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(continued on inside back cover)
PREFATORY NOTE

In 1903 a volume was published by the University of Chicago Press, entitled Studies in Logical Theory, as a part of the "Decennial Publications" of the University. The volume contained contributions by Drs. Thompson (now Mrs. Woolley), McLenman, Ashley, Gore, Heidel, Stuart, and Moore, in addition to four essays by the present writer who was also general editor of the volume. The edition of the Studies being recently exhausted, the Director of the Press suggested that my own essays be reprinted, together with other studies of mine in the same field. The various contributors to the original volume cordially gave assent, and the present volume is the outcome. Chaps. ii–v, inclusive, represent (with editorial revisions, mostly omissions) the essays taken from the old volume. The first and introductory chapter has been especially written for the volume. The other essays are in part reprinted and in part rewritten, with additions, from various contributions to philosophical periodicals. I should like to point out that the essay on "Some Stages of Logical Thought" antedates the essays taken from the volume of Studies, having been published in 1900; the other essays have been written since then. I should also like to point out that the essays in their psychological phases are written from the standpoint of what is now termed a behavioristic psychology, though some of them antedate the use of that term as a descriptive epithet.

J. D.

COLUMBIA UNIVERSITY
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I

INTRODUCTION

The key to understanding the doctrine of the essays which are herewith reprinted lies in the passages regarding the temporal development of experience. Setting out from a conviction (more current at the time when the essays were written than it now is) that knowledge implies judgment (and hence, thinking) the essays try to show (1) that such terms as "thinking," "reflection," "judgment" denote inquiries or the results of inquiry, and (2) that inquiry occupies an intermediate and mediating place in the development of an experience. If this be granted, it follows at once that a philosophical discussion of the distinctions and relations which figure most largely in logical theories depends upon a proper placing of them in their temporal context; and that in default of such placing we are prone to transfer the traits of the subject-matter of one phase to that of another—with a confusing outcome.

1. An intermediary stage for knowledge (that is, for knowledge comprising reflection and having a distinctively intellectual quality) implies a prior stage
THE LOGIC OF JUDGMENTS OF PRACTICE
THEIR NATURE

In introducing the discussion, I shall first say a word to avoid possible misunderstandings. It may be objected that such a term as “practical judgment” is misleading; that the term “practical judgment” is a misnomer, and a dangerous one, since all judgments by their very nature are intellectual or theoretical. Consequently, there is a danger that the term will lead us to treat as judgment and knowledge something which is not really knowledge at all and thus start us on the road which ends in mysticism or obscurantism. All this is admitted. I do not mean by practical judgment a type of judgment having a different organ and source from other judgments. I mean simply a kind of judgment having a specific type of subject-matter. Propositions exist relating to agenda—to things to do or be done, judgments of a situation demanding action. There are, for example, propositions of the form: M. N. should do thus and so; it is better, wiser, more prudent, right, advisable, opportune, expedient, etc., to act thus and so. And this is the type of judgment I denote practical.

It may also be objected that this type of subject-matter is not distinctive; that there is no ground for
marking it off from judgments of the form $SP$, or $mRn$. I am willing, again, to admit that such may turn out to be the fact. But meanwhile the prima facie difference is worth considering, if only for the sake of reaching a conclusion as to whether or no there is a kind of subject-matter so distinctive as to imply a distinctive logical form. To assume in advance that the subject-matter of practical judgments must be reducible to the form $SP$ or $mRn$ is assuerily as gratuitous as the contrary assumption. It begs one of the most important questions about the world which can be asked: the nature of time. Moreover, current discussion exhibits, if not a complete void, at least a decided lacuna as to propositions of this type. Mr. Russell has recently said that of the two parts of logic the first enumerates or inventories the different kinds or forms of propositions. It is noticeable that he does not even mention this kind as a possible kind. Yet it is conceivable that this omission seriously compromises the discussion of other kinds.

Additional specimens of practical judgments may be given: He had better consult a physician; it would not be advisable for you to invest in those bonds; the United States should either modify its Monroe Doctrine or else make more efficient military preparations; this is a good time to build a house; if I do that I shall be doing wrong, etc. It is silly to dwell upon the

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1 Scientific Method in Philosophy, p. 57.

practical importance of judgments of this sort, but not wholly silly to say that their practical importance arouses suspicion as to the grounds of their neglect in discussion of logical forms in general. Regarding them, we may say:

1. Their subject-matter implies an incomplete situation. This incompleteness is not psychical. Something is “there,” but what is there does not constitute the entire objective situation. As there, it requires something else. Only after this something else has been supplied will the given coincide with the full subject-matter. This consideration has an important bearing upon the conception of the indeterminate and contingent. It is sometimes assumed (both by adherents and by opponents) that the validity of these notions entails that the given is itself indeterminate—which appears to be nonsense. The logical implication is that of a subject-matter as yet unterminaled, unfinished, or not wholly given. The implication is of future things. Moreover, the incompleteness is not personal. I mean by this that the situation is not confined within the one making the judgment; the practical judgment is neither exclusively nor primarily about one’s self. On the contrary, it is a judgment about one’s self only as it is a judgment about the situation in which one is included, and in which a multitude of other factors external to self are included. The contrary assumption is so constantly made about moral judgments
that this statement must appear dogmatic. But surely the prima facie case is that when I judge that I should not give money to the street beggar I am judging the nature of an objective situation, and that the conclusion about myself is governed by the proposition about the situation in which I happen to be included. The full, complex proposition includes the beggar, social conditions and consequences, a charity organization society, etc., on exactly the same footing as it contains myself. Aside from the fact that it seems impossible to defend the "objectivity" of moral propositions on any other ground, we may at least point to the fact that judgments of policy, whether made about ourselves or some other agent, are certainly judgments of a situation which is temporarily unfinished. "Now is a good time for me to buy certain railway bonds" is a judgment about myself only because it is primarily a judgment about hundreds of factors wholly external to myself. If the genuine existence of such propositions be admitted, the only question about moral judgments is whether or no they are cases of practical judgments as the latter have been defined—a question of utmost importance for moral theory, but not of crucial import for our logical discussion.

2. Their subject-matter implies that the proposition is itself a factor in the completion of the situation, carrying it forward to its conclusion. According as the judgment is that this or that should be done, the situation will, when completed, have this or that subject-matter. The proposition that it is well to do this is a proposition to treat the given in a certain way. Since the way is established by the proposition, the proposition is a determining factor in the outcome. As a proposition about the supplementation of the given, it is a factor in the supplementation—and this not as an extraneous matter, something subsequent to the proposition, but in its own logical force. Here is found, prima facie at least, a marked distinction of the practical proposition from descriptive and narrative propositions, from the familiar SP propositions and from those of pure mathematics. The latter imply that the proposition does not enter into the constitution of the subject-matter of the proposition. There also is a distinction from another kind of contingent proposition, namely, that which has the form: "He has started for your house"; "The house is still burning"; "It will probably rain." The unfinishedness of the given is implied in these propositions, but it is not implied that the proposition is a factor in determining their completion.

3. The subject-matter implies that it makes a difference how the given is terminated: that one outcome is better than another, and that the proposition is to be a factor in securing (as far as may be) the better. In other words, there is something objectively at stake in the forming of the proposition. A right or wrong descriptive judgment (a judgment confined
to the given, whether temporal, spatial, or subsistent) does not affect its subject-matter; it does not help or hinder its development, for by hypothesis it has no development. But a practical proposition affects the subject-matter for better or worse, for it is a judgment as to the condition (the thing to be done) of the existence of the complete subject-matter.¹

4. A practical proposition is binary. It is a judgment that the given is to be treated in a specified way; it is also a judgment that the given admits of such treatment, that it admits of a specified objective termination. It is a judgment, at the same stroke, of end—the result to be brought about—and of means. Ethical theories which disconnect the discussion of ends—as so many of them do—from determination of means, thereby take discussion of ends out of the region of judgment. If there be such ends, they have no intellectual status.

To judge that I should see a physician implies that the given elements of the situation should be completed in a specific way and also that they afford the conditions which make the proposed completion practicable. The proposition concerns both resources and obstacles—intellectual determination of elements lying in the way of, say, proper vigor, and of elements which can be utilized to get around or surmount these obstacles. The judgment regarding the need of a physician implies the existence of hindrances in the pursuit of the normal occupations of life, but it equally implies the existence of positive factors which may be set in motion to surmount the hindrances and reinstate normal pursuits.

It is worth while to call attention to the reciprocal character of the practical judgment in its bearing upon the statement of means. From the side of the end, the reciprocal nature locates and condemns utopianism and romanticism: what is sometimes called idealism. From the side of means, it locates and condemns materialism and predeterminism: what is sometimes called mechanism. By materialism I mean the conception that the given contains exhaustively the entire subject-matter of practical judgment: that the facts in their givenness are all “there is to it.” The given is undoubtedly just what it is; it is determinate throughout. But it is the given of something to be done. The survey and inventory of present conditions (of facts) are not something complete in themselves; they exist for the sake of an intelligent determination of what is to be done, of what is required to complete the given. To conceive the given in any such way, then, as to imply

¹The analytic realists have shown a peculiar disinclination to discuss the nature of future consequences as terms of propositions. They certainly are not identical with the mental act of referring to them; they are “objective” to it. Do they, therefore, already exist in some realm of subsistence? Or is subsistence but a name for the fact of logical reference, leaving the determination of the meaning of “subsistence” dependent upon a determination of the meaning of “logical”? More generally, what is the position of analytic realism about the future?
that it negates in its given character the possibility of
any doing, of any modification, is self-contradictory.
As a part of a practical judgment, the discovery that
a man is suffering from an illness is not a discovery
that he must suffer, or that the subsequent course
of events is determined by his illness; it is the in-
dication of a needed and a possible course by which to
restore health. Even the discovery that the illness
is hopeless falls within this principle. It is an in-
dication not to waste time and money on certain fruit-
less endeavors, to prepare affairs with respect to
death, etc. It is also an indication of search for
conditions which will render in the future similar
cases remediable, not hopeless. The whole case for
the genuineness of practical judgments stands or falls
with this principle. It is open to question. But
decision as to its validity must rest upon empirical
evidence. It cannot be ruled out of court by a dia-
lectic development of the implications of propositions
about what is already given or what has already
happened. That is, its invalidity cannot be deduced
from an assertion that the character of the scientific
judgment as a discovery and statement of what is
forbids it, much less from an analysis of mathematical
propositions. For this method only begs the ques-
tion. Unless the facts are complicated by the sur-
reptitious introduction of some conception; the
prima facie empirical case is that the scientific judg-
ment—the determinate diagnosis—favors instead of

forbidding the doctrine of a possibility of change of
the given. To overthrow this presumption means,
I repeat, to discover specific evidence which makes it
impossible. And in view of the immense body of
empirical evidence showing that we add to control of
what is given (the subject-matter of scientific judg-
ment) by means of scientific judgment, the likelihood
of any such discovery seems slight.

These considerations throw light upon the proper
meaning of (practical) idealism and of mechanism.
Idealism in action does not seem to be anything
except an explicit recognition of just the implica-
tions we have been considering. It signifies a recog-
nition that the given is given as obstacles to one course
of active development or completion and as resources
for another course by which development of the
situation directly blocked may be indirectly secured.
It is not a blind instinct of hopefulness or that mis-
cellaneous obscurantist emotionalism often called
optimism, any more than it is utopianism. It is
recognition of the increased liberation and redirection
of the course of events achieved through accurate
discovery. Or, more specifically, it is this recognition
operating as a ruling motive in extending the work of
discovery and utilizing its results.

“Mechanism” means the reciprocal recognition
on the side of means. It is the recognition of the
import within the practical judgment, of the given,
of fact, in its determinate character. The facts in
their isolation, taken as complete in themselves, are not mechanistic. At most, they just are, and that is the end of them. They are mechanistic as indicating the mechanism, the means, of accomplishing the possibilities which they indicate. Apart from a forward look (the anticipation of the future movement of affairs) mechanism is a meaningless conception. There is no sense in applying the conception to a finished world, to any scene which is simply and only done with. Propositions regarding a past world, just as past (not as furnishing the conditions of what is to be done), might be complete and accurate, but they would be of the nature of a complex catalogue. To introduce, in addition, the conception of mechanism is to introduce the implication of possibilities of future accomplishment.¹

¹ Supposing the question to be that of some molten state of the earth in past geologic ages. Taken as the complete subject-matter of a proposition—or science—the facts discovered cannot be regarded as causative of, or a mechanism of, the appearance of life. For by definition they form a closed system; to introduce reference to a future event is to deny the definition. Contrariwise, a statement of that past condition of the earth as a mechanical condition of the later emergence of life means that that past stage is taken not merely as past, but as in process of transition to its future, as in process of alteration in the direction of life. Change in this direction is an integral part of a statement of the early stage of the earth’s history. A purely geologic statement may be quite accurate in its own universe of discourse and yet quite incomplete and hence inaccurate in another universe of discourse. That is to say, a geologist’s propositions may accurately set forth a prior state of things, while ignoring any reference to a later state entailed by them. But a would-be philosophy may not ignore the implied future.

5. The judgment of what is to be done implies, as we have just seen, a statement of what the given facts of the situation are, taken as indications of the course to pursue and of the means to be employed in its pursuit. Such a statement demands accuracy. Completeness is not so much an additional requirement as it is a condition of accuracy. For accuracy depends fundamentally upon relevancy to the determination of what is to be done. Completeness does not mean exhaustiveness per se, but adequacy as respects end and its means. To include too much, or what is irrelevant, is a violation of the demand for accuracy quite as well as to leave out—to fail to discover—what is important.

