response to the question, "Is it the case that p?"

All of this would seem to suggest that there is a particular

psychological orientation which characterizes the "mental set"

and behaviour of an individual who either knows that p or is

sufficiently convinced that p. And this fact may be described by

saying that the individual has a certain "doxastic posture" with

respect to p or by saying simply that he believes that p. Some

like Ayer have thought it necessary to specify a very _high_ degree

of conviction. Thus Ayer would say that "S is sure that p"

expresses that psychological state which is internally indistinguishable

from the agent's mental condition when he _knows_ that p. But this

is not to deny that S believes that p when he knows that p, but

rather to introduce the qualification that this belief is held

with full conviction.

Yet there is a tradition, spuriously based upon some remarks

of J.L. Austin, according to which if S believes that p it follows

that he does not know that p and conversely. In other words

3-11.   (S knows that p) $=$ -(S believes that p)

or, using '$\neq$' for exclusive disjunction, i.e., $(p \lor q) . -(p.q)$

(S knows that p) $\not\equiv$ (S believes that p)

This strange dogma that knowledge that p logically excludes and is

excluded by belief that p draws its inspiration from a rather half-

digested, wolfed-down interpretation of Austin's remarks on the

performative character of knowledge claims.

The fault may perhaps be laid to some extent at Austin's door, since in his enthusiastic elaborations of the "ritual" character of knowledge claims he omits qualifications that he had introduced earlier (in the same article).[44] Moreover, the qualifications, when introduced, are slipped in unobtrusively, almost as a grudging afterthought. The context in which this reluctant hedging occurs is a discussion of the different sorts of challenge involved when the foundations of our beliefs are questioned and when our claims to know that p are challenged.

> The 'existence' of your alleged belief is not challenged, but the 'existence' of your alleged knowledge is challenged. If we like to say that 'I believe", and likewise 'I am sure' and 'I am certain', are descriptions of subjective mental or cognitive states or attitudes, or what not (a pejorative aside), then 'I know' is not that, or at least not merely that: it functions differently in talking. [45] [The contents of the parentheses and the emphasis are mine.]

What Austin is here laying stress on is that, whatever subsidiary uses it may have, saying 'I know' functions primarily in an extra-descriptive way. So he is willing to countenance the possibility that there are peripheral descriptive functions. To

[45]J. L. Austin, "Other Minds," in Essays on Logic and Language, Anthony Flew ed., (Oxford: Basil Blackwell, 1961), p. 125.

claim to know that something is the case, although possibly indicative of a high degree of confidence that it is so, is not, Austin is arguing, so much to report my psychological condition as to "give others my word", "to take a new plunge", "to stake my reputation in a new way"[46] on its being the case that p.

Austin explains his position by appealing to a rather elaborate analogy with "I promise". Just as when S utters 'p' he implies that he believes that p, so, Austin argues, when he utters 'I shall do A' he implies that he hopes or intends to do A. (And if he has been "strictly brought up" he implies in the one case that he is (quite) sure that p and in the other that he (fully) intends to do A.) I gather that this is "contextual" implication. But now Austin adds that if S only believes that p, he may supplement the original utterance with "But of course I may (very well) be wrong about that" (if he has said 'p') or "But of course I may (very well) not." (If he has said 'I shall do A' and if he only hopes to manage A)[47] and this is a slip on Austin's part. We cannot add anything of the sort. Imagine someone saying to you, "It is raining now. But I may very well be wrong about that."

Putting the best light on Austin's remarks, however, let us

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[46] Ibid., pp. 170-171

[47] Austin, op. cit. p. 170

allow that what he (<u>must</u> have) meant was that if we <u>only</u> believe

that p we may add <u>to the</u> <u>statement</u> <u>that</u> <u>we</u> <u>believe</u> <u>it</u> "But of

course I may (very well) be wrong." Similarly, we may add to the

statement that we intend to do A that we may very well not manage

it.

> When I <u>only</u> believe or <u>only</u> hope, it is recognized
> that further evidence or further circumstances are
> liable to make me change my mind.[48]

I think that it is instructive that Austin uses the word

"only" here, rather than something like "When I believe or hope,

it is recognized that further developments might lead me to change

my mind." Normally, we use such an idiom to indicate that certain

conditions have or lack a particular property when taken by them-

selves or in isolation, with the suggestion that when they are

supplemented the case will be otherwise. Thus we might say "If

it were <u>only</u> a matter of the injury that I received at his hands

I would drop the charge. But it is clear that he did it deliber-

ately." In other words, "Not <u>only</u> was I injured, but I was injured

<u>deliberately</u>." Similarly we might say, "If it were only a matter

of belief I might not <u>insist</u> upon your taking these precautions.

But I <u>know</u> that you will be in danger." Again "Not only do I

believe that you will be in danger, I know it."

We might refer to this as the implicit "but also" use of

"only". This may also be combined with the connotation that in the

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[48]<u>loc. cit.</u>

absence of the implicit "but also" addendum, what is being cited

as <u>only</u> the case is of little importance, that it is <u>merely</u> the

case, and that the significant aspect is yet to come. And it is

clear that Austin is using this idiom when he goes on to say

> But now, when I say 'I promise', a <u>new</u> plunge is taken:
> I have not <u>merely</u> announced my intention, but, by using
> this formula (performing this ritual), I have bound
> myself to others, and staked my reputation in a new way.
> <u>Similarly</u>, saying 'I know' is taking a new plunge.[49]
> [The emphases are mine.]

Capitalizing on "similarly" let us expand the parallel hinted at

by substituting in the above 'I know' for 'I promise' and 'being

quite sure' for 'intention'.

> When I say 'I know', a new plunge is taken: I have not
> <u>merely</u> announced my being quite sure that p, but, by
> using this formula (performing this ritual), I have
> bound myself to others, and staked my reputation in a
> new way.

Austin wishes to <u>deny</u>, and this is quite unexceptionable,

that saying 'I know' is distinguished from doxastic claims by the

<u>intensity</u> of the conviction expressed, by signalling "a specially

striking feat of cognition, superior, in the same scale as

believing and being sure, even to being merely quite sure."[50]

It is not that we are saying "Not <u>only</u> am I <u>quite</u> sure, but I am

<u>even</u> <u>surer</u> than that." When I say "It is not <u>merely</u> a matter of

being quite sure (which is <u>not</u> to deny that it is <u>partially</u> a

matter of being quite sure), because I <u>know</u> that p" the difference

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[49]<u>Ibid.</u> p. 171

[50]Austin, <u>op. cit.</u>, p. 171

does not lie on the extreme end of the doxometer _per impossibile_

beyond absolute conviction in a doxastic never-never land. And I

agree with Austin that _part_ of the difference is to be found in a

"ritual aspect" in which I vouch for the truth of what I am saying

and undertake to answer for it if I am wrong. (But is there some-

thing _else_ about "knows" in virtue of which it is particularly

fitted out for this function?) Has this ritual function devolved

upon "knows" quite accidentally?)

> We all _feel_ the very great difference between saying
> even 'I'm _absolutely_ sure' and saying 'I know': it
> is like the difference between saying even 'I firmly
> and irrevocably intend' and 'I promise'.[51]

But I think that we can all feel a different difference in

the latter pair. If I say 'I know' and things turn out badly I

can be "rounded on", as Austin puts it, in a way that I am not

liable to be rounded on if I say 'I promise' and fail to perform.

"You did _not_ know after all" is appropriate in the first case.

But in the second a reproachful and indignant "You promised!" is

more to the point. Moreover, turning out to be _right_ in what we

claimed to know is the occasion upon which the parallel exclam-

ation "You knew!" is in place. Whether I promised depends only

upon whether I have appropriately executed the ritual utterance

'I promise',[52] that is, upon conditions obtaining at the time of

utterance. Whether I knew will depend upon factors independent of

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[51]_Ibid_.

[52]Under the appropriate circumstances we may execute this
ritual with other locutions such as "I'll be there. You can count
on me" or "It will be taken care of. Don't worry" or "I'll see to
it." Furthermore, it is conceivable that we could promise by using
a non-verbal performance given appropriate "understandings" all
around.

my utterance 'I know'. Indeed, I can know that p without saying

a word about it to anyone. We make promises and we have knowledge.

We do not have promises and make knowledge. This is why we can ask

"Why did you promise?" but not "Why did you know?" Moreover, the

answer to "How did you promise?" is "By saying 'I promise'." But

"How (on earth) did you know?" would be very oddly met by "It was

just a matter of saying 'I know'." And of course I can know (all

along) without wanting to say anything. But I cannot promise (all

along) saying nothing. Not only that, but in order to promise (all

along) you would have to go around saying 'I promise', 'I promise',

'I promise' . . .

This discrepancy between the criteria of application of the

word "know" and such a verb as promise I take to be evidence that

the word "know" is used to represent a dispositional mental state.

And of course I would go along with Austin that it is not merely

to report such a psychological condition that we say "I know".

It is to signal that the acquisition of this condition was by one

of the epistemically accredited routes, and that you can "take it

from me". As Austin says, somewhat misleadingly,

> where someone has said to me 'I know' I am entitled to
> say I know too, at second hand. The right to say 'I
> know' is transmissible, in the sort of way that other
> authority is transmissible. Hence, if I say it lightly,
> I may be responsible for getting you into trouble.[53]

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[53] J. L. Austin, op. cit., p. 171

Now one would have to detract from this by saying that it is not exactly transmissible the way other authority is transmissible. You do not acquire the right to say 'I know' just because I said 'I know'. But you might say that what I was attempting to do was to confer authority upon my claim that p, and if you accept my claim as one of knowledge (if you indeed take it from me) then this authority will transmit to your own claim that p (for whatever it's worth). But this does not mean that you will have the same authority for saying 'I know' as the original speaker. If Einstein says to you "I know that $E = MC^2$," you might take his word for it. But assuming that you are aware of what the symbols represent, you do not have Einstein's sort of authority for saying "I know that $E = MC^2$" (unless you have Einstein's reasons for holding this), but rather only Einstein's authority. If asked, "How do you know that $E = MC^2$?" you would have to say "A little white-haired physicist told me so." But not so with Einstein who can trot out the jargon. We must not mistake a reflexive ad verecundiam for an irreflexive one.

Now I hope it will be agreed that Austin has said nothing in the sections we have examined which would lead anyone to deny that there is a descriptive aspect to first person uses of "know". In any case, if we take "descriptive" in contrast with "normative" we would be reluctant to say that "knows" itself is wholly descriptive. However interesting and important the things which Austin can show about the extra-descriptive functions of "knows", he has not only said nothing to deny that such a function exists,

he seems to intimate positively (if weakly) that the possibility of a descriptive aspect must be taken into account.

His followers, however, whom I shall refer to as "reductive multi-functionalists", have decided that the presence of ritualistic aspects to first person uses of "know" weighs conclusively against the possibility of assertive aspects. For these thinkers dissimilarity seems to spell incompatibility. What is most disconcerting is that an oral tradition (which has occasionally found its way into print), according to which Austinians have shown that "I know" and "I believe" or "I am certain" are logically exclusive of one another, is said to derive its strength from Austin's famous remarks about the extra-descriptive functions of knowledge claims. But I think that the exegetical labours we have bestowed on the relevant passages in Austin yield the conclusion that Austin's thesis, however much he might be reluctant to admit it, is non-destructive. Assertions of 'I know' are not merely "descriptions of subjective mental or cognitive states or attitudes", because they "function differently in talking." And because they function differently in talking they are in addition performances of some new sort. Perhaps the Austinians have done us a service by over-emphasizing this additional feature of epistemic utterances. It may be that on the philosophical stage, as on any stage, it is necessary to exaggerate for effect. But I think we all get the point now, and any further dogmatic proseletyzing incurs the risk of becoming tedious and irritating.

Now let us have a look at the _facts_ which are adduced in support of the claim that knowledge and belief are logically exclusive. They are not to be found in Austin. The 'performative' ingredients (if there are any) in utterances of 'I know' have no tendency to support such a conclusion ('I know' is certainly not a performative in the sense that you can know by saying 'I know' in the way that you can promise by saying 'I promise'.) The extra-descriptive (but not 'performative') functions of "knows" _are_ generally recognized by philosophers of analytical persuasion. This too has no tendency to make us join the Austin tea party in jettisoning overboard the descriptive or assertive aspects. Now the phenomenological evidence that knowing is internally indistinguishable from being quite sure or absolutely convinced and the behavioural data indicating the two are manifested in the same way seem _prima facie_ _overwhelmingly_ _against_ the claim that they are exclusive.

What is it, then, that we say, what ordinary epistemic locution have these people fastened upon which leads them to jump in with both feet where Austins would perhaps have loved to tread but wisely resisted? (Not that Austin is necessarily on the side of the angels.)

I will now state the oral tradition and document this with a certain amount of backseepage of this tradition into print. The backseepage, however, usually amounts to sage acceptance by the "uninitiated" of what is _supposed_ to be demonstrated by the oral

tradition. A good example of one of these "sophisticates on the fringe" is Chisholm.

We may now state the argument. It is short and sweeping.

3-12   We sometimes say in response to the question "Do you believe that p?", "No. I don't _believe_ it. _I know_ it." Hence, if I know something, I don't believe it.'

Put baldly in this way, there are obvious flaws in the argument; and it is almost embarrassing to have to point them out. These would probably be glossed over by cryptic in-group references to Austin and multi-functionalism. But I hope we have shown by now that Austin will have none of it and that multi-functionalism is a red-herring. The argument must stand or fall on its _own_ merits. And what are these?

I think that we may see this argument for what it is worth by comparing it with a whole set of arguments of _exactly_ the same sort. For we might as well argue

3-13. We sometimes say, "I don't _want_ a drink of water. _I'm desperate_ for a drink of water" or "I'm not _hungry_. I'm _famished_ (_ravenous_, _starved_)" or "She's not _unhappy_. She is downright _miserable_" or "That water isn't hot. Why it's _positively_ _scalding_!" or "The acts of genocide committed by the Nazis are not morally wrong. They are _monstrous_, _heinous_ _crimes_. And the persons who engaged in these actions with such alacrity are not worthy of _disapproval_; they are _odious_, _despicable_ _beasts_ who deserve the most extreme sorts of punishments that the ingenuity of

man is capable of devising."

Ought we not to conclude, then, that someone who is dying for a drink of water is not thirsty and does not really <u>want</u> a drink of water, that starving people are not hungry, that miserable people are not unhappy, that scalding water is not hot water, that monstrous heinous crimes are not morally wrong, that despicable persons who richly deserve the maximum punishments are not worthy of disapproval? But surely it is pretty obvious and we all <u>know</u> that despicable, odious persons who richly deserve the maximum punishment are worthy of disapproval and <u>more</u>, that monstrous heinous crimes are <u>very gravely wrong</u>, that scalding water is scalding <u>hot</u>, that famished persons are <u>very hungry indeed</u>, and that miserable persons are <u>quite</u> unhappy.

It does not take that much of a sensitivity to the nuances of ordinary English to realize what is the point of this idiom of denying the weaker claim in order to substitute a stronger one. This is a tacitly understood elimination game in which the denial format is hardly to be taken as a literal reflection of the speaker's intentions. In each case the speaker is presented with a set of possible "locutionary acts" or things to say, and he is required to choose <u>one</u> of these to perform a particular linguistic job. He may be asked "Will that one do the job?" And he might well answer "No. Not <u>that</u> one. But <u>this</u> one will do quite nicely." But this is not to deny that he could say <u>part</u> of what he wanted to say by using the former.

It is as if we had a set of labels and a situation to be
labelled and we are asked to choose _just_ _one_ of these labels.
Now for our purposes, for purposes of communication, for purposes
of communicating the most information that we can by means of just
one semantically well-packed information-bursting-at-the-seams
expression, we might have to reject certain possibilities, but
not because they would _falsely_ label the situation or because they
would not do _part_ of the job we want done. We will select one
specific candidate for the job in preference to all the others
because this will enable us to say everything that we want to say,
and without incurring the risk of being misunderstood.

For the other participants in the game know the alternatives
that were available to us, given that they are equally at home in
the English language. And what we say will acquire significance
for them in terms of what they think we have chosen _not_ to say.
But since we knew before we decided on what to say that they
would know and reckon with the sayable things we left unsaid, this
would itself be a consideration entering into our decision.
Moreover, they _knew_ that we knew that they would know and that we
would take this into consideration, and we knew _this_, and this was
another factor in our decision, and _they_ knew that _we_ knew this
and on we go. The mutual understandings within understandings
that enter into the complex fabric of our linguistic transactions
become to some extent conventionalized and cannot help but play a
role in the formation of idiom. Here it _is_ quite instructive to
compare language to a game. The moral is that the explanations

for the moves will not <u>always</u> lie on the surface, and may require us to imagine the players looking several moves ahead.

