Change and Permanence in the Experimental Logic

1. Introduction

In Chapter 2 I emphasized three factors that were responsible for Dewey's transition to experimentalism: Darwin's theory of evolution, the concomitant emphasis upon change, and the search for a new logic. The first two, evolution and change, were discussed in that chapter; the third, Dewey's new logic, forms the subject matter of the present one. Dewey understands logic as involving especially the search for method. His earliest attempt at developing a methodology fully consistent with the advances of modern science is found in Studies in Logical Theory, published in 1903. This book includes articles by Dewey and some of his colleagues at The University of Chicago. Dewey's articles from that volume, along with additional material of his own, plus an introduction, were printed in 1916 as Essays in Experimental Logic. Dewey's views were not developed in isolation from the philosophical controversies of his day. The type of logic he espoused is presented as a response to the perceived insufficiencies of alternative positions. Thus the new book on logic, like the earlier one on Leibniz, has a polemical as well as a constructive dimension.

The body of this chapter will be divided along these polemical and constructive lines. Section 3 will examine Dewey's objections to the two traditions that dominated philosophical discussion, realism and idealism, and will deal in greater detail with his understanding of the term "object," a topic merely touched on in Chapter 2. Section 4 will discuss the constructive doctrine Dewey propounded in his experimental phase and in this connection will treat a variety of issues: (a) his suggestion of a novel starting point for philosophizing;
(b) the way one aspect of his theory of knowledge can be described in terms of "intentionality"; (c) a re-examination of the charges made by the critics listed in Chapter 2; and (d) the place of *eidos* in these logical works. Prior to these polemical and constructive analyses I shall review in Section 2 the main issues under consideration.

2. Restatement of the Problem

As we saw in the examination of Dewey’s article on the influence of Darwin, the term “species” is a translation of the Greek *eidos*, which we render in English as “form.” Any investigation of the ontological problem of change and permanence will result in some conceptual articulation of the relationship between these two aspects of experienced fact. The concept of form has traditionally been associated with the stable or the permanent, signifying as it does a certain ordered, delimiting structure. For example, it played a significant role in the philosophy of Aristotle, which Dewey interpreted as an early representative of naturalism because it placed humans fully within the natural world.\(^1\) The beings that populated the world were viewed as organized beings, formed in certain definite ways. Knowledge resulted when the form was intellectually grasped.

The renascent naturalism of the twentieth century owed a great deal to the biological theory of evolution. John Herman Randall, Jr., a pupil of Dewey’s and one of the main interpreters and theoreticians of naturalism, has made this point quite explicitly.

“Naturalism” came into vogue as the name for a recognized philosophic position during the great scientific movement of the nineteenth century, which put man and his experience squarely into the Nature over against which he had hitherto been set. The obliteration of the gulf between the nature of the “natural scientist” and human life was then associated with the discovery of the facts of biological evolution and of the descent of man.\(^2\)

In terms of content, then, naturalism stressed the *continuity* of humans and the natural world, and challenged the dualistic and anthropocentric bias prominent in philosophy since the time of Descartes. The new analysis typified by this term “continuity” was somewhat of a return to the cosmoceentricism of Aristotle. The assumption of continuity is prevalent in Dewey’s thought and critical
to a proper understanding of his position. In “The Need for a Recovery in Philosophy,” he dealt with it in the following way:

Can one deny that if we were to take our clue from the present empirical situation, including the scientific notion of evolution (biological continuity) and the existing arts of control of nature, subject and object would be treated as occupying the same natural world as unhesitatingly as we assume the natural conjunction of an animal and its food? Would it not follow that knowledge is one way in which natural energies cooperate [MW X 24]?

This passage, first published in 1917, presents a clear statement of two important and interrelated Deweyan themes. First of all, the dualism of subject and object is challenged. As we know, Dewey’s opposition to dualisms can be traced back to his studies at Johns Hopkins with Morris. In the notion of biological continuity, Dewey found a theoretical, non-idealistic, formulation for his opposition. The stress on the continuum between humans and nature also re-emphasizes the position Randall expresses on the relationship between evolutionary thought and the recognition of continuity. By linking evolution, rather than “universal consciousness” or “intelligence,” with the non-dualistic doctrine of continuity, Dewey succeeds in modifying his idealism without sacrificing one of the main beliefs he had held during that phase in his career. This shift in position typifies the manner in which Dewey was able to preserve many of the positions from his idealistic period while finding non-idealistic ways of expressing them.

If the theory of evolution brought forth this emphasis on continuity, a revived naturalism, and cosmocentrism, it suggested a naturalism without the Aristotelian corollary of natural forms. In fact, Darwin’s theory did much to undermine any philosophical position that would be based on such a doctrine. The resulting situation for the naturalists of the twentieth century was, then, that naturalism was renewed but the attendant essentialism it had been associated with earlier was now suspect. This situation led to the problem of developing a new vision of nature, one consistent with the new science yet capable of meeting the challenge of reductionism. In his early works on logic Dewey articulates this new vision as an alternative both to realism, in its ancient and contemporary forms, and to the idealisms of the immediately preceding centuries.
Obviously those critics who accuse him of a lingering subjectivism do not find the arguments used to support his new position convincing. In fact, it is in his very attempt to develop a path between the doctrines he refers to as realism and idealism that Dewey becomes vulnerable to this interpretation. Because he is not a realist (in the sense of positing an independent, knowing mind which merely contemplates nature as it is), he seems to some interpreters such as Richard Rorty and Robert Dewey to resemble Immanuel Kant. This interpretation, as I mentioned in the previous chapter, poses a serious challenge to my own analysis of Dewey.

3. Dewey’s Criticisms of Alternative Views

In this section I shall examine Dewey’s position as found in the early logical works, and focus on the nature and description of the beings of the world as he conceived them. The result is an ontological analysis that asks both what kind of descriptive attributes can be said to belong to beings simply as beings and whether there is anything in these early works to indicate that Dewey is willing to recognize form as a trait of existence.

But first I must clarify an important matter of terminology. Both realism and idealism are complex movements of thought with many and diverse positions within the schools themselves. In his early works on logic, Dewey refers to idealistic and realistic philosophies as foils to his own constructive analysis. But since his main interest is to develop and defend a novel doctrine, his *Essays in Experimental Logic* cannot be read as scholarly analyses of the various undertakings that go by the names of realism and idealism.

While engaged in polemics, Dewey is inclined to deal chiefly with types rather than with actual individuals. By “type” I mean a composite picture reflecting the major characteristics of a position without necessarily being exemplified in any single thinker. Dewey’s analysis of realism in the *Essays* manifests this very tendency. He discusses and rejects three versions of realism, analytic, presentative, and epistemological. In none of these discussions does he name particular individuals as representatives of the criticized views. The treatment of idealism is better focused since in this case Dewey has chosen a typical thinker, Hermann Lotze. But here, too, Lotze is
used as a springboard for an attack on varying sorts of idealisms. My own presentation will follow Dewey in this regard. I shall examine somewhat briefly the positions he considers to be antithetical to his own, in the hope of bringing his positive contributions into better relief. This kind of analysis will not do justice to the complex texture of the realisms and idealisms vying for adherents at the beginning of this century; yet, given the aim of my study, the exploration of these issues remains a subsidiary consideration, one that can be overlooked at this time.