Clear recognition of this fact will enable one to avoid certain dialectic confusions. It has been argued that a judgment of given existence, or fact, cannot be hypothetical; that factuality and hypothetical character are contradictions in terms. They would be if the two qualifications were used in the same respect. But they are not. The hypothesis is that the facts which constitute the terms of the proposition of the given are relevant and adequate for the purpose in hand—the determination of a possibility to be accomplished in action. The data may be as factual, as absolute as you please, and yet in no way guarantee that they are the data of this particular judgment. Suppose the thing to be done is the formation of a prediction regarding the return of a comet. The prime
difficulty is not in making observations, or in the mathematical calculations based upon them—difficult as these things may be. It is making sure that we have taken as data the observations really implicated in the doing rightly of this particular thing: that we have not left out something which is relevant, or included something which has nothing to do with the further movement of the comet. Darwin's hypothesis of natural selection does not stand or fall with the correctness of his propositions regarding breeding of animals in domestication. The facts of artificial selection may be as stated—in themselves there may be nothing hypothetical about them. But their bearing upon the origin of species is a hypothesis. Logically, any factual proposition is a hypothetical proposition when it is made the basis of any inference.

6. The bearing of this remark upon the nature of the truth of practical judgments (including the judgment of what is given) is obvious. Their truth or falsity is constituted by the issue. The determination of end-means (constituting the terms and relations of the practical proposition) is hypothetical until the course of action indicated has been tried. The event or issue of such action is the truth or falsity of the judgment. This is an immediate conclusion from the fact that only the issue gives the complete subject-matter. In this case, at least, verification and truth completely coincide—unless there is some serious error in the prior analysis.

This completes the account, preliminary to a consideration of other matters. But the account suggests another and independent question with respect to which I shall make an excursus. How far is it possible and legitimate to extend or generalize the results reached to apply to all propositions of facts? That is to say, is it possible and legitimate to treat all scientific or descriptive statements of matters of fact as implying indirectly if not directly, something to be done, future possibilities to be realized in action? The question as to legitimacy is too complicated to be discussed in an incidental way. But it cannot be denied that there is a possibility of such application, nor that the possibility is worth careful examination. We may frame at least a hypothesis that all judgments of fact have reference to a determination of courses of action to be tried and to the discovery of means for their realization. In the sense already explained all propositions which state discoveries or ascertainments, all categorical propositions, would be hypothetical, and their truth would coincide with their tested consequences effected by intelligent action.

This theory may be called pragmatism. But it is a type of pragmatism quite free from dependence upon a voluntaristic psychology. It is not complicated by reference to emotional satisfactions or the play of desires.

I am not arguing the point. But possibly critics of pragmatism would get a new light upon its meaning
were they to set out with an analysis of ordinary practical judgments and then proceed to consider the bearing of its result upon judgments of facts and essences. Mr. Bertrand Russell has remarked that pragmatism originated as a theory about the truth of theories, but ignored the "truths of fact" upon which theories rest and by which they are tested. I am not concerned to question this so far as the origin of pragmatism is concerned. Philosophy, at least, has been mainly a matter of theories; and Mr. James was conscientious enough to be troubled about the way in which the meaning of such theories is to be settled and the way in which they are to be tested. His pragmatism was in effect (as Mr. Russell recognizes) a statement of the need of applying to philosophic theories the same kinds of test as are used in the theories of the inductive sciences. But this does not preclude the application of a like method to dealing with so-called "truths of fact." Facts may be facts, and yet not be the facts of the inquiry in hand. In all scientific inquiry, however, to call them facts or data or truths of fact signifies that they are taken as the relevant facts of the inference to be made. If (as this would seem to indicate) they are then implicated however indirectly in a proposition about what is to be done, they are themselves theoretical in logical quality. Accuracy of statement and correctness of reasoning would then be factors in truth, but so also

1 Philosophical Essays, pp. 104, 105.

would be verification. Truth would be a triadic relation, but of a different sort from that expounded by Mr. Russell. For accuracy and correctness would both be functions of verifiability.

JUDGMENTS OF VALUE

I

It is my purpose to apply the conclusions previously drawn as to the implications of practical judgment to the subject of judgments of value. First, I shall try to clear away some sources of misunderstanding.

Unfortunately, however, there is a deep-seated ambiguity which makes it difficult to dismiss the matter of value summarily. The experience of a good and the judgment that something is a value of a certain kind and amount have been almost inextricably confused. The confusion has a long history. It is found in mediaeval thought; it is revived by Descartes; recent psychology has given it a new career. The senses were regarded as modes of knowledge of greater or less adequacy, and the feelings were regarded as modes of sense, and hence as modes of cognitive apprehension. Descartes was interested in showing, for scientific purposes, that the senses are not organs of apprehending the qualities of bodies as such, but only of apprehending their relation to the well-being of the sentient organism. Sensations of pleasure and pain, along with those of hunger, thirst, etc., most easily lent themselves to this treatment; colors,
tones, etc., were them assimilated. Of them all he says: "These perceptions of sense have been placed within me by nature for the purpose of signifying what things are beneficial or harmful." Thus it was possible to identify the real properties of bodies with their geometrical ones, without exposing himself to the conclusion that God (or nature) deceives us in the perception of color, sound, etc. These perceptions are only intended to teach us what things to pursue and avoid, and as such apprehensions they are adequate. His identification of any and every experience of good with a judgment or cognitive apprehension is clear in the following words: "When we are given news the mind first judges of it and if it is good it rejoices." This is a survival of the scholastic psychology of the vis aetimativa. Lotze's theory that the emotions, as involving pleasure and pain, are organs of value judgments, or in more recent terminology, that they are cognitive appreciations of worth (corresponding to immediate apprehensions of sensory qualities) presents the same tradition in a new terminology.

As against all this, the present paper takes its stand with the position stated by Hume, in the following words: "A passion is an original existence, or, if you will, modification of existence; and contains not any representative quality, which renders it a copy of any

other existence or modification. When I am angry I am actually posset with the passion, and in that emotion have no more a reference to any other object, than when I am thirsty, or sick, or more than five feet high." In so doing, I may seem to some to be begging the question at issue. But such is surely the prima facie fact of the matter. Only a prior dogma to the effect that every conscious experience is, ipso facto, a form of cognition leads to any obscuration of the fact, and the burden of proof is upon those who uphold the dogma.  

A further word upon "appreciation" seems specially called for in view of the currency of the doctrine that "appreciation" is a peculiar kind of knowledge, or cognitive revelation of reality: peculiar in having a distinct type of reality for its object and in having for its organ a peculiar mental condition differing from

1 Treatise of Human Nature, Part III, sec. iii.  

2 It is perhaps poor tactics on my part to complicate this matter with anything else. But it is evident that "passions" and pains and pleasures may be used as evidences of something beyond themselves (as may the fact of being more than five feet high) and so get a representative or cognitive status. Is there not also a prima facie presumption that all sensory qualities are of themselves bare existences or occurrences without cognitive pretension, and that they acquire the latter status as signs or evidence of something else? Epistemological idealists or realists who admit the non-cognitive character of pleasure and pain would seem to be under special obligations carefully to consider the thesis of the non-cognitive nature of all sensory qualities except as they are employed as indications or indexes of some other thing. This recognition frees logic from the epistemological discussion of secondary qualities.
the intelligence of everyday knowledge and of science. Actually, there do not seem to be any grounds for regarding appreciation as anything but an intentionally enhanced or intensified experience of an object. Its opposite is not descriptive or explanatory knowledge, but depreciation—a degraded realization of an object. A man may climb a mountain to get a better realization of a landscape; he may travel to Greece to get a realization of the Parthenon more full than that which he has had from pictures. Intelligence, knowledge, may be involved in the steps taken to get the enhanced experience, but that does not make the landscape or the Parthenon as fully savored a cognitive object. So the fulness of a musical experience may depend upon prior critical analysis, but that does not necessarily make the hearing of music a kind of non-analytic cognitive act. Either appreciation means just an intensified experience, or it means a kind of criticism, and then it falls within the sphere of ordinary judgment, differing in being applied to a work of art instead of to some other subject-matter. The same mode of analysis may be applied to the older but cognate term “intuition.” The terms “acquaintance” and “familiarity” and “recognition” (acknowledgment) are full of like pitfalls of ambiguity.

In contemporary discussion of value-judgments, however, appreciation is a peculiarly treacherous term. It is first asserted (or assumed) that all experiences of good are modes of knowing: that good

is a term of a proposition. Then when experience forces home the immense difference between evaluation as a critical process (a process of inquiry for the determination of a good precisely similar to that which is undertaken in science in the determination of the nature of an event) and ordinary experience of good and evil, appeal is made to the difference between direct apprehension and indirect or inferential knowledge, and “appreciation” is called in to play the convenient rôle of an immediate cognitive apprehension. Thus a second error is used to cover up and protect a primary one. To savor a thing fully—as Arnold Bennett’s heroines are wont to do—is no more a knowing than is the chance savoring which arises when things smelled are found good, or than is being angry or thirsty or more than five feet high. All the language which we can employ is charged with a force acquired through reflection. Even when I speak of a direct experience of a good or bad, one is only too likely to read in traits characterizing a thing which is found in consequence of thinking, to be good; one has to use language simply to stimulate a recourse to a direct experiencing in which language is not depended upon. If one is willing to make such an imaginative excursion—no one can be compelled—he will note that finding a thing good apart from reflective judgment means simply treating the thing in a certain way, hanging on to it, dwelling upon it, welcoming it and acting to perpetuate its presence, taking delight in it.
It is a way of behaving toward it, a mode of organic reaction. A psychologist may, indeed, bring in the emotions, but if his contribution is relevant it will be because the emotions which figure in his account are just part of the primary organic reaction to the object. In contrary fashion, to find a thing bad (in a direct experience as distinct from the result of a reflective examination) is to be moved to reject it, to try to get away from it, to destroy or at least to displace it. It connotes not an act of apprehension but an act of repugning, of repelling. To term the thing good or evil is to state the fact (noted in recollection) that it was actually involved in a situation of organic acceptance or rejection, with whatever qualities specifically characterize the act.

All this is said because I am convinced that contemporary discussion of values and valuation suffers from confusion of the two radically different attitudes—that of direct, active, non-cognitive experience of goods and bads and that of valuation, the latter being simply a mode of judgment like any other form of judgment, differing in that its subject-matter happens to be a good or a bad instead of a horse or planet or curve. But unfortunately for discussions, "to value" means two radically different things: to prize and appraise; to esteem and to estimate: to find good in the sense described above, and to judge it to be good, to know it as good. I call them radically different because to prize names a practical, non-intellectual attitude, and to appraise names a judgment. That men love and hold things dear, that they cherish and care for some things, and neglect and contemn other things, is an undoubted fact. To call these things values is just to repeat that they are loved and cherished; it is not to give a reason for their being loved and cherished. To call them values and then import into them the traits of objects of valuation; or to import into values, meaning valuated objects, the traits which things possess as held dear, is to confuse the theory of judgments of value past all remedy.

And before coming to the more technical discussion, the currency of the confusion and the bad result consequences may justify dwelling upon the matter. The distinction may be compared to that between eating something and investigating the food properties of the thing eaten. A man eats something; it may be said that his very eating implies that he took it to be food, that he judged it, or regarded it cognitively, and that the question is just whether he judged truly or made a false proposition. Now if anybody will condescend to a concrete experience he will perceive how often a man eats without thinking; that he puts into his mouth what is set before him from habit, as an infant does from instinct. An onlooker or anyone who reflects is justified in saying that he acts as if he judged the material to be food. He is not justified in saying that any judgment or
intellectual determination has entered in. He has acted; he has behaved toward something as food: that is only to say that he has put it in his mouth and swallowed it instead of spewing it forth. The object may then be called food. But this does not mean either that it is food (namely, digestible and nourishing material) or that the eater judged it to be food and so formed a proposition which is true or false. The proposition would arise only in case he is in some doubt, or if he reflects that in spite of his immediate attitude of aversion the thing is wholesome and his system needs recuperation, etc. Or later, if the man is ill, a physician may inquire what he ate, and pronounce that something not food at all, but poison.

In the illustration employed, there is no danger of any harm arising from using the retroactive term “food”; there is no likelihood of confusing the two senses “actually eaten” and “nourishing article.” But with the terms “value” and “good” there is a standing danger of just such a confusion. Overlooking the fact that good and bad as reasonable terms involve a relationship to other things (exactly similar to that implied in calling a particular article food or poison), we suppose that when we are reflecting upon or inquiring into the good or value of some act or object, we are dealing with something as simple, as self-inclosed, as the simple act of immediate prizing or welcoming or cherishing performed without rhyme or reason, from instinct or habit. In truth just as determining a thing to be food means considering its relations to digestive organs, to its distribution and ultimate destination in the system, so determining a thing found good (namely, treated in a certain way) to be good means precisely ceasing to look at it as a direct, self-sufficient thing and considering it in its consequences—that is, in its relations to a large set of other things. If the man in eating consciously implies that what he eats is food, he anticipates or predicts certain consequences, with more or less adequate grounds for so doing. He passes a judgment or apprehends or knows—truly or falsely. So a man may not only enjoy a thing, but he may judge the thing enjoyed to be good, to be a value. But in so doing he is going beyond the thing immediately present and making an inference to other things, which, he implies, are connected with it. The thing taken into the mouth and stomach has consequences whether a man thinks of them or not. But he does not know the thing he eats—he does not make it a term of a certain character—unless he thinks of the consequences and connects them with the thing he eats. If he just stops and says “Oh, how good this is,” he is not saying anything about the object except the fact that he enjoys eating it. We may if we choose regard this exclamation as a reflection or judgment. But if it is intellectual, it is asserted for the sake of enhancing the enjoyment; it is a means to an end. A very hungry man will generally satisfy his appetite to some extent
before he indulges in even such rudimentary propositions.  

II

But we must return to a placing of our problem in this context. My theme is that a judgment of value is simply a case of a practical judgment, a judgment about the doing of something. This conflicts with the assumption that it is a judgment about a particular kind of existence independent of action, concerning which the main problem is whether it is subjective or objective. It conflicts with every tendency to make the determination of the right or wrong course of action (whether in morals, technology, or scientific inquiry) dependent upon an independent determination of some ghostly things called value-objects—whether their ghostly character is attributed to their existing in some transcendental eternal realm or in some realm called states of mind. It asserts that value-objects mean simply objects as judged to possess a certain force within a situation temporarily developing toward a determinate result. To find a thing good is, I repeat, to attribute or impute nothing to it. It is just to do something to it. But to consider whether it is good and how good it is, is to ask how it, as if acted upon, will operate in promoting a course of action.