Consider a speaker A and his addressee B. A wishes to report to B the temperature of a basin of water into which A has recently immersed his hands. I think that we may safely assume that we have here a magnitude which admits of degrees and that it may be represented on a graduated scale. Now various portions of this scale would be roughly captured by the ordinary expressions, "cold", "freezing", "warm", "luke-warm", "hot", "scalding". Let us suppose that these exhaust A's temperature-vocabulary and B knows this and A knows that B knows this. We may further imagine that both A and B are aware of certain modifying expressions such as "very" and "extremely" which they use "and mutually understand one another to use) in order to supplement their basic vocabulary. For the purposes of the present discussion I am going to <u>assume</u> or <u>stipulate</u> that A and B believe that water which may be labelled as "scalding" is very or extremely hot and is therefore correctly labelled "hot" and that water which is correctly labelled as "freezing" is very cold and hence correctly labelled "cold". And suppose, contrary to fact, that these are <u>eccentric</u> uses of these words on the part of A and B. Now send in an observer who is to determine how A and B use their temperature vocabulary. All he will need for apparatus is hot and cold running water, a basin and a thermometer.

The experimenter now fills the basin with water that is close to boiling point and asks A to stick his hands into it and report

to B. Before he says anything B asks him, "Is it hot?" or maybe

just "How is the water?" Since both A and B agree that scalding

water is very hot and "hot" is one of the alternatives available

to A, he <u>could</u> quite correctly say "Hot." But A knows that B

knows that the alternatives available include "scalding". A will

now reason as follows:

> I have agreed with B to use "hot" to label a certain
> portion of the scale starting somewhere above "warm"
> and continuing on to boiling point. We have also agreed
> to use "scalding" for a part of the scale that is also
> labelled by "hot". Now the water is hot and it is also
> scalding. If I say "scalding" I will have conveyed the
> maximum amount of information, <u>vis.</u>, that the water is
> hot and <u>very</u> hot. But if I should say "hot" not only
> would I convey less information that I might have otherwise,
> I may mislead B into thinking that I deliberately <u>rejected</u>
> "scalding". Here I have a generic label and a specific
> label. But I cannot use the generic label without
> producing a specific misunderstanding. So I had better
> tell A that the water is not hot but scalding.

This is what he does and our observer writes in his notebook

"Scalding water is not hot." But the experimenter has <u>not</u> made a

<u>mistake.</u> He has committed an <u>atrocious</u> <u>blunder</u>. And the moral of

the story is: diction is stranger than fact. Or at least, the

facts <u>underlying</u> diction do not all lie on the surface. For as

Austin might say, fact is <u>richer</u> than diction.

In general, if we have a set of labels 'P_1' for the

possibility that p_1, 'P_2' for the conjunction '$p_1 \cdot p_2$' and so on

to 'P_n' for the conjunction '$p_1 \cdot p_2 \cdot \ \ldots \ \cdot p_n$' and these are

embedded in mutual linguistic understandings between speakers, the

complex inter-play of anticipatory behaviour among the participants in the "language-game" will result in a preference for the strongest possible claim (the longest conjunction) in any particular situation both from the point of view of information efficiency and to avoid misunderstandings. If the situation could be correctly labelled 'P_n' then of course it is also correctly labelled 'P_1,' 'P_2' ... 'P_{n-1}'. But the **transmitter** knows that the receiver will attach some significance to the omission of the possible stronger claims. And since the receiver <u>knows</u> that the transmitter knows this he will feel <u>entitled</u> to attach significance to these eliminations, because he will <u>expect</u> the transmitter to take into <u>account</u> in his decision the importance that he the receiver will be attaching to what he <u>might</u> have said but didn't. This is why the receiver "gives it to be understood" or "contextually implies" that he is making the strongest claim available to him and why if he makes the claim 'P_i' it may be legitimately inferred that $-P_{i+1}$. Hence if asked 'P_i?' A will reply, in order to avoid jamming communication, but <u>not</u> in order to avoid saying what is false, '$-P_i$.' 'P_{i+1}.'

Let me make it clear that what I was trying to do above is to show the utter <u>worthlessness</u> of the <u>argument</u> that has been the support of the oral tradition. I did <u>not</u> have to go to such lengths, however, merely to <u>refute</u> this argument, because quite aside from the fact that the argument is worthless it is based on a distortion and misrepresentation of the data. We must be not

selective but exhaustive in canvassing the sorts of things that

get said in such contexts. And when this one item is spread out

alongside a corpus of utterances that may be elicited in such

situations an entirely different picture emerges.

Look at some of the things that we say. We do say "I

do not believe it. I know it." But we also say, "I do not just

believe it. I know it." Furthermore, if someone said to us

accusingly "You just believe that." we might very well reply in

perfectly ordinary English, "Not only do I believe it, damn it!

I know it." or less vehemently "Not only do I believe that p, I

also know that p." And we have all learned in elementary logic

that "Not only p but also q" is correctly paraphrased as "p.q."

Finally, it is undeniable that we cannot say "I know that p.

But I do not believe it." And our hypothesis about the proprieties

involving the use of labels for cumulative conjunctions explains

this datum very easily, for we would be saying something like"(P.q.).

But -p." -- plainly a contradiction. So much for the oral tradition.

I take it, then, that we have conclusively established the

untenability and ratuousness of the view that has been foisted

upon us by the reductive multi-functionalists. Let us now examine

the way in which Chisholm acquiesces in the prevailing mythology.

> There is a sense of "believe", in its ordinary use,
> which is such that "S believes that h is true" entails
> "S does not know that h is true". My emphasis on "sense".
> If I know that La Paz is in Bolivia, I am not likely to

say, "I believe that La Paz is in Bolivia," for "I
believe that La Paz is in Bolivia" suggests I don't know
that it is.[54]

Chisholm seems to be accepting the view here that if, in

a given context, saying "I believe that p" would suggest that it

is false that I know that p, there exists a sense of "believe" in

which believing is incompatible with knowing. But this does not

follow. Saying "I believe that p" may suggest that I don't know

it precisely because knowing is generally accepted as entailing

believing and the nature of the mutual understandings involved in

our linguistic transactions requires that we make the strongest

claim available. We would then be entitled to infer from any

claim that all stronger claims have been abdicated. Therefore

it is only because knowing is a stronger claim than believing

(involves believing and more), only because we are using "believe"

in a sense in which "knows" entails it that the suggestion that

we don't know attaches to the weaker claim that we believe. Since

Chisholm accepts this fallacious argument --

> if we interpret "believe" in this way, we cannot
> say that knowing entails believing.[55]

he finds it necessary to offer a remedy.

> But "believe" is also used to mean the same as "accept",
> . . . and in this use knowing entails believing.[56]

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[54]Chisholm, op. cit., p. 17.

[55]Chisholm, loc. cit.

[56] Ibid.

When "believe" is used in this _other_ "sense" then knowing _does_ entail believing; and this is because knowing entails _accepting_, and "believe" is here used in the sense of "accept". Chisholm thinks that in _this_ sense of "believe" I may believe that x is f "and yet not _say_, 'I believe that x is f' for, as we have noted, when "I believe" is used in this construction (in contrast with its parenthetical use)[57] it is ordinarily intended to express doubt or hesitation." But it seems that we have now switched to different inferential principles than those Chisholm espoused a few moments earlier when he argued for a sense of "believe" in which _believing_ was incompatible with _knowing_ simply in virtue of the existence of a context in which "I'm not likely to say, 'I believe that La Paz is in Bolivia,' for 'I believe that La Paz is in Bolivia' suggests I don't know that it is."

The only difference, Chisholm seems to think, is that when "believe" is used in the sense of "accept"

> _You_ may say of me, however, "He believes that x is f and, for all I know, he _knows_ that x is f."[58]

Yet it seems very plain that this very same datum is available in the example of La Paz. For there you may say of me, "He believes that La Paz is in Bolivia and, for all I know, he _knows_ that La Paz is in Bolivia." So it seems that if _I_ say

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[57] In _this_ sense he thinks that believing _entails_ knowing, or at least that "I believe" entails "I know".

[58] _Ibid._

"I believe that La Paz is in Bolivia" I am using a different sense of "believe" than the one which you use when you say "He believes that La Paz is in Bolivia." And if I know that La Paz is in Bolivia what I say is false and what you say is true. But it seems to me that what I say is true but misleading while what you say is not misleading and true. For if I say "I believe" when "I know" and mislead you, you cannot round upon me with the accusation that what I said was false, but rather that I indicated that something else was false. If I say that the water is hot when it is scalding hot I may have misled you in the same way. But it is still true that the water was hot. And surely we do not want to say that there is a sense of "hot" in its ordinary use, swhich is such that "The water is hot" entails "The water is not scalding." Nevertheless, if I feel that the water is scalding, I'm not likely to say "The water is hot." (but maybe, with the proper intonation contour, "The water is HOT!" for "The water is hot" suggests that it is not scalding. Nor if I am miserable am I likely to say "I am unhappy" since this might lead people to believe that I am not quite as unhappy as all that. What I am likely to say is in any case a red-herring since if I believe that Smith is a bachelor I am not likely to say in most contexts that he is an unmarried adult male because "bachelor" is a shorter expression, because I don't want to sound pedantic and for all sorts of reasons that are quite unconnected with whether Smith is indeed an unmarried adult male

and with the question of whether "Smith is a bachelor" does or does
not imply "Smith is an unmarried adult male." We cannot take
"what I am likely to say" as evidence for _meanings_ or _implications_
until we have taken _some_ precautions to guard against the possibi-
lity that extra-semantic factors have interfered with our results.

Now at this point I think it might be well to point out
that there _are_ some expressions which appear, on the surface, to
be simple doxastic verbs, but which can be seen on closer inspection
to be covertly normative expressions. We must be wary of using
some of these in the doxastic condition for the analysis of "knows"
because _these_ may _indeed_ logically exclude the possibility of the
agent's knowing. These normative expressions are listed in
I.B.1.b.(1) and include, among others, "guess", "conjecture",
and possibly "assume", "suppose". The first two are _clearly_
normative, while the other two are rather borderline.

If S _guesses_ that p, then it would seem to follow that he
has no way of knowing whether p and no good reasons for believing
that p, and similarly if he _conjectures_. Whether _assumptions_ or
or _suppositions_ or _hypotheses_ can be candidates for knowledge is
probably a nice judgment. But Chisholm seems to have been driven
to putting forward such things as "S assumes that p" and "S
accepts the hypothesis that h" as analytic doxastic requirements
in the analysis of "knows" largely in order to avoid the pseudo-
Austinian objections which we have considered and rejected.

Unfortunately, the doxastic expressions that he has chosen
are much more _natural_ targets for this sort of criticism than is

"believe". Thus someone might ask "Do you accept the hypothesis that p?" And an appropriate reply might be "I don't _accept_ the _hypothesis_ that p. I _know_ p for a _fact_." Again it might be asked, "So you have assumed that p?" and the natural reply would be "I do not _assume_ that p. I _know_ it." Of course, as we have shown, this pattern of argument is incapable by itself of yielding the conclusion of incompatibility. But, in the case of _these_ expressions, the fact that we might plausibly argue that they are covertly normative is a consideration which _does_ carry some weight.

Talk of an hypothesis, for example, will ordinarily connote _an_ _assumption_ _that_ _has_ _been_ _provisionally_ _accepted_ as a basis of reasoning and discussion and for which there is as yet insufficient evidence to warrant final epistemic certification. It would thus quite commonly function as an explicit disclaimer of knowledge. This is not to say that an hypothesis cannot _become_ knowledge as when we say "We now know that Einstein's hypothesis that light is deflected in the neighbourhood of large masses is correct." Conjectures may similarly be borne out by further research. But hypotheses and conjectures then lose their sub-standard epistemic status and become full-fledged items of knowledge. My point here is simply this. If it can be shown that such words as "hypothesis" or "conjecture" or "assumes" are normative in their intent and they function _negatively_ as _disclaimers_ of sufficient evidence or warrant for believing, then they cannot be used in the analysis of knowledge that p. But these words are at least _borderline_

cases in this respect. Hence, since we cannot rule out the possibility that they are negatively evaluative it will be better to stick with more clearly non-normative expressions. Otherwise, it will be necessary to _stipulate_ that they are to be taken in a non-normative sense. And if this were actually necessary I would see nothing intrinsically objectionable to taking such a course. But since we have available perfectly good un-normatively tainted doxastic expressions such as "believes" and "is sure that" I see no reason for doing so. Anyway, it is difficult to see _how_ we would go about stipulating unless we admitted at least _one_ doxastic expression to be beyond normative suspicion. But then why not use that one?

"S accepts the hypothesis that h" also suffers from being syncategorematic. The incompleteness of this locution may be brought out by asking, "_How_ does S accept the hypothesis that h? As credible? As a _sound_ hypothesis or a _promising_ one? As an hypothesis worth looking into or worthy of belief? If we accept some such interpretation as "S accepts the hypothesis that p as worthy of belief", this will turn out, should there be a phenomenon of "epistemic _akrasia_", to be quite compatible with not believing that p or not accepting p _as true_. Thus, it will be necessary for Chisholm to reword his doxastic condition so as to explicitly include the semantic expression "true", viz.,

(2)(f) "S accepts the hypothesis that h as true."

another explicitly semantic clause would be

(2)(g) "S takes the hypothesis that h to be true."

It seems to me undesirable, however, to include the word "true" in the doxastic condition in case one should want to avoid the meta-linguistic connotations that this carries. And we can do this with the semantic condition itself simply by saying "It is the case that p."

The other problem with acceptance is that it may refer to a rather special doxastic condition which will not be present in the standard case. This is suggested by H. H. Price. Price distinguishes a number of elements which he considers to be essential to the standard case of believing. He then goes on to argue that acceptance lacks one of these ingredients. If he is right then although knowing implies believing and acceptance implies believing, it will be false that knowing implies acceptance. Despite some disagreement with Price's entire analysis, I find that it is mainly on the right track; and his method of dis- tinguishing between "believe" and "accept" seems to me very plausible. The only point that I would take exception with in Price's analysis is his view that knowing some proposition other than p is a necessary condition for believing that p. Price distinguishes the following four factors in the situation which he calls "believing p":

 (1) Entertaining p together with one or more
    alternative propositions q and r.

 (2) Knowing a fact (or set of facts) F, which is
    relevant to p, q and r.

   (3) Knowing that F makes p more likely than q or r,
         i.e. having more evidence for p than for q or r.

   (4) Assenting to p; which in turn includes
        (a) the preferring of p to q and r;
        (b) the feeling a certain degree of confidence
           with regard to p.[59]

Price introduces (2) and (3) because he believes that some sort

of rock-bottom epistemic foundation such as indubitable sense-

data or logical truths are needed for belief. These he will

consider <u>knowledge</u>. But I must reject (2) and (3) as an analysis

of believing, since it would involve us in an infinitely regres-

sive explanation. For knowing already entails believing on my

view, which has been defended at length.

Accordingly, I shall opt for a curtailed version of Price's

analysis. We have already suggested that a necessary condition

for believing that p is entertaining the proposition that p as

well as the possibility that p (which we distinguished). But the

alternative propositions that we consider may be summed up simply

as -p. The only other element involved would then be <u>assenting</u>

to p, including (a) the preference of p to -p, and (b) feeling a

certain degree of confidence with regard to p. The elements that

are involved in this process of assenting are very well described

by Price. He suggests that there are two basic ingredients, one

volitional and one emotional.

      On the one hand, it is analagous to choice or
      preference or decision; and it is significant

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[59] H. H. Price, "Some Considerations About Belief",
<u>Proceedings</u> <u>of</u> <u>the Aristotelian</u> <u>Society</u>, Vol. 25, 1935, p. 234

that we say "I decided (or made up my mind) <u>that</u>
A was B" as well as "I decided (or made up my mind)
to do X". When we come out of the state of considering
to the state of assent we seem as it were to be coming
down on one side of the fence, or to be taking a plunge.
At first we were neutral as between the alternatives.
But now we have come to be in favour of one and against
the rest. On the other hand, assent also has an emotional
side. When we believe something, we feel a feeling of
<u>sureness</u> or <u>confidence</u> with regard to it. As we say,
we feel comfortable about it.[60]

Price points out that the first of these factors admits of

no degrees. We decide in favour of p or in favour of -p. Even

if we should later revoke our decision, nevertheless "at the

time of its occurrence it must occur wholly or not at all".[61]

But the other element provides us with a magnitude that admits

of degrees. "I rather think that p" Price suggests as expressive

of a rather <u>mild</u> degree of confidence.

> "I suppose" or "I expect" are often used colloquially,
> though inaccurately, to express a slightly greater
> degree of it than this. "I think" expresses still more.
> And "I am sure" or "quite sure" or "I feel certain"
> express a very high degree of confidence. Perhaps the
> lower half of the scale might be called <u>opinion</u> and the
> upper half <u>conviction</u>; and the upper limit might be
> called <u>absolute</u> <u>conviction</u>.[62]

What I would like to add here is a specific comment on the

nature of the relationship between the "emotional" element and

the purely volitional element. The doxastic expressions

describing the latter are listed in I.B.1.c. as

> prefer, accept, select, opt for, fix upon, fasten upon,
> choose, decide.