As was noted earlier, Dewey presents his new logic, which he sometimes calls "instrumentalism," as a way of overcoming the polarization between realism and idealism. It shares characteristics with both, but avoids what Dewey considers to be their respective errors. Like the realists, Dewey does not give to the intellect the power of actually constituting reality. "In bare outline, it is obvious that the two latter [realism and instrumentalism] agree in regarding thinking as instrumental, not as constitutive" (MW X 338). Yet, as we saw in our discussion of Dewey's idealistic period, humans are not simply passive observers of the world. From Trendelenburg and Morris, Dewey learned that awareness of the world around us involves not only passivity, but activity on the part of individuals. This position remains unchanged in the Essays. "In so far as it is idealistic to hold that objects of knowledge in their capacity of distinctive objects of knowledge are determined by intelligence, it is idealistic" (MW X 338). Given the point of view of this inquiry, which is to ascertain just what Dewey allows in terms of an ontological description of entities, the expression distinctive objects of knowledge should be kept securely in mind.

As we saw in the previous chapter, McGilvary based much of his contention that Dewey is an idealist on the way Dewey deals with the concept of "object." In his analysis, Dewey is seen as distinguishing between objects simply as existents and objects as known, and as holding the doctrine that, although the very existence of an entity is not knowledge-dependent, its intelligibility is. Intelligibility, in other words, resides, not in beings themselves, but in some other source. The implication for the line of argument I am undertaking is direct: the structure or form of an entity is not an ontological given.
3.1 “Objects” in Dewey’s Instrumentalism

McGilvary’s position is based on the identification of objects with existents or things-in-the-world. These are seen as not having full reality or as needing the completion of experience. But Dewey rarely uses the word “object” in that sense. For him, “object” has a special logical sense. It means the result of an intellectual investigation. “Object” for Dewey means knowledge-object, and is to be distinguished from the entities setting the context for the investigation that results in its (the object’s) discovery. It indicates the end aimed at in the process of investigation or experimentation. The sense in which Dewey uses this term can best be exemplified in a question such as: What is the object of your inquiry? The term “object,” as used in this type of question, indicates what is sought after or looked for.

Dewey’s favorite example to illustrate this point is a physician. When patients visit a doctor, they present a series of symptoms to which the doctor brings training and expertise. The physician’s task is to discern the illness and prescribe a remedy. As Dewey explains this situation in logical terms, the descriptions of the patient, together with the competence of the physician, are means to secure the object which is not yet given, not yet known.

Now, in the degree to which the physician comes to the examination of what is there with a large and comprehensive stock of such possibilities or meanings in mind, he will be intellectually resourceful in dealing with a particular case. They (the concepts or universals of the situation) are (together with the sign-capacity of the data) the means of knowing the case in hand; they are the agencies of transforming it, through the actions which they call for, into an object—an object of knowledge, a truth to be stated in propositions [MW X 340-41].

The object, as Dewey expressed it earlier, is “suggested by what is given, but is no part of the given” (MW X 340). This understanding of what Dewey means by object may remove a possible source of misconstrual. Objects are the results of a line of investigation. They are to be expressed in propositions: “This person has an ulcer”; “Genes are discrete units which determine heredity”; “Your blood is type AB.” In none of these cases could we say that the object was
given directly to the inquirer. It was actually what was not given, a missing piece of the puzzle that was sought out. If this fairly restricted meaning of object is kept in mind, it will be possible to understand how Dewey preserves some aspects of idealism, without committing himself fully to that doctrine. At the same time, by focusing on what an object is for Dewey, we will be able to understand his quarrel with some realistic philosophies.

3.2. Dewey and Realism

Dewey finds three types of realism unsatisfactory: analytic, presentative, and epistemological. These are described not so much as wholly distinct positions as various facets of a philosophical movement that is in some ways mistaken. His arguments against these positions must be viewed in light of two wider and, according to Dewey, erroneous assumptions. The first, a familiar Deweyan bête noire, is a dualistic ontology; the second, what Dewey calls the "ubiquity of the knowledge relation."

These realisms accentuate the dualistic attitude because they are products of that very doctrine. If one is willing to accept a Cartesian bifurcation into res cogitans and res extensa, then one consistent implication for epistemology is to accept a mental, cogitating power surveying from the outside the affairs of the material world. When, in addition, the rich complexity of experience is reduced to presentation of data to a knower (the ubiquity of the knowledge relation), certain difficulties follow.

Since this second assumption is basic to Dewey's analysis, it is important to understand exactly what he means by it. In ordinary parlance, Dewey argues, "knowledge" is a term employed to distinguish the settled outcome of a certain situation from one that remains indeterminate or ambiguous, and to contrast securely attained information "with ungrounded conviction, or with doubt and mere guesswork, or with the inexpertness that accompanies lack of familiarity" (EEL 264).

This common use of the term stands in sharp opposition to the "epistemological use" favored by professional thinkers and taken over, as Dewey asserts, by both the realists and the idealists. "In its epistemological use, the term 'knowledge' has a blanket value which is absolutely unknown in common life. It covers any and every
'presentation' of any and every thing to a knower, to an 'awarer,' if I may coin a word for the sake of avoiding some of the pitfalls of the term 'consciousness'" (EEL 264-65). One way of understanding what Dewey is saying is to see this particular argument as a continuation of the line of criticism directed against non-mediated, or "immediate," knowledge which is present in his earliest writings. The expression "ubiquity of the knowledge relation" is only an alternative way of indicating the confusion between mediated and non-mediated knowledge. The use of the term "knowledge" to indicate what is gained in immediate "presentation" to a knower—in other words, knowledge as ubiquitous or non-mediated—involves a misunderstanding of the actual cognitive situation, according to Dewey. As in his earlier phase, Dewey insists that there is a specific meaning for "knowledge," and that that meaning involves mediation of some sort. What is directly presented to an "awarer" is a complex situation that includes qualities as well as moral and aesthetic elements. The reductive assertion that what is directly presented is merely cognitive involves the oversimplification and falsification of experience typical of positivism.

The problems Dewey finds associated with analytic, presentative, and epistemological realism can now be dealt with in this context. The labels "analytic" and "presentative" are lucidly illustrative of the positions in question. Both share the view that thinkers are to analyze data presented to them. On this view, thinkers are passive onlookers. Data and knowledge are then overlapping terms because of the ubiquity of the knowledge relation. The individual knower is strictly a recipient, active in no significant way in determining the proper object of knowledge. The main difficulty which flows from this position, according to Dewey, is coordinating the data of common sense with that of the sciences. If both are treated equally as cases of knowledge, as cases of knowledge-objects given to an inquirer, then a conflict is inevitable.