Hence the great contrast which may exist between a good or an immediate experience and an evaluated or judged good. The rain may be most uncomfortable (just be it, as a man is more than five feet tall) and yet be "good" for growing crops—that is, favor or promote their movement in a given direction. This does not mean that two contrasting judgments of value are passed. It means that no judgment has yet taken place. If, however, I am moved to pass a value-judgment I should probably say that in spite of the disagreeableness of getting wet, the shower is a good thing. I am now judging it as a means in two contrasting situations, as a means with respect to two ends. I compare my discomfort as a consequence of the rain with the prospective crops as another consequence, and say "let the latter consequence be." I identify myself as agent with it, rather than with the immediate discomfort of the wetting. It is quite true that in this case I cannot do anything about it; my identification is, so to speak, sentimental rather than practical so far as stopping the rain or growing the crops is concerned. But in effect it is an assertion that one would not on
account of the discomfort of the rain stop it; that one would, if one could, encourage its continuance. Go it, rain, one says.

The specific intervention of action is obvious enough in plenty of other cases. It occurs to me that this agreeable “food” which I am eating isn’t a food for me; it brings on indigestion. It functions no longer as an immediate good; as something to be accepted. If I continue eating, it will be after I have deliberated. I have considered it as a means to two conflicting possible consequences, the present enjoyment of eating and the later state of health. One or other is possible, not both—though of course I may “solve” the problem by persuading myself that in this instance they are congruent. The value-object now means thing judged to be a means of procuring this or that end. As prizing, esteeming, holding dear denote ways of acting, so valuing denotes a passing judgment upon such acts with reference to their connection with other acts, or with respect to the continuum of behavior in which they fall. Valuation means change of mode of behavior from direct acceptance and welcoming to doubting and looking into—acts which involve postponement of direct (or so-called overt) action and which imply a future act having a different meaning from that just now occurring—for even if one decides to continue in the previous act its meaning-content is different when it is chosen after reflective examination.

LOGIC OF JUDGMENTS OF PRACTICE

A practical judgment has been defined as a judgment of what to do, or what is to be done: a judgment respecting the future termination of an incomplete and in so far indeterminate situation. To say that judgments of value fall within this field is to say two things: one, that the judgment of value is never complete in itself, but always in behalf of determining what is to be done; the other, that judgments of value (as distinct from the direct experience of something as good) imply that value is not anything previously given, but is something to be given by future action, itself conditioned upon (varying with) the judgment. This statement may appear to contradict the recent assertion that a value-object for knowledge means one investigated as a means to competing ends. For such a means it already is; the lobster will give me present enjoyment and future indigestion if I eat it. But as long as I judge, value is indeterminate. The question is not what the thing will do—I may be quite clear about that: it is whether to perform the act which will actualize its potentiality. What will I have the situation become as between alternatives? And that means what force shall the thing as means be given? Shall I take it as means to present enjoyment, or as a (negative) condition of future health? When its status in these respects is determined, its value is determined; judgment ceases, action goes on.

Practical judgments do not therefore primarily concern themselves with the value of objects; but
with the course of action demanded to carry an incomplete situation to its fulfilment. The adequate control of such judgments may, however, be facilitated by judgment of the worth of objects which enter as ends and means into the action contemplated. For example, my primary (and ultimate) judgment has to do, say, with buying a suit of clothes: whether to buy and, if so, what? The question is of better and worse with respect to alternative courses of action, not with respect to various objects. But the judgment will be a judgment (and not a chance reaction) in the degree in which it takes for its intervening subject-matter the value-status of various objects. What are the prices of given suits? What are their styles in respect to current fashion? How do their patterns compare? What about their durability? How about their respective adaptability to the chief wearing use I have in mind? Relative, or comparative, durability, cheapness, suitability, style, aesthetic attractiveness constitute value traits. They are traits of objects not per se, but as entering into a possible and foreseen completing of the situation. Their value is their force in precisely this function. The decision of better and worse is the determination of their respective capacities and intensities in this regard. Apart from their status in this office, they have no traits of value for knowledge. A determination of better value as found in some one suit is equivalent to (has the force of) a decision as to what it is better to do. It provided the lacking stimulus so that action occurs, or passes from its indeterminate-indecisive-state into decision.

Reference to the terms "subjective" and "objective" will, perhaps, raise a cloud of ambiguities. But for this very reason it may be worth while to point out the ambiguous nature of the term objective as applied to valuations. Objective may be identified, quite erroneously, with qualities existing outside of and independently of the situation in which a decision as to a future course of action has to be reached. Or, objective may denote the status of qualities of an object in respect to the situation to be completed through judgment. Independently of the situation requiring practical judgment, clothes already have a given price, durability, pattern, etc. These traits are not affected by the judgment. They exist; they are given. But as given they are not determinate values. They are not objects of valuation; they are data for a valuation. We may have to take pains to discover that these given qualities are, but their discovery is in order that there may be a subsequent judgment of value. Were they already definite values, they would not be estimated; they would be stimuli to direct response. If a man had already decided that cheapness constituted value, he would simply take the cheapest suit offered. What he judges is the value of cheapness, and this depends upon its weight or importance in the situation requiring
action, as compared with durability, style, adaptability, etc. Discovery of shoddy would not affect the de facto durability of the goods, but it would affect the value of cheapness—that is, the weight assigned that trait in influencing judgment—which it would not do, if cheapness already had a definite value. A value, in short, means a consideration, and a consideration does not mean an existence merely, but an existence having a claim upon judgment. Value judged is not existential quality noted, but is the influence attached by judgment to a given existential quality in determining judgment.

The conclusion is not that value is subjective, but that it is practical. The situation in which judgment of value is required is not mental, much less fanciful. I can but think that much of the recent discussion of the objectivity of value and of value-judgments rests upon a false psychological theory. It rests upon giving certain terms meanings that flow from an introspective psychology which accepts a realm of purely private states of consciousness, private not in a social sense (a sense implying courtesy or mayhap secrecy toward others), but existential independence and separateness. To refer value to choice or desire, for example, is in that case to say that value is subjectively conditioned. Quite otherwise, if we have steered clear from such a psychology. Choice, decision, means primarily a certain act, a piece of behavior on the part of a particular thing. That
man has not chosen, but has quieted himself into a belief that he has chosen in order to relieve himself of the strain of suspense.

Exactly the same analysis applies to desire. Diverse anticipated ends may provoke divided and competing present reactions; the organism may be torn between different courses, each interfering with the completion of the other. This intra-organic pulling and hauling, this strife of active tendencies, is a genuine phenomenon. The pull in a given direction measures the immediate hold of an anticipated termination or end upon us, as compared with that of some other. If one asked after the mechanism of the valuing process, I have no doubt that the answer would be in terms of desires thus conceived. But unless everything relating to the activity of a highly organized being is to be denominated subjective, I see no ground for calling it subjective. So far as I can make out, the emphasis upon a psychological treatment of value and valuation in a subjective sense is but a highly awkward and negative way of maintaining a positive truth: that value and valuation fall within the universe of action: that as welcoming, accepting, is an act, so valuation is a present act determining an act to be done, a present act taking place because the future act is uncertain and incomplete.

It does follow from this fact that valuation is not simply a recognition of the force or efficiency of a means with respect to continuing a process. For unless there is question about its continuation, about its termination, valuation will not occur. And there is no question save where activity is hesitant in direction because of conflict within it. Metaphorically we may say that rain is good to lay the dust, identifying force or efficiency with value. I do not believe that valuations occur and values are brought into being save in a continuing situation where things have potency for carrying forward processes. There is a close relationship between prevailing, valiancy, valency, and value. But the term "value" is not a mere reduplication of the term "efficiency": it adds something. When we are moving toward a result and at the same time are stimulated to move toward something else which is incompatible with it (as in the case of the lobster as a cause of both enjoyment and indigestion), a thing has a dual potency. Not until the end has been established is the value of the lobster settled, although there need be no doubt about its efficiencies. As was pointed out earlier, the practical judgment determines means and end at the same time. How then can value be given, as efficiency is given, until the end is chosen? The rain is (metaphorically) valuable for laying dust. Whether it is valuable for us to have the dust laid—and if so, how valuable—we shall never know until some activity of our own which is a factor in dust-laying comes into conflict with an incompatible activity. Its value is its force,
indeed, but it is its force in moving us to one end rather than to another. Not every potency, in other words, but potency with the specific qualification of falling within judgment about future action, means value or valuable thing. Consequently there is no value save in situations where desires and the need of deliberation in order to choose are found, and yet this fact gives no excuse for regarding desire and deliberation and decision as subjective phenomena.

To use an Irish bull, as long as a man knows what he desires there is no desire; there is movement or endeavor in a given direction. Desire is desires, and simultaneous desires are incompatible; they mark, as we have noted, competing activities, movements in directions, which cannot both be extended. Reflection is a process of finding out what we want, what, as we say, we really want, and this means the formation of new desire, a new direction of action. In this process, things get values—something they did not possess before, although they had their efficiencies.

At whatever risk of shock, this doctrine should be exposed in all its nakedness. To judge value is to engage in instituting a determinate value where none is given. It is not necessary that antecedently given values should be the data of the valuation; and where they are given data they are only terms in the determination of a not yet existing value. When a man is ill and after deliberation concludes that it be well to see a doctor, the doctor doubtless exists antecedently. But it is not the doctor who is judged to be the good of the situation, but the seeing of the doctor: a thing which, by description, exists only because of an act dependent upon a judgment. Nor is the health the man antecedently possessed (or which somebody has) the thing which he judges to be a value; the thing judged to be a value is the restoring of health—something by description not yet existing. The results flowing from his past health will doubtless influence him in reaching his judgment that it will be a good to have restored health, but they do not constitute the good which forms his subject-matter and object of his judgment. He may judge that they were good without judging that they are now good, for to be judged now good means to be judged to be the object of a course of action still to be undertaken. And to judge that they were good (as distinct from merely recalling certain benefits which accrued from health) is to judge that if the situation had required a reflective determination of a course of action one would have judged health an existence to be attained or preserved by action. There are dialectic difficulties which may be raised about judgments of this sort. For they imply the seeming paradox of a judgment whose proper subject-matter is its own determinate formation. But nothing is gained by obscuring the fact that such is the nature of the practical judgment: it is a judgment of what and how to judge—of
the weight to be assigned to various factors in the
determination of judgment. It would be interesting
to inquire into the question whether this peculiarity
may not throw light upon the nature of "conscious-
ness," but into that field we cannot now go.

III

From what has been said, it immediately follows,
of course, that a determinate value is instituted as a
decisive factor with respect to what is to be done.
Wherever a determinate good exists, there is an ade-
quate stimulus to action, and no judgment of what is
to be done or of the value of an object is called for.
It is frequently assumed, however, that valuation is
a process of applying some fixed or determinate value
to the various competing goods of a situation; that
valuation implies a prior standard of value and con-
sists in comparing various goods with the standard as
the supreme value. This assumption requires exami-
nation. If it is sound it deprives the position which
has been taken of any validity. For it renders the
judgment of what to do a matter of applying a value
existing ready-made, instead of making—as we have
done—the valuation a determination within the
practical judgment. The argument would run this
way: Every practical judgment depends upon a
judgment of the value of the end to be attained; this
end may be such only proximately, but that implies
something else judged to be good, and so, logically,
till we have arrived at the judgment of a supreme
good, a final end or sumnum bonum. If this state-
ment correctly describes the state of the case there
can be no doubt that a practical judgment depends
upon a prior recognition of value; consequently the
hypothesis upon which we have been proceeding
reverses the actual facts.

The first thing by way of critical comment is to
point out the ambiguity in the term "end." I should
like to fall back upon what was said earlier about the
thoroughly reciprocal character of means and end in
the practical judgment. If this be admitted it is
also admitted that only by a judgment of means—
things having value in the carrying of an indetermi-
nate situation to a completion—is the end determin-
ately made out in judgment. But I fear I cannot
count upon this as granted. So I will point out that
"end" may mean either the de facto limit to judgment,
which by definition does not enter into judgment at
all, or it may mean the last and completing object
of judgment, the conception of that object in which
a transitive incompletely given situation would come
to rest. Of end in the first sense, it is to be said that
it is not a value at all; of end in the second sense, that
it is identical with a finale of the kind we have just
been discussing or that it is determined in judgment,
not a value given by which to control the judgment.
It may be asserted that in the illustration used some
typical suit of clothes is the value which affords the
standard of valuation of all the suits which are offered to the buyer; that he passes judgment on their value as compared with the standard suit as an end and supreme value. This statement brings out the ambiguity just referred to. The need of something to wear is the *stimulus* to the judgment of the value of suits offered, and possession of a suit puts an end to judgment. It is an end of judgment in the objective, not in the possessive, sense of the preposition “of”; it is an end not in the sense of aim, but in the sense of a terminating limit. When possession begins, judgment has already ceased. And if argument *ad verum cundiam* has any weight I may point out that this is the doctrine of Aristotle when he says we never deliberate about ends, but only about means. That is to say, in all deliberation (or practical judgment or inquiry) there is always something outside of judgment which fixes its beginning and end or terminus. And I would add that, according to Aristotle, deliberation always ceases when we have come to the “first link in the chain of causes, which is last in the order of discovery,” and this means “when we have traced back the chain of causes [means] to ourselves.” In other words, the last end-in-view is always that which operates as the direct or immediate means of setting our own powers in operation. The end-in-view upon which judgment of action settles down is simply the adequate or complete means to the doing of something.