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[60]Price, <u>op. cit.</u> p. 233   [61]<u>Ibid.</u>   [62]<u>Ibid.</u>

All of these emphasize an active element in the acquisition of the belief that p. But I think it will be therapeutic to point out that there need not be any such implication. We may simply "come to believe that p" or "come to be convinced that p" without at any stage having been aware of "opting for p" or "coming down on the side of p". At some point, however, the transition was made, and we found that we had come over to the side of p. As we might say, "I don't know when I made up my mind that p, but my mind seems to be made up and I am quite convinced."

Now I may be more confident in p than in -p but not yet believe that p although somewhat inclined to believe that p. But when I become so much more confident in p than in -p that I would be surprised if -p, I think that we would say that I have become convinced that p or that I have come to believe that p. This would seem to suggest that "believe" is a generic label somewhat like "hot" and like the latter refers to all levels of confidence exceeding a certain critical point. In that case I would not like to insist that there need always be an active volitional element although there may very well be some sort of conative factor corresponding to "being in favour of p" or "preferring p to -p".

And the way we have used "belief" we have remained neutral with respect to the degree to which we have consciously made allowances for the possibility that -p, so that we are including those cases in which we have quite consciously made allowances for -p and attached some degree of weight to this eventuality,

and yet, on balance, are convinced that p. But "accept" would
seem to lack this neutrality. This seems to signify a state of
mind which Price describes as a state of taking for granted or
acceptance. He tells us that Cook Wilson calls it being under and
impression that and Prichard "thinking without question".[63] An
this would definitely involve not being aware of the possibility
that we may be mistaken. An example would be when we take for
granted or jump to the conclusion that someone is our friend
Smith simply on the basis of his appearance. We do not weigh any
of the alternatives but simply accept that it is Smith.

Although we entertain the proposition "This man is Smith"
in the case of acceptance proper (as opposed to behaviour quasi-
acceptance in which we merely act unreflectively on the assumption
that this man is Smith), we do not prefer this proposition to its
alternatives for we do not consider any alternatives.

> No alternative occurs to our mind at all. What happens
> is that we do not dissent from the proposition. Likewise
> it is not that we feel a certain degree of sureness with
> regard to the proposition. What happens is that we do not
> feel unsure. We entertain it without doubt or question.
> This differs from the state of "suspending judgment" about
> a proposition. There we suppress our doubts and questions
> by a deliberate and often painful effort. But here no
> doubt or question arises in us, so we do not have to sup-
> press it. We just surrender ourselves to the proposition
> in a childlike and effortless way.[64]

Being quite unaware of the possibility that the proposition
might turn out to be false, we should in that event experience "a
peculiarly disconcerting and painful shock" on becoming convinced

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[63] Price, op. cit., p. 235

[64] Ibid.

that it is false, "quite different from the mild surprise and disappointment which results from the unmasking of an ordinary false belief."[65]

Since this is a rather special doxastic condition, we should not want to lay down that we must be in this precise condition with respect to the possibility that p in order to know that p, even though we might accept this as a kind of believing and hence as satisfying the doxastic requirement. A more serious difficulty, however, concerning the relationship between acceptance and the normative condition would arise if Price is correct in his assessment of the relation between acceptance and evidence.

Although various affective-conative factors will play a role in determining our acceptance of some proposition, it must be some unconscious association of certain of the observed characteristics of the individual that we take to be Smith with the remaining Smith characteristics that leads us to take him for Smith. Thus is may seem that there is evidence for the accepted proposition (and of course there is).

> To clear up this point we must distinguish between the consciousness of something which is in fact evidence, and the using it as evidence: for instance, between perceiving something which does in fact make p likely and recognizing that it makes p likely. It is this recognizing or using which is absent in acceptance and present in belief proper.[66]

[65] Price, op. cit., p. 235

[66] Ibid. p. 236.

Price points out that we can convince ourselves of this difference

partially by "introspection" but also by means of an argument.

> For if we recognize that F makes p likely, we must also
> recognize that p may, after all, be false, and some
> alternative proposition true; and this recognition
> is absent in acceptance, though present in belief (proper).
> Indeed its absence is the differentia of acceptance, as
> we saw at first. Now according to ordinary usage we are
> only said to "have" evidence for p when we <u>recognize</u> that
> such and such a fact makes p likely (that such and such a
> belief renders p credible). Thus it is not true that in
> acceptance (or taking for granted) we have evidence for
> what we accept; though we could have it, if we roused
> ourselves from our unquestioning state of mind, and
> considered critically what we are already conscious of.[67]
>   Contents of parentheses are mine.

As for myself, I would be willing to allow that ordinary

usage is inconclusive on this point, so that there would be an

ordinary sense in which S "has" evidence if he believes something

that <u>is</u> evidence and another sense in which he does not "have"

evidence, as Price holds, unless he <u>recognizes</u> some belief of his

which is evidence <u>as</u> evidence. What is important about Price's

statement is not the terminological point but the fact that his

analysis of "accept" would require that we avoid interpreting

"having evidence" in the second sense when reading Chisholm's

normative condition

     (3)(b_2) "S has adequate evidence for p."

(3)(b_2) would then read

> "S has some belief q which renders p credible, even
> though S does not recognize that it does."

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[67] Price, op. cit., p. 237

Should we add:

> "Furthermore S's belief that q has led him uncritically to
> accept p"?

But it may be that it was some other belief r distinct from q
which led to the acceptance of p. Thus in the absence of the
addendum we would not seem to have a strong enough normative
condition for the analysis of "knows". With the addendum we
might then feel more confident that we are in the presence of an
instance of knowledge of a special variety. But since we are
interested in characterizing the general case and not any special
case, I would find Chisholm's pair of conditions unacceptable
outside of a limited context.

Chisholm puts forward another clause

$(3)(b_1 1)$ "p is more worthy of S's belief than -p."

which he takes to be synonymous with $(3)(b_2)$, but which is not,
(as we shall argue shortly). This too will be unacceptable in
combination with "S accepts p" where acceptance is interpreted
along the lines Price has suggested, unless, once again, we
introduce further stipulations of the sort described for $(3)(b_2)$.
For S may not have been led to accept p by anything which renders
it credible.

§3.5 Qualitative and Quantitative Idioms.

In both the doxastic and normative clauses we are dealing
with magnitudes that admit of degrees, even though in "believe"
we have a conative element which is an all or nothing affair and a
generic label for all levels of confidence beyond a certain critical

point. Thus there is no grammatical mechanism for constructing comparatives from "believes" except by means of adverbs that admit of comparison, such as "firmly believes" or "strongly believes" or by annexing phrases such as "S's belief that p is held <u>with a great deal of conviction</u> or with more conviction than his belief that q" and sooon. Other doxastic expressions admit of comparison directly. These include "puts credence in" as in "S puts more credence in p than in -p", "is sure that p" as in "S is surer that p than he is that q", "is convinced that p", as in "S is more convinced that p than he is convinced that q", "has confidence in" as in "S has more (a greater degree of) confidence in p than in q". In each case we can make the comparative idiom explicitly quantitative by speaking of the <u>degree</u> to which S is sure that p or confident that p or the <u>amount</u> of credence or confidence that S reposes in p.

Each of the normative clauses seems to be readily amenable to its own comparative locutions. S may be <u>more justified</u> in beliefing that p than he is in believing that q. He may have <u>more evidence</u> for p than for q. q may be more worthy of his belief than q. He may have just as much a right to believe that p than he has to believe q or more of a right to believe q than p. But the way Ayer words his normative clause

(3)(c) "S has <u>the</u> right to be sure that p"

makes it not so amenable to comparison as "<u>a</u> right to be sure". Chisholm's clause

(3)(b$_2$) "S has adequate evidence for p"

although based on a quantitative idiom derived from the
comparative locution "having more evidence for p than for q",
seems immune to comparison due to the word "adequate". Of course
you might have "more than adequate evidence" or more adequate
evidence for p than for q". But if you have adequate evidence for
p, then the only way in which you can have more adequate evidence
for another proposition q than you have for p is by having "more
than adequate evidence" for that other proposition.

Nevertheless, "S has adequate evidence for p" is trouble-
some because it is syncategorematic. This is brought out by
reading it as "S has evidence for p that is adequate for . . . ."
The same would be true if we said that S has enough evidence for
p. Enough for what? Adequate for what? Are we trying to say
that S has enough evidence to believe that p? Do we want to
specify that S has enough evidence to believe that p with a high
degree of confidence? But even this is incomplete. How does one
have "enough" evidence for believing a proposition? Do we mean
that S has the amount of evidence that is usually sufficient to
produce belief in p? This is then a purely psychological statement.
Undoubtedly we mean something like "S has enough evidence for p
to warrant him in believing that p or to give him the right to be
sure that p or to justify him in believing that p".

But when we have so expanded (3)(b) the reference to
evidence seems either superfluous or restrictive. It appears
superfluous since we might simply say instead of "S has sufficient
evidence to warrant him in believing that p" that conditions are

such that S is warranted in believing that p. For are we going

to defend the reference to evidence by saying that S <u>cannot</u>

be warranted in believing that p under any other conditions than

those involving his being in the possession of evidence? In that

case, however, we would have ensured that he has evidence by

requiring simply that he is warranted in believing. By our own

admission the two would be inseparable. On the other hand, if we

wish to suggest that people may be justified in believing under

circumstances <u>other</u> than those involving the possession of

evidence, then it would seem rather arbitrary to restrict

knowledge to <u>evidential</u> situations in which one is justified in

believing.

But Chisholm has suggested the clause

(3)(b_1) "h is more worthy of S's belief than $\bar{h}$"

as a correct reportive definition of "S has adequate evidence

for h" and also as stating a satisfactory normative requirement

for the analysis of "knows". I will now argue that he is wrong

on both these points. That (3)(b_1) is not a correct report of

what we mean in saying something involving the expression

"adequate" becomes clear when we look in vain for its counter-

part in the <u>definiens</u>. That Chisholm has not succeeded in

stating a satisfactory normative requirement will follow from the

more general result that we cannot state such a requirement

relying only upon the <u>comparative</u> normative idioms.

Clearly, in order to define "S has <u>adequate</u> evidence for

h" in terms of the comparative locution "h is more worthy of

S's belief than i (or h̄)" it will be necessary to say something

like "h is <u>sufficiently</u> more worthy of S's belief than h̄".

But then again, sufficient or enough for what? Well, presumably,

we will want to say that h must be sufficiently more credible for

S than h̄ for S to <u>believe</u> h. But now, if this is not to be simply

a normatively worded psychological statement, what we must say is

something like

> "h is sufficiently more worthy of S's belief than h̄
> for S to be <u>justified</u> in believing that p"

<p align="center">or</p>

> "h is sufficiently more worthy of S's belief than h̄
> for it to be <u>rational</u> for S to believe h."

It now becomes apparent why <u>no</u> comparative normative idiom

will suffice <u>in</u> <u>and</u> <u>of</u> <u>itself</u> to state the normative requirement.

What we will require is the non-comparative qualitative or

classificatory form or possibly, the quantitative counterpart.

The latter are distinguished by R. H. Vincent as follows:

> 'X is justified in being sure that p' and 'X is
> unjustified in being sure that p' are qualitative
> or classificatory terms that admit of degree. (This
> is not incompatible with saying that X either is or
> is not justified in being sure that p.) Behind
> these qualitative terms there stands, so to speak,
> the quantitative term 'the degree to which X is
> justified in being sure that p.'[69]

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[69] R. H. Vincent, "The Traditional Analysis of 'knows'," Part One of an unpublished manuscript co-authored by R.H. Vincent and J.T. Stevenson and delivered in 1963 to the Western Regional Association of Philosophers in Regina, Saskatchewan. p. 4.

But Vincent explains that due to the vagueness of these qualitative
expressions that admit of degree, it is not at all clear just what
the quantitative counterpart should be.

> The quantitative counterpart of 'X is justified in
> being sure that P' might be 'The degree to which X
> is justified in being sure that P is as high as is
> logically possible' or 'The degree to which X is
> justified in being sure that p is high but not
> necessarily as high as is logically possible'. To
> express the former possibility qualitatively we shall
> make use of the expression 'X is completely justified
> in being sure that P'; to express the latter
> qualitatively we shall make use of our original
> expression 'X is justified in being sure that P'.[70]

But it must be pointed out that neither of these
quantitative expressions will do as an analytic replacement
for either 'X is justified in being sure that P' or 'X is
completely justified in being sure that P'. They serve merely
as quantitative specifications of the range within which the
degree to which X is justified in being sure that P will fall
when, respectively, X is completely justified in being sure that
P or X is justified in being sure that P. For someone might adhere
to the epistemically strained but not analytically false position
that nobody is ever completely justified in being sure that p
(for any p) even if the degree to which he is justified in being
sure that p is as high as is logically possible. On the other hand;
if anyone ever is completely justified in being sure that p then he
would certainly be so when his degree of justification was as high
as is logically possible, and as long as it was not that high, we

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70
R. H. Vincent, op. cit., p. 5

might want to say that he is not yet _completely_ justified.

The other qualitative expression, 'The degree to which X is justified in being sure that P is high but not necessarily as high as is logically possible', clearly presents us with a rather wide range some areas of which are compatible with X's not being justified in being sure that P. Thus we might say "I grant you that the degree to which X is justified in being sure that P is _high_, but it is not yet high _enough_ to warrant him in believing that p or to justify him in being _sure_. On the other hand, I will not demand that his degree of justification be as high as is logically possible for it to be high enough to warrant his being sure."

But it is clear that Chisholm's comparative non-quantitative specification of the degree to which h is more worthy of S's belief than h̄ must accept the above as quite damaging to his theory, since this is put forward explicitly as a _replacement_ for one of the standard qualitative clauses and not merely as a specification of range. Vincent was not attempting to _define_ "X is justified in being sure that P' but merely to point out that he will _not_ restrict the range of this expression to that portion of the scale which is its logical upper limit and that its lower bound will be at least "a _high degree_" of justification.

What stands behind Chisholm's comparative qualitative expression "h is more worthy of S's belief than h̄" is the corresponding quantitative notion expressed by "the degree to which h

is more worthy of S's belief than h̄". But surely we will want to
say that unless the degree to which h is more worthy of S's
belief than h̄ is high or high enough h is not worthy of S's
belief and S is not justified in believing h (or accepting h).
Thus we might very well say, "I grant you that h is more worthy
of S's belief than h̄. But the degree to which h is more worthy of
S's belief than h̄ is very low and definitely not high enough to
warrant S in believing or accepting h. It is certainly insufficient
for S to have the right to be sure that h." The point is that h
must be sufficiently more worthy of S's belief than h̄ for S to be
justified in believing that h or for it to be rational for S to
believe (or accept) h or for h to be worthy of S's belief. Or to
put it in quantitative terms, the degree to which h is more worthy
of S's belief than h̄ must be high enough for S to be justified and
so on.

What emerges from all of this is the general inadequacy
of attempts to reduce the non-comparative qualitative normative
idioms to either comparative or quantitative terms alone. For it
will continue to remain an open question whether the categorical
qualitative evaluation applies until this question is closed by
the introduction of an appropriate connecting phrase specifying
that the underlying magnitude is sufficient for its application.
The interdigitation of the normative and doxastic quantitative
idioms provides some interesting further questions for such
reductions. For example, if S is justified in having a higher

degree of confidence in p than in q, does it follow that S is more

justified in believing that p than he is in believing q? Perhaps

what Chisholm had in mind, and formulated misleadingly, is that

if h is even _slightly_ more worthy of S's belief than h̄, then S

would be jusjtified in just _slightly_ preferring h to h̄ or in having

just a _shade_ more confidence in h than in h̄. But, of course, I

may be justified in having more _confidence_ in h than in h̄ without

being justified in _believing_ it. For "S believes that p" will

be a qualitative expression which refers to levels of confidence

beyond some specified critical stage (at which point, perhaps, the

conative or volitional element intervenes). Likewise "S is

justified in believing that p" will be a qualitative expression that

is piggy-back on the first and will require that S be sufficiently

more justified in believing p than in believing -p (or that p be

sufficiently more worthy of S's belief than -p) for S to be

justified in having a level of confidence that exceeds the critical

level for belief.

§ 3.6. Inferential normative conditions.

If S draws the conclusion Q on the basis of P, or infers

Q from P, then the fact that he was justified in believing P

provides us with no guarantee that he is now justified in believing

Q. Moreover, whether 'Q' in fact entails 'P' or whether 'Q' in

fact renders 'P' probable will be an irrelevent consideration.

It would seem that the important issue is whether S _believes_ and is

justified in believing that (1) 'P' entails or probabilifies 'Q'

or (2) Q may be correctly inferred from P.

Thus I propose the following as a set of individually necessary and jointly sufficient conditions for S being justified in believing Q, given that he has inferred Q from P and is justified in believing P.

J_1 (1) S is justified in believing P.

(2) S believes that he has inferred Q from P by means of a justifiable inference procedure; that is,
(i) S believes that he has inferred Q from P.
(ii) S believes that his method of inferring Q from P is a justifiable one; or, what S things he has done (so far as he can tell, what he <u>has</u> done) in inferring Q from P, conforms, he believes, to an acceptable permissive rule of formal inference.