In illustrating this point, Dewey uses the example of a star as both the light shining in the night sky and the actual physical object identified by astronomers and physicists. The conflict becomes one of adjudicating between two equally valid, but incompatible objects of knowledge (EEL 255). A solution may then be sought in one of two ways, both of which Dewey finds untenable. Either the common-sense world is accepted as the truly real, and science is denigrated;
or the scientific view is accepted, and the *really real* is said to be something behind the appearances of everyday existence.

We are here face to face with a crucial point in analytic realism. Realism argues that we have no alternative except either to regard analysis as falsifying (à la Bergson), and thus commit ourselves to distrust of science as an organ of knowledge, or else to admit that something eulogistically termed Reality (especially as *Existence*, Being as subject to space and time determinations) is but a complex made up of fixed, mutually independent simples: viz., that Reality is truly conceived only under the caption of whole and parts, where the parts are independent of each other and consequently of the whole [MW X 343].

In any case, realisms of this sort are led to ask about the possibility of knowledge in general, of the relation between mind and the objective world. Dewey pejoratively labels these questions "epistemological." The resulting realism is thus called "epistemological realism," and is an outgrowth of accepting the two leading assumptions of presentative and analytic realism.

Dewey wishes to distinguish this as a third erroneous aspect of realism because he finds here the locus of questions which have traditionally bothered epistemologists and for which there is no solution. The only path out of the dilemmas these kinds of questions engender is to reject the presuppositions on which these varieties of realism are based. Because both realism and idealism develop their views by assuming the ubiquity of the knowledge relation, both are challenged when this assumption is brought into question (EEL 266).

Besides dealing with both the ontological and the epistemological presuppositions and consequences of the three versions of realism, Dewey's line of argument once again reveals his preoccupation with ethical concerns and his awareness of the social consequences that follow from a theoretical analysis. In this respect, the failure to place human beings within nature has a practical corollary in allowing philosophers to stand aloof from the vexing practical problems that continually arise in the course of a human life. It makes them a special, privileged class, and this, as I suggested in the last chapter, is an equally serious reason for Dewey's rejection of realism. The moral tone of any theoretical analysis is never very distant for
Dewey. He argues that there are considerations which allow us to understand how such a social organization came about; but conditions have now changed, and so must the philosopher’s orientation.

I can see how specialists at any time, professional knowers, so to speak, find in this doctrine a salve for conscience—a solace which all thinkers need as long as an effective share in the conduct of affairs is not permitted them. Above all, I can see how seclusion and the absence of the pressure of immediate action developed a more varied curiosity, greater impartiality, and a more generous outlook. But all this is no reason for continuing the idealization of a remote and separate mind or knower now that the method of intelligence is perfected, and changed social conditions not only permit but demand that intelligence be placed within the procession of events [MW X 365].

Realism then is untenable for three reasons. (a) It is a product of two incorrect assumptions: the dualistic interpretation of mind and nature, and the ubiquity of the knowledge relation, both of which have been called into question by evolutionary biology. (b) The realist who takes his common-sense perceptions as reflecting the "really-real" world must inevitably fall into conflict with scientists whose methods of observation provide them with a different version of things. (c) Finally, the practical consequence of such a position, the remote, disinterested, aloof philosopher, involves an abdication of responsibility.

3.3 Dewey and Idealism

One of the most admirable aspects of Dewey’s analyses of earlier positions is that, even in criticism, he seeks out the positive, the fertile, the fruitful. He rarely engages in wholesale condemnation. This is especially true in regard to idealism because of his own earlier allegiance to a version of it. His criticisms fall into two categories, following the two kinds of idealism to which he had once adhered. Both kinds are significant with respect to the question of forms. The first is “constitutive” idealism, which assumes a certain formlessness in external entities and argues that it is the mind that constructs or constitutes reality in a certain way. Dewey counters this theory by providing physical rather than psychical explanations
for the cases these idealists cite in support of their position. The second type, objective idealism, which argues for an "objective thought" or "Reason" as responsible for structuring or organizing the world, is shown to be involved in logical difficulties.

The thinker against whom Dewey specifically argues in these matters is Hermann Lotze. Dewey never labels the particular kind of idealism Lotze espoused, but his descriptions indicate that he considers it to be of a subjectivistic, Kantian kind. The two marks which allow Lotze to be classified in this manner are a radical separation of subject and object and a distinction between mere existence and organized existence. These marks are reminiscent of those of a younger Dewey who differentiated between "mere succession of phenomena" and "substance." Later in his career, Dewey suggested that the use of the adjective "mere" offered a clear sign of a dualistic (anti-naturalistic) position.

Using Lotze as a foil helps to connect the discussion of idealism with that of realism. As was mentioned in the previous section, Dewey conceives of both as dependent on a belief in the ubiquity of the knowledge relation and on a dualistic ontology. Because of these assumptions, the epistemological problem of the relation of thought in general to reality in general once again presents itself. The realistic option, as we have seen, recognizes a passive role alone for the mind in dealing with this difficulty. The idealistic solution, as embodied by Lotze, emphasizes an active role for the mind, independent of particular contents. "Lotze refers to 'universal forms and principles of thought which hold good everywhere both in judging of reality and in weighing possibility, irrespective of any difference in the objects'" (MW II 302).

Dewey interprets this as Lotze's statement of one term in the epistemological problem, that of thought as such. The reason Dewey centers his attention on Lotze is that Lotze makes a conscious attempt to deal adequately with the other term as well, subject matter as such. "Then we have the question of 'how far the most complete structure of thought ... can claim to be an adequate account of that which we seem compelled to assume as the object and occasion of our ideas.' This is clearly the question of the relation of thought at large to reality at large. It is epistemology" (MW II 302–303). We already know enough about Dewey to recognize that to label something "epistemology" is to mark it as tainted and defective. Episte-
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...ology as the inquiry which deals with the possibility of knowledge in general, and of the relationship between thought as such to subject matter as such, is, whether in realism or idealism, the result of an erroneous starting point.

If on these assumptions the crucial problem for the realist is to harmonize the contents of common-sense knowledge with those of scientific knowledge, the idealist, exemplified by Lotze, faces a different problem of harmonization. His self-contained activity of thinking cannot be consistently and organically connected with the external material conditions that occasion the thought and should ultimately justify it.

In other words, logically speaking, we are at the end just exactly where we were at the beginning—in the sphere of ideas, and of ideas only, plus a consciousness of the necessity of referring these ideas to a reality which is beyond them, which is utterly inaccessible to them, which is out of reach of any influence which they may exercise, and which transcends any possible comparison with their results. . . . At the end, after all our maneuvering we are where we began:—with two separate disparates, one of meaning, but no existence, the other of existence, but no meaning [MW II 365–66].

The idealist who tries to solve the epistemological dilemma by emphasizing an active, self-contained thought-function thus fares no better than the realist with his passive, receptive view of knowing. Lotze's fate was sealed, on the Deweyan interpretation, as soon as he argued for forms and principles of thought that were applicable everywhere "irrespective of any difference in the objects." This non-temporal, non-relative, but absolutist interpretation of consciousness may safeguard the absolute certainty and security of thought, but it does so at the expense of severing its connections with the subject matter of which Lotze had hoped to give an account. That such an account cannot be given successfully is Dewey's major objection.