We do deliberate, however, about *aims*, about ends-in-view—a fact which shows their radically different nature from ends as limits to deliberation. The aim in the present instance is not the suit of clothes, but the *getting of a proper suit*. That is what is precisely estimated or valued; and I think I may claim to have shown that the determination of this aim is identical with the determination of the value of a suit through comparison of the values of cheapness, durability, style, pattern of different suits offered. Value is not determined by comparing various suits with an ideal model, but by comparing various suits with respect to cheapness, durability, adaptability *with one another*—involving, of course, reference also to length of purse, suits already possessed, etc., and other specific elements in the situation which demands that something be done. The purchaser may, of course, have settled upon something which serves as a model before he goes to buy; but that only means that his judging has been done beforehand; the model does not then function in judgment, but in his act as stimulus to immediate action. And there is a consideration here involved of the utmost importance as to practical judgments of the moral type: The more completely the notion of the model is formed outside and irrespective of the specific conditions which the situation of action presents, the less intelligent is the act. Most men might have their ideals of the model changed somewhat in the face of the actual offering,
even in the case of buying clothes. The man who is not accessible to such change in the case of moral situations has ceased to be a moral agent and become a reacting machine. In short, the standard of valuation is formed in the process of practical judgment or valuation. It is not something taken from outside and applied within it—such application means there is no judgment.

IV

Nothing has been said thus far about a standard. Yet the conception of a standard, or a measure, is so closely connected with valuation that its consideration affords a test of the conclusions reached. It must be admitted that the concepts of the nature of a standard pointed to by the course of the prior discussion is not in conformity with current conceptions. For the argument points to a standard which is determined within the process of valuation, not outside of it, and hence not capable of being employed ready-made, therefore, to settle the valuing process. To many persons, this will seem absurd to the point of self-contradiction. The prevailing conception, however, has been adopted without examination; it is a preconception. If accepted, it deprives judgment and knowledge of all significant import in connection with moral action. If the standard is already given, all that remains is its mechanical application to the case in hand—as one would apply a yard

rule to dry-goods. Genuine moral uncertainty is then impossible; where it seems to exist, it is only a name for a moral unwillingness, due to inherent viciousness, to recognize and apply the rules already made and provided, or else for a moral corruption which has enfeebled man's power of moral apprehension. When the doctrine of standards prior to and independent of moral judgments is accompanied by these other doctrines of original sin and corruption, one must respect the thoroughgoing logic of the doctrine. Such is not, however, the case with the modern theories which make the same assumption of standards preceding instead of resulting from moral judgments, and which ignore the question of uncertainty and error in their apprehension. Such considerations do not, indeed, decide anything, but they may serve to get a more unp戒judiced hearing for a hypothesis which runs counter to current theories, since it but formulates the trend of current practices in their increasing tendency to make the act of intelligence the central factor in morals.

Let us, accordingly, consider the alternatives to regarding the standard of value as something evolved in the process of reflective valuation. How can such a standard be known? Either by an a priori method of intuition, or by abstraction from prior cases. The latter conception throws us into the arms of hedonism. For the hedonistic theory of the standard of value derives its logical efficiency
from the consideration that the notion of a prior and fixed standard (one which is not determined within the situation by reflection) forces us back upon antecedent irreducible pleasures and pains which alone are values definite and certain enough to supply standards. They alone are simple enough to be independent and ultimate. The apparently commonsense alternative would be to take the "value" of prior situations in toto, say, the value of an act of kindness to a sufferer. But any such good is a function of the total unanalyzed situation; it has, consequently, no application to a new situation unless the new exactly repeats the old one. Only when the "good" is resolved into simple and unalterable units, in terms of which old situations can be equated to new ones on the basis of the number of units contained, can an unambiguous standard be found.

The logic is unimpeachable, and points to irreducible pleasures and pains as the standard of valuation. The difficulty is not in the logic but in empirical facts, facts which verify our prior contention. Conceding, for the sake of argument, that there are definite existences such as are called pleasures and pains, they are not value-objects, but are only things to be valued. Exactly the same pleasure or pain, as an existence, has different values at different times according to the way in which it is judged. What is the value of the pleasure of eating the lobster as compared with the pains of indigestion? The rule tells us, of course, to break up the pleasure and pain into elementary units and count. Such ultimate simple units seem, however, to be about as much within the reach of ordinary knowledge as atoms or electrons are within the grasp of the man of the street. Their resemblance to the ultimate, neutral units which analytic psychologists have postulated as a methodological necessity is evident. Since the value of even such a definite entity as a toothache varies according to the organization constructed and presented in reflection, it is clear that ordinary empirical pleasures and pains are highly complex.

This difficulty, however, may be waived. We may even waive the fact that a theory which set out to be ultra-empirical is now enmeshed in the need for making empirical facts meet dialectical requirements. Another difficulty is too insuperable to be waived.

Analytic realism ought to be favorable to such a hedonism; the fact that present-day analytic realists are not favorable would seem to indicate that they have not taken their logic seriously enough, but have been restrained, by practical motives, from applying it thoroughly. To say that the moral life presents a high degree of organization and integration is to say something which is true, but is also to say something which by the analytic logic calls for its resolution into ultimate and independent simples. Unless they accept the pleasures and pains of Bentham as such ultimates, they are bound to present acceptable substitutes. But here they tend to shift their logic and to make the fulfillment of some organization (variously defined) the standard good. Consistency would then admit the hypothesis that in all cases an eventual organization rather than antecedent simples supply the standard of knowledge. Meanwhile the term "fulfillment" (or any similar term) stands as an acknowledgment that the organization in question is not something ontologically prior but is one yet to be achieved.
In any case the quantity of elementary existences which constitutes the criterion of measurement is dependent upon the very judgment which is assumed to be regulated by it. The standard of valuation is the units which will result from an act; they are future consequences. Now the character of the agent judging is one of the conditions of the production of these consequences. A callous person not only will not foresee certain consequences, and will not be able to give them proper weight, but he does not afford the same condition of their occurrence which is constituted by a sensitive man. It is quite possible to employ judgment so as to produce acts which will increase this organic callousness. The analytic conception of the moral criterion provides—logically—for deliberate blunting of susceptibilities. If the matter at issue is simply one of number of units of pleasure over pain, arrange matters so that certain pains will not, as matter of fact, be felt. While this result may be achieved by manipulation of extra-organic conditions, it may also be effected by rendering the organism insensitive. Persistence in a course which in the short run yields uneasiness and sympathetic pangs, will in the long run eliminate these pains and leave a net pleasure balance.

This is a time-honored criticism of hedonism. My present concern with it is purely logical. It shows that the attempt to bring over from past objects the elements of a standard for valuing future conse-

quences is a hopeless one. The express object of a valuation-judgment is to release factors which being new, cannot be measured on the basis of the past alone. This discussion of the analytic logic as applied in morals would, however, probably not be worth while did it not serve to throw into relief the significance of any appeal to fulfilment of a system or organization as the moral good—the standard. Such an appeal, if it is wary, is an appeal to the present situation as undergoing that reorganization that will confer upon it the unification which it lacks; to organization as something to be brought about, to be made. And it is clear that this appeal meets all the specifications of judgments of practice as they have been described. The organization which is to be fulfilled through action is an organization which, at the time of judging, is present in conception, in idea—in, that is, reflective inquiry as a phase of reorganizing activity. And since its presence in conception is both a condition of the organization aimed at and a function of the adequacy of the reflective inquiry, it is evident that there is here a confirmation of our statement that the practical judgment is a judgment of what and how to judge as an integral part of the completion of an incomplete temporal situation. More specifically, it also appears that the standard is a rule for conducting inquiry to its completion: it is a counsel to make examination of the operative factors complete, a warning against suppressing recognition of any of
them. However a man may impose upon himself or upon others, a man's real measure of value is exhibited in what he does, not in what he consciously thinks or says. For the doing is the actual choice. It is the completed reflection.

It is comparatively easy at the present time in moral theory to slam both hedonism and apriorism. It is not so easy to see the logical implications of the alternative to them. The conception of an organization of interests or tendencies is often treated as if it were a conception which is definite in subject-matter as well as clear-cut in form. It is taken not as a rule for procedure in inquiry, a direction and a warming (which it is), but as something all of whose constituents are already given for knowledge, even though not given in fact. The act of fulfilling or realizing must then be treated as devoid of intellectual import. It is a mere doing, not a learning and a testing. But how can a situation which is incomplete in fact be completely known until it is complete? Short of the fulfilment of a conceived organization, how can the conception of the proposed organization be anything more than a working hypothesis, a method of treating the given elements in order to see what happens? Does not every notion which implies the possibility of an apprehension of knowledge of the end to be reached also imply either an a priori

1 It must not be overlooked that a mere reminder of an end previously settled upon may operate as a sufficient stimulus to revelation of the nature of that end, or else that organization is nothing but a whole composed of elementary parts already given—the logic of hedonism?

The logic of subsumption in the physical sciences meant that a given state of things could be compared with a ready-made concept as a model—the phenomena of the heavens with the implications of, say, the circle. The methods of experimental science broke down this motion; they substituted for an alleged regulative model a formula which was the integrated function of the particular phenomena themselves, a formula to be used as a method of further observations and experiments and thereby tested and developed. The unwillingness to believe that, in a similar fashion, moral standards or models can be trusted to develop out of the specific situations of action shows how little the general logical force of the method of science has been grasped. Physical knowledge did not as matter of fact advance till the dogma of models or forms as standards of knowledge had been ousted. Yet we hang tenaciously to a like doctrine in morals for fear of moral chaos. It once seemed to be impossible that the disordered phenomena of perception could generate a knowledge of law and order; it was action. It is probably this act of calling the end to mind which the realist confuses with knowledge, and therefore terms apprehension. But there is nothing cognitive about it, any more than there is in pressing a button to give the signal for an act already decided upon.
supposed that independent principles of order must be supplied and the phenomena measured by approach to or deviation from the fixed models. The ordinary conception of a standard in practical affairs is a precise analogue. Physical knowledge started on a secure career when men had courage to start from the irregular scene and to treat the suggestions to which it gave rise as methods for instituting new observations and experiences. Acting upon the suggested conceptions analyzed, extended, and ordered phenomena and thus made improved conceptions—methods of inquiry—possible. It is reasonable to believe that what holds moral knowledge back is above all the conception that there are standards of good given to knowledge apart from the work of reflection in constructing methods of action. As the bringer of bad news gets a bad name, being made to share in the production of the evil which he reports, so honest acknowledgment of the uncertainty of the moral situation and of the hypothetical character of all rules of moral mensuration prior to acting upon them, is treated as if it originated the uncertainty and created the skepticism.

It may be contended, however, that all this does not justify the earlier statement that the limiting situation which occasions and cuts off judgment is not itself a value. Why, it will be asked, does a man buy a suit of clothes unless that is a value, or at least a proximate means to a further value? The answer is short and simple: Because he has to; because the situation in which he lives demands it. The answer probably seems too summary. But it may suggest that while a man lives, he never is called upon to judge whether he shall act, but simply how he shall act. A decision not to act is a decision to act in a certain way; it is never a judgment not to act, unqualifiedly. It is a judgment to do something else—to wait, for example. A judgment that the best thing to do is to retire from active life, to become a Simon Stylites, is a judgment to act in a certain way, conditioned upon the necessity that, irrespective of judging, a man will have to act somehow anyway. A decision to commit suicide is not a decision to be dead; it is a decision to perform a certain act. The act may depend upon reaching the conclusion that life is not worth living. But as a judgment, this is a conclusion to act in a way to terminate the possibility of further situations requiring judgment and action. And it does not imply that a judgment about life as a supreme value and standard underlies all judgments as to how to live. More specifically, it is not a judgment upon the value of life per se, but a judgment that one does not find at hand the specific means of making life worth while. As an act to be done, it falls within and assumes life. As a judgment upon the value of life, by definition it evades the issue. No one ever influenced a person considering committing suicide by arguments concerning the value of life, but only by suggesting or supplying conditions
and means which make life worth living; in other words, by furnishing direct stimuli to living.

However, I fear that all this argument may only obscure a point obvious without argument, namely, that all deliberation upon what to do is concerned with the completion and determination of a situation in some respect incomplete and so indeterminate. Every such situation is specific; it is not merely incomplete; the incompleteness is of a specific situation. Hence the situation sets limits to the reflective process; what is judged has reference to it and that which limits never is judged in the particular situation in which it is limiting. Now we have in ordinary speech a word which expresses the nature of the conditions which limit the judgments of value. It is the word "invaluable." The word does not mean something of supreme value as compared with other things any more than it means something of zero value. It means something out of the scope of valuation—something out of the range of judgment; whatever in the situation at hand is not and cannot be any part of the subject-matter of judgment and which yet instigates and cuts short the judgment. It means, in short, that judgment at some point runs against the brute act of holding something dear as its limit.

V

The statement that values are determined in the process of judgment of what to do (that is, in situa-

tions where preference depends upon reflection upon the conditions and possibilities of a situation requiring action) will be met by the objection that our practical deliberations usually assume precedent specific values and also a certain order or grade among them. There is a sense in which I am not concerned to deny this. Our deliberate choices go on in situations more or less like those in which we have previously chosen. When deliberation has reached a valuation, and action has confirmed or verified the conclusion, the result remains. Situations overlap. The m which is judged better than n in one situation is found worse than l in another, and so on; thus a certain order of precedence is established. And we have to broaden the field to cover the habitual order of reflective preferences in the community to which we belong. The valu-eds or valuables thus constituted present themselves as facts in subsequent situations. Moreover, by the same kind of operation, the dominating objects of past valuations present themselves as standardized values.

But we have to note that such value-standards are only presumptive. Their status depends, on one hand, upon the extent in which the present situation is like the past. In a progressive or rapidly altering social life, the presumption of identical present value is weakened. And while it would be foolish not to avail one's self of the assistance in present valuations of the valuables established in other situations,
we have to remember that habit operates to make us overlook differences and presume identity where it does not exist—to the misleading of judgment. On the other hand, the contributory worth of past determinations of value is dependent upon the extent in which they were critically made; especially upon the extent in which the consequences brought about through acting upon them have been carefully noted. In other words, the presumptive force of a past value in present judgment depends upon the pains taken with its verification.