(3) S is justified in believing that what he thinks he has done in inferring Q from P conforms to a justifiable inference license.

(4) S is justified in believing that he <u>has</u> done what he thinks he has done, i.e., he is justified in believing that he has not made an error in following what he is justified in thinking is a justifiable inference procedure.

(5) S believes that Q. (I don't know if this is really necessary, since it may be impossible (logically) to infer Q from P, without, at <u>some</u> stage, entertaining the possibility that Q and believing that Q.)

Now it will be observed that nowhere in the above is there any reference to a belief on the part of the agent that 'P' entails 'Q' or that 'P' probabilifies 'Q'. Instead we have worded our conditions in terms of "justifiable inference procedures". If it should turn out to be the case that no inference procedures are ever justified except when the agent involved believes and is justified in believing certain underlying entailment of probabilification

statements, then our conditions will entail these additional require-
ments. We have worded our conditions in the way that we have, however,
in order to underscore the fact that "inference ticket" belief are
logically separate from the beliefs in the corresponding implications
(or probabililification statements). For example, the inference
license corresponding to 'p.(p q)' logically implies or entails
'q', is the rule

MP   If, in a deduction, the lines 'p' and 'p q' have occurred
            (not as discharged assumptions or within the scope of
            discharged assumptions) previously, then you may write as
            a later line, 'q'.

The rule stated above is a purely mechanical permission.
But we can revise it so that it permits us <u>validly</u> to <u>infer</u> 'q'
<u>and</u> <u>hence</u>, write it as a later line. A person could conceivably
believe the implication statement corresponding to a given inference
license, (because of a truth table calculation), while at the same
time not believing that he can validly infer the consequent and write
it as a later line when the conjuncts in the antecedent are individually
present in previous lines. Moreover, he may, alongside these beliefs
(or failures to believe) harbor beliefs that invalid inference
procedures are logically permissible. He might, for example, think
that the inference license corresponding to any true implication
statement is one which permits you to infer the antecedent, writing
it as a later line, if the consequent is present in any earlier line
of the deduction.

Taking the above set of conditions as indeed necessary and
sufficient for inferential justification, let us now ask what is

intended by the frequently employed expressions

P justified Q

and

Believing that P justifies believing that Q.

I will take the first as elliptical for the second. The interpretation

that I shall suggest for the second expression is

If a rational person were to believe P and was justified in
believing P and nothing else but tautological information,
then conditions (1)-(5) above would be true of this person.

At this point, then, I would like to assert that it does

not seem likely that such a statement as

Believing that P justifies believing that Q

could be true unless it were also true that 'P' entails 'Q' or that 'P' renders

'Q' probable. However, it seems important to add that the conditions

for inferential justification specified in (J_1) do not in any obvious

way require that believing that P justifies believing that Q.

CHAPTER IV

A FAMILY OF CRITICISMS

A related group of criticisms has been levelled against the tra-
ditional sort of analysis of which Edmund Gettier's are the most recent
vintage. It will be important, however, to consider the earlier versions,
especially in view of the suggestions that are frequently offered as
solutions. Gettier himself was content to stir up an epistemological
hornets' nest without attempting to diagnose the difficulties which he
had exposed. Now in order to appreciate at what points Gettier has been
anticipated by these earlier authors, I shall, without further ado, pre-
sent the two Gettier counter-examples. Comment will be reserved until
we have examined the earlier work of G. E. Moore, A. D. Woozley and
Bertrand Russell.

4-1. The ten coin counter-example. We are to suppose that both Smith
and Jones have applied for a certain job and are sitting in the outer
office of the president of the company awaiting his decision. Smith
has reliable inside information (the president's personal assurance,
say) that he, Smith, will get the job. Moreover, to pass the time Smith
has just counted the number of coins in his pocket and has ascertained
that there are ten. "In that case," he says to himself, "the man who
gets the job now has ten coins in his pocket. For I am going to get
the job and I have ten coins in my pocket." It would seem, then, that
Smith is justified in believing the proposition

(a) The man who will get the job has ten coins in his pocket.
But quite unexpectedly and for reasons Smith could not have foreseen,

the president, acting quite out of character, decides at that moment

to give the job to Jones, and by sheer coincidence, Jones _too_ has ten

coins in his pocket. So the proposition that Smith was justified in

believing turns out to be true. But we are reluctant to say that Smith

knew (a), even though (at the time)

> (1) It is the case that (a)

> (2) Smith believes that (a)

> (3) Smith is justified in believing that (a).[71]

4-2. _The disjunctive counter-example_. We are to suppose here that

Smith has strong evidence for the following proposition:

> (b) Jones owns a ford
>
> Smith's evidence might be that Jones has at all times
> in the past within Smith's memory owned a car, and
> always a Ford, and that Jones has just offered Smith
> a ride while driving a Ford.[72]

We are to imagine further that Smith has another friend, Brown,

of whose whereabouts he is totally ignorant, and that Smith,

selecting three place-names quite at random, constructs the following

three propositions:

> (c) Either Jones owns a Ford, or Brown is in Boston.

> (d) Either Jones owns a Ford, or Brown is in Barcelona.

> (e) Either Jones owns a Ford, or Brown is in Brest-Litovsk.

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[71] I have reworded the example in insignificant ways in order
to facilitate later analysis. The original version will be found in
"Is justified true belief knowledge?", _Analysis_, Vol. 23, No. 6,
June 1963, p. 122.

[72] Gettier, _op. cit._, p. 122.

But by sheer coincidence it happens that Jones does not own a Ford
but is at present driving a rented car and that Brown is indeed
in Barcelona. Presumably, then

> (1) It is the case that (d).

> (2) Smith believes that (d).

> (3) Smith is justified in believing that (d).

(And surely he is justified in believing the disjunctive proposition
(d) since he is justified in believing one of the disjuncts.)
Again it would seem that he did not know that (d), notwithstanding
that the traditional criteria for knowledge that p have been
satisfied. In this example there is some room for discussion
concerning the relationship between the inference from (b) to
(d) and his justification in believing (d). But we shall postpone this.

§4.1. _Gettier anticipated_.

I propose to discuss the anticipations of Gettier's objections
according to the order in which they occur in the literature. It
is difficult to say to what extent the authors concerned were
aware of one anothers work. But my guess is that each of them
arrived at his own stand by an independent route due to the natural
way in which the defects in the analysis that each presents are
suggested by the preceding discussion. In any case, the independence
of Moore's work is beyond question since his discussion antedates
the others by some forty years.

§4.11. _Moore and good reasons_.

Now I think you may have noticed that when you make
a statement to another person, and he answers "How
do you know that that is so?" he very often means

to suggest that you do <u>not</u> know it. And yet, though
he means to suggest that you do not <u>know</u> it, he may
not for a moment wish to suggest that you do not
<u>believe</u> it, nor even that you have not that degree
or kind of conviction, which goes beyond mere belief,
and which may be taken to be essential to anything
which can properly be called knowledge.[73]

Nor is he asking a question concerning the psychological

origin of our belief. Moore emphasizes that when he asks any

question of the form "How do we (you) know that p?" he does <u>not</u>

mean "How does our (your) belief that p arise?"

> But if I do not mean this what do I mean? I have
> said that I mean to ask a question with regard to
> the <u>truth</u> of that belief; and the particular question
> that I mean to ask might be expressed in the words:
> <u>What</u> <u>reason</u> <u>have</u> we for our belief... (that p)?[74]

Moore confesses to his readers at this point that such a

question as "What reason have we for our belief that p?" will

itself need some explanation, and it is in the ensuing explanatory

remarks that he anticipates Gettier. He insists that we cannot

meet the challenge "How do you know that p?" unless we have "a good

reason" for believing it.

> In the first place, then, when I talk of "a reason," I
> mean <u>only</u> a good reason and <u>not</u> a bad one. A bad reason
> is, no doubt, a reason, in one sense of the word; but
> I mean to use the word "reason" exclusively in the sense
> in which it is equivalent to "good reason."[75]

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[73]G.E. Moore, <u>op</u>. <u>cit</u>., p. 33.
[74]<u>Ibid</u>. o. 35. The occasion for Moore's remarks is a
discussion of the existence of other persons. What follows "belief"
in the original is "in the existence of other persons".
[75]Moore, <u>op</u>. <u>cit</u>., p. 35

At this point we are in an agony of suspense to learn what Moore

means by "a good reason." And as a master philosophical dramatist

he prolongs the agony by asking rhetorically, "But what, then, is

meant by a good reason for a belief?" adding shortly

> A good reason for a belief is a proposition which
> is true, and which would not be true unless the
> belief were also true. (We should, I think, commonly
> say that when a man knows such a proposition, he has
> a good reason for his belief; and, when he knows no
> such proposition, we should say that he has no reason
> for it. When he knows such a proposition, we should
> say he knows something which is reason for thinking
> his belief to be true--something from which it could
> be validly inferred.) And if, in answer to the question
> "How do you know so and so?" he were to state such a
> proposition, we should, I think, feel that he had
> answered the question which we meant to ask. My emphasis
> on the occurrences of "knows". [76]

Let us disregard, for a moment, the passage which I have

taken the liberty of putting in parentheses and which contains

the various occurrences of "knows" to which I have drawn attention.

It is clear, I think, that the passage immediately preceding and

the one immediately following state a condition that is disregarded

by both of the Gettier counter-examples. In each case Smith would

be unable to state a good reason for his belief that p, if he were

asked "How do you know that p?"; that is, he would be unable to state,

as his reason for believing that p, a proposition (say q) which is

true, and which would not be true unless it were the case that p.

What he could state, as his reason for believing that p, is a

proposition which it would have to be admitted would not be true

unless it were the case that p. It could not be true that Smith is

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[76] loc. cit.

going to get the job and that Smith has ten coins in his pocket

unless it were also true that the man who will get the job has

ten coins in his pocket. Nor could it be true that Jones owns a

Ford unless it were also true that either Jones owns a Ford or he

is in Barcelona. In each case the first proposition <u>subjunctively</u>

<u>implies</u> the second (which is another way of stating Moore's relational

condition). (In Gettier's examples we have logical implication.)

But in each case Moore's material (or semantic) condition is violated.

For the reasons that would be given would constitute <u>bad</u> <u>reasons</u>

on Moore's interpretation, because they would turn out to be false

propositions.

Stating Moore's necessary condition for knowledge that p in

the following form

4-3.   S knows that p only if

   (i) S believes that p.

   (ii) There exists a proposition q logically distinct from
         p such that S believes that q and q ⊃ p.

it is clear that this could serve as a principle for the construction

of the sorts of counter-example Gettier has produced by so arranging

matters that it is not the case that q, even though the other

conditions are satisfied and S is justified in believing that p. The

curious thing about Moore's condition is that this could be unsatisfied

even though S is justified in believing that p. But would we not

think that S could not be justified in believing that p <u>unless</u> he

had <u>good</u> <u>reasons</u> for believing that p and that <u>so</u> <u>long</u> as he had good

reasons for believing that p he would be justified in believing that p?

Would we not be prepared to endorse the following?

4-4   "S is justified in believing that p if and only if
        S has good reasons for believing that p."

Since 4-4 is very plausible we might suspect that Moore's definition

of "good reasons" does not conform to common usage.

Indeed, we might want to say that so long as there exists

a proposition q such that S believes that q and believes that it

is the case that q and is justified in believing that q and believes

that it would not be the case that q unless it were the case that

p and is justified in believing this and on the basis of this

concludes that p, then he has _good_ _reasons_ for believing that p and

is justified in believing that p. For this reason I have not stated

4-3 in Moore's idiosyncratic terms of "good reasons". Let us

instead coin the expression "materially sound reasons" for this.

Adding as a fourth condition to the traditional analysis

4-5   "S believes that p for a materially sound reason"

we would have a set of conditions which would be impervious to Gettier's

counter-examples. Unfortunately, however, they are not impervious

to other counter-examples that have been devised by some of the

commentators on Gettier's paper. For there is an entire _genre_ of

conditions like 4-5, which it seems _equally_ plausible to add as

necessary conditions for knowledge that p. Our problem will be to

find a parsimonious condition that will cover them all.

But so far we have neglected the passage in which Moore says

that S must _know_ a materially sound reason for p and not merely

believe it. With this addition we would indeed circumvent all of

the counter-examples, but on pain of circularity in our definition.

Nevertheless, this suggestion will provide us with a partial clue

for a solution. Indeed, we might point out a way in which Moore could

avoid circularity in his proposal. For if Moore was groping towards

a _recursive_ definition of "knows" then there would exist an algorithm

by means of which he could transform his recursive definition into a

standard non-circular _definiens_.[77] But in that case he would have

to specify certain basic, rock-bottom items of knowledge as the

foundation of his recursive specification. This would involve a

great deal of controversial territory including the question of

whether there are any indubitable propositions and questions concerning

sense-data. Moreover, in the latter connection we would have to deal

with such people as C.I. Lewis who can argue quite plausibly that the

foundations of our knowledge are not themselves items of knowledge.

It would be desirable to be able to define "knows" without having

first to take a stand on such issues as empiricism and so forth.

It is necessary now to enter a qualification which Moore

himself later insists upon in explaining what he means by a "good

reason" and what we have called "a materially sound reason." He

explicitly rejects the notion that he means to restrict the word

"reason","to what, in the strictest sense, might be called a

logical reason--to propositions from which the belief in question

follows, according to the rules of inference accepted by Formal

Logic." And he points out that the illustration that he has given

would be inconsistent with such as restricted meaning.

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[77] If B is the recursion basis and R the recursive generating
function, then our definition would be
   "S knows that p" = df. "B v (i)R_i(B)"
where 'R_i(B)' represents the i'th iteration of R.

> I said that the fact that a statement appeared in
> the _Times_ might be a good reason for believing that
> that statement was true. And I am using the word
> "reason" in the wide and popular sense, in which it
> really might be. If, for instance, the _Times_ stated
> that the King was dead, we should think that was a
> good reason for believing that the King was dead; we
> should think that the _Times_ would not have made such
> a statement as that unless the King really were dead.[78]

But of course, Moore hastens to add, we should not think

that the appearance of the statement in the _Times_ rendered it

absolutely _certain_ that the King was dead. "But it _is_ extremely

unlikely that the _Times_ would make a statement of this kind unless

it were true; and, in that sense, the fact of the statement appearing

in the _Times_ would render it _highly probable_--much more likely than

not--that the King was dead."[79]

Let us then construe Moore's condition as follows:

2-6.   In order for S to have a materially sound reason for believing

that p, S must believe at least one other proposition q which is

such that it is true and would not _likely_ be true unless it _were_

the case that p.

In other words a materially sound reason would be a proposition that

is true and which either implies the proposition that is a candidate

for knowledge or renders it highly probable. In each of the Gettier

counter-examples although S is justified in believing that p he

lacks a materially sound reason for believing it. We may conclude,

therefore, that the particular defect in the analysis that is

exploited by the Gettier counter-examples is the lack of a materially

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[78]Moore, _op. cit._, p. 40.
[79]Ibid. p. 41.

sound reason for believing that p. And Moore's condition 4-5
will be the minimal additional clause that we can add to the analysis
to frustrate the effect of these examples. (thus partially answering
question (ii) on p. 3.).

§ 4.12. _Russell_ _and_ _false_ _premises_. Russell is the one
philosopher who presents his analysis of knowledge in terms of a
diachronic doxastic concept, _viz_. _expectation_. Now there are a
host of positively prospective evaluative terms and some non-diachronic
terms that one might choose for the normative condition here, all
of which are found in IV.A.1., _viz_.,

> expectable, (probable, likely,) reasonable to expect,
> worthy of expectation.

All of these are diachronic except for "probable" and "likely".
Russell relies on the expression "probable". He seeks, in the
context we are considering, to advance a conception of probability
related to expectation which will be applicable to situations in
which the agents involved are not language users.

> We must first consider what we are to mean by
> "expectation", remembering that we are concerned
> with something that may exist among dumb animals,
> and that does not presuppose language.[80]

Russell tells us that he will consider expecting as a
species of believing so that much of what he says about the one
will apply to the other.

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[80]Bertrand Russell, _Human_ _Knowledge_: _Its_ _Scope_ _and_ _Limits_
(London: George Allen and Unwin Ltd., 1948), p. 445.

> The state of expecting, in its more emphatic forms,
> is one with which we are all familiar. Before a race,
> you wait expectantly for the pistol shot which is the
> signal for starting. In a quarry in which blasting
> operations take place, when an explosion is due you
> acquire a certain tenseness while waiting for it.
> When you go to meet a friend at a crowded station,
> you scan faces with the expected face in your imagination.
> These various states are partly mental, partly physical;
> there is adjustment of sense-organs, and usually also
> something imagined (which may be only words). At a
> certain moment, either something happens which gives
> you the feeling "quite so", or you have the feeling
> "how surprising". In the former case your expectation
> was "true", in the latter "false".[81]

Having characterized in this rough way what makes an expectation "true", Russell now asks what would make an expectation count as knowledge. For "it is easy to think of cases of true expectation which is not knowledge."[82] As an example Russell considers a situation in which you expect Mr. X to ring you up on the telephone. (And we may suppose that you are justified in believing this.) "The telephone bell rings, but it is not Mr. X. In this case your expectation that the bell would ring, though true, was not knowledge."[83]

> It is clear that an expectation is not knowledge
> if it is the result of an argument which has false presmisses.[84]

This is a pretty clear anticipation, I would say, of Gettier's sort of counter-instance and an explicit disclaimer of their foundation. Russell evidently wishes to exclude any knowledge claims that are based on false premisses.