Another version of idealism is the objective kind, in which some "Absolute Thought," "consciousness," or "Reason" is actually regarded as the underlying reality. Here, once again, we are approaching the central question of this study, which may be phrased as seeking an accurate philosophical description of the entities that are
part of human experience. We are particularly concerned to discern whether one traditional articulation—that the beings of the world are formed entities—retains any validity in a post-Darwinian era. The idealism we are now dealing with argues that the beings of the world are the products of an Absolute Reason that guarantees their structural integrity and their intelligibility.

Dewey finds that, although this solution is attractive in some respects, it suffers from major flaws. When a distinction is made, as it has to be, between this constructive thought and the reflective thought the individual brings to inquiry, certain difficulties surface. The first and most serious problem is the supposed need for two kinds of thought. "For the more one insists that the antecedent situation is constituted by thought, the more one has to wonder why another type of thought is required; what need arouses it, and how it is possible for it to improve upon the work of previous constitutive thought" (MW II 334). This is the point, Dewey argues, at which the flight of idealistic metaphysics begins. "This difficulty at once forces idealists from a logic of experience as it is concretely experienced into a metaphysic of a purely hypothetical experience" (MW II 334).

Dewey may, in this passage, be arguing somewhat against his former self. He is assuredly continuing the criticism begun in his book on Leibniz. There he suggested the need for a new logic to complement the newer ontology. In the Essays, however, a new logic of experience is seen as displacing ontology. Once the experimental method is understood and applied, the need for the meta-empirical hypotheses of idealistic metaphysics is removed. The lasting insights of idealism can be secured without recourse to this hypothesis. The "hypothetical experience" is the need to posit an Absolute Reason of a sort that remains hidden to human awareness. From a Deweyan perspective what is given as an explanation in this idealistic position is an unnecessary and artificial construct. But even this construction itself is not free from difficulties. For why should this Thought call forth reflective inquiry? Why should it even occasion such inquiry if it has constructed the world successfully? "How does it happen that the absolute constitutive and intuitive Thought does such a poor and bungling job that it requires a finite discursive activity to patch up its products" (MW II 334)?

Dewey, in other words, is puzzled as to why any puzzling situa-
tions eliciting reflective thought should arise, given the pervasive­
ness of an Absolute Reason. There is, in the end, no real justification
for positing such an existence, for erecting such a metaphysics.

If reflective thought is required because constitutive thought works
under externally limiting conditions of sense, then we have some
elements which are, after all, mere existences, events, etc. Or, if
they have organization from some other source than thought, and
induce reflective thought not as bare impressions, etc., but through
their place in some whole, then we have admitted the possibility
of organization in experience, apart from Reason, and the ground
for assuming Pure Constitutive Thought is abandoned [MW II
335].

Dewey’s objections to idealism, then, are threefold. (a) To begin
with, the idealist such as Lotze is not able to deal adequately with
the subject matter that occasions thinking. (b) Idealists who suggest
the necessity of a mentalistic constitution of objects are refuted
on the basis of physical explanations of the critical phenomena on
which they base their opinion. (c) Finally, the absolute idealist
is viewed as erecting an unnecessary and self-contradictory meta­
physics.

In the context of his critical remarks about absolute idealism,
Dewey gives us a positive indication of his own position. He admits
that his criticisms of Lotze are not so different, after all, from those
that might be labeled “neo-Hegelian.” But Dewey is not fully satis­
fied with this label, and he characterizes the position as one “devel­
oped by many writers in criticizing Kant” (MW II 333). Presumably
these “many writers” include George S. Morris and Dewey himself.
At any rate, in listing what the parallels rather than the differences
are, he makes some definitive ontological assertions. “They [Dewey’s
position and the Neo-Hegelian] unite in denying that there is or can
be any such thing as mere existence—phenomenon unqualified as
respects organization and force, whether such phenomenon may be
psychic or cosmic. They agree that reflective thought grows organ­
ically out of an experience which is already organized, and that it
functions within such an organism” (MW II 333).

Dewey offers here a very important descriptive statement which
is central to the analysis I am undertaking. Once again the key term
is “mere.” Dewey uses it to indicate the position he is arguing
against, claiming that there is no such thing as “mere existence.” He explains this by saying that mere existence would involve phenomena “unqualified as respects organization and force.” I take this to mean, translated into positive terms, that existences and situations are organized existences. It is too soon to construct an interpretation on an isolated quotation, but this excerpt does provide the connection with the following section, which will be devoted to Dewey’s own theory. I shall be especially careful to note whether in the logical works this concept of organization is elaborated or developed.

4. Dewey’s Constructive Doctrine

Dewey not only criticizes the consequences and developed positions of both realism and idealism; he also believes that they err in their choice of a starting point. An accurate theory about thinking begins, quite naturally, with a proper beginning.

Grant, for a moment, as a hypothesis, that thinking starts neither from an implicit force of rationality desiring to realize itself completely in and through and against the limitations which are imposed upon it by the conditions of our human experience (as all idealisms have taught), nor from the fact that in each human being is a “mind” whose business it is just to “know”—to theorize in the Aristotelian sense; but, rather, that it starts from an effort to get out of some trouble, actual or menacing [MW X 333].

Here we have the key to understanding the novel doctrine Dewey expounds. Thinking is not primarily a detached appraisal of the way things are; nor is it an attempt to reach an ultimate synthesis in which difficulties will have disappeared. Rather it is the activity of reflecting on a situation beset with some difficulties. It is significant that in the Essays in Experimental Logic, Dewey prefers the terms “reflection” and “thinking” to “knowing” because of the inherent association of “knowing” with the realistic and idealistic positions he considers untenable.

Naturalism, as John Herman Randall pointed out, owes much to the doctrine of evolution. We saw in the last chapter how strongly Dewey, in particular, felt the influence of Darwin. In the matter at hand, Dewey's theory is merely the application to epistemological
problems of Darwin's teaching on adaptation. It may, therefore, be helpful in understanding what Dewey is saying to develop an analogy with this biological thesis.

Two facts struck Darwin as especially significant. The first was the careful adjustment of individual to environment; the second, the continuous production, within groups of similar creatures, of individual variations. When these two facts are combined with the reality of a continually changing environment, the force of Darwin's discovery can be appreciated. Since the surroundings in which a plant or animal finds itself do not remain constant, the equilibrium of adaptation will invariably be upset. But it may be that some of the individual differences continually produced in nature will provide advantages for their bearers in the new surroundings. Thus, the individuals carrying these changes will increase and multiply, while those in which these newly adaptive traits are absent will dwindle and eventually perish.

One of the many examples Darwin used is the discovery of a Mr. Wollaston. When studying beetles on the island of Madeira, he noted the surprising fact that many of them could not fly. This was the case in more than two-thirds of the species inhabiting the island. Also significant was the almost total absence of certain genera of beetles which could not survive without flying. Darwin explains this condition by noting that the climate on the island, being very windy, presents a special and deadly problem for winged insects: the danger of being blown out to sea. Those insects that remained on the island and flourished there are those in which an alteration of behavior and structure favored the new conditions. “For during many successive generations each individual beetle which flew least, either from its wings having been so little less perfectly developed or from indolent habit, will have had the best chance of surviving from not being blown out to sea; and, on the other hand, those beetles which most readily took to flight would oftenest have been blown out to sea and thus destroyed.”