In any case, so far as judgment takes place (instead of the reminiscence of a prior good operating as a direct stimulus to present action) all valuation is in some degree a revaluation. Nietzsche would probably not have made so much of a sensation, but he would have been within the limits of wisdom, if he had confined himself to the assertion that all judgment, in the degree in which it is critically intelligent, is a transvaluation of prior values. I cannot escape recognition that any allusion to modification or transformation of an object through judgment arouses partisan suspicion and hostility. To many it appears to be a survival of an idealistic epistemology. But I see only three alternatives. Either there are no practical judgments—as judgments they are wholly illusory; or the future is bound to be but a repetition of the past or a reproduction of something eternally existent in some transcendent realm (which is the same thing logically); or the object of a practical judgment is some change, some alteration, to be brought about in the given, the nature of the change depending upon the judgment and yet constituting its subject-matter. Unless the epistemological realist accepts one of the two first alternatives, he seems bound, in accepting the third, to admit not merely that practical judgments make a difference in things as an after-effect (this he seems ready enough to admit), but that the import and validity of judgments is a matter of the difference thus made. One may, of course, hold that this is just what marks the distinction of the practical judgment from the scientific judgment. But one who admits this fact as respects a practical judgment can no longer claim that it is fatal to the very idea of judgment to suppose that its proper object is some difference to be brought about in things, and that the truth of the judgment is constituted by the differences in consequences actually made. And a logical realist who takes seriously the

1 Upholders of this view generally disguise the assumption of repetition by the notion that what is judged is progress in the direction of approximation to an eternal value. But as matter of fact, progress is never judged (as I have had repeated occasion to point out) by reference to a transcendent eternal value, but in reference to the success of the end-in-view in meeting the needs and conditions of the specific situation—a surrender of the doctrine in favor of the one set forth in the text. Logically, the notion of progress as approximation has no place. The thesis should read that we always try to repeat a given value, but always fail as a matter of fact. And constant failure is a queer name for progress.
notion that moral good is a fulfilment of an organization or integration must admit that any proposition about such an object is prospective (for it is something to be attained through action), and that the proposition is made for the sake of furthering the fulfilment. Let one start at this point and carry back the conception into a consideration of other kinds of propositions, and one will have, I think, the readiest means of apprehending the intent of the theory that all propositions are but the propoundings of possible knowledge, not knowledge itself. For unless one marks off the judgment of good from other judgment by means of an arbitrary division of the organism from the environment, or of the subjective from the objective, no ground for any sharp line of division in the propositional-continuum will appear.

But (to obviate misunderstanding) this does not mean that some psychic state or act makes the difference in things. In the first place, the subject-matter of the judgment is a change to be brought about; and, in the second place, this subject-matter does not become an object until the judgment has issued in act. It is the act which makes the difference, but nevertheless the act is but the complete object of judgment and the judgment is complete as a judgment only in the act. The anti-pragmatists have been asked (notably by Professor A. W. Moore) how they sharply distinguish between judgment—or knowledge—and act and yet freely admit and insist that knowledge makes a difference in action and hence in existence. This is the crux of the whole matter. And it is a logical question. It is not a query (as it seems to have been considered) as to how the mental can influence a physical thing like action—a variant of the old question of how the mind affects the body. On the contrary, the implication is that the relation of knowledge to action becomes a problem of the action of a mental (or logical) entity upon a physical one only when the logical import of judgment has been misconceived. The positive contention is that the realm of logical propositions presents in a realm of possibility the specific rearrangement of things which overt action presents in actuality. Hence the passage of a proposition into action is not a miracle, but the realization of its own character—its own meaning as logical. I do not profess, of course, to have shown that such is the case for all propositions; that is a matter which I have not discussed. But in showing the tenability of the hypothesis that practical judgments are of that nature, I have at least ruled out any purely dialectic proof that the nature of knowledge as such forbids entertaining the hypothesis that the import—indirect if not direct—of all logical propositions is some difference to be brought about. The road is at least cleared for a more unprejudiced consideration of this hypothesis on its own merits.
SENSE PERCEPTION AS KNOWLEDGE

I mentioned incidentally in the first section that it is conceivable that failure to give adequate consideration to practical judgments may have a compromising effect upon the consideration of other types. I now intend to develop this remark with regard to sense perception as a form of knowledge. The topic is so bound up with a multitude of perplexing psychological and epistemological traditions that I have first to make it reasonably clear what it is and what it is not which I propose to discuss. I endeavored in an earlier series of papers\(^1\) to point out that the question of the material of sense perception is not, as such, a problem of the theory of knowledge at all, but simply a problem of the occurrence of a certain material—a problem of causal conditions and consequences. That is to say, the problem presented by an image\(^2\) of a bent stick, or by a dream, or by “secondary” sensory qualities is properly a problem of physics—of conditions of occurrence, and not of logic, of truth or falsity, fact or fiction. That the existence of a red quale is dependent upon disturbances of a certain velocity of a medium in connection with certain changes of the organism is not to be confused with the notion that red is a way of knowing, in some more or less adequate fashion, some more “real” object or else.

\(^1\) See IX and X ante.
\(^2\) I use the term “image” in the sense of optics, not of psychology.

of knowing itself. The fact of causation—or functional dependence—no more makes the quale an “appearance” to the mind of something more real than itself or of itself than it makes bubbles on the water a real fish transferred by some cognitive distortion into a region of appearance. With a little stretching we may use the term appearance in either case, but the term only means that the red quale or the water-bubble is an obvious or conspicuous thing from which we infer something else not so obvious.

This position thus freely resumed here needs to be adequately guarded on all sides. It implies that the question of the existence or presence of the subject-matter of even a complex sense perception may be treated as a question of physics. It also implies that the existence of a sense perception may be treated as a problem of physics. But the position is not that all the problems of sense perception are thereby exhausted. There is still, on the contrary, the problem of the cognitive status of sense perception. So far from denying this fact, I mean rather to emphasize it in holding that this knowledge aspect is not to be identified—as it has been in both realistic and idealistic epistemologies—with the simple occurrence of presented subject-matter and with the occurrence of a perceptive act. It is often stated, for example, that primitive sense objects when they are stripped of all inferential material cannot possibly be false—but with the implication that they, therefore, must
be true. Well, I meant to go this statement one better—to state that they are neither true nor false—that is, that the distinction of true-or-false is as irrelevant and inapplicable as to any other existence, as it is, say, to being more than five feet high or having a low blood pressure. This position when taken leaves over the question of sense perception as knowledge, as capable of truth or falsity. It is this question, then, which I intend to discuss in this paper.

I

My first point is that some sense perceptions at least (as matter of fact the great bulk of them), are without any doubt forms of practical judgment—or, more accurately, are terms in practical judgments as propositions of what to do. When in walking down a street I see a sign on the lamp-post at the corner, I assuredly see a sign. Now in ordinary context (I do not say always or necessarily) this is a sign of what to do—to continue walking or to turn. The other term of the proposition may not be stated or it may be; it is probably more often tacit. Of course, I have taken the case of the sign purposely. But the case may be extended. The lamp-post as perceived is to a lamp-lighter a sign of something else than a turn, but still a sign of something to be done. To another man, it may be a sign of a possible support. I am anxious not to force the scope of cases of this class beyond what would be accepted by an unbiased person, but I wish to point out that certain features of the perceived object, as a cognitive term, which do not seem at first sight to fall within this conception of the object, as, an intellectual sign of what to do, turn out upon analysis to be covered by it. It may be said, for example, that our supposed pedestrian perceives much besides that which serves as evidence of the thing to be done. He perceives the lamp-post, for example, and possibly the carbons of the arc. And these assuredly do not enter into the indication of what to do or how to do it.

The reply is threefold. In the first place, it is easy—and usual—to read back into the sense perception more than was actually in it. It is easy to recall the familiar features of the lamp-post; it is practically impossible—or at least very unusual—to recall what was actually perceived. So we read the former into the latter. The tendency is for actual perception to limit itself to the minimum which will serve as sign. But, in the second place, since it is never wholly so limited, since there is always a surplusage of perceived object, the fact stated in the objection is admitted. But it is precisely this surplusage which has not cognitive status. It does not serve as a sign, but neither is it known, or a term in knowledge. A child, walking by his father's side, with no aim and hence no reason for securing indications of what to do, will probably see more in his idle curiosity than his
parent. He will have more presented material. But this does not mean that he is making more propositions, but only that he is getting more material for possible propositions. It means, in short, that he is in an aesthetic attitude of realization rather than in a cognitive attitude. But even the most economical observer has some aesthetic, non-cognitive surplusage. In the third place, surplusage is necessary for the operation of the signifying function. Independently of the fact that surplusage may be required to render the sign specific, action is free (its variation is under control) in the degree in which alternatives are present. The pedestrian has probably the two alternatives in mind: to go straight on or to turn. The perceived object might indicate to him another alternative—to stop and inquire of a passer-by. And, as is obvious in a more complicated case, it is the extent of the perceived object which both multiplies alternative ways of acting and gives the grounds for selecting among them. A physician, for example, deliberately avoids such hard-and-fast alternatives as have been postulated in our instance. He does not observe simply to get an indication of whether the man is well or ill; but in order to determine what to do he extends his explorations over a wide field. Much of his perceived object field is immaterial to what he finally does; that is, does not serve as sign. But it is all relevant to judging what he is to do. Sense perception as a term in practical judgment must include more than the element which finally serves as sign. If it did not, there would be no perception, but only a direct stimulus to action.¹

The conclusion that such perceptions as we have been considering are terms in an inference is to be carefully discriminated from the loose statement that sense perceptions are unconscious inferences. There is a great difference between saying that the perception of a shape affords an indication for an inference and saying that the perception of shape is itself an inference. That definite shapes would not be perceived, were it not for neural changes brought about in prior inferences, is a possibility; it may be, for aught I know, an ascertained fact. Such telescoping of a perceived object with the object inferred from it may be a constant function; but in any case the telescoping is not a matter of a present inference.

¹The superstition that whatever influences the action of a conscious being must be an unconscious sensation or perception, if it is not a conscious one, should be summarily dismissed. We are active beings from the start and are naturally, wholly apart from consciousness, engaged in redirecting our action in response to changes in our surroundings. Alternative possibilities, and hence an indeterminate situation, change direct response into a response mediated by a perception as a sign of possibilities, that is, a physiological stimulus into a perceived quality: a sensory datum.
going on unconsciously, but is the result of an organic modification which has occurred in consequence of prior inferences. In similar fashion, to say that to see a table is to get an indication of something to write on is in no way to say that the perception of a table is an inference from sensory data. To say that certain earlier perceived objects not having as perceived the character of a table have now “fused” with the results of inferences drawn from them is not to say that the perception of the table is now an inference. Suppose we say that the first perception was of colored patches; that we inferred from this the possibility of reaching and touching, and that on performing these acts we secured certain qualities of hardness, smoothness, etc., and that these are now all fused with the color-patches. At most this only signifies that certain previously inferred qualities have now become consolidated with qualities from which they were formerly inferred. And such fusion or consolidation is precisely not inference. As matter of fact, such “fusion” of qualities, given and formerly inferred, is but a matter of speaking. What has really happened is that brain processes which formerly happened successively now happen simultaneously. What we are dealing with is not a fact of cognition, but a fact of the organic conditions of the occurrence of an act of perception.

Let us apply the results to the question of sense “illusions.” The bent reed in the water comes naturally to mind. Purely physical considerations account for the refraction of the light which produces an optical image of a bent stick. This has nothing to do with knowledge or with sense perception—with seeing. It is simply and wholly a matter of the properties of light and a lens. Such refractions are constantly produced without our noting them. In the past, however, light refracted and unrefracted has been a constant stimulus to responsive actions. It is a matter of the native constitution of the organism that light stimulates the eyes to follow and the arms to reach and the hands to clutch and handle. As a consequence, certain arrangements of reflected and refracted light have become a sign to perform certain specific acts of handling and touching. As a rule, stimuli and reactions occur in an approximately homogeneous medium—the air. The system of signs or indexes of action set up has been based upon this fact and accommodated to it. A habit or bias in favor of a certain kind of inference has been set up. We infer from a bent ray of light that the hand, in touching the reflecting object, will, at a certain point, have to change its direction. This habit is carried over to a medium in which the conclusion does not hold. Instead of saying that light is bent—which it is—we infer that the stick is bent: we infer that the hand could not protract a straight course in handling the object. But an expert fisherman never makes such an error in spearing fish.
Reacting in media of different refractive capacities, he bases his signs and inferences upon the conditions and results of his media. I see no difference between these cases and that of a man who can read his own tongue. He sees the word "pain" and infers it means a certain physical discomfort. As matter of fact, the thing perceived exists in an unfamiliar medium and signifies bread. To the one accustomed to the French language the right inference occurs. There is neither error nor truth in the optical image: it just exists physically. But we take it for something else, we behave to it as if it were something else. We mis-take it.

II

So far as I can see, the pronounced tendency to regard the perceived object as itself the object of a peculiar kind of knowledge instead of as a term in knowledge of the practical kind has two causes. One is the confirmed habit of neglecting the wide scope and import of practical judgments. This leads to overlooking the responsive act as the other term indicated by the perception, and to taking the perceived object as the whole of the situation just by itself. The other cause is the fact that because perceived objects are constantly employed as evidence of what is to be done—or how to do something—they them-

Here is where the primary advantage of recognizing that ordinary sense perceptions are forms of practical judgment comes in. In practical judgments, the other term is as open and aboveboard as is the sensory quality: it is the thing to be done, the response to be selected. To borrow an illustration of Professor Woodbridge's: A certain sound indicates to the mother that her baby needs attention. If she turns out to be in error, it is not because sound ought to mean so many vibrations of the air, and as matter of fact doesn't even suggest air vibrations, but because there is wrong inference as to the act to be performed.

I imagine that if error never occurred in inferences of this practical sort the human race would have gone on quite contented with them. However that may be, errors do occur and the endeavor to control inference as to consequences (so as to reduce their likelihood of error) leads to propositions where the knowledge-object of the perceived thing is not something to be done, but the cause which produced it. The mother finds her baby peacefully sleeping and says the baby didn't make the noise. She investigates and decides a swinging door made it. Instead of inferring a consequence, she infers a cause. If she had identified the noise in the first place, she would have concluded that the hinges needed oiling.