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[81]Russell, op. cit., p. 445   [82]loc. cit.

[83]Ibid. p. 446   [84]loc. cit.

Russell uses another example that differs from the telephone example.

> If I think that A is almost always followed by B,
> and therefore, having seen A, I expect B; if, in fact,
> A is very seldom followed by B, but this happens to be
> one of the rare cases where it is so followed, then
> my true expectation of B cannot count as knowledge.[85]

Now again, of course, S may be justified in believing that A is almost always followed by B, and his expectation would still not count as knowledge. Russell considers this sort of eventuality in terms of a dog "so consistuted that, if A has been frequently followed by B in her experience, and B is emotionally interesting, A causes her to expect B."[86]

> Suppose that, although A is in fact always followed by
> B, this generalization only happens to be right, and
> most logically similar generalizations are wrong.
> In that case we must regard it as a stroke of luck for
> the dog that she has hit on a case in which a
> fallacious process, by chance, leads to a true result.
> I do not think that in such a case the dog's expectation
> can be regarded as "knowledge".[87]

Russell's attempt to characterize knowledge in terms of true expectation, and the latter in terms of "surprise reactions" raises difficulties which he had not anticipated. I think it will be instructive to consider these. For we may then be provided with a clue to our subsequent analyses of the counter-examples.

What is the relationship between the degree to which the agent fells that he has "learned something" or what we may call the amount of "subjective information" which the agent obtains when he has satisfied himself that p, and the degree to which p is unexpected for the agent or the degree of the agent's subjective

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[86]Russell, op. cit., p. 446
[87]Ibid.

expectation or anticipation that p?

If the agent had not been expecting p at all and was
strongly inclined to doubt that p, then if he (thought that he)
found out that p, it would strain his credulity, he would be very
surprised to learn that p, and it would seem to him that he had
acquired a great deal of information. (But surely this is the
case in the Gettier counter-examples. If Smith should learn in
virtue of what it is the case that p he should be _very_ surprised.)
On the other hand, if someone rushed up to me breathlessly and asked
me, "Have you heard the news?" and I asked, "What news?" and with
a dramatic flourish he solemnly announced, "The sun rose this morning",
then I might feel that I had learned very little. After all, I
expected that the sun would rise this morning. I was quite confident
that it would, and there were no doubts whatsoever and no uncertainty
in my mind as to whether or not it would rise. And so I am not at
all surprised to learn that it has risen, nor do I feel that I have
learned very much when I am told that it has.

On the basis of these examples, one is inclined to consider
the theory that the degree of subjective information obtained by
an agent when he has satisfied himself that p is proportional to the
degree of uncertainty which is removed from the agent's mind when
he "learns" that p, that the degree of uncertainty removed is
proportional to the degree to which the agent is surprised that p,
and the degree to which he is surprised is proportional to the
degree of doxastic "readjustment" which it is necessary for the agent

to make in satisfying himself that p, and finally that the amount of doxastic readjustment will be a function of the degree of subjective expectation that p.

But suppose that p and -p are equi-probable and that the agent has proportioned his expectations according to the probabilities. Then he would not be <u>surprised</u> to learn that p (nor surprised to learn that -p). On the other hand, if p were overwhelmingly probable and the agent absolutely convinced that p, he would again be unsurprised when he was told that p. But in the first case it would be natural for the agent to think that he had learned more than in the second. So it seems that we have a case where his degree of surprise is not proportional to the amount of information conveyed nor even to the degree of uncertainty removed.

Now in the case where p and -p are <u>equally expected</u> the agent has refrained from committing himself to either one or the other alternative, and we may say that it is false that he expects p and false that he expects -p. Hence no doxastic readjustment is necessary. He has merely entertained the possibility that p without being inclined to believe or to disbelieve that p. In the case where he is firmly convinced that p, again no doxastic readjustment is necessary for the same reason; he does not have to believe anything differently from what he already believes. On the other hand, if he had believed that -p and were to learn that p he would be forced to substitute for a belief of his its contradictory.

We want to say that the amount of subjective information which is conveyed to the agent is proportional to the number of

pre-existing possibilities which (he thinks) have been eliminated
for him. If I thought that there were a large number of possibilities
and I find out that one of them has been actualized it seems to me
that I have learned more than if there were only a small number of
possibilities to choose from in the first place. And if I thought
there was only one possibility I would feel that I had learned
nothing at all. My degree of uncertainty as to whether some event
E will happen is proportional to the number of anticipated possibilities
in which E does not take place. These are the possibilities that
the occurrence of E eliminates for me.

If some event is thought very probable and is expected,
then most of the possibilities which are considered and prepared
for are possibilities in which this event is actualized, so that in
the event of its actualization very few possibilities have been
eliminated, whereas in the event of its non-actualization a great
many possibilities have been eliminated. When I find out that an
event that I thought was certain to take place actually occurred I
feel that I have obtained no information, because none of the projected
possibilities contained the non-occurrence of the event, and thus no
possibility is ruled out by its occurrence. When I have a high
degree of expectation that some event will take place, then most of
the possibilities that I prepare for or take account of or set
myself for are possibilities involving this event, and so I am
surprised and must readjust my thinking when the event does not
materialize. But if the event occurs I can say that there was only
a small degree of uncertainty on my part with regard to its occurrence,

and very little readjustment was necessary (if any). I was quite

prepared for the occurrence. In the case of the equi-probable

and equi-expected p and -p the reason that I am not surprised is

that there is no need to re-adjust any of my "preparations". In

half of the envisaged possibilities p was taken account of, whereas

in half of them -p was taken account of. Thus, in general, if any set

of exclusive and exhaustive events is thought to be equi-probable,

no _surprise_ will be occasioned by the occurrence of any one of them,

even though more and more information will be obtained as the set

increases in size.

In the event of the non-actualization of a very probable

and expected event E, we can say that the degree of uncertainty

as to whether non-E would occur was very high and so a great deal

of subjective information is conveyed by non-E, since a great deal

of uncertainty has been removed (a proportionately large number of

possibilities have been eliminated).

Within the above framework we might attempt to distinguish

between absolute certainty and knowledge on the basis of subjective

information and "objective" information. If I am absolutely certain

that p, then I feel that I have learned nothing when I have been

told that p. If I know that p, is it the case that I can _indeed_ learn

nothing from being told that p? But we cannot use "learn" here since

it is analyzable into something like "a process culminating in the

acquisition of knowledge".

Let us observe that subjective information is dependent only

upon a set of beliefs. Relative to these beliefs of the agent a

certain set of possibilities are envisaged some of which involve p and others not involving p. In the case of the ten-coin counter-example the agent may envisage the following cases (assume there are one hundred applicants for the position):

(0) I, Smith, get the job.   p. ('p' is "The man who gets the job has ten coins in his pocket.")

(1) $John_1$ Doe gets the job.

Sub-cases (assume a maximum of one hundred coins in a person's pocket):(11) $John_1$Doe has one coin in his pocket. -p
(12) $John_1$Doe has two coins in his pocket. -p.
. . .

(110) $John_1$Doe has ten coins in his pocket. p
. . .

(1100) $John_1$Doe has one hundred coins in his pocket. -p.

(2) $John_2$Doe gets the job.
Sub-cases:
(21) $John_2$Doe has one coin in his pocket. -p.
. . .

(210) $John_2$Doe has ten coins in his pocket. p.
. . .

(2100) $John_2$Doe has one hundred coins in his pocket. -p.

(100) $John_{100}$Doe gets the job.
Sub-cases as before.

Now if Smith knew that the boss had actually changed his mind about giving him the job and had decided to pick another applicant at random, then his expectations would be as follows:

For any $John_i$Doe that I think of there will be one chance in a hundred that he will be picked and there will then be a further chance of one in a hundred that this man will have ten coins in his pocket. There are ten thousand possibilities that I must anticipate

(one hundred possibilities for each of one hundred men). In one hundred
of these it will be the case that p, _viz._, (110), (210), ... , (10010).
If it should turn out to be the case that p,   900 out of 10,000
possibilities will have been eliminated.

Thus if Smith should become convinced that p he would feel
that he had learned a great deal, that a great deal of information
had been conveyed to him. This would happen if Smith were to come to
believe that one of the false beliefs that he has were indeed false.
This is the belief that he is going to get the job because he has
been told by the boss who is generally reliable. Reasoning on the
basis of what he _actually_ believes, Smith might believe that there
is only one chance in a million that he will not get the job and that
the boss will choose someone else quite at random. In that case he
prepared himself for 10,000,000,000 possible cases of which only
10,000 are unfavourable to the hypothesis that p. In the other
9,999,990,000 cases it will be the case that p. But even among the
10,000 there will be 100 instances in which p is the case. So strictly
speaking he must consider that it will be the case that p in 9,999,
990,100 cases out of 10,000,000,000 and the case that -p in only
9,900 cases out of 10,000,000,000. When he becomes convinced that p
he will feel that he has learned a lot less than he would think that
he had learned in the absence of the false belief that he would get
the job. Could we suggest that a person knows that p only if the
degree to which he would be subjectively informed when he has
satisfied himself that p would not be _increased_ if he were to
believe the contradictory of any false proposition which entails or

probabilified (but is not entailed by or probabilified by) p and which

he so took and which formed part of the basis for his belief that p?

We might then state the following conditions for the correct

use of "S knows that p":

4-7. (1) It is the case that p.

(2) S expects p (or S believes that p.)

(3) p is probable for S to a high degree.

(4) The degree to which S would be subjectively informed
if he became convinced that p would not be increased
if he were to believe the contradictory of any
proposition which rendered p probable for him (or justified
him in believing that p.)

In condition (4) if we assume that S is not already _completely_

convinced, then we would phrase the condition in terms of his

becoming completely convinced. But perhaps it should be reworded in

terms of becoming convinced that confirmation for p has been forth-

coming or some sort of corroboration other than what he already

possessed prior to becoming expectant with regard to p. It is best

to use the model of a future event E that is being anticipated. If

S knows that E will take place, being confirmed in his expectation

will eliminate very few possibilities (if any) that he had contemplated.

It must not be the case, however, that if S should suppose some false

belief of his to _be_ false that a _greater_ number of anticipated

possibilities would be eliminated for him.

In the case where S believes that (p v q) because he believes

that p and it is the case that (p v q) because it is the case that q,

and it happens to be the case that -p, if S were to suppose his false

belief that p to be false, he would calculate the cases to be considered

as follows:

(We shall assume that p is as likely as q without loss of generality, and similarly for p and -p and for q and -q.)

(1) p. It is the case that (p v q), (Ruled out by hypothesis.)
whether q or -q, which would be sub-cases (11) and (12).

(2) -p

Sub-cases:
(21) q. It is the case that (p v q).
(22) -q. It is false that (p v q).

Since S has the belief that -p by hypothesis, he will consider only the cases (21) and (22) which are equi-expected. Hence he will feel that he has been informed to the same extent in finding out that (p v q) or that -(p v q). In the previous case we may assume once more a very high probability weighing for p, let us say allowing for only one chance in a million for going wrong. Then out of 2,000,000 possibilities he would allow for only two cases out of the lot in which he might be mistaken. Thus he would think that confirmation for p only eliminated two out of two million possibilities and hence that he had learned very little from such confirmation. But given that he believed the contradictory of his false belief he would feel that he had eliminated half of the possibilities, _viz_., 500,000 out of 1,000,000 rather than only one millionth of the possibilities. Thus condition (4) in 4-7 handles the Gettier counter-examples. But we must consider whether it handles later counter-instances which have been brought forward since Gettier. We may then compare it in this respect with Moore's condition 4-5.

§4.13. _Woozley_ _and_ _being_ _right_ _about_ _the_ _evidence._

Woozley begins by considering what more is required for knowledge

than true belief or, as he puts it,

(i) that what is known is true.

(ii) that the person knowing is sure that it is true.

He then designs some counter-examples to these two conditions of a

sort that go beyond the usual specifications that the agent is

justified in believing or being sure that p.

> If p is the proposition in question, then a man does not
> know p, even although he is sure that p, and although p is
> true, in any of the following conditions:
>
> (a) he has no evidence for p;
> (b) he is wrong about the evidence; [88]
> (c) he is wrong about the relation of the evidence to p.

A person who comes under condition (a) would be a pessimist

who "claims to know that his fireworks party will be spoiled by

rain."[89] Later remarks seem to suggest that this is a condition of

rationality.

> Where an increase in conviction is produced by an
> increase in the evidence (and evidence can increase
> in more than one dimension) the belief is rational.
> We would call irrational the belief that it will
> rain to-night simply because one has arranged a
> fireworks party, and rational the belief that it
> will rain tonight because the official weather
> forecasts predict rain for tonight. Belief may
> wander throughout the whole range of rationality
> and irrationality, according to the extend, nature,
> and value of the evidence, but I do not think we
> ever believe, if there is a total absence of anything
> which one would regard as evidence (even though one
> might be quite wrong in so regarding it).[90]

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[88] A.D. Woozley, _Theory_ _of_ _Knowledge_ (London: Hutchison
and Company, 1949, p. 189.

[89] Woozley, _op._ _cit_, p. 189

Of course, if Woozley thinks this he should revise his statement of (a) which suggests that it is possible to believe in the _absence_ (and he explicitly considers knowing to be a species of believing which results under certain evidential conditions) of evidence. Condition (a) should then be that it is rational for the agent to be sure that p on the evidence that he has.

Conditions (b) and (c) Woozley considers to involve various kinds of "mistakes about evidence."

> Mistakes under (b) consist of being misinformed about
> The data which one is using as evidence.[91]

Thus if I take the darkening of the sky to be due to rain clouds and it is due to clouds of smoke from oil storage tanks then "I might under that misapprehension unjustifiably predict that rain would spoil my fireworks party tonight." But here is would not be _irrational_ for me to believe what I do on the interpretation that I have given my data. It is simply that I have been led to a false premise from which I have justifiably arrived at a conclusion which may or may not be borne out. But on the other hand, I cannot justifiably predict rain on the basis of what I _take_ to be oil-storage-tank-smoke-clouds. In any case, the problem is basically of the sort that Gettier (and Moore and Russell) have been concerned about: The exclusion of knowledge claims based upon false premisses.

Another example that Woozley considers is one in which Professor Hubble is sure that the universe is expanding at a speed that is higher than that of any ordinary explosion.

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[91]_Ibid_. p. 190

> and he may be right, but he does not know that the
> universe is expanding at that speed; for the data
> which he has observed, namely, the shift towards red
> of the light of remote nebulae, are consistent with
> alternative hypotheses to his own.[92]

This of course is _not_ a mistake under (b) as it stands, since we have

a case where it is simply unjustifiable to conclude that p from the

evidence given, because we are unwarranted in excluding alternative

explanatory hypotheses. Hence, this would fall under (a) not because

Hubble has no evidence but because he has insufficient evidence.

Woozley, however, alters the example so that is will illustrate

a mistake under (b), a case of being misinformed about the data that

one is using as evidence. An astronomer such as Hubble would be

making such a mistake "if he supposed that the light from the distant

nebulae showed a red shift when it did not."[93] And once again we

would have an instance of a supposition which is false and thereby

incapable of enduing its possessor with knowledge.

Woozley's third sort of example of mistakes under (b) is

rather interesting, in that it is difficult to decide whether it

should really count as a counter-example to the agent's claim to know.

A newspaper reader would be making a mistake under (b), Woozley

contends, and hence is epistemically disqualified.

> if he supposed, on reading the heading, "Queen Elizabeth
> Held Up By Breakdown," that the liner had been delayed,
> when in fact the train in which the Queen was travelling
> had been held up by a breakdown farther along the line.[94]

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[92]Woozley, _op. cit._, p. 189.

[93]_Ibid._ p. 190.

[94]Woozley, _op. cit_, p. 190.

In the case of the astronomer and the newspaper reader Woozley
wishes to make parallel comments, since the astronomer is operating
upon the false premise that the nebulae showed a red shift and the
newspaper reader on the false premise that the Queen has been delayed
due to a breakdown in the _liner_.