An important fact is underscored here: namely, that the same trait, such as strong wings and ability for flight, is not always a favorable one. Whether or not it is favorable depends on the conditions in which the individual exists. A situation that has remained stable for a long time may be altered, and organisms either adjust accord-
The significance of the evolutionary method in biology and social history is that every distinct organ, structure, or formation, every grouping of cells or elements, is to be treated as an instrument of adjustment or adaptation to a particular environing situation. Its meaning, its character, its force, is known when, and only when, it is considered as an arrangement for meeting the conditions involved in some specific situation [MW II 310].

Of course, beetles, along with other animals, do not think, and any attempted analogy with the human situation will break down on this point. Yet there are other elements in this description of natural selection which will help us to understand Dewey’s position. The first is a recognition that an optimal state is one of equilibrium or successful adaptation. This adaptation is the result of a relationship involving the individual and its environment. The second is the realization that this environment is to some degree unstable and changing. Thirdly, as a consequence, if the equilibrium is to be maintained under these changing conditions, the creatures existing in them will have to change themselves or alter the environment.

Thinking, for Dewey, has its roots in just such a troubling situation. It begins when the adaptive equilibrium has been upset, and it has as its goal the institution of a new adaptive equilibrium. Like the poor beetle buffeted by winds, whose wings, formerly so advantageous, have become a liability, the human animal often finds itself in a predicament requiring a solution.

The example of a physician treating an illness is helpful once again for elucidating what Dewey is saying. A pain or a discomfort of some kind disturbs the previously satisfactory state and arouses reflective behavior that seeks to correct the situation. This reflection is not that of a disinterested observer seeking to “know” what the matter is, but that of an interested party seeking useful information. Where is the pain located? What caused the discomfort: too much food, a sudden increase in exercise, nervous tension, a virus? When one of these is fastened on as the cause, then a solution related to it—such as a reduced diet, programmed exercising, a vacation, antibiotics—is suggested. The success of the solution reflects the accu-
racy of the analysis. Failure is merely a prod to attempt one of the other possible solutions. In these early logical works, Dewey calls the condition that provokes thought “tensional.” “In other words, reflection appears as the dominant trait of a situation when there is something seriously the matter, some trouble, due to active discordance, dissentiency, conflict among the factors of a prior non-intellectual experience; when, in the phraseology of the essays, a situation becomes tensional” (MW X 326).

From this overview we can begin to piece together how the elements taken from evolutionary theory are forged into Dewey’s own doctrine. (a) Thought always arises in a context that presents troublesome or “tensional” aspects. This means (b) that thought or reflection is not detached. It does not indifferently catalogue the facts. Rather, it is attached in a very significant sense as a participant in overcoming the difficulty. (c) The events or data of immediate experience serve as indications of what must be discovered. If they themselves were the objects of knowledge, the troublesome situation would not exist. A bodily ache, for instance, is a sign of something else, a something that has to be discerned (or “inferred,” to use the word Dewey preferred) by investigation. (d) The success or failure in reaching a new optimal situation, or new equilibrium, is not strictly a theoretical matter, but a practical one as well. As a result, (e) experimentation with various possibilities is an indispensable ingredient in this analysis of thinking. Thinking and doing, in other words, are not antithetical activities. Dewey uses the term “instrumentalism” to indicate this intricate connection between knowing and doing.

When instrumentalism is developed in this manner, it becomes clear how much it owes to the positive recognition of change as a factor in experience. For intelligence is viewed as the means for bringing about a continually renewed stability out of a state of affairs constantly in flux. Although this may, to some degree, sound similar to idealism, it serves as one of Dewey’s main objections to that doctrine. Idealism, Dewey argues, sets a limit on change. It has a fixed end in view, such as the Hegelian Geist, in which contradictions are harmoniously interwoven. Such an attitude, as far as Dewey is concerned, removes the conditions which occasion thinking. “For a theory which ends by declaring that everything is, really and eternally, thoroughly ideal and rational, cuts the nerve of the specific
demand and work of intelligence” (MW X 333). As a result of such considerations it is possible to appreciate the manner in which change is crucially interwoven into the fabric of Dewey’s experimental phase.

Few people today would doubt that change is pervasive. But what about permanence? How does Dewey’s scheme of thought provide for elements of stability? In a classical doctrine, such as Aristotle’s, the permanent factors are to be found in the very character of the things which the world comprises and which consequently are the objects of knowledge. The first point that must be noted in this very formulation of the issue is that Dewey’s analysis will be misconstrued if the Aristotelian vocabulary is retained. I have already remarked that the term “object” is to be understood in a very restricted sense in the Deweyan corpus. Object means object of knowledge. As such, objects are precisely the things not given in experience. Atoms, genes, and sound waves, for instance, are all objects of knowledge because each was discovered by, and not given to, the investigators as an initial datum. If Dewey is to be viewed from the perspective of ontological considerations, his analysis of “objects” must be examined in greater detail.

4.1. Thought and Things

To borrow terminology from another tradition: for Dewey, thinking is, in the word reintroduced into philosophical discourse by Franz Bretano, “intentional.” That is to say, thinking is relational, is directed toward phenomena that are outside of itself. Thinking is, in other words, thinking about something; knowing is knowledge of something. This characterization of knowledge as intentional immediately leads to questions of ontology. If knowledge is knowledge of something, then one can expect that a theory of beings which would provide the generic characteristics of these “somethings” would be forthcoming. A minimal statement about them, for instance, would indicate that they are intelligible. It is precisely at this juncture, so critical to my reading of Dewey, that the confusions surrounding the word “object” can be most misleading. To understand Dewey accurately, the word “object” must not be used to indicate both “thing” and “result of inquiry.” Its meaning is restricted strictly to the latter.
Dewey must be seen against the background of the realistic and idealistic theories which he seeks to avoid. He is attempting a formulation which does not interpret the intellectual capacities of human beings as the sheer passivity of the realist or the sheer activity of the idealist. Dewey wants to show that in the activity of investigation or inquiry not only does one receive data, one does something with them. He uses the word "object" to express the results of these investigations. As such, it is contrasted to thing/existent, and should in no way be confused with it. Data, in other words, include the immediate givens received by the individual. In contrast, "object" necessarily involves mediation. Dewey distinguishes between "objects" and "data" in the following manner. "We have stated that, strictly speaking, data (as the immediate considerations from which controlled inference proceeds) are not objects but means, instrumentalities, of knowledge: things by which we know rather than things known" (MW X 346). The data set the context for investigation, but only when results are obtained may the term "object" be used in its technical Deweyan sense.