Now where does the argument stand? The proper control of inference in specific cases is found (a) to lie in the proper indetification of the datum. If the perception is of a certain kind, the inference takes place as a matter of course; or else inference can be suspended until more adequate data are found, and thus error is avoided even if truth be not found. Furthermore (b) it is discovered that the most effective way of identifying datum (and securing adequate data) is by inference to its cause. The mother stops short with the baby and the door as causes. But the same motives which made her transfer her inference from consequences to conditions are the motives which lead others to inferring from sounds to vibrations of air. Hence our scientific propositions about sensory data. They are not, as such, about things to do, but about things which have been done, have happened—"facts." But they have reference, nevertheless, to inferences regarding consequences to be effected. They are the means of securing data which will prevent errors which would otherwise occur, and which facilitate an entirely new crop of inferences as to possibilities—means and ends—of action. That scientific men should be conscious of this reference or even interested in it is not at all necessary, for I am talking about the logic of propositions, not about biography nor psychology. If I reverted to psychology, it would be to point out that there is no reason in the world why the practical activity of some men should not be predominantly directed into the pursuits connected with discovery. The extent in which they actually are so directed depends upon social conditions.
III

We are brought to a consideration of the notion of "primitive" sense data. It was long customary to treat the attempt to define true knowledge in terms derived from sense data as a confusion of psychology—or the history of the growth of knowledge—with logic, the theory of the character of knowledge as knowledge. As matter of fact, there is confusion, but in the opposite direction. The attempt involved a confusion of logic with psychology—that is, it treated a phase of the technique of inference as if it were a natural history of the growth of ideas and beliefs.

The chief source of error in ordinary inference is an unrecognized complexity of data. Perception which is not experimentally controlled fails to present sufficiently wide data to secure differentia of possible inferences, and it fails to present, even in what is given, lines of cleavage which are important for proper inference. This is only an elaborate way of saying what scientific inquiry has made clear, that, for purposes of inference as to conditions of production of what is present, ordinary sense perception is too narrow, too confused, too vivid as to some quales and too blurred as to some others. Let us confine our attention for the moment to confusion. It has often been pointed out that sense qualities being just what they are, it is illegitimate to introduce such notions as obscurity or confusion into them: a slightly illuminated color is just as irretrievably what it is, as clearly itself, as an object in the broad glare of noonday. But the case stands otherwise when the quale is taken as a datum for inference. It is not so easy to identify a perceived object for purposes of inference in the dusk as in bright light. From the standpoint of an inference to be effected, the confusion is the same as an unjustifiable simplification. This over-simplification has the effect of making the quale, as a term of inference, ambiguous. To infer from it is to subject ourselves to the danger of all fallacies of ambiguity which are expounded in the textbooks. The remedy is clearly the resolution, by experimental means, of what seems to be a simple datum into its "elements." This is a case of analysis; it differs from other modes of analysis only in the subject-matter upon which it is directed, viz., something which had been previously accepted as a simple whole. The result of this analysis is the existence as objects of perception of isolated qualities like the colors of the spectrum scientifically determined, the tones of the scale in all their varying intensities, etc., in short, the "sensations" or sense qualities of contemporary psychology textbooks or the "simple ideas" of sensation of Locke or the "objects of sense" of Russell. They are the material of sense perception discriminated for the purpose of better inferences.

Note that these simple data or elements are not original, psychologically or historically; they are
logical primitives—that is, irreducible for purposes of inference. They are simply the most unambiguous and best defined objects of perception which can be secured to serve as signs. They are experimentally determined, with great art, precisely because the naturally given, the customary, objects in perception have been ambiguous or confused terms in inference. Hence they are replaced, through experimental means involving the use of wide scientific knowledge deductively employed, by simpler sense objects. Stated in current phraseology, "sensations" (i.e., qualities present to sense) are not the elements out of which perceptions are composed, constituted, or constructed; they are the finest, most carefully discriminated objects of perception. We do not first perceive a single, thoroughly defined shade, a tint and hue of red; its perception is the last refinement of observation. Such things are the limits of perception, but they are final, not initial, limits. They are what is perceived to be given under the most favorable possible conditions; conditions, moreover, which do not present themselves accidentally, but which have to be intentionally and experimentally established, and detection of which exacts the use of a vast body of scientific propositions.

I hope it is now evident what was meant by saying that current logic presents us not with a confusion of psychology with logic, but with a wholesale mistaking of logical determinations for facts of psy-

chology. The confusion was begun by Locke—or rather made completely current through the enormous influence exercised by Locke—and some reference to Locke may be of aid in clearing up the point. Locke's conception of knowledge was logical, not psychological. He meant by knowledge thoroughly justified beliefs or propositions, "certainty," and carefully distinguished it from what passed current as knowledge at a given time. The latter he called "assent," opinion, belief, or judgment. Moreover, his interest in the latter was logical. He was after an art of controlling the proper degree of assent to be given in matters of probability. In short, his sole aim was to determine certainty where certainty is possible and to determine the due degree of probability in the much vaster range of cases where only probability is attainable. A natural history of the growth of "knowledge" in the sense of what happens to pass for knowledge was the last of his interests. But he was completely under the domination of the ruling idea of his time; namely, that Nature is the norm of truth. Now the earliest period of human life presents the "work of nature" in its pure and unadulterated form. The normal is the original, and the original is the normative. Nature is both beneficent and truthful in its work; it retains all the properties of the Supreme Being whose vice-regent it is. To get the logical ultimates we have only, therefore, to get back to the natural primitives. Under the influence
of such deistic ideas, Locke writes a mythology of the history of knowledge, starting from clear and distinct meanings, each simple, well defined, sharply and unambiguously just what it is on its face, without concealments and complications, and proceeds by "natural" compoundings up to the store of complex ideas, and to the perception of simple relations of agreement among ideas: a perception always certain if the ideas are simple, and always controllable in the case of complex ideas if we consider the simple ideas and their compoundings. Thus he established the habit of taking logical discriminations as historical or psychological primitives—as "sources" of beliefs and knowledge instead of as checks upon inference and as means of knowing.

I hope reference to Locke will not make a scapegoat. I should not have mentioned him if it were not that this way of looking at things found its way over into orthodox psychology and then back again into the foundations of logical theory. It may be said to be the stock in trade of the school of empiricist logicians, and (what is even more important) of the other schools of logic whenever they are dealing with propositions of perception and observation: vide Russell's trusting confidence in "atomic" propositions as psychological primitives. It led to the supposition that there is a kind of knowledge or simple apprehension (or sense acquaintance) implying no inference and yet basic to inference. Note, if you please, the multitude of problems generated by thinking of whatever is present in experience (as sensory qualities are present) as if it were intrinsically and apart from the use made of its subject-matter of knowledge.

a) The mind-body problem becomes an integral part of the problem of knowledge. Sense organs, neurones, and neuronic connections are certainly involved in the occurrence of a sense quality. If the occurrence of the latter is in and of itself a mode of knowledge, it becomes a matter of utmost importance to determine just how the sense organs take part in it. If one is an idealist he responds with joy to any intimation that the "process of apprehension" (that is, speaking truly, the physical conditions of the occurrence of the sensory datum) transforms the extra organic stimulus: the alteration is testimony somehow to the constitutive nature of mind! But if he is a realist he conceives himself under obligation to show that the external stimulus is transmitted without any alteration and is apprehended just as it is; color must be shown to be simply, after all, a compacting of vibrations—or else the validity of knowledge is impugned! Recognize that knowledge is something about the color, whether about its conditions or causes or consequences or whatever and that we don’t have to identify color itself with a mode of knowing, and the situation changes. We know a color when we understand, just as we know a
thunder-storm when we understand. More generally speaking, the relation of brain-change to consciousness is thought to be an essential part of the problem of knowledge. But if the brain is involved in knowing simply as part of the mechanism of acting, as the mechanism for co-ordinating partial and competing stimuli into a single scheme of response, as part of the mechanism of actual experimental inquiry, there is no miracle about the participation of the brain in knowing. One might as well make a problem of the fact that it takes a hammer to drive a nail and takes a hand to hold the hammer as to make a problem out of the fact that it also requires a physical structure to discover and to adapt the particular acts of holding and striking which are needed.

b) The propositions of physical science are not found among the data of apprehension. Mathematical propositions may be disposed of by making them purely a priori; propositions about sense objects by making them purely a posteriori. But physical propositions, such as make up physics, chemistry, biology, to say nothing of propositions of history, anthropology, and society, are neither one nor the other. I cannot state the case better than Mr. Russell has stated it, although, I am bound to add, the stating did not arouse in Mr. Russell any suspicion of the premises with which he was operating. “Men of science, for the most part, are willing to condemn immediate data as ‘merely subjective,’ while yet maintaining the truth of the physics inferred from those data. But such an attitude, though it may be capable of justification, obviously stands in need of it; and the only justification possible must be one which exhibits matter as a logical construction from sense data. . . . It is therefore necessary to find some way of bridging the gulf between the world of physics and the world of sense.” I do not see how anyone familiar with the two-world schemes which have played such a part in the history of humanity can read this statement without depression. And if it occurred to one that the sole generating condition of these two worlds is the assumption that sense objects are modes of apprehension or knowledge (are so intrinsically and not in the use made of them), he might think it a small price to pay to inquire into the standing of this assumption. For it was precisely the fact that sense perception and physical science appeared historically (in the seventeenth century) as rival modes of knowing the same world which led to the conception of sense objects as “subjective”—since they were so different from the objects of science. Unless sense and science had both first been thought of as modes of knowing and then as modes of knowing the same things, there would not have been the slightest reason for regarding immediate data, as “merely subjective.” They would have

1 See Russell, Scientific Method in Philosophy, p. 53.
been natural phenomena, like any other. That they are phenomena which involve the interaction of an organism with other things is just an important discovery about them, as is also a discovery about starch in plants.

Physical science is the knowledge of the world by their means. It is a rival, not of them, but of the medley of prior dogmas, superstitions, and chance opinions about the world—a medley which grew up and flourished precisely because of absence of a will to explore and of a technique for detecting unambiguous data. That Mr. Russell, who is a professed realist, can do no better with the problem (once committed to the notion that sense objects are of themselves objects of knowledge) than to hold that although the world of physics is not a legitimate inference from sense data, it is a permissible logical construction from them—permissible in that it involves no logical inconsistencies—suggests that the pragmatic difference between idealist and realist—of this type—is not very great. From necessary ideal constructions to permissible logical constructions involves considerable difference in technique but no perceptible practical difference. And the point of this family likeness is that both views spring from regarding sense perception and science as ways of knowing the same objects, and hence as rivals until some scheme of conciliation has been devised.

c) It is but a variant of this problem to pass to what may be called either the ego-centric predica-

ment or the private-public problem. Sense data differ from individual to individual. If they are recognized to be natural events, this variation is no more significant than any change depending upon variation of generating conditions. One does not expect two lumps of wax at different distances from a hot body to be affected exactly alike; the upsetting thing would be if they were. Neither does one expect cast-iron to react exactly as does steel. That organisms, because of different positions or different internal structures, should introduce differences in the phenomena which they respectively have a share in producing is a fact of the same nature. But make the sense qualities thus produced not natural events (which may then be made either objects of inquiry or means of inquiry into something else) but modes of knowing, and every such deviation marks a departure from true knowing: it constitutes an anomaly. Taken en masse the deviations are so marked as to lead to the conclusion (even on the part of a realist like Mr. Russell) that they constitute a world of private existences, which, however, may be correlated without logical inconsistency with other such worlds. Not all realists are Leibnizian monadists as is Mr. Russell; I do not wish to leave the impression that all come to just this solution. But all who regard sense data as apprehensions have on their hands in some form the problem of the seemingly distorting action exercised by the
individual knower upon a public or common thing known or believed in.

IV

I am not trying to discuss or solve these problems. On the contrary, I am trying to show that these problems exist only because of the identification of a datum determined with reference to control of inference with a self-sufficient knowledge-object. As against this assumption I point to the following facts. What is actually given as matter of empirical fact may be indefinitely complicated and diffused. As empirically existent, perceived objects never constitute the whole scope of the given; they have a context of indefinite extent in which they are set. To control inference it is necessary to analyze this complex situation—to determine what is data for inference and what is irrelevant. This analysis involves discriminative resolution into more ultimate simples. The resources of experimentation, all sorts of microscopic, telescopic, and registering apparatus, are called in to perform that analysis. As a result we differentiate not merely visual data from auditory—a discrimination effected by experiments within the reach of everybody—but a vast multitude of visual and auditory data. Physics and physiology and anatomy all play a part in the analysis. We even carry the analysis to the point of regarding, say, a color as a self-included object unreferred to any other object. We may avoid a false inference by conceiving it, not as a quality of any ob-

ject, but as merely a product of a nervous stimulation and reaction. Instead of referring it to a ribbon or piece of paper we may refer it to the organism. But this is only as a part of the technique of suspended inference. We avoid some habitual inference in order to make a more careful inference.

Thus we escape, by a straightening out of our logic (by avoiding erecting a system of logical distinctions and checks into a mythological natural history), the epistemological problems. We also avoid the contradiction which haunts every epistemological scheme so far propounded. As matter of fact every proposition regarding what is "given" to sensation or perception is dependent upon the assumption of a vast amount of scientific knowledge which is the result of a multitude of prior analyses, verifications, and inferences. What a combination of Tantalus and Sisyphus we get when we fancy that we have cleared the slate of all these material implications, fancy that we have really started with simple and independent givens, and then try to show how from these original givens we can arrive at the very knowledge which we have all the time employed in the discovery and fixation of the simple sense data!  

SCIENCE AS A PRACTICAL ART

No one will deny that, as seen from one angle science is a pursuit, an enterprise—a mode of practice. It is at least that, no matter how much more

1 See the essay on *The Existence of the World as a Logical Problem*. 
or else it is. In course of the practice of knowing distinctive practical judgments will then naturally be made. Especially does this hold good when an intellectual class is developed, when there is a body of persons working at knowing as another body is working at farming or engineering. Moreover, the instrumentalities of this inquiring class gain in importance for all classes in the degree in which it is realized that success in the conduct of the practice of farming or engineering or medicine depends upon use of the successes achieved in the business of knowing. The importance of the latter is thrown into relief from another angle if we consider the enterprises, like diplomacy, politics, and, to a considerable extent, morals, which do not acknowledge a thoroughgoing and constant dependence upon the practice of science. As Hobbes was wont to say, the advantages of a science of morals are most obvious in the evils which we suffer from its lack.