> The astronomer could not, in such circumstances, know that
> the universe was expanding at the speed of an explosion
> (even although he was right and it was); and the newspaper
> reader could not know that the liner would dock at Southampton
> behind schedule (even though he was right and it would).[95]

The case that is indecisive that I alluded to involves the claim
by the agent, not that he knows that the liner will be behind schedule
in docking at Southampton, but, say that the Queen will be late in
arriving at her final destination. For in this case he is taking the
newspaper's testimony that the Queen was held up (in someway or other),
and even though he incorrectly attributes the delay to the liner
rather than the train, he may be perfectly justified in thinking that
she will be delayed on the basis of the true premisses involving a
statement in a reliable news medium which entails this, even though
false mediating premisses were at work in the process. But Woozley
is quite right to point out that the newspaper reader does not know
that the _liner_ will dock late at Southampton on the basis of his false
impression and "even although" he is right.

Woozley not turns to mistakes under (c) which he thinks are the
more common variety.

> Here one is wrong not about the evidence itslef, but about
> its function as evidence, about its relation to the conclusion,
> or because, although it is evidence for the conclusion, it
> is not sufficient.[96]

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[95] _loc. cit._

[96] Woozley, _op. cit._, p. 190.

These are mistakes, then, which the agent makes in manipulating the evidence, in working with it, reasoning from it, and so forth. No such mistakes are considered in the Gettier counter-examples where the universe, so tp speak, has conspired to provide the would-be knower with faulty material upon which to operate.

The important condition in Woozley's set for us is the condition (b) requiring that the knower be right about the evidence. This seems to be a stipulation that his belief is not based on false premises. But as we shall see, this condition will be too sweeping. (It does obviate Gettier's two examples.) Woozley sums up:

> Knowing p, then, will consist of surely believing p
> where p is true, and of the belief being due to having
> conclusive evidence for p. Having conclusive evidence
> for p will consists in either explicitly attending to it and
> consciously treating it as evidence, inferring
> p from it, or in being able, if called on, to attend to
> it explicitly, etc., i.e., in the possibility of inferring
> p. Knowledge has thus been analyzed, not as something
> generically different from belief, but as the limiting
> case of belief, something which belief becomes when the
> evidence is good enough.[97]

I would tend to agree with this, since the only additional requirements that the counter-examples have dictated are material condit-. ions on the evidence or grounds of belief. False premisses simply do not constitue "good enough" evidence.

§ 4.2. Gettier re-visited.

What I shoud like to do now is to answer with regard to all of the later counter-instances to the analysis of "knows" that have followed Gettier the question that was asked very early in this

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[97]Woozley, op. cit. p. 193

work, viz., How many and what sorts of additional clauses are
required to obviate these counter-instances? What we want, as we
said before, is a list of defects in the traditional anlysis which are
exploited by the various instances cited against it. For any given
counter-example there is some feature the presence of which will render
the judgments that we are prepared to make on the strength of the
analysis counter-intuitive. We shall now consider the various
examples in turn, starting with the Gettier cases and proceeding to
those that have appeared in commentaries on his work and look for the
particular defects that are exploited in each instance. The
goal for now is thus quite limited. I shall be interested for
the time being, not in curing the disease, but in treating the symptoms
as they arise.

In both of Gettier's examples this is very easy. It is what
Russell and Moore have insisted upon and one of the things that
Woozley considers. There was a false proposition in each case from
which Smith inferred one that was true on other grounds of which he
was unaware. In each case there are propositions P, Q and R such that
(1) S believes that P because he believes that Q, (2) S believes
that is is the case that P because it is the case that Q, (3) it
is the case that P because it is the case that R and not because it
is the case that Q, because it is not the case that Q, (4) S does
not believe that it is the case that R. Other conditions are added
to ensure that S is justified in believing that P. Translating out
of the causal idiom, we might say that 'it is the case that p because
it is the case that q' is a way of saying either (i) Q. (Q ⊃ P),

or (ii) Q. (Q renders P probable).

Now S's belief under (2) is false in each case. In the Gettier examples they are of the form (i). "Q' in the ten-coin counter-example is the false conjunction 'I have ten coins in my pocket and I am going to get the job.' which we might label 'T.J.' The proposition P in this case is that the man who will get the job has ten coins in his pocket, which we may label 'M'. S believes that (T.J) ((T.J) ⊃ M) and this is his reason for believing that M. In the disjunctive case 'Q' is 'Jones owns a Ford', 'P' is 'Either Jones owns a Ford or Brown is in Barcelona' and 'R' is 'Brown is in Barcelona'. 'R' in the ten-coin case is 'Jones will get the job and Jones has ten coins in his pocket' What happened in each case was that there were three propositions P, Q, and R such that S believed a false proposition of the form

$$Q.(Q ⊃ P)$$

but there was nevertheless a true porposition of the form

$$R.(R ⊃ P)$$

which was doxastically unavailable to S. Moreover, S was justified in believing the false proposition of the form

$$Q.(Q ⊃ P)$$

because he was justified in believing Q and he was justified in believing (Q ⊃ P).

The conundrum that faces us now is to decide what would be the minimal requirement that we could add to the analysis to block Gettier's examples. Moore's condition is that he must (in the deductive application of this condition) believe at least one true porposition of the form

$$R.(R ⊃ P)$$

But this is somewhat indirect in this case. Let us ask what it is

about what he <u>did</u> believe that caused the counter-intuitive judgment.

Well, he believed a false proposition of the form

$$Q.(Q \supset P)$$

But this could be false for <u>two</u> reasons: either because of $-Q$ or

because of $-(Q \supset P)$. In the Gettier examples it happens to be false

because of $-Q$. Thus we might state our requirement as follows:

4-8. S must not believe any proposition of the form

$$Q.(Q \supset P)$$

when it is the case that $-Q$, if he is to know that P.

Should we have confined ourselves in 4-8 to propositions Q which are

such that S has evidence for them and such that they justify him in

believing that P because S is justified in believing that $(Q \supset P)$ and

it is the case that $(Q \supset P)$? This would be reasonable, since we

might not be concerned with cases in which S has beliefs of this form

in which it is false that Q, but for which he has no evidence and which

he does not take as justification for believing that P. We are only

interested in beliefs which do <u>indeed</u> justify him in believing that P.

For if they did <u>not</u> justify him in believing that P the counter-

intuitive judgment would not be forthcoming on the basis of the

traditional analysis, since the normative clause would be violated.

Let us then state the condition as follows:

4-9. For any propositions P and Q such that S has evidence adequate

to justify him in believing that Q and such that Q justified him in

believing that P because S is justified in believing that $(Q \supset P)$ and,

indeed, it is the case that $(Q \supset P)$ and S believes the compound

proposition that $Q.(Q \supset P)$, it must not be false that Q.

This might now seem to be a minimal *ad hoc* requirement. But it is not, and it will be important to see what feature of Gettier's examples have not been taken account of here. Let us recall that in each of the Gettier examples there is a true proposition of the form.

It is the case that P because it is the case that R

or, a proposition of the form

$$R.(R \supset P)$$

such that it has been carefully arranged that S does not believe this proposition. Nor is there a suggestion that he does not believe this proposition because he does not believe that $(R \supset P)$. It seems quite sensible to allow that if S thought Brown were in Barcelona he would infer from this that either Jones owns a Ford or Brown is in Barcelona, or at any rate, he would realize that this inference is justifiable if he should happen to reflect on it. The suggestion is that he does not believe that R and hence he fails to believe the conjunction $R.(R \supset P)$. Let us then add to 4-9 the proviso that if there is a true proposition of the form

$$R.(R \supset P)$$

then S does not believe it because he does not believe that R. The importance of this addition will emerge shortly.

The fact that I would like to call attention to by this addition is that Gettier has provided in each example what we might call, in the terms used for the Moore condition, a materially sound reason for believing that P of which the agent has been deprived. But

the agent has a reason which is a materially unsound reason for

believing that P, but is nevertheless a good reason for believing it;

that is, he is justified in believing that P for this reason. Could

Gettier have constructed these counter-examples without providing a

materially sound reason for believing that P?

If we confine ourselves to deductive models we can see that this

would be impossible. You will have to have the agent believing a false

proposition of the form

$$Q.(Q \supset P)$$

But it will be necessary to have it true that $(Q \supset P)$ in order to

argue for his being justified in believing that P. Hence, in order

to make it the case that $-(Q.(Q \supset P))$ we must let it be false that Q.

Now, however, we must have the belief that P come out true. Is it

simply a matter of stipulating that it shall be the case that P?

The problem is that we have admitted a proposition of the form

$$(Q \supset P)$$

to be true. This will require (in the deductive model) that 'P'

is non-atomic. For we are not using any nomic sort of relationship

in our justification but purely logical relationships. If 'P' does

not involve quantifications, but is merely compounded of logical

connectives and atomic statement letters, then we will have opted for

one of the lines in the truth table for the corresponding schema in

which it comes out true. Thus if we stipulate that S believes falsely

that $p.(p \supset (p \lor q))$ and that nevertheless it is the case that

$(p \lor q)$, then it follows that it is the case that q, for by our

stipulations we have automatically selected the line in the truth table

'p' false and 'q' true. And the same will hold true for quantification examples. If we stipulate that the man who will get the job has ten-coins in his pocket, then it must be true that some person X will get the job and that X will have ten coins in his pocket. This will then be a materially sound reason for believing that P, i.e., not that some person X, unnamed, will have these properties but that the <u>particular</u> person, say, Jones has these properties. Now if we have established that we cannot set up these counter-examples (in the deductive model) without providing a materially sound reason for believing that p, I think that we can show that it is necessary to <u>deprive</u> the agent of this reason.

For if S believed a true proposition of the form

$$R.(R \supset P)$$

and where he had evidence adequate to justify him in believing that R, (and of course, he can be justified in believing that $(R \supset P)$ since by hypothesis it is the case that $(R \supset P)$), then we would have to admit that he <u>knows</u> that P even though he <u>also</u> believes a <u>false</u> proposition of the form

$$Q.(Q \supset P)$$

Thus unless we explicitly pack into our condition that the agent has been <u>deprived</u> of a materially sound reason for believing that P, we shall run the risk of producing too <u>strong</u> a condition. 4-9, for example, will block a claim to knowledge in the above instance in which we would want to maintain that the agent <u>does</u> know that P. Let us stipulate as our requirement, then,

4-10. For any propositions P, Q, and R such that the agent has

evidence adequate to justify him in believing that Q and Q justifies

him in believing that P since (Q ⊃ P), and it is the case that R and

S does not believe that R and it is the case that (R ⊃ P) and S believes

that Q.(Q ⊃ P), it must not be false that Q.

Let us provisionally assume that this is the minimum requirement that

we can construct tailor made for the Gettier examples.

Let us now turn to the variant of the Gettier counter-examples

produced by Keith Lehrer.[98] This is based on the possibility that I

mentioned earlier, blocked by the Gettier formulation, in which S

believes a true proposition of the form

$$R.(R \supset P)$$

in addition to believing falsely a proposition

$$Q.(Q \supset P)$$

4-11. The _evidential_ _redemption_ _example_.

I shall formulate the example in terms of two men whom we may

call Mr. Haswun and Mr. Lackswun. The first owns a Ford and the

second does not. Let us suppose that Mr. Haswun and Mr. Lackswun both

assure me that they own Fords and are very reliable persons in general.

I know them both and have no reason to doubt the word of either. Both

of them show me certificates that they own Fords, and so forth. Assume

for the moment that I have adequate evidence to justify me in believing

that Mr. Haswun owns a Ford and tto justify me in believing that Mr.

Lackswun owns a Ford. From this I conclude that it is the case that

P : Someone in the room owns a Ford.

Here we would want to say that I know that P. And we might ask how

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[98]Keith Lehrer, "Knowledge, Truth and Evidence," _Analysis_, Vol. 25,
No. 5, p. 170.

we should word the condition 4-10, taking out the condition packed
in by Gettier depriving S of a materially sound reason for believing
that P, so that we continue to block the claim to knowledge in the
Gettier cases while letting it go through for the Lehrer example. The
only simple answer here seems to be Moore's condition 4-5 that S
believes that P for a materially sound reason. For if S has evidence
adequate to justify him in believing a true proposition of the form

$$R.(R \supset P)$$

as he has in 4-11 we want to redeem his claim to knowledge, despite
the fact that he also claims to know that P for a materially unsound
reason. In other words his claim to knowledge will no longer be suspect
on the grounds that he believes a false proposition of the form

$$Q.(Q \supset P)$$

In the Gettier cases where he believed _only_ such a false
proposition, he thought that the reason that P was true was that Q
(that Jones owns a Ford, that he will get the job having ten coins in
his pocket). But it turns out, in each case, that the reason that P
is true is that R. Thus S did not know a reason that P was true,
although he had a reason for _thinking_ that P was true.

Now very often we use a locution of the kind "The reason that
it is the case that P is that R". And also there are locutions of
the kind "That is not a reason for believing that P" or "That is not a
good reason for believing that P is true" or "That is a (good) reason
for believing that P is true." Moreover, I will suggest that the
most significant feature of the Gettier counter-examples is the fact
that Gettier provides in each instance a good reason for _believing_

that P is the case which is not the reason that it is the case.

When we say, "The reason that it is the case that P is that Q" we would seem to be answering the question, "Why is it the case that P?". And in each of Gettier's examples there is an answer to this question, but it is not given to the agent. The reason for its being true that either Jones owns a Ford or Brown is in Barcelona is that Brown is not in Barcelona. But Smith has been doxastically deprived of this item of information. The same is true in the ten-coin example where the reason that the man who will get the job has ten coins in his pockets is that Jones who has ten coins in his pocket is going to get the job. In each case Smith has a reason for believing that P which is not the reason that P. But since we were looking before for the minimal requirement that was tailored precisely to Gettier's sort of counter-instance, we may as well cash in on this idiosyncracy of their construction. This might tempt us to state the following somewhat sweeping requirement.

4-12. If S knows that P then S's reason for believing that P must be the reason that P.

This is of course too sweeping to introduce into other contexts. Clearly, if I have good reasons for believing that P you cannot neutralize my claim to knowledge because I do not know (or have a justifiable belief with respect to) why it is the case that P. I do not have to know why the chair is in the room (say, who put it there or how it got there) in order to have good reasons for believing and in order to know that the chair is in the room.

How, then, can we narrow down our formulation of 4-12. to fit

only the Gettier cases? Well, do we not find that in each of Gettier's examples S's reason for believing that P is a reason of the form below?

4-13. It is the case that P because it is the case that Q.

or

The fact that Q makes it the case that P.

or

The reason that "P" is true is the fact that Q.

Hence we add simply that if S's reason for believing that P is his thinking that the reason that P is that Q (which he is jutified in believing because (Q ⊃ P) or more generally, if it were the case that Q it would be or would likely be the case that P), then it must not be false that Q. Making the revision we would have

4-14. If S knows that P then if S's reason for believing that P is his (justified) belief that the reason that P is that Q (or it is the case that P because it is the case that Q), then it must be the case that Q.

I think that this is close enough to the minimal requirement to be accepted as such.

Turning now to the evidential redemption example, we may observe the same sort of peculiarity in the redeeming justifying belief. For the (justified) belief that redeems S's claim to know that P is also a belief of the form.

The reason that P is that R.

which happens to be justifiably believed and true. 4-14. would block this claim. Hence we must find a way of overcoming this unwanted result. Can we then say that in order for S to know that P he must have

a true (justified) belief of the form "P" is true because "Q" is true

(or the reason that P is that Q)? Notice that this would differ from

Moore's condition that he must have a materially sound reason for

believing that P. But this is too sweeping, too restrictive, as we

suggested earlier. What we might do, however, is stipulate the

following:

4-15. If S knows that P, then if S has any false belief of the form

"P" is true because "Q" is true (or the reason that P is that Q),

then he must also have a true belief of this form such as "P" is true

because "R" is true (or the reason that P is that R).

Now this would entail that for some sub-set of false beliefs of the form

$$Q.(Q \supset P)$$

namely those in which it is also believed that the reason that P is

that Q, there would be true beliefs of the form

$$R.(R \supset P)$$

But this would not be specified for all such beliefs. Nevertheless,

in the _deductive_ case the two sets of beliefs would coincide, since

any belief that Q.(Q   P) will be _automatically_ a belief that the

(or a) reason that P is that Q (or "P" is true because "Q" is true).

I take 4-15 to be the weakest addition to the analysis that will

handle both the Gettierexamples, while permitting knowledge in the

evidential redemption example.

But we can construct similar examples to Gettier's by making

similar moves at remoter points in the chain of reasons leading to P.

Thus 4-15 will block Gettier's disjunctive example where "p v q" is

true because "q" is true and the agent believes that "p v q" is true

because "p" is true. But since "p" is false, the agent believes a
false proposition of the form

"P" is true because "Q" is true.
or

The reason that P is that Q.
without believing a true proposition of the form

The reason that P is that R.
(In this case "R" could be "q".)

Now what if S believes that (p v q v r) because he believes
that (p v q) and he believes that (p v q) because he believes
that p? Moreover he believes that the reason that (p v q v r) is that
(p v q) and the reason that (p v q) is that p (or in the causal idiom
"(p v q v r)" is true because "(p v q)" is true and the latter is
true because it is the case that p.) Moore's condition that S believes
that P (in this case (p v q v r)) for a materially sound reason would
be satisfied. For we may suppose that "p" is false, "q" is true, and
"r" either true or false. Then there will be a true proposition
(p v q) which S believes and is justified in believing because he is
justified in believing the false proposition

$$p. \ (p \supset (p \lor q)).$$

which is false because of the fact that $-p$
And the true proposition (p v q) which S is justified in believing will
entail and justify S in believing that (p v q v r). Thus S will have a
materially sound reason for believing that P even though he does not
have a materially sound reason for believing what is his reason for
believing that P.