Dewey's altered usage of "object" is not as incongruous as it may at first appear. Actually, the new usage reflects the considerable distance between Dewey and the epistemology-centered philosophies of modernity. What Dewey came to realize was that the terms "object" and "subject" form a correlative pair on the interpretive grid of post-Cartesian philosophy. In this view, "object" as thing-in-the-world is paired off against "subject" as spectator. Since one of Dewey's primary concerns is to overcome the dualistic bias of modern philosophy, "object" can no longer be a suitable term for the entities that populate our existential milieu. As soon as these entities are called "objects," inexpugnable epistemological connotations become associated with them. Dewey's distance from the Cartesian orientation can be measured by the way he modifies the inherited terminology. No longer are humans to be thought of as "subjects." Indeed, the "subjects" or subject matters are those events which constitute our milieu and, as problematic situations, occasion thinking. The "objects" become then, as we have seen, the objectives sought in the process of inquiry.

Dewey defends his analysis by contrasting it with Aristotle's, and supporting it with the authority of modern science.
Aristotle was not lacking in acuteness nor in learning. To him it was clear that objects of knowledge are the things of ordinary perception, so far as they are referred to a form which comparison of perceived things, in the light of a final cause, makes evident. If this view of the objects of knowledge has gone into the discard, if quite other objects of knowledge are now received and employed, it is because the methods of getting knowledge have been transformed, till, for the working scientist, "objects of knowledge" mean precisely the objects which have been obtained by approved processes of inquiry. To exclude consideration of these processes is thus to throw away the key to understanding knowledge and its objects.

What is obvious here is Dewey's belief that the decisive difference between the older and the newer version of objects is the methodology of the sciences. Science is not content to leave the objects of the world untouched. It manipulates them, testing and experimenting until a certain result is found. Water is not simply accepted as such, but subjected to electrolysis, in order to break it down into its atomic constituents. This methodology, according to Dewey, has proven to be most effective. "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" (EEL 434–35). This emphasis on signs and inference is crucial to Dewey's epistemology. Illness, as we have seen, is a popular Deweyan example. The ruptured appendix and the kidney stone are objects of knowledge which come as the result of inquiry. They are objects as "objectives" (MW X 329) of the inquiry. Likewise, we might argue that the molecular structure of DNA was not given to Watson and Crick as an initial datum, but was the outcome, the result, of a lengthy process of investigation and hypothecation.

Now we can come to a concrete appreciation of the confusion engendered by an improper understanding of the way the word "object" functions in Dewey's philosophy. For Dewey, this term grows out of a particular epistemic analysis and is employed in a very specific manner. But in common philosophical usage "object," as its etymology suggests, has primarily an ontological meaning. It refers to something there, a being or an existent given or cast up in the environment. A misrepresentation of Dewey will result if this
second sense is introduced into his texts. On a Deweyan interpretation, as we have already seen, the object is not given prior to inquiry. The object does not exist before the actual work of investigation. Object means precisely the result or objective of inquiry. Knowledge of the structure of DNA did not, could not, antedate the work of the experimenters who discovered it. It is in this sense, and in this sense alone, that a Deweyan analysis denies the pre-existence of an object. Since object means knowledge-object, it is not possible that it could exist prior to inquiry. The very occasion for a particular inquiry is the fact that the object is unknown.

If this term is read in its etymological/ontological sense, Dewey’s position will be misconstrued as an idealism. For now object (ontological sense) is said to be dependent for its existence on the procedures of intellectual investigation. Dewey’s position, I maintain, is not that at all. Using the example of Watson and Crick, we can say that they may have discovered the molecular structure of DNA as the result of a lengthy process of inquiry, but that structure itself pre-existed the discovery. Nothing in Dewey’s analysis, if properly understood, argues against this. The DNA molecule was intelligible, was organized in such a way that intellectual inquiry, given enough diligence and ability, was able to succeed in determining its structure. However, as a discovered object, the structure of the DNA molecule was new. Previously, it had been unknown, and so had not existed as the result of any of the feverish inquiries aiming at this end. Only in this sense does Dewey’s doctrine lead to the conclusion of an object’s inexistence prior to inquiry.

If, however, the limited sense of “object” is not understood as Dewey meant it, then misinterpretations will follow, and the charge of idealism will be most prominent among them. The cases of Robert Dewey and Richard Rorty, quoted in the last chapter, offer examples of this misunderstanding. Robert Dewey says that “when Dewey asserts that events as such are not objects of knowing, they become his process philosophy’s version of the unknown somewhats (or Kantian unknowable Ding-an-sich) constituting nature beyond the data of immediate experience.” Rorty claims that Dewey’s epistemology involves “the constitution of the knowable by the cooperation of two unknowables.”

The arguments of these critics are reduced here to their starkest
simplicity. Events (things in the environment) cannot be the objects of knowledge, so they are unknowable. They become simply unknown somethings, and the Kantian-type of idealism follows. But here precisely is where we find that the confusion surrounding the word “object” has led interpreters astray. The misrepresentation of John Dewey’s position is most evident when these critics confuse “unknown” and “unknowable.”

Events as “unknown somewhats” are compared to the “unknowable” things-in-themselves of the Kantian philosophy. But Dewey is not saying this at all. Events are eminently knowable; his books on logic are analyses of the methodologies best suited for securing knowledge. But knowable does not mean the same as known. There is no “constitution of the knowable by the cooperation of two unknowables.” Rorty has misunderstood Dewey on this point. There is, instead, inquiry (research, experimentation) aimed at resolving a certain problem. The solution is not yet known but it is certainly knowable. Dewey can assert with perfect consistency that events or aspects of events are unknown, but that they are knowable. When he says that they (events) are not “objects of knowing,” he is simply asserting that inquiry seeks to discover something about them which thus far has remained elusive, unknown. The object of knowledge cannot be identical with the thing in existence, the event, because inquiry would then not be necessary. Pasteur, for instance, knew what wine was and what an important role it played in French life. He also knew that fermentation was a chemical process in its production. What he did not know, what he sought as the object of his investigations, was the causal process through which fermentation occurred.

In such a case, an event, the fermentation of wine as it is given to the observer, is not the object of knowledge. The object is the “unknown somewhat” the investigator seeks to uncover. To make this distinction Dewey separates “event” and “object.” I find Dewey’s retention of the word “object” in his idiosyncratic sense to be a very poor choice. I am sympathetic to the ready misunderstandings that it occasions. But I do believe that it is possible by a careful reading of the texts to frame an accurate portrait of Dewey’s position. When this position is understood, it may be seen as embodying certain flaws, but not that it is a thinly disguised idealism.
4.2. Eidos

But what about the concept of *eidos* or form? As presented thus far, my interpretation merely allows the possibility that Dewey could have developed a revised version of an ontology that recognizes forms-in-nature. Are there more constructive signs in these logical texts that Dewey did, in fact, carry out such an undertaking? By and large, the answer is that, in these middle works at least, he did not.