To say that something is to be learned, is to be found out, is to be ascertained or proved or believed, is to say that something is to be done. Every such proposition in the concrete is a practical proposition. Every such proposition of inquiry, discovery and testing will have then the traits assigned to the class of practical propositions. They imply an incomplete situation going forward to completion, and the proposition as a specific organ of carrying on the movement. I have not the intention of dwelling at length upon this theme. I wish to raise in as definite and emphatic a way as possible a certain question. Suppose that the propositions arising within the practice of knowing and functioning as agencies in its conduct could be shown to present all the distinctions and relations characteristic of the subject-matter of logic: what would be the conclusion? To an unbiased mind the question probably answers itself: All purely logical terms and propositions fall within the scope of the class of propositions of inquiry as a special form of propositions of practice. My further remarks are not aimed at proving that the case accords with the hypothesis propounded, but are intended to procure hospitality for the hypothesis.

If thinking is the art by which knowledge is practiced, then the materials with which thinking deals may be supposed, by analogy with the other arts, to take on in consequence special shapes. The man who is making a boat will give wood a form which it did not have, in order that it may serve the purposes to which it is to be put. Thinking may then be supposed to give its material the form which will make it amenable to its purpose—attaining knowledge, or, as it is ordinarily put, going from the unknown to the known. That physical analysis and synthesis are included in the processes of investigation of natural objects makes them a part of the practice of knowing. And it makes any general traits which result in consequence of such treatment
characters of objects as they are involved in knowledge-getting. That is to say, if there are any features which natural existences assume in order that inference may be more fertile and more safe than it would otherwise be, those features correspond to the special traits which would be given to wood in process of constructing a boat. They are manufactured, without being any worse because of it. The question which I raised in the last paragraph may then be restated in this fashion: Are there such features? If there are, are they like those characters which books on logic talk about?

Comparison with language may help us. Language—I confine myself for convenience to spoken language—consists of sounds. But it does not consist simply of those sounds which issue from the human organs prior to the attempt to communicate. It has been said that an American baby before talking makes almost every sound found in any language. But elimination takes place. And so does intensification. Certain sounds originally slurred over are made prominent; the baby has to work for them and the work is one which he neither undertakes nor accomplishes except under the incitation of others. Language is chiefly marked off, however, by articulation; by the arrangement of what is selected into an orderly sequence of vowels and consonants with certain rules of stress, etc. It may fairly be said that speech is a manufactured article: it consists of natural ebullitions of sound which have been shaped for the sake of being effective instrumentalities of a purpose. For the most part the making has gone on under the stress of the necessities of communication with little deliberate control. Works on phonetics, dictionaries, grammars, rhetorics, etc., mark some participation of deliberate intention in the process of manufacture. If we bring written language into the account, we should find the conscious factor extended somewhat. But making, shaping for an end, there is, whether with or without conscious control.

Now while there is something in the antecedent properties of sound which enters into the determination of speech, the worth of speech is in no way measured by faithfulness to these antecedent properties. It is measured only by its efficiency and economy in realizing the special results for which it is constructed. Written language need not look like sounds any more than sounds look like objects. It must represent articulate sounds, but faithful representation is wholly a matter of carrying the mind to the same outcome, of exercising the same function, not of resemblance or copying. Original structure limits what may be made out of anything: one cannot (at least at present) make a silk purse out of pigs' bristles. But this conditioning relationship is very different from one in which the antecedent existences are a model or prototype to which
the consequent must be servilely faithful. The boatmaker must take account of the grain and strength of his wood. To take account of, to reckon with, is a very different matter, however, from repetition or literal loyalty. The measure is found in the consequences for which existences are used.

I wish, of course, to suggest that logical traits are just features of original existences as they have been worked over for use in inference, as the traits of manufactured articles are qualities of crude materials modified for specific purposes. Upon the whole, past theories have vibrated between treating logical traits as "subjective," something resident in "mind" (mind being thought of as an immaterial or psychical existence independent of natural things and events), and ascribing ontological pre-existence to them. Thus far in the history of thought, each method has flourished awhile and then called out a reaction to its opposite. The reification (I use the word here without prejudice) of logical traits has taken both an Idealistic form (because of emphasis upon their spiritual or ideal nature and stuff) and a Realistic one, due to emphasis upon their immediate apprehension and givenness. That mathematics have been from Plato to Descartes and contemporary analytic realism the great provocative of Realistic Idealisms is a familiar fact. The hypothesis here propounded is a via media. What has been overlooked is the reality and importance of art and its works. The tools and

Logic of judgments of practice works of art are neither mental, subjective things, nor are they antecedent entities like crude or raw material. They are the latter shaped for a purpose. It is impossible to overstate their objectivity from the standpoint of their existence and their efficacy within the operations in question; nor their objectivity in the sense of their dependence upon prior natural existences whose traits have to be taken account of, or reckoned with, by the operations of art. In the case of the art of inference, the art securely of going from the given to the absent, the dependence of mind upon inference, the fact that wherever inference occurs we have a conscious agent—one who recognizes, plans, invents, seeks out, deliberates, anticipates, and who, reacting to anticipations, fears, hates, desires, etc.—explains the theories which, because of misconception of the nature of mind and consciousness, have labeled logical distinctions psychical and subjective. In short, the theory shows why logical features have been made into ontological entities and into mental states.

To elaborate this thesis would be to repeat what has been said in all the essays of this volume. I wish only to call attention to certain considerations which may focus other discussions upon this hypothesis.

1. The existence of inference is a fact, a fact as certain and unquestioned as the existence of eyes or ears or the growth of plants, or the circulation of the
blood. One observes it taking place everywhere where human beings exist. A student of the history of man finds that history is composed of beliefs, institutions, and customs which are inexplicable without acts of inference. This fact of inference is as much a datum—a hard fact—for logical theory as any sensory quality whatsoever. It is something men do as they walk, chew, or jump. There is nothing a priori or ideological about it. It is just a brute empirically observable event.

2. Its importance is almost as conspicuous as its existence. Every act of human life, not springing from instinct or mechanical habit, contains it; most habits are dependent upon some amount of it for their formation, as they are dependent upon it for their readaptation to novel circumstances. From the humblest act of daily life to the most intricate calculations of science and the determination and execution of social, legal, and political policies, things are used as signs, indications, or evidence from which one proceeds to something else not yet directly given.

3. The act of inferring takes place naturally, i.e., without intention. It is at first something we do, not something which we mean to do. We do it as we breathe or walk or gesture. Only after it is done do we notice it and reflect upon it—and the great mass of men no more reflect upon it after its occurrence than they reflect upon the process of walking and try to discover its conditions and mechanism.

That an individual, an animal organism, a man or a woman performs the acts is to say something capable of direct proof through appeal to observation; to say that something called mind, or consciousness does it is itself to employ inference and dubious inference. The fact of inference is much surer, in other words, than that of a particular inference, such as that to something called reason or consciousness, in connection with it; save as mind is but another word for the fact of inference, in which case of course it cannot be referred to as its cause, source, or author. Moreover, by all principles of science, inference cannot be referred to mind or consciousness as its condition, unless there is independent proof of the existence of that mind to which it is referred. Prima facie we are conscious or aware of inference precisely as we are of anything else, not by introspection of something within the very consciousness which is supposed to be its source, but by observation of something taking place in the world—as we are conscious of walking after we have walked. After it has been done naturally—or "unconsciously"—it may be done "consciously," that is, with intent or on purpose. But this means that it is done with consciousness (whatever consciousness may be discovered to mean), not that it is done by consciousness. Now if other natural events characteristic only (so far as can be ascertained) of highly organized beings are marked by unique or by distinctive traits, there is good ground
for the assumption that inference will be so marked. As we do not find the circulation of blood or the stimulation of nerves in a stone, and as we expect as a matter of course to find peculiar conditions, qualities, and consequences in the being where such operations occur, so we do not find the act of inference in a stone, and we expect peculiar conditions, qualities, and consequences in whatever beings perform the act. Unless, in other words, all the ordinary canons of inquiry are suspended, inference is not an isolated nor a merely formal event. As against the latter, it has its own distinctive structure and properties; as against the former, it has specific generating conditions and specific results.

4. Possibly all this seems too obvious for mention. But there is often a virtual conspiracy in philosophy, not to mention obvious things nor to dwell upon them: otherwise remote speculations might be brought to a sudden halt. The point of these commonplace resides in the push they may give anyone to engage in a search for distinctive features in the act of inference. The search may perhaps be best initiated by noting the seeming inconsistency between what has been said about inference as an art and inference as a natural, unpremeditated occurrence. The obvious function of spontaneous inference is to bring before an agent absent considerations to which he may respond as he otherwise responds to the stimulating force of the given situation. To infer rain is to enable one to behave now as given conditions would not otherwise enable him to conduct himself. This instigation to behave toward the remote in space or time is the primary trait of the inferential act; descriptively speaking, the act consists in taking up an attitude of response to an absent thing as if it were present. But just because the thing is absent, the attitude taken may be either irrelevant and positively harmful or extremely pertinent and advantageous. We may infer rain when rain is not going to happen, and acting upon the inference be worse off than if there had been no inference. Or we may make preparations, which we would not otherwise have made; the rain may come, and the inference save our lives— as the ark saved Noah. Inference brings, in short, truth and falsity into the world, just as definitely as the circulation of the blood brings its distinctive consequences, both advantages and liabilities into the world, or as the existence of baking brings with it consequences of business extension and of bankruptcy not previously existent. If the reader objects to the introduction of the terms “truth” and “falsity”, I am perfectly willing to leave the choice of words to him, provided the fact is recognized that through inference men are capable of a kind of success and exposed to a kind of failure not otherwise possible: dependent upon the fact that inference takes absent things as being in a certain real continuum with present things, so that our attitude toward the latter
is bound up with our reaction to the former as parts of the same situation. And in any event, I wish to protest against a possible objection to the introduction of the terms "false" and "true". It may be said that inference is not responsible for the occurrence of errors and truths, because these accompany simple apprehensions where there is no inference: as when I see a snake which isn't there—or any other case which may appear to the objector to afford an illustration of his point. The objection illustrates my point. To affirm a snake is to affirm potentialities going beyond what is actually given; it says that what is given is going to do something—the doing characteristic of a snake, so that we are to react to the given as to a snake. Or if we take the case of a face in the cloud recognized as a phantasy; then (to say nothing of "in the cloud" which involves reference beyond the given) "phantasy," "dream," equally means a reference to objects and considerations not given as the actual datum is given.

We have not got very far with our question of distinctive, unique traits called into existence by inference, but we have got far enough to have light upon what is called the "transcendence" of knowledge. All inference is a going beyond the assuredly present to an absent. Hence it is a more or less precarious journey. It is transcending limits of security of immediate response. The stone which reacts only to stimuli of the present, not of the future, cannot make the mistakes which a being reacting to a future taken to be connected with the present is sure to make. But it is important to note just what this transcendence consists in. It has nothing to do with transcending mental states to arrive at an external object. It is behaving to the given situation as involving something not given. It is Robinson Crusoe going from a seen foot to an unseen man, not from a mental state to something unmental.

5. The mistakes and failures resulting from inference constitute the ground for transition from natural spontaneous performance to a technique or deliberate art of inference. There is something humorous about the discussion of the problem of error as if it were a rare or exceptional thing—an anomaly—when the barest glance at human history shows that mistakes have been the rule, and that truth lies at the bottom of a well. As to inferences bound up with barely keeping alive, man has had to effect a considerable balance of good guesses over bad. Aside from this somewhat narrow field, the original appearance of inference upon the scene probably added to the interest of life rather than to its efficiency. If the classic definition of man as a rational animal means simply an inferring or guessing animal, it applies to the natural man, for it allows for the guesses being mostly wrong. If it is used with its customary eulogistic connotations, it applies only to man chastened to the use of a hardly won and toilsome art.
If it alleges that man has any natural preference for a reasonable inference or that the rationality of an inference is a measure of its hold upon him, it is grotesquely wrong. To propagate this error is to encourage man in his most baleful illusion, and to postpone the day of an effective and widespread adoption of a perfected art of knowing.

Summarily put, the waste and loss consequent upon the natural happening of inference led man, slowly and grudgingly, to the adoption of safeguards in its performance. In some part, the scope of which is easily exaggerated, man has come to attribute many of the ills from which he suffers to his own premature, inept, and unguarded performing of inference, instead of to fate, bad luck, and accident. In some things, and to some extent in all things, he has invented and perfected an art of inquiry: a system of checks and tests to be used before the conclusion of inference is categorically affirmed. Its nature has been considered in many other places in these pages, but it may prove instructive to restate it in this context.

a) Nothing is less adapted to a successful accomplishing of an inference than the subject-matter from which it ordinarily fares forth. That subject-matter is a nest of obscurities and ambiguities. The ordinary warnings against trusting to imagination, the bad name which has come intellectually to attach to fancy, are evidences that anything may suggest any-

thing. Regarding most of the important happenings in life no inference has been too extravagant to obtain followers and influence action, because subject-matter was so variegated and complex that any objects which it suggested had a prima facie plausibility. That every advance in knowledge has been effected by using agencies which break up a complex subject-matter into independent variables (from each of which a distinct inference may be drawn), and by attacking each one of these things by every conceivable tool for further resolution so as to make sure we are dealing with something so simple as to be unambiguous, is the report of the history of science. It is sometimes held that knowledge comes ultimately to a necessity of belief, or acceptance, which is the equivalent of an incapacity to think otherwise than so and so. Well, even in the case of such an apparently simple "self-evident" thing as a red, this inability, if it is worth anything, is a residuum from experimental analysis. We do not believe in the thing as red (whenever there is a need of scientific testing) till we have exhausted all kinds of active attack and find the red still resisting and persisting. Ordinarily we move the head; we shake the eyes; we turn the thing over; we take it to a different light. The use of lens, prism, or whatever device, is simply carrying farther the use of like methods as of physical resolution. Whatever endures all these active (not mental) attacks, we accept—
pending invention of more effective weapons. To make sure that a given fact is just and such a shade of red is, one may say, a final triumph of scientific method. To turn around and treat it as something naturally or psychologically given is a monstrous superstition.