4-15 Fares somewhat better, but still falls down. This will

at least bring out the fact that he has a false belief of the form

The reason that P is that Q.

or

"P" is true because "Q" is true.

But the redeeming feature of a true belief of this form is also

present. Although S believes falsely that it is the case that

(p v q v r) because it is the case that p, he believes truly that it

is the case that (p v q v r) because it is the case that (p v q).

This purious knowledge claim would thus escape the screening of

Moore's condition as well as 4-15. What, then, is the solution?

§ 4.21 On fully grounded doxastic chains.[99]

Ultimately, what makes S believe that (p v q v r) is his

belief that p. But what makes it the case that (p v q v r) is the

fact that q. Thus in constructing this counter-example I have

employed Gettier's principle of construction involving a justifying

belief of the form

> It is the case that P because it is the
> case that Q.

But although I have had S believe a true proposition of the form

> The reason that P is that Q_1

he also believes a false proposition of the form

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[99]Michael Clark uses the expression "fully grounded" in his article "knowledge and Grounds: A Comment on Mr. Gettier's paper", *Analysis*, Vol. 24, pp. 46-47. There he says that S's belief that p is fully grounded if and only if there is a chain of warrants terminating in what he calls a "basic proposition" (These would be sense-datum statements or "indubitable" propositions.) and each ground in the chain is true. But I use the expression here in a different way.

The reason that Q_1 is that Q_2.

As a first step towards the replacement of 4-15, I shall
adopt, temporarily only, the fiction that all of the justifying
beliefs that we have to consider are of the form

The reason that P is that Q.

This will give us a simpler problem to consider. We might then be
in a better position to tackle the general case.

Relative to this assumption we may now stipulate that if a
person knows that P he must believe a true proposition of the form

"P" is true because "Q_1" is true because "Q_2" is true
because ... because "Q_n" is true.

which has as its _terminus ad quem_ the proposition that is a candidate
for knowledge and as its _terminus ab quo_ (Q_n) a proposition that is
not believed because of a belief in some false proposition Q_{n+1}.
I shall refer to such a chain of beliefs as a materially grounded
doxastic chain. As was pointed in   a belief of the form

It is the case that p_1 because it is the case that p_2 because
it is the case that ... because it is the case that p_n

cannot be true unless the conjunction of p_1 and p_2 and ... and p_n
is also true. The notation that we adopted in   for such
propositions connecting their constituent statement letters (or
propositional variables) by the operator "because it is the case
that" consisted in a substitution of the symbol '/' for that
operator where 'p/q/r' is read 'The reason that p is that q and the
reason that q is that r'. Our condition could then be stated as
follows:

If S knows that P, then he must believe a true proposition
of the form

$$P/Q_1/Q_2/ \ldots /Q_n$$

such that there is no false proposition that $Q_n/Q_n + 1$ also
believed by S.

We might put this another way. Instead of saying that the
terminus ab quo of the chain should not be based on a false belief,
we could speak of a true _terminated_ doxastic chain. By "a terminated
doxastic chain" we mean a chain of beliefs of the form

4-17. (S believes that P)/(S believes that Q_1)/.../(S believes that Q_n)
that Q_n)

which is isomorphic with the chain

4-18. S believes that $P/Q_1/Q_2/ \ldots /Q_n$

where there is no further doxastic source for the belief that Q_n
such as the belief that $Q_n + 1$. Thus we could truly say that P is
ultimately believed because of the belief that Q_n.

4-17 is simply a statement tracing the origin of S's belief
that P ultimately to his belief that Q_n. 4-18 records his belief
that the reason that P is, ultimately, that Q_n. But 4-18 is in
no way entailed by 4-17. We are simply looking at the special case
in which these two chains are isomorphic.

We can then require that there be at least one chain of the
form 4-18 (corresponding with one of the form 4-17) which is true.
These would all be different ways of expressing the notion of a
doxastic chain being materially grounded. Our condition is thus

4-19. If S knows that P then there exists in S a materially grounded
doxastic chain with "P" as its first member; that is, a true
terminated doxastic chain of the form

$$P/Q_1/ \ldots /Q_n$$

Now when a person asks me "What justifies you in believing that P?" and the answer is "The _fact_ that Q justifies me in believing that P". I am claiming that my belief that P is materially grounded in a true belief that Q, or, in the special case we are considering, that the fact that Q makes it true that P (or is not likely to be true if it were not the case that P which we shall treat shortly); and I am claiming, moreover, that as a result, my belief that Q justifies me in believing that P, that it provides me with adequate evidence for accepting P, that it gives me the right to be sure that P. Now abstracting from the material question and from the material "efficacy" of the agent's warranting belief (i.e. whether he is right in thinking P/Q_n), we would not want to say that S knows that P if he does not have a warranting belief. Thus we will want to stipulate that there is some proposition Q (possibly identical with P) which has the property that belief that Q justifies belief that P.

But, as before, this is not enough, because S may believe that Q because he believes that R and belief that R may not justify him in believing that Q. Again we want to say that S is ultimately justified in believing that P, that the materially grounded doxastic chain coincides with a chain of warrants of the following form:

4-20. S's belief that Q_n justifies him in believing that Q_{n-1} which justifies him in believing that ... which justifies him in believing that P. Moreover, S does not believe that Q_n on the basis of any belief Q_{n+1} which is such that Q_{n+1} fails to justify S in believing that Q_n. Nor is there any belief in the doxastic chain,

say Q_i, which is such that some set of true propositions, T, if

justifiably believed by S would in conjunction with Q_i fail to justify

S in believing that Q_{i+1}.[100]

We can express the condition that is desired here by

saying that S's belief that P is evaluatively grounded. But we

may have specified too strong a condition in stipulating that there

be _no_ set of true propositions which when conjoined with some link

in the doxastic chain would fail (if justifiably believed) to justify

belief in the next link. A weaker condition would require only that

the set consisting of the totality of true propositions (logically

distinct from Q_i) when justifiably believed in conjunction with

any Q_i, should not fail to justify S in believing that P, and this

may be all that is necessary.[101]

In the special case we are considering, then, it would seem

plausible to suggest that if a doxastic chain in S is both materially

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[100]That a condition of this _sort_ is required is suggested by
Ernest Sosal in "The analysis of 'Knowledge that p'", _Analysis_, Vol.
25, pp. 1-8. He points out there that we must account for the
possibility that S 'Besides believing in the truth of what are good
grounds for p and in the goodness of these grounds, believes too in
the truth of what are good grounds for -p and in the goodness of
these grounds". Thus it is at least necessary to exclude _beliefs_
of this sort. But it will be pointed out in   that a much
stronger requirement is called for.

[101]The rationale behind these additions will be found in the
discussion of the requirement of epistemic invulnerability (which is
suggested by the data of non-canonical epistemic locutions) in
 4.22.

grounded and evaluatively grounded, then necessary and sufficient

conditions for the truth of "S knows that p" have been satisfied.

Putting the condition another way, we could simply require that there

exists in S a terminated doxastic chain leading to P that is _fully_

grounded, _viz_., materially grounded and evaluatively grounded.

Knowledge, in this special case, could then be defined as _fully_

grounded _belief_.

Thus, on the assumption that all of S's warranting beliefs

are of the form

The reason that P is that Q

we would be able to provide three conditions paralleling those

in the traditional analysis:

S knows that P is and only if

           (1) P is materially grounded

           (2) S believes that P

           (3) P is evaluatively grounded

(1) entails the traditional semantic condition. (3) entails the

traditional normative condition.[102] (2) is just the traditional

doxastic condition. But stating (1) and (3) separately is somewhat

misleading since it is the same terminated doxastic chain that we

are referring to in both of these clauses.

But we must remember that this analysis is based on the

simplifying assumption that all of S's reasons for believing that

P are of the form

The reason that P is that Q

or

$$P/Q_1/ \ldots Q_n$$

Suppose, on the other hand, that S believes that P because of
something that he has read in what he thinks to be a reliable
source of information. Take Moore's example where I believe that the
King is dead because I have read it in the <u>Times</u>. I do not believe
that the reason that the King is dead is that I have read it in the
<u>Times</u> (although Richard Taylor might take exception to this).
What I believe, as Moore says, is that it would not have been in
the <u>Times</u> if it were not so or that it is hardly likely to have been
in the <u>Times</u> if it were not so. To take account of this let us read
the expression 'P/Q' in two ways. One interpretation would be
'A.(Q ⊃ P)'. The condition would then read as before. We would
still require a terminated doxastic chain that is materially grounded
and evaluatively grounded. We may also interpret 'P/Q' as 'Q.
(Q renders P probable)'. These conditions will cover a great many
of the counter-examples similar to the sort generated by Gettier.

But there are some further counter-examples that we have yet
to consider which are slightly different from the above and do not
seem to be covered if we take our non-causal interpretation of 'P/Q'.
4-22. <u>The testimony example</u>. Here we imagine that I have been
informed that Jones owns a Ford by someone who is generally reliable,
but in this case tells me that on a whim that Jones owns a Ford and
just happens by accident to be right. Then I have a justified true

belief that Jones owns a Ford based on true propositions right along
the line:

P: Jones owns a Ford.

I believe the true proposition P because I believe

Q_1: Reliable Smith said "Jones owns a Ford."

Q_2: Reliable Smith has always told the truth in my experience.

Q_3: Lie detector tests have revealed that when Reliable Smith
speaks the truth he is sincere and has good reasons to
support his claim when asked.

This is of the Gettier variety because what fouls things up is a
causal sort of belief that I have, _viz._, that the reason that Smith
spoke the truth as t is that he is reliable. This is a false
belief of the form "It is the case that P because it is the case
that Q." But unfortunately if we interpret the expression 'P/Q'
in the probabilification sense, i.e., 'Q.(Q p P)' this example will
slip through, since the fact that Smith is reliable _does_ render it
probable that he will speak the truth. Hence we are caught between
the too sweeping (because restrictive) causal interpretation and the
lax non-causal interpretation. But the non-causal interpretation
provides us with a set of _necessary_ conditions as we have seen.
Hence, it cannot be abandoned.

What we shall do is use the non-causal interpretation for
our three conditions. But we shall have to add a fourth.

4-23. For any proposition in the materially grounded and evaluatively
grounded terminated doxastic chain leading to P, say Q_i, the agent
does not believe a false proposition of the form

The reason that Q_i is that Q_{i+1}

unless he also believes a true proposition of the form

The reason that Q_i is that R

I take these four conditions to be individually necessary and jointly

sufficient for knowledge that P.

§4.22. Lehrer's condition. Keith Lehrer proposes an

ingenious fourth condition to be added to the traditional analysis

as it stands which I shall reject by means of a counter-example

generated by the application of 4-23. We may show that if Lehrer's

condition holds but 4-23 is violated a counter-intuitive claim to

knowledge is sanctioned.

Lehrer states the following fourth condition for knowledge

that h.

> If S is completely justified in believing any false
> statement p which entails (but is not entailed by) h,
> then S would be completely justified in believing h
> even if S were to suppose that p is false.[103]

This will need some revision on other grounds of course.

We must understand not "suppose" but "justifiably believe" if this

is to get off the ground at all. But given some emendations of

this sort we can present a counter-example based on 4-23. The

counter-example that I am thinking of is one where both p and -p

entail h relative to S's other beliefs but S falsely believes that

the reason that h is that p, and, indeed, the reason that h is that

-p. More precisely, taking S's background beliefs as 'B', the

reason that h is that -p.B, while S falsely believes that the

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[103]Keith Lehrer, op. cit., p. 177.

reason that h is that p.B.

4-24. **The poker example.** Suppose that Jones is justified in believing that his friend Smith does not have a good hand in an ongoing poker game and he has good reasons to believe that when Smith does not have a good hand he will bluff. Thus he believes that Smith will bluff on the basis of his belief that Smith does not have a good hand and Smith does indeed bluff.

But he does not know that Smith will bluff. Smith actually has a good hand and he bluffs in order to prevent people from relying upon his bluffing only when he does not have a good hand. His policy is to bluff every third good hand. Now Jones knows this policy, and he knows that Smith has just had two good hands in a row.

So if he were to believe (and justifiably believe) that Smith now has a good hand, knowing that it was his third good hand, he would be justified in believing that Smith would bluff. Moreover, if he thought of the fact that Smith now either has a good hand or he does not and in either case he will bluff, he would again be justified in believing that Smith will bluff.

But none of these reasons in fact constitute the basis for his belief that Smith will bluff. And we would not say that he knows this fact even though Lehrer's condition is satisfied. But our condition 4-23 is **not** satisfied, since S has a false belief of the form

The reason that P is that Q

viz., his belief that the reason that he will bluff is that he does not have a good hand unaccompanied by a true belief of that form,

which might, for example be the dilemma argument.

This same flaw is detected by means of our adaptive criterion of belief that is to be considered as knowledge. The doxastic terminal outcome, a chain of beliefs like 4-17 must be goal adaptive in the generalized sense. This comes down to saying that believing that he was right for the reasons that he had under the circumstances must not lead to an increased chance of future error should the same circumstances recut. But as we have shown in our analysis of expectation in §4.12 his concluding that P for the same reasons as before should the same circumstances recur (which is what he would do if he went along believing that this was why he was right the first time) would provide him with a grossly unrealistic doxastic posture in which his chances of going wrong are quite high and much higher than he suspects. Somehow we feel that the universe has deceived him and that his intellect has been unable to penetrate to the underlying facts.

§4.3.   Non-canonical epistemic locutions.

The material conditions that we have imposed on the chain of warrants in 4-20 have been derived in part from a consideration of certain of the non-canonical epistemic locutions. In this section we shall consider the question of how strong a material condition must be added to 4-20. That a very strong condition indeed is necessary we can show from an analysis of the way in which the epistemic variants of the following expressions are used.

Non-canonical schemata.

(H)   "How do you ... that P?"

(i) know

(ii) believe

(C) "S could not have ... that P."

    (i) known

    (ii) believed

(W) "S has (or had) no way of ... that P."

    (i) knowing

    (ii) believing

(HC) "How could S have ... that P?"
"Hos can S ... that p?"

    (i) known, know

    (ii) believed, believe

(W_e) "There is no way of ... that P."
"No way of ... that P exists."
"There is a way of ... that P."

    (i) knowing

    (ii) believing

(P) "S was in no position to ... that P."
"S was in a position to ... that P."

    (i) know

    (ii) believe

(WH) "Why do you ... that P?"

    (i) believe

    (ii) know

Both Austin and Ryle have pointed out the peculiar
suitability of "know" for (H) and "believe" for (WH) and the
unsuitability of "believe" for (H) and "know" for (WH). But let us

examine some of the others. We shall use the convention that

'B(...)' refers to the locution with the "believe" alternative in

the blank and 'K(...)' to the same locution with the "know"

alternative in the blank.

Except for (WH) all of these locutions are epistemic and sound

quite natural with the "know" alternative.[103]

It is principally by an analysis of K(H) and K(W) that we

are able to see the extent of the commitment involved in a claim

to know that P, and hence the need for the introduction of some very

powerful material conditions in the analysis.

The informal arguments which precede the introduction of

the normative condition in the traditional analysis cash in heavily

upon the use of non-canonical epistemic locutions in an unreflective

way. Thus it is considered obvious that to say "S knows that P"

is to say something to which it is appropriate to respond

      (H) "How does S know that P?"

or, with the would-be knower as addressee

      (H) "How do you know that P?"

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[103]In the case of (C) we could also have B(C). But we may
note that K(C) does not imply B(C). B(W) sounds decidedly odd. (W)
would seem to be a locution specifically adapted to "knowing" rather
than "believing". We could have either B(HC) or K(HC). K(HC) as a
challenge does not, however suggest B(C) but rather K(C). Again
B(W_c) would seem strange and K(W_c) the natural expression. (W_c)
and (W) are connected in that "There is no way of knowing that P" seems
to entail "S has no way of knowing that P." Similarly (P) and (W)
are related in that "S has no way of knowing that P." Similarly
(P) and (W) are related in that "S was not in a position to know
that P" entails "S had no way of knowing that P." As for (P) it
seems that we could have B(P) as well as K(P).

And it is generally accepted that S's claim to know that P will be
disqualified if this question cannot be answered satisfactorily.
But most philosophers have construed this question as synonymous
with, and doing roughly the same job as

(J) "How are you justified in believing that P?"

Now this I take to be a seriously misleading simplification.
And what I shall undertake to show here is a fundamental bifurcation
in the "grammar" of justification challenges as compared with (H).
I will then attempt to apply this distinction to the problems
raised in the counter-examples.