I pointed out earlier that in Dewey's analysis thinking is intentional. That is to say, thinking is always thinking of or about something. Thinking is a relational activity, with the data of thought accepted as a necessary ingredient. Dewey's position on this point was formulated in his earliest work on logic, *Studies in Logical Theory*, and reprinted in the *Essays in Experimental Logic*. "As we submit each characteristic function and situation of experience to our gaze, we find it has a dual aspect. Wherever there is striving there are obstacles; wherever there is affection there are persons who are attached; wherever there is doing there is accomplishment; wherever there is appreciation there is value; wherever there is thinking there is material-in-question" (MW II 311). Dewey's analysis here seems quite correct and well-founded. Thinking is always thinking about something. But now the question arises as to the nature of this something that is thought about. What, in other words, can be said about the "material-in-question" Dewey refers to? I contend that unless the situations that occasion thought are recognized as structured and organized in a certain way, no proper epistemology, save the idealistic, can accurately account for the fact of knowledge. What I am arguing is that the notion of *eidos* must be, not rejected, but reformulated in terms of structure and organization.

Dewey, as I have shown, appears to admit as much when he compares the neo-Hegelian position to his own. At that point, he says quite specifically that there cannot be "any such things as mere existence—phenomenon unqualified as respects organization and force, whether such phenomenon be psychic or cosmic." Yet such an explicit ontological statement about existents as organized is the exception rather than the rule in these texts. While defending his experimental logic, Dewey is concerned with stressing the plasticity of existents more than their definiteness. The very success of the
experimental method depends on flexibility and changeableness. If this method is to be effective, beings must be such as to allow experimentation. This means that beings as subject matter must be capable of undergoing the kinds of alterations and manipulations demanded by successful experimentation.

Dewey is also heir to the philosophical legacy of Bacon and Descartes, both of whom rejected the formal causes of the Scholastics as trivial to the actual understanding of nature. He was born, as we saw, five weeks prior to the publication of Darwin's *Origin of Species*. This work carried the mechanistic plan set in motion by Descartes and Bacon into the biological realm which had heretofore been exempt. Species, those last remnants of medieval essentialism, were now discarded under the impact of a powerful and well-documented biological thesis. It is not at all surprising, therefore, to find Dewey somewhat hesitant to portray beings as formed in certain characteristically determinate ways. This reluctance, it seems to me, make those few admissions all the more significant.

How, then, does he describe this "material-in-question"? What does he say about it? At this point we can recognize just how wary Dewey is of admitting forms-in-nature. The terminology he selects to describe the tensional situation that must be resolved is instructive in this respect. He speaks of "crude or raw data" (MW X 336), "means, instrumentalities" (MW X 346), "evidence" (MW X 347), "brute fact," "particulars (parts, fragments)" (MW X 334), and a material "alogical in character" (MW X 331). Each of these labels, it should be noted, indicates a situation that is ontologically indeterminate, that is, exists as inchoate. As is the case with much else in the way Dewey expresses himself, this could readily lead one to interpret him in a Kantian sense. If the material-in-question is ontologically indeterminate, that is, exists as inchoate. As is the case with much else in the way Dewey expresses himself, this could readily lead one to interpret him in a Kantian sense. If the material-in-question is ontologically indeterminate, then it could be argued that it needs completion of some sort, which, in this case, would be provided by the individual carrying out the inquiry.

Does Dewey mean to indicate a complete indeterminateness and malleability in existents? I do not think so. To understand what he is saying we need to place him in an historical context. As one deeply influenced by Darwin and the whole movement of post-medieval science, he is struck by the great improvements that came about when manipulation and experiment replaced contemplation as the noetic ideal. Were species fixed, final, and wholly unchange-
able, the work of knowledge and the appreciation of aesthetics might collapse into a single endeavor. But species are not fixed, and science has progressed by going beyond the limitations of presentative realism. Scientific facts, Dewey says, "are discovered facts, discovered by physical manipulations which detach them from their ordinary setting" (MW X 346). Since Dewey is attempting to develop a generalized theory of inquiry based on the model of scientific knowing, we should not be at all surprised that he would stress the amenability of the subject matter to this type of investigation. The terms he chooses to describe the material that is to be subjected to investigation, "means," "raw data," "instrumentalities," "evidence," are selected to emphasize that inquiry does not work on recalcitrant material. The process of inquiry does not of necessity result in frustration and failure. Insofar as some success is achieved, the material is capable of being manipulated to the degree necessary in the various sorts of inquiries. This necessary condition for inquiry, coupled with the theoretical support of evolutionary doctrine, allows Dewey to stress the malleable and plastic in the subject matter of research.

His expressions are not meant to deny entirely the organization or structure in existents. He does not mean to imply that the subject matter of inquiry is a wholly indeterminate "stuff" capable of being formed in any manner whatsoever because it has no form of its own. If his language tends to lead a reader to interpret him in that way, it is because he was anxious to set forth the conditions necessary for his own theory. The great enemy of his approach is the belief that beings are formed in rigid, fixed, absolutely determinate, unchangeable patterns. If this were true, then a procedure that would progress by experimenting, manipulating, introducing changes would be vitiated from the outset.

Since Dewey is concerned to reject this view, he tends to overstate his case somewhat by choosing terms that indicate an amorphous, malleable, subject matter. However, seen in the context of what he is trying to accomplish, he can be interpreted correctly. Structure or organization is not denied, only its rigidity, fixity, and utter unchangeableness. One way to characterize Dewey's thought during his experimental phase is to say of him in reference to form exactly what he said of the Greeks in reference to change. Form, for Dewey, is not denied, just minimized and viewed as not especially significant. This fact contrasts Dewey's experimental phase decisively with
his Hegelian period. In that earlier period, form, under various synonyms, was a prominent consideration. In the experimental phase, form receded quite dramatically into the background. Just what becomes of it in the next phase will be the subject of the following chapters.

5. Summary

If we grasp the major lines of thought developed in these books on logic, a solid foundation can be built for the kind of interpretation I am suggesting. The details of this interpretation are still lacking, and will be taken up in later chapters. For the moment, it may be worthwhile to list in summary fashion some of the main concerns that have arisen in this chapter. I will divide these into two groups, the negative, those positions Dewey rejects, and the positive, the ones he embraces. On the negative side, we saw, to begin with, that Dewey rejects two assumptions he finds to be sources of many misconceptions in contemporary philosophy: dualism and the ubiquity of the knowledge relation. Secondly, he rejects certain tenets of both realism and idealism. This means, thirdly, that cognitive activity is neither purely passive nor purely active. Finally, he is hesitant to describe entities as formed because of the associations of this term with utter fixity.

On the positive side, this chapter gives us, first of all, an indication of the theoretical weapon, suggested by evolutionary theory, on which most of Dewey's arguments are based, that of continuity. Secondly, we find in the early logical books a very definitive statement from Dewey that entities must be recognized as being organized, although this insight is in no way pursued or developed. Thirdly, this organization cannot be absolutely rigid because the experimental method depends on some degree of plasticity in the materials being investigated. Finally, no proper understanding of Dewey is possible unless his very idiosyncratic and restricted meaning for "object" is grasped.