When assured, such a simple datum is for the sake of guarding the act of inference. Color may mean a lot of things; any red may mean a lot of things; such things are ambiguous; they afford unreliable evidence or signs. To get the color down to the last touch of possible discrimination is to limit its range of testimony; ideally, it is to secure a voice which says but one thing and says that unmistakably. Its simplicity is not identical with isolation, but with specified relationship. Thus the hard "facts," the brute data, the simple qualities or ideas, the sense elements of traditional and of contemporary logic, get placed and identified within the art of controlling inference. The allied terms "self-evident," "sensory truths," "simple apprehensions" have their meanings unambiguously determined in this same context; while apart from it they are the source of all kinds of error. They are no longer notions to conjure with. They express the last results attainable by present physical methods of discriminative analysis employed in the search for dependable data for inference. Improve the physical means of experimentation, improve the microscope or the

registering apparatus or the chemical reagent, and they may be replaced tomorrow by new, simple apprehensions of simple and ultimate data.

b) Natural or spontaneous inference depends very largely upon the habits of the individual in whom inferring takes place. These habits depend in turn very largely upon the customs of the social group in which he has been brought up. An eclipse suggests very different things according to the rites, ceremonies, legends, traditions, etc., of the group to which the spectator belongs. The average layman in a civilized group may have no more personal science than an Australian Bushman, but the legends which determine his reactions are different. His inference is better, neither because of superior intellectual capacity, nor because of more careful personal methods of knowing, but because his instruction has been superior. The instruction of a scientific inquirer in the best scientific knowledge of his day is just as much a part of the control (or art) of inference as is the technique of observational analysis which he uses. As the bulk of prior ascertainments increases, the tendency is to identify this stock of learning, this store of achieved truth, with knowledge. There is no objection to this identification save as it leads the logician or epistemologist to ignore that which made it "knowledge" (that which gives it a right to the title), and as a consequence to fall into two errors: one, overlooking its function in the guidance and handling of
future inferences; the other, confusing the mere act of reference to what is known (known so far as it has accrued from prior tested inquiries) with knowing. To remind myself of what is known as to the topic with which I am dealing is an indispensable performance, but to call this reminder "knowing" (as the presentative realist usually does) is to confuse a psychological event with a logical achievement. It is from misconception of this act of reminding one's self of what is known, as a check in some actual inquiry, that arise most of the fallacies about simple acquaintance, mere apprehension, etc.—the fallacies which eliminate inquiry and inferring from knowledge.

c) The art of inference gives rise to specific features characterizing the inferred thing. The natural man reacts to the suggested thing as he would to something present. That is, he tends to accept it uncritically. The man called up by the footprint on the sand is just as real a man as the footprint is a real footprint. It is a man, not the idea of a man, which is indicated. What a thing means is another thing; it doesn't mean a meaning. The only difference is that the thing indicated is farther off, or more concealed, and hence (probably) more mysterious, more powerful and awesome, on that account. The man indicated to Crusoe by the footprints was like a man of menacing powers seen at a distance through a telescope. Things naturally inferred are accepted, in other words, by the natural man on altogether too realistic a basis for adequate control; they impose themselves too directly and irretrievably. There are no alternatives save either acceptance or rejection in toto. What is needed for control is some device by which they can be treated for just what they are, namely, inferred objects which, however assured as objects of prior experiences, are uncertain as to their existence in connection with the object from which present inference sets out. While more careful inspection of the given object—to see if it be really a footprint, how fresh, etc.—may do much for safe-guarding inference; and while forays into whatever else is known may help, there is still need for something else. We need some method of freely examining and handling the object in its status as an inferred object. This means some way of detaching it, as it were, from the particular act of inference in which it presents itself. Without some such detachment, Crusoe can never get into a free and effective relation with the man indicated by the footprint. He can only, so to speak, go on repeating, with continuously increasing fright, "There's a man about, there's a man about." The "man" needs to be treated, not as man, but as something having a merely inferred and hence potential status; as a meaning or thought, or "idea." There is a great difference between meaning and a meaning. Meaning is simply a function of the situation: this thing means that thing: meaning is this relationship. A meaning is something quite different; it
is not a function, but a specific entity, a peculiar thing, namely the man as suggested.

Words are the great instrument of translating a relation of inference existing between two things into a new kind of thing which can be operated with on its own account; the term of discourse or reflection is the solution of the requirement for greater flexibility and liberation. Let me repeat: Crusoe's inquiry can play freely around and about the man inferred from the footprint only as he can, so to say, get away from the immediate suggestive force of the footprint. As it originally stands, the man inferred is on the same coercive level as the suggestive footprint. They are related, tied together. But a gesture, a sound, may be used as a substitute for the thing inferred. It exists independently of the footprint and may therefore be thought about and ideally experimented with irrespective of the footprint. It at once preserves the meaning-force of the situation and detaches it from the immediacy of the situation. It is a meaning, an idea.

Here we have, I submit, the explanation of notions, forms, essences, terms, subsistences, ideas, meanings, etc. They are surrogates of the objects of inference of such a character that they may be elaborated and manipulated exactly as primary things may be, so far as inference is concerned. They can be brought into relation with one another, quite irrespective of the things which originally suggested them. Without such free play reflective inquiry is mockery, and control of inference an impossibility. When a speck of light suggests to the astronomer a comet, he would have nothing to do but either to accept the inferred object as a real one, or to reject it as a mere fancy unless he could treat "comet" for the time being not as a thing at all, but as a meaning, a conception; a meaning having, moreover, by connection with other meanings, implications—meanings consequent from it. Unless a meaning is an inferred object, detached and fixed as a term capable of independent development, what sort of a ghostly Being is it? Except on the basis stated, what is the transition from the function of meaning to a meaning as an entity in reasoning? And, once more, unless there is such a transition, is reasoning possible?

Cats have claws and teeth and fur. They do not have implications. No physical thing has implications. The term "cat" has implications. How can this difference be explained? On the ground that we cannot use the "cat" object inferred from given indications in such a way as will test the inference and make it fruitful, helpful, unless we can detach it from its existential dependence upon the particular things which suggest it. We need to know what a cat would be if it were there; what other things would also be indicated if the cat is really indicated. We therefore create a new object: we take something to stand for the cat-in-its-status-as-inferred in
contrast with the cat as a live thing. A sound or a visible mark is the ordinary mechanism for producing such a new object. Whatever the physical means employed, we now have a new object; a term, a meaning, a notion, an essence, a form or species, according to the terminology which may be in vogue. It is as much a specific existence as any sound or mark is. But it is a mark which notes, concentrates, and records an outcome of an inference which is not yet accepted and affirmed. That is to say, it designates an object which is not yet to be reacted to as one reacts to the given stimulus, but which is an object of further examination and inquiry, a medium of a postponed conclusion and of investigation continued till better grounds for affirming an object (making a definite, unified response) are given. A term is an object so far as that object is undergoing shaping in a directed act of inquiry. It may be called a possible object or a hypothetical object. Such objects do not walk or bite or scratch, but they are nevertheless actually present as the vital agencies of reflection. If we but forget where they live and operate—within the event of controlled inference—we have on our hands all the mysteries of the double world of existence and essence, particular and universal, thing and idea, ordinary life and science. For the world of science, especially of mathematical science, is the world of considerations which have approved themselves to be effectively regulative of the operations of inference. It is easier to wash with ordinary water than with H₂O, and there is a marked difference between falling off a building and \( \frac{1}{2}gt^2 \). But H₂O and \( \frac{1}{2}gt^2 \) are as potent for the distinctive act of inference—as genuine and distinctive an act as washing the hands or rolling down hill—as ordinary water and falling are impotent.

Scientific men can handle these things-of-inference precisely as the blacksmith handles his tools. They are not thoughts as they are ordinarily used, not even in the logical sense of thought. They are rather things whose manipulation (as the blacksmith manipulates his tools) yield knowledge—or methods of knowledge—with a minimum of recourse to thinking and a maximum of efficiency. When one considers the importance of the enterprise of knowledge, it is not surprising that appropriate tools have been devised for carrying it on, and that these tools have no prototypes in pre-existent materials. They are real objects, but they are just the real objects which they are and not some other objects.

**THEORY AND PRACTICE**

Our last paragraphs have touched upon the nature of science. They contain, by way of intimation, an explanation of the distance which lies between the things of daily intercourse and the terms of science. Controlled inference is science, and science is, accordingly, a highly specialized industry. It is such a
specialized mode of practice that it does not appear to be a mode of practice at all. This high specialization is part of the reason for the current antithesis of theory and practice, knowledge and conduct, the other part being the survival of the ancient conception of knowledge as intuitive and dialectical—the conception which is set forth in the Aristotelian logic.

Starting from the hypothesis that the art of controlled inference requires for its efficient exercise specially adapted entities, it follows that the various sciences are the various forms which the industry of controlled inquiry assumes. It follows that the conceptions and formulations of the sciences—physical and mathematical—concern things which have been reshaped in view of the exigencies of regulated and fertile inference. To get things into the estate where such inference is practicable, many qualities of the water and air, cats and dogs, stones and stars, of daily intercourse with the world have been dropped or depressed. Much that was trivial or remote has been elevated and exaggerated. Neither the omissions nor the accentuations are arbitrary. They are purposeful. They represent the changes in the things of ordinary life which are needed to safeguard the important business of inference.

There is then a great difference between the entities of science and the things of daily life. This may be fully acknowledged. But unless the admis-
express them in the particular form in which they can enter most directly and efficiently into subsequent inquiries. The fact that they are sustained within the universe of inquiry accounts for their remoteness from the things of daily life, the latter being promptly precipitated out of suspense in such solutions. That most of the immediate qualities of things (including the so-called secondary qualities) are dropped signifies that such qualities have not turned out to be fruitful for inference. That mathematical, mechanical, and "primary" distinctions and relations have come to constitute the proper subject-matter of science signifies that they represent such qualities of original things as are most manipular for knowledge-getting or assured and extensive inference. Consider what a hard time the scientific man had in getting away from other qualities, and how the more immediate qualities have been pressed upon him from all quarters, and it is not surprising that he inclines to think of the intellectually useful properties as alone "real" and to relegate all others to a quasi-illusory field. But his victory is now sufficiently achieved so that this tension may well relax; it may be acknowledged that the difference between scientific entities and ordinary things is one of function, the former being selected and arranged for the successful conduct of inferential knowings.

I conclude with an attempt to show how bootless the ordinary antithesis between knowledge (or theory) and practice becomes when we recognize that it really involves only a contrast between the kinds of judgments appropriate to ordinary modes of practice and those appropriate to the specialized industry of knowledge-getting.

It is not true that to insist that scientific propositions fall within the domain of practice is to deprecate them. On its face, the insistence means simply that all knowledge involves experimentation, with whatever appliances are suited to the problem in hand, of an active and physical type. Instead of this doctrine leading to a low estimate of knowledge, the contrary is the case. This art of experimental thinking turns out to give the key to the control and development of other modes of practice. I have touched elsewhere in these essays upon the way in which knowledge is the instrument of regulation of our human undertakings, and I have also pointed out that intrinsic increments of meaning accrue in consequence of thinking. I wish here to point how that mode of practice which is called theorizing emancipates experience—how it makes for steady progress. No matter how much specialized skill improves, we are restricted in the degree in which our ends remain constant or fixed. Significant progress, progress which is more than technical, depends upon ability to foresee new and different results and to arrange conditions for their effectuation. Science is the instrument of increasing our technique in
attaining results already known and cherished. More important yet, it is the method of emancipating us from enslavement to customary ends, the ends established in the past.

Let me borrow from political philosophy a kind of caricature of the facts. As social philosophers used to say that the state came into existence when individuals agreed to surrender some of their native personal rights for the sake of getting the advantages of non-interference and aid from others who made a like surrender, so we might say that science began when men gave up the claim to form the structure of knowledge each from himself as a center and measure of meaning—when there was an agreement to take an impersonal standpoint. Non-scientific modes of practice, left to their natural growth, represent, in other words, arrangements of objects which cluster about the self, and which are closely tied down to the habits of the self. Science or theory means a system of objects detached from any particular personal standpoint, and therefore available for any and every possible personal standpoint. Even the exigencies of ordinary social life require a slight amount of such detachment or abstraction. I must neglect my own peculiar ends enough to take some account of my neighbor if I am going to be intelligible to him. I must at least find common ground. Science systematizes and indefinitely extends this principle. It takes its stand, not with what is common with some particular neighbor living at this especial date in this particular village, but with any possible neighbor in the wide stretches of time and space. And it does so by the mere fact that it is continually reshaping its peculiar objects with an eye single to availability in inference. The more abstract, the more impersonal, the more impartially objective are its objects, the greater the variety and scope of inference made possible. Every street of experience which is laid out by science has its tracks for transportation, and every line issues transfer checks to every other line. You and I may keep running in certain particular ruts, but conditions are provided for somebody else to foresee—or infer—new combinations and new results. The depersonalizing of the things of everyday practice becomes the chief agency of their repersonalizing in new and more fruitful modes of practice. The paradox of theory and practice is that theory is with respect to all other modes of practice the most practical of all things, and the more impartial and impersonal it is, the more truly practical it is. And this is the sole paradox.

But lest the man of science, the man of dominantly reflective habits, be puffed up with his own conceits, he must bear in mind that practical application—that is, experiment—is a condition of his own calling, that it is indispensable to the institution of knowledge or truth. Consequently, in order that he keep his
own balance, it is needed that his findings be everywhere applied. The more their application is confined within his own special calling, the less meaning do the conceptions possess, and the more exposed they are to error. The widest possible range of application is the means of the deepest verification. As long as the specialist hugs his own results they are vague in meaning and unsafe in content. That individuals in every branch of human endeavor should be experimentalists engaged in testing the findings of the theorist is the sole final guaranty for the sanity of the theorist.

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