One difference that is immediately apparent upon reflection
is that while S can be justified in believing a false proposition
(that is, he can answer (J) satisfactorily while all along what
he claims to know is false), S cannot have a way of knowing a
false proposition (that is, he cannot give a satisfactory answer
to (H) if his claim is false). Thus I would argue that the following
conditional holds.

"(S has a way of knowing that P) ⊃ P"

Or, in other words - P   ⊃-(W). Moreover, I would also opt for
another conditional, the one that is generally accepted, but,
unfortunately (and I think mistakenly), as an equivalence, viz.,

"(S has a way of knowing that P) ⊃ (S is justified in
believing that P)"

And furthermore, I shall argue that "S has a way of knowing that P"
entails all of the additional material requirements that have been

dictated by the recent counter-examples to the traditional analysis.

If we look at the kind of imagery or schemata that are suggested by the phrase "having a _way_ of knowing that P" we might picture the knower at a crossroads from which he can elect to travel along one or another of a number of "epistemic pathways". When he claims to know that P he is claiming that by following a particular doxastic route he is able (in virtue of having taken this route) to arrive at the true belief that P. And of course for this to be true there must indeed be a route which leads to the true belief that P. S _has_ no way of knowing that P unless there _is_ a way of knowing that P. For there can be no epistemic route leading to P if, so to speak, P does not exist. Similarly, if S has a way of knowing that P then not only must ther _be_ a way of knowing that P but S must be _in_ _a_ _position_ to know that P.

Now it seems to me that we can paraphrase the question, Is there a way of knowing that P?, as follows: Given the availability of certain sorts of premises or facts can we arrive at certain other sorts of facts or particular conclusions? Now since we might arrive at any conclusion we desired from any premises whatever if we used invalid canons of reasoning, we might be forced to add "justifiable". But perhaps we can specify what we want in another way as follows:

4-25. If W is a way of going from P_i to C_k then in any epistemic situation S and for any agent A if A used W in S to go from P_i to C_k then C_k would be true in virtue of W.

This is somewhat similar to saying that if highway 75 is a way of going from Winnipeg to Minneapolis then if anyone started out from Winnipeg on highway 75 (going south), then, other things being equal, he would get to Minneapolis due (at least in part) to his having travelled along highway 75. In the epistemic case P_i and C_k indicate, respectively, a conjunction of certain sorts of premisses or facts and a conclusion of a certain kind. 'W' and 'S' are also used to refer to "ways" and "situations" of a particular sort. Otherwise we would not evaluate an epistemic situation as being one of a certain kind and every knowledge claim would be unique. The point of talking about a way of knowing is to evaluate a given situation and a given procedure as being the kind of situation in which that kind of procedure will _work_ to achieve a true belief that P.

We may now state the principle of constructing counter-examples along Gettier's lines very succinctly. In each case there there _is_ a way of knowing that P but A _has_ no way of knowing that P. The question (H) is thus left unanswered. The doxastic chains that we described are, in a sense, "ways" of knowing that P.

The question (H) is something like "What method did you use to get to P?" This seems to require that there be some sort of effective procedure which leads us to P, some sort of epistemic methodology, an effective method which was _functional_ in bringing us to the true belief that P. One way of knowing that P would be to conclude that P on the basis of very good evidence and to be "right" as Woozley puts it, "about the relation of the evidence to the conclusion,"

and, finally, for "P" to be true. If the reasons that you had for
thinking that P were of the P/Q causal variety and they were not
the reasons that P, then the way you thought you had of knowing that
P was not a way of knowing that P.

For example, although "p" implies "p v q", if you falsely
believe that P, when, in fact, "-P" is the case, and you conclude
that p v q and "p v q" is true because "q" is true, then you had no
way of knowing that (p v q) because there was no way of knowing that
(p v q) on the basis of knowing that p. There is no epistemic
route going from p to (p v q) because there is no epistemic route
starting from p unless it is false that -p. Similarly there is no
way of going from Brest-Litovsk, Manitoba to Winnipeg, Manitoba
because the proposed embarkation point does not exist. In order for
there to be a way of knowing that will take us from P to Q, both
P and Q must be true. Otherwise our way of knowing will lack either
an epistemic destination or a point of embarkation.

Ayer says, "Normally we do not say that people know things
unless they have followed one of the accredited routes to knowledge."
Perhaps Ayer has added "accredited" superfluously, since, presumably,
"knowledge" is already some sort of "accredited belief". Let us
revise this to read:

> We do not say that people know things unless they have
> followed one of the accredited routes to true belief.

Now the way we have analyzed "S has a way of knowing that P"
it will have two components, one more or less subjective and the
other objective. The objective component in (W_c) involving that there

exists a way of knowing that P. The subjective component is packed
into "S is in a position to know that P" indicating that S is so
situated in "evidential space" that he is in a "position" to make
use of the way of knowing that exists. The latter would entail,
among other things, that the premisses required for "embarkation"
are justifiably believed by S and, indeed, all of the justification
requirements that are needed for the doxastic transitions from
justifiably believed premisses to justifiably believed conclusions.

The objective component involves a very adventurous commitment.
For to say that there is a way of knowing that P is, of course, to
deny that there is a way of knowing that -P. And this is to claim
that there are no true premisses which could ever be used to get to
-P "by an accredited route". We are claiming not only that if there
are any justifiably believed true propositions which justify us in
believing that P then there are no _other_ true propositions which _we_
are justified in believing which would justify us in believing that
-P, not only that there are no such true propositions justifiably
believed by _other_ people, not only that there are no such true
propositions that ever were, are or will be justifiably believed by
anyone which when conjoined with our premisses would justify belief
that -P, but we are claiming over and above this that there _are no_
true propositions which _anyone_ no matter how rational or intelligent
could be justified in believing even if he were in the possession
of all and only true beliefs about _everything_ past, present and
future, such that these when conjoined with the true premisses which
justify us in believing that P would fail to justify us and justify

us in believing that -P.

Thus we might think that anyone who claims to know is making an insane epistemic leap into the dark and going far beyond his evidential base. This is true of course. (And when I convinced one of my colleagues of this he was noticeably disturbed and vowed to eschew the use of "knows" in future.) But this fact is no _more_ disturbing than the epistemic leap that we accept with equanimity in the shape of the traditional semantic or material condition.

Here too we are going beyond our evidential base whenever our premisses fail to _logically imply_ our conclusion, but merely render it probable. For we are claiming that it _is_ the case that P, not that it is probable. And we will withdraw our claim to _know_ if it is false that P. (Of course we would not have been required to withdraw a claim that it is merely probable.) When I claim to know that P I am claiming that there is _no way of knowing_ that -P. If there _were_ a way of knowing that -P it would follow that -P. But then I could not have known that P and it would be false that I knew.

Thus my claim to know that P involves the categorical prediction that no one will _ever_ uncover any further evidence which when conjoined with the facts at my disposal will provide a way of knowing that -P no matter how ingenious the investigator or how rational or intelligent, simply because there _is_ nothing _knowable_ which when combined with my evidence would fail to justify me in believing that P. For my position is that all of the relevant evidence is in. I am claiming that my belief that P is _epistemically_

<u>invulnerable</u>. This, at least, is what it would <u>appear</u> that we are maintaining on the basis of the evidence provided by the grammar of non-canonical epistemic locutions. Nevertheless, there is a question of exactly how strong a claim we should make, granting that we are to make a very strong claim. Should we claim that <u>no</u> true propositions when conjoined with S's justifying premisses will fail to justify him in believing that P? Should we claim only that the totality of true propositions when conjoined with S's justifying premisses must not fail to justify him in believing that P? Only one of these conditions is necessary, since the former entails the latter. But I think that we can show that neither of them is sufficient unless accompanied by a rider that 4-23 is not violated. This may be demonstrated by means of the following counter-example.

4-26. <u>The triangle</u>.

Mrs. Smith who is a red-head has been impregnated by her red-haired lover on July 7th, 1965 at 3:00 P.M. (Let us assume for the purposes of this illustration that the genes controlling hair colour are such that if two persons have the red-haired phenotype they will have a red-haired offspring; that is, red hair is domonant over non-red hair, etc.)

Now Mrs. Smith's husband also has red hair. On the date mentioned, but at 11:00 P.M., he has intercourse with his wife. He knows that he is not sterile and that his wife is in her fertile period. Let us suppose that Mr. Smith is a geneticist and a doctor of medicine, so that he is well aware of the facts concerning the

probability of his wife's having a red-haired baby given that she

was fertilized by a red-headed male.

Let us add to this the further information that all but one

of the 1,000,000 male inhabitants of the city in which Mr. Smith

lives have red hair and that Mr. Smith knows this.

One month later Mr. Smith learns from their family doctor

that his wife is pregnant. Believing that he has fertilized her at

11:00 P.M. on July 7th, 1965, he believes and is justified in

believing that eight months from now (August 7) his wife will give

birth to a red-headed baby.

And indeed, she will have a red-headed baby at that time.

Moreover, given the facts, unavailable at the time to Smith, it is

quite probable that she will have a red-headed baby. In addition the

totality of true propositions is such that when added to S's grounds

for believing that his wife will give birth to a red-head, they continue

to justify his belief (and perhaps increase his warrant for believing

this). What is more, the very strong condition that there is no set

of true propositions which when added to S's grounds for believing

that P will not fail to justify him in believing that P is _also_

satisfied.

But S does not _know_ that P. Nevertheless, S _has_ a way of

knowing that P and he is in a position to know that P. What has gone

wrong is that his reasons for believing that P do not constitute a

way of knowing that P. He _could_ _not_ have known that P for the reasons

that he had, because one of his reasons was a false proposition of the

form.

> The reason that P is that Q

and S failed to believe a true proposition of the form

> The reason that P is that R.

That he turned out to be right for the reasons that he had was

purely accidental. That certain facts happened to be arranged so

that he would have a good reason for believing that P different from

his _actual_ reason for believing this, if he should think of them,

is also quite accidental. On future occasions of the same sort the

facts might not be quite so accommodating.

It is worth noting that the triangle example violates clause

(4) in condition 4-7. For it is false that the degree to which S

would be subjectively informed if he became convinced that P would not

be increased if he were to believe the contradictory of any proposition

which rendered P probable for him (or justified him in believing that

P). This analysis would thus seem to show some promise. But I think

that we can alter the triangle example so that this condition

would not be violated by manipulating probabilities.

On the other hand the principle of formulation of the

triangle example is such that it must necessarily violate the adaptive

criterion. For the complex belief that P/Q is goal non-adaptive.

For example, if S were to select the goal of (or a goal dependent

upon) calculating the exact time of the baby's birth, his behaviour

would be non-adaptive relative to that goal (Other goals might include the goal of giving the father of the baby a haircut, etc.) This would seem to be because his reasons for believing that P justify him in believing a number of false propositions in addition to the true proposition that P. Goal non-adaptive beliefs seem to have the property of being falsehood generating. This fact might prompt us to lay down the informal convention:

4-27. Believing that P for the reasons that S has must not be functional in the generation of falsehoods; that is, in a neutral context, a doxastic context consisting only of truths, it must be impossible for S to infer F from his doxastic terminal outcome, where F is a false proposition.

We might attempt to capture the gist of the condition required by tightening up our characterization of a materially grounded doxastic chain. Indeed, we can now see that the solution has been staring us in the face all along. In concentrating our attention on the doxastic chain leading to P we completely neglected considering the continuation of the chain beyond P. This is what is brought to our attention forcefully by 27 prompted by the adaptive criterion. A materially grounded doxastic chain must be truth terminating even when extended beyond P, and here we wish to exclude not only actual false beliefs generated by S's terminal doxastic outcome but possible ones as well. Belief that is to count as knowledge must not bear this responsibility of corrupting truth into falsehoods.

If S believes that P because he believes that Q_1 ... because he believes that Q_n (where "because" is not to be taken in a strict causal sense but in the sense of "the reason or the basis for

S's belief that P") and if each of P, Q_1, ... , Q_n is true and

if Q_n is not believed on the basis of any false belief Q_{n+1},

then we have what was previously described as "a materially grounded

doxastic chain". Let us now consider adding a requirement which we

might abbreviate by saying that such a chain must be "infallibly

extendable".

4-28. A doxastic chain is infallibly extendable if and only if

(1) no set of true propositions is such that it will deductively

entail some false proposition when conjoined with some of the

members of the chain, and (2) the totality of true propositions

logically distinct from any of the members of the chain is such

that it does not render probable any false proposition when conjoined

with the members of the chain.

4-29. We may now define "S knows that P" as follows:

Definition.   S knows that P if and only if

      (1)   There is an infallibly extendable
            doxastic chain containing P.

      (2)   The doxastic chain leading to P in (1)

provides S with evidence adequate to justify him in believing that P.

        (1) conjoined with (2) entails that belief that Q_1 justifies

belief that P and belief that Q_2 justifies belief that Q_1 and so on;

that is, it entails that the chain is evaluatively grounded. (1)

and (2) also entail that at each link in the chain the totality of

true propositions is such that it does not fail to justify belief

(if this totality is justifiably believed) in the next link, which

of course entails the strong requirement of the epistemic invulnerability
of P mentioned earlies as too weak. (1) itself entails the chain
is materially grounded. At this point the author will take a new
plunge and state categorically that 29 provides us with a set of two
individually necessary and jointly sufficient conditions for the truth
or applicability of the locution "S knows that P". The first is a
rather complicated systemic-semantic-doxastic-normative condition
(the normative element enters in 4-28) which entails the traditional
doxastic and material conditions. The second is a strong normative
condition.

Conclusion.

Normally, if a person is justified in believing a proposition
and he turns out to be wrong, he will have been given a clue that
false premisses figured in his epistemic downfall. And of course
he may also interpret such a clue as an indication that he was not
justified. If he chooses to believe that he was justified in
believing as he did, but was misled by false premisses, we may say
(non-pejoratively) that hs is "internally rationalizing". He wants
to show that it was not his rational processes or his ratiocinative
prowess that was at fault, but the evidential materials with which
he was working.

But when he thinks that his premisses are true and his
reasoning faultless and he turns out (fortuitously) to be right (in
what he has inferred), then he will assume that he is correct in
thinking that his reasoning has been faultless and his premisses true.

If his reasoning has been defective at some point, events will have

conspired to lull him into epistemic complacency and he may duplicate

this procedure with disastrous effects on another occasion (hence

the _normative_ condition is dictated by the adaptive criterion).

But if his reasoning was indeed impeccable and the falsehood of some

of his justifying premisses has been concealed from him by the

fortuitous turn of events, then the universe has played another sort

of epistemic practical joke on him, which we will not countenance

by dignifying his claim with the title of "knowledge". Knowledge

successes must be "repeatable" (as scientists say honorifically of

those experimental results which they consider valuable). And we

do not think that our would-be knower will be able to _repeat_ his

cognitive success on the next occasion of this sort. His luck is

very likely to run out. This, indeed, is the thrust of the adaptive

criterion. The importance of repeatability as a criterion in our

assessment of knowledge claims is hinted at by A.J. Ayer.

> If someone reaches a true conclusion without appearing to
> have any adequite basis for it, we are likely to say that
> he does not really know it. But if he were _repeatedly_
> successful in a given domain, we might very well come to
> say that he knew the facts in question, even though we
> could not explain how he knew them.[104](my emphasis)

And when we suspect that he will _not_ be repeatedly successful "in

a given domain" we are very _reluctant_ to grant that he knew the

facts in question. Thus when we claim to know we are claiming

that all of the beliefs which are relevent to the "repeatability"

of our cognitive feat are true. (And I have attempted to capture

"repeatability" with the requirement that P is a member of an infallibly extendable doxastic chain.)

This is, indeed, as Austin puts it, "a new plungs". And no _wonder_ I can be "rounded on" in the characteristic way that I am liable to be rounded on if I should turn out to be _wrong_. Still, even this very _strong_ material-justification-clause may turn out to be too weak (though necessary). It might collapse in the face of counter-examples constructed on the basis of the peculiar Gettier principle.

What I have attempted to do is set forth a condition which is strong enough to avoid the causal idiom of 4-23. If I am right, this provides us with a two-clause definition of "S knows that P' which is co-extensive with both the objective and subjective components of the non-canonical epistemic locution (W_e) and also with the adaptive criterion.

In closing, we might point out that there is at least _one_ material condition that is strong enough to do the job required. This would simply require that _all_ of S's beliefs be true. Under those circumstances justified true belief _would_ be knowledge, and the causal idiom of 4-23 is neatly avoided. But it is evident that such a condition is far too sweeping. For surely I may know certain things and still have false beliefs about _other_ things. What the counter-examples have demonstrated is that I must not have false beliefs about a certain _class_ of other things which are related by a given relation R to my belief that P.

In this thesis I have argued that this relation R is a complex doxastic-normative relation specifiable in terms of a doxastic chain having P as one member and on the basis of which it must be impossible to generate falsehoods deductively in a context of true beliefs and inductively in a context of total evidence. In order for a belief to count as knowledge it must be capable of serving as a foundation for _further_ knowledge. Thus we have not defined knowledge in terms of its ancestry, but in terms of its descendants.

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