Notes

1. "Philosophical naturalism has a more distinguished ancestry than is usually recognized; there are, for example, the names of Aristotle and
3. See chap. 1, sect. 2.22.
4. The manner in which realists and idealists are treated offers but another example of Dewey’s disregard for detail when he is engaged in critical evaluation of philosophies he considers to be mistaken. We have seen this already in relation to Greek philosophy in chap. 2. Bothersome as Dewey’s procedure may seem, it is defended to some extent by no less a theoretician of methodology in the humanities than Ernst Cassirer. It is from Cassirer that I have borrowed the word “type.” He argues that humanists deal in “types” and that Jacob Burckhardt’s “Man of the Renaissance” offers a perfect example of this procedure. Burckhardt’s description exemplified an era even though no single individual could actually be found who fit perfectly the traits of the “Man of the Renaissance” which he enunciated. Cassirer argues that what is attempted in cases such as these is the delineation of a “unity of direction, not a unity of actualization.” He goes on in the following way: “The particular individuals belong together, not because they are alike or resemble each other, but because they are cooperating in a common task, which, in contrast to the Middle Ages, we perceive to be new and to be the distinctive ‘meaning’ of the Renaissance” (The Logic of the Humanities, trans. Clarence Smith Howe [New Haven: Yale University Press, 1961], pp. 139–40). Cassirer’s analysis offers a defense for Dewey’s use of collective terms such as “Greeks,” “realists,” or “idealists” if it is argued that Dewey, like Burckhardt, sought to indicate a “unity of direction” or to deal with groups of individuals “cooperating in a common task.”
5. Dewey asserts that Lotze has “well stated” the “various aspects of logical theory” which he, Dewey, is interested in pursuing (MW II 302).
6. Dewey defined “instrumentalism” in the following manner: “It means that knowing is literally something which we do; that analysis is ultimately physical and active; that meanings in their logical quality are standpoints, attitudes, and methods of behaving toward facts, and that active experimentation is essential to verification” (MW X 367).
7. The fact that he is not fully consistent in his usage adds to the difficulties of interpreting him accurately. For instance, in the following passage from EN 199, “object” is used in a manner synonymous with “thing,” “existent.” “For when, through language, sentience is taken up into a system of signs, when for example a certain quality of the active relationship of organism and environment is named hunger, it is seen as an organic demand for an extra-organic object.”
8. "It is a total contrast of thought as such to something else as such that he [Lotze] requires, not a contrast within experience of one temporal phase of process, one period of a rhythm, from others. . . . This contrast arises because of the attempt to consider thought as an independent somewhat in general which nevertheless, in our experience, is dependent upon a raw material of mere impressions given to it" (MW II 330–31). Dewey's reading of Lotze, however, overly emphasizes the dualistic tendencies in this German thinker. Dewey had but to examine Morris' translation of Ueberweg in order to find a more balanced view (History of Modern Philosophy, pp. 314–15). Recently, Paul Kuntz has interpreted Lotze in terms of contemporary process philosophy. The Lotze Kuntz describes is actually in some crucial respects quite close to Dewey. Both Lotze and Dewey shared an admiration for Leibniz which is manifested in the centrality of relations in their respective philosophies. According to Kuntz, the main thread that runs through Lotze's metaphysics is the doctrine that "'to be is to be related.'" We have already seen how Dewey focused on relations in his book on Leibniz (chap. 1, sect. 2.241). This emphasis will recur, especially in reference to the question of form, in his third phase. However, an expression such as Lotze used is not found anywhere in Dewey because he was most uncomfortable with the language of being. See George Santayana, Lotze's System of Philosophy, ed. Paul G. Kuntz (Bloomington: Indiana University Press, 1971). Kuntz discusses Lotze's philosophy in a lengthy introduction to this volume, pp. 3–87. The mention of Lotze's phrase "'to be is to be related'" occurs on page 22.


11. "Of twenty-nine endemic genera, no less than twenty-three have all their species in this condition" (Charles Darwin, The Origin of Species and The Descent of Man [New York: Modern Library, n.d.], p. 103).

12. Ibid., p. 104.

13. "Thinking, both speculative and practical, is regarded as akin to a form of perceiving; for in the one as well as in the other the soul discriminates and is cognizant of something which is" (De anima 427A18–21); "The thinking part of the soul must therefore be, while impassible, capable of receiving the form of an object; that is, must be potentially identical in character with its object without being the object. Mind must be related to what is thinkable, as sense is to what is sensible" (ibid. 429A14–17, in Basic Works of Aristotle, ed. McKeon, pp. 586 and 589).
14. Brentano described "intentionality" in the following manner: "Every mental phenomenon is characterized by what the Scholastics of the Middle Ages called the intentional (or mental) inexistence of an object, and what we might call, though not wholly unambiguously, reference to a content, direction toward an object (which is not to be understood here as meaning a thing), or immanent objectivity. Every mental phenomenon includes something as object within itself, although they do not all do so in the same way. In presentation something is presented, in judgement something is affirmed or denied, in love loved, in hate hated, in desire desired and so on" (Psychology from an Empirical Standpoint, trans. D. B. Terrell, Antos C. Rancurello, and Linda L. McAlister [London & New York: Humanities Press, 1973], pp. 88-89). A recent author, comparing Dewey to the phenomenological tradition, has also noted the place of intentionality in Dewey's thought. "Implicit in Dewey's notions of interaction and transaction is a well-developed conception of intentionality" (Victor Kestenbaum, The Phenomenological Sense of John Dewey: Habit and Meaning [Atlantic Highlands, N.J.: Humanities Press, 1977], p. 1).

15. In fairness to Aristotle, it must be noted that he and the members of his school did actively engage in one form of experimentation: dissection. Contrary to what Dewey says about the objects of knowledge being for Aristotle the "things of ordinary perception, so far as they are referred to a form," Aristotle sought empirically to investigate what was not given in ordinary perception. This included embryological research on chickens, and perhaps even humans, and the investigation of the digestive tracts of various animals. See W. D. Ross, Aristotle, 5th ed. (New York: Barnes & Noble, 1964), p. 113. Dewey is following here the tradition of Aristotelian interpretation popularized by Francis Bacon in his Novum Organum. Bacon knew of Aristotle's experiments but refused to ascribe any importance to them. See Novum Organum 1.63, in The English Philosophers from Bacon to Mill, ed. Edwin A. Burtt (New York: Modern Library, 1939), pp. 43-44.

16. In a letter to James, Dewey asserted that his theory did not deny pre-existence in any other sense. He said that his "'instrumental theory of knowledge is clearly self-contradictory unless there are independent existences of which ideas take account and for the transformation of which they function. . . . I have repeated ad nauseam that there are existences prior to and subsequent to cognitive states and purposes, and that the whole meaning of the latter is the way they intervene in the control and revaluation of the independent existence'" (quoted in Schneider, History of American Philosophy, p. 473).

17. Just as there undoubtedly remain many unresolved questions
about the DNA molecule today, Dewey realizes that success comes to an investigator after experimentation. This should not, however, be interpreted as indicating a belief on Dewey's part in the possibility of coming to a final, definitive solution that would make further reflection and inquiry unnecessary. Not only is further inquiry always a possibility, but the possibility also exists for revising previously held results.

19. CP 85.
20. See sect. 3.3.