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Logical Forms

1. INTRODUCTION

Logic: The Theory of Inquiry holds a special prominence in regard to the issue of forms. This stems from two facts: (a) as a text on logic, it returns to the subject Dewey treated in 1916 when he published the Essays in Experimental Logic; and (b) as a late book in his career (it was published in 1938 when he was nearly seventy-nine), it follows those that were studied in the last three chapters. These two facts combine to make it a special work for my undertaking insofar as there appears to be an historical progression on Dewey's part concerning the topic of forms. My interpretation has revealed Dewey's growing appreciation of the need to situate properly the permanent or stable dimensions of existence. It is this dimension which, as we know, is encapsulated in the concept of form.

With respect to form, my interpretation has established the following stages of development. In the Essays of 1916, form or its equivalents are not denied, but they are not focused on as significant. Dewey is eager to establish his new logic, and doing so requires that the materials to be investigated exhibit an amenability to the kind of procedures involved in scientific research. Since these procedures necessitate experimentation, Dewey wishes to stress that entities are not so rigidly fixed as to resist the guided alterations involved in experimentation. It is not surprising, therefore, to find that this book accentuates change, process, and pliability rather than stability and fixity. The Essays do contain a significant passage in which Dewey denies the possibility of there being such a thing as "mere existence," that is, existence without qualification in terms of organization. But this remark remains an isolated one, far outweighed by the stress on change.

In Experience and Nature, published in 1925, there is a discernible shift in emphasis. Stability and precariousness are given equal prominence. It is the mixture of the two, Dewey argues, which occa-
sions philosophical problems and allows for their solutions. The term "form," still allied in Dewey's mind with the absolutely static interpretation of reality, is not widely used. He relies instead on such synonyms as "structure" and "organization." Yet the term "form" is used non-pejoratively in one context. The Greeks, Dewey says, were correct in arguing that form and not matter is taken into account in knowledge. In 1929, *The Quest for Certainty* not only deepens the analysis of this point, but argues that there are other classical views which, if properly understood, are still acceptable. Outstanding among these is the teaching that the elements of stability may, in a sense, be called "eternal." But the term "form" still finds no general non-pejorative application in this text.

For the transition to the use of the actual word in a positive sense, it is necessary to advance a few years to 1934 and the famous book on art. Here, his task made easier no doubt by the context of art, Dewey engages in a significant analysis of what is meant by "form." The definitions articulated in this text were found to be consistent with his analysis of structure in *Experience and Nature* and with the explanation of relations in *The Quest for Certainty*. Dewey was reluctant to use "form" in the context of nature because of its association with a pre-Darwinian view. Nonetheless, when form is understood as it is presented in *Art as Experience*, it is found to be consistent and continuous with the analyses in the two other books published in the decade 1925–1935.

We are now brought, in our chronological sequence, to *Logic: The Theory of Inquiry*. Does this text also reveal the growing stress on form in Dewey's thought? The answer is an unequivocal "yes." Unlike the previous logic texts, which pay scant attention to this topic, and like the intervening books, in which forms gain more and more in prominence, *Logic* deals with its subject matter in the context of forms. The specific topic is *logical* forms, but his analysis builds on the more generalized interpretation that has been presented in the earlier chapters.

I am not suggesting that the *Logic* of 1938 is a radical departure from the *Essays* of 1916. Quite the contrary is the case. The texts exhibit astonishing similarity and consistency for books separated by twenty-two years of intense philosophical activity. What I am suggesting is that in those twenty-two years, Dewey has come to understand forms in an original sense, one that is justifiable and
defensible with regard to contemporary scientific discoveries. As a result, he is no longer hesitant to frame his analyses in terms of "forms."

Dewey's own explanation of the relationship between the logical books indicates this difference.

This book is a development of ideas regarding the nature of logical theory that were first presented, some forty years ago, in *Studies in Logical Theory*; that were somewhat expanded in *Essays in Experimental Logic* and were briefly summarized with special reference to education in *How We Think*. While basic ideas remain the same, there has naturally been considerable modification during the intervening years. While connection with the problematic is unchanged, express identification of reflective thought with objective inquiry makes possible, I think, a mode of statement less open to misapprehension than were the previous ones. The present work is marked in particular by application of the earlier ideas to interpretation of the forms and formal relations that constitute the standard material of logical tradition [LTI 3].

Dewey's quotation emphasizes three points. First, there has remained, over forty years, an essential similarity with regard to the basic conception of logic. Second, whereas earlier he spoke of "reflective thought," he is now going to describe logic in terms of "inquiry," not because of any repudiation of earlier positions, but because of a need to clarify earlier doctrines. Finally, in the one significant change in the new text, he will be dealing with logical forms. Here, too, the continuity with the earlier texts is to be maintained, but a new "application" of these ideas to logical forms is to be undertaken. What these forms are and how they can be integrated with what we already know about Dewey's treatment of forms in general will be investigated in this chapter.

To set the context for this analysis, two preliminary issues must be discussed. One is important for understanding Dewey's logical theory; the other, for the line of inquiry I have been presenting. The first involves a clarification of just what Dewey means by the term "logic," since he uses the word in a manner that differs from generally recognized usage. The second deals with his unfortunate overstatement about the absolute separation of logic and ontology. As we shall see, because of the particular manner in which Dewey conceives of logic, he is unable to uphold this separation consistently.
To explain what Dewey understands by "logic" I shall begin by presenting a commonly accepted division of branches within the field, and then indicate Dewey's meaning by reference to this standard classification. According to one historian of logic, I. M. Bocheński, this term is one of the most ambiguous in all of philosophy. Even when most of the sources of ambiguity are removed, there remains an irreducible threefold division of disciplines covered by the term: "Logic, as the science of inference, comprises three disciplines which should be kept sharply distinct"—(a) formal logic, (b) methodology, and (c) philosophy of logic. Formal logic deals with the laws of valid inference; methodology concerns itself with the application of these laws; and the philosophy of logic asks fundamental questions about the nature of logic and its laws.

Dewey makes no distinction between the first two disciplines mentioned, arguing that formal logic and methodology should not be viewed as separate fields. Inquiry, the actual application of methodology, is, on Dewey's interpretation, what provides the forms of logic. Because of this, the continuity between the methodology of investigation and the formal canons that guide investigation must be maintained.

The plausibility of the view that sets up a dualism between logic and the methodology of inquiry, between logic and scientific method, is due to a fact that is not denied. Inquiry in order to reach valid conclusions must itself satisfy logical requirements. It is an easy inference from this fact to the idea that the logical requirements are imposed upon methods of inquiry from without. How, it will be asked, can inquiry which has to be evaluated by reference to a standard be itself the source of the standard? How can inquiry originate logical forms (as it has been stated that it does) and yet be subject to the requirements of these forms? The question is one that must be met. It can be adequately answered only in the course of the entire discussion that follows [LTI 13].

That Dewey would argue in such a manner should come as no surprise. This is a theme that can be traced back to his Hegelianism, and to the disdain he had inherited from Morris for any logic that was purely formal. This outlook first manifested itself negatively, in his criticisms of Leibniz, but by the turn of the century, he was
able to provide a positive manifestation of it in his attempt to develop a logic that assiduously avoided the radical separation of logic and methodology.

Fully in line with these considerations is Dewey's assertion that the fallacy of selective emphasis was an especially tempting one for philosophers. The sharp separation of formal logic and methodology is but another manner in which this fallacy manifests itself. Dewey is clear to point out in the passage above that the use of logical laws as a norm for valid inquiry is not denied. The point he is trying to make is that these logical forms do not come from a higher realm of being or from an "Intellectus Purus" (LT 18). They have been developed, rather, within the very processes of inquiry. Gradually they were arranged and codified so that they could be effectively employed. But the fact that they are capable of separate use does not mean that they originated from any source other than actual human attempts to resolve problematic situations. They are the results which have been selectively isolated from the context which gave rise to them. This latter point is the one Dewey wants to stress. Logical forms should not be separated from the situation which occasioned them. This is the reason he calls his text *Logic: The Theory of Inquiry*, combining two terms which traditionalists like Bocheński would want decisively separated.

Dewey is not saying that formal logic cannot be studied as a distinct branch of logic or that the validity of its laws is to be questioned. What he is saying is that this fact of being capable of separate study should not lead to the belief that its source is independent of experience. For the purposes of my study, two issues arising out of this discussion must be noted. First of all, there is an indication that logical forms will be treated in a manner consistent with my interpretation of forms in Dewey's earlier writings. Logical forms are said to "originate" in inquiry. This is merely another way of arguing that forms result in an organism/environment interaction. Secondly, this stress on *inquiry* is an indication of a fact that becomes evident as one reads Dewey's *Logic*. He is concerned much more with methodology, with the process of inquiry, which is the source of logical forms, than with the formalism itself. This position is typical of Dewey's general emphasis on "context" and "tensional situations." Inquiry, as the activity which applies the proper methodology for resolving these situations, receives extensive treatment.
Formal logic is treated only incidentally. There is no symbolic notation in the entire book.

3. Logic and Ontology

The stress on methodology is important for dealing with Dewey's outright assertion that logic is independent of ontology. Were this assertion true, *Logic: The Theory of Inquiry* would be of only marginal significance for my investigation. Since I am concerned to interpret Dewey's ontology, a book that was irrelevant to ontological issues would not merit much attention.

But this claim is erroneous. Dewey himself, as we shall see, does not succeed in keeping the two fields apart. His arguments for separating them are closely related to his arguments for uniting the two disciplines of formal logic and methodology. Dewey claims that this latter, and incorrect, separation is based on some version of a dualistic ontology. On such a scheme, two realms of being lead to two sources of knowledge, *a priori* and *a posteriori*. These, in turn, lead to two branches of logic, formal and methodological. Those who come to logic with a preconceived ontology and epistemology, Dewey argues, impose a dualistic interpretation upon it. The corrective is to treat logic in isolation from metaphysics.

Logic as inquiry into inquiry is, if you please, a circular process; it does not depend upon anything extraneous to inquiry. The force of this proposition may perhaps be most readily understood by noting what it precludes. It precludes the determination and selection of logical first principles by an *a priori* intuitional act, even when the intuition in question is said to be that of *Intellectus Purus*. It precludes resting logic upon metaphysical and epistemological assumptions and presuppositions [LTI 28].

To get an accurate picture of what Dewey means, it is necessary to keep two things in mind: (a) Dewey is using "metaphysics" in the popular, pejorative sense of that which is beyond empirical verification; and (b) metaphysics refers here to the various controversial systems, the various *isms* which are endemic to philosophy. A logical theory, Dewey is saying, should be operative no matter what particular philosophical system holds one's allegiance.

I find Dewey's analysis not only incorrect but ironic in a special sense. If he held for the strict separation of formal logic and meth-
odology, then he might be able to argue that formal logic is independent of ontology. But since he insists on negating this distinction, and especially since his text is mostly concerned with methodology, ontological considerations will of necessity intervene. To explain my claims in a somewhat more complete manner, I shall begin by referring to the great development of this century in the field, mathematical or symbolic logic. If a case could be made for the independence of logic and ontology, in the sense Dewey articulates, it would apply directly to this formalization. The founders of the discipline were mostly Platonists (Frege, the early Russell, Whitehead), yet the most aggressive application of this technique was at the hands of the neo-positivists. Here we are confronted with widely diverging ontological positions which yet utilize an identical logical procedure. The fact that most schools of philosophy now use this technique indicates even more strongly the basis on which a Deweyan claim could be erected.

If by "logic" Dewey meant formal logic, it would appear that his argument for the separation of logic and ontology might have some merit. The problem with his analysis lies precisely in the fact that when he uses "logic" he means primarily methodology. This peculiar usage entirely alters the possibility that logic can proceed in isolation from ontology since the methodology is not formalistic; it involves the specific character of the subject matters being dealt with.

This, in turn, leads directly to ontological considerations. For the entities that become the subject matters of inquiry must exhibit at least one generic trait: amenability to investigation. If beings were opaque to the experimental method of inquiry Dewey suggests, then a new methodology (a new "logic") would have to be developed because of ontological considerations. Methodological prescriptions and ontological descriptions must work in concert if success in inquiry is to be achieved. Dewey's own "experimental logic" was a response to the new ontological situation introduced by evolutionary thinking, and by the scientific movement in general. Because the new ontology describes beings as changeable, and not as fixed, a methodology which emphasizes experimentation and manipulation can be successful.

If we understand metaphysics as the study of beings as beings or, in Deweyan terminology, as the study of the generic traits of exist-
ence, then methodological analyses will reveal their interconnec-
tions with ontological considerations. The ontology may be only implicit, but it will be present. Indeed, Dewey's Logic addresses this very issue. He admits that subject matters must be of a certain sort if the operations of inquiry are to be successful, and he does this by reverting to venerable ontological considerations, by returning to themes that Trendelenburg had emphasized: potentiality and actuality.

Dewey asserts, after summarizing the main tenets of his position, that "It is important, in this connection, not to confuse the categories of potentiality and actuality. Crude materials must possess qualities such as permit and promote the performance of the specific operations which result in formed-matter as means to end" (LTI 385–86). On the following page, we find a similar statement framed expressly in ontological language: "Existence in general must be such as to be capable of taking on logical form, and existences in particular must be capable of taking on differential logical forms. But the operations which constitute controlled inquiry are necessary in order to give actuality to these capacities or potentialities" (LTI 387).

Both passages deal with questions of ontology since both describe existences as such, indicating something about them in reference to inquiry. Dewey thus appears to be admitting here in practice what he has previously denied in theory. When he says that "existence in general must be such as to be capable of taking on logical form," he is admitting that his logic is not independent of ontological assumptions. Indeed, his logic depends on an important ontological fact: that beings are suited to the kinds of inquiries he suggests.

In the last chapter, the understanding of forms was seen to be tied closely to the notion of possibility. The position is restated here in a manner consistent with the texts previously studied. The previous chapter also claimed that forms possess the status of potentials until they are actualized in experience. Events possess certain possibilities, but it takes the work of inquiry to realize them. In the Logic, Dewey describes his position in similar terms. The above quotations assert that, in relation to existences, logical forms are possibilities until these existences undergo the operations of guided inquiry.

This indication of a coherent position in regard to forms lends support to my interpretation. I am claiming that an ontology of
formed beings can be found in Dewey’s texts; I am arguing, in other words, that Dewey develops a revised version of a position with Greek roots. Thus far, we have seen that his comments concerning form fall together in a defensible and consistent pattern through three of his major works. The above quotations suggest that this analysis is continued and expanded in *Logic: The Theory of Inquiry*. What we must turn to now is a further analysis of this text to see just how the topic of forms is treated there.

4. LOGICAL FORMS

Various considerations will guide this investigation. First of all, I shall examine Dewey’s statement that forms accrue to subject matter. Second, I shall show that Dewey’s meaning for “logical form” is not a rigidly univocal one, and that there are two senses in which this expression can be understood. Third, I shall show how the doctrine which is presented in this text is both consistent and continuous with the analyses I have presented of Dewey’s other writings.

The position which Dewey defends has been adumbrated in the discussion of method and ontology:

The theory, in summary form, is that all logical forms (with their characteristic properties) arise within the operation of inquiry and are concerned with control of inquiry so that it may yield warranted assertions. This conception implies much more than that logical forms are disclosed or come to light when we reflect upon processes of inquiry that are in use. Of course it means that; but it also means that the forms originate in operations of inquiry. To employ a convenient expression, it means that while inquiry into inquiry is the *causa cognoscendi* of logical forms, primary inquiry is itself *causa essendi* of the forms which inquiry into inquiry discloses [LTI 11-12].

Several typical Deweyan themes are recapitulated in this citation. His insistence, for example, that forms are not given ready-made but originate in inquiry is simply another version of a continuing polemic against presentative realism.17 This polemic, secondly, is based on Dewey’s theory of transactions with an environment. Forms result from interactions. They are not immediate givens, merely to be espied by a knower/spectator.18 This means, thirdly,
that the kind of activity termed inquiry is a necessary element in the origination of forms.

We have already discussed Dewey's insistence that the independence of formal logic as a norm in inquiry does not imply a transcendent origin for logical forms. The argument that these forms are innate or a priori Dewey considers erroneous. His text seeks to refute this position by developing a doctrine of logical forms which is based on the kinds of analyses presented in his earlier books. The arguments against presentative realism, his teachings on the centrality of interactions, and his doctrine of experimental inquiry receive a new focus in logical theory. But the aim remains the same as in those texts: to stress the active as well as the passive character of inquiry, and to indicate that novelty, in the sense of new discoveries, becomes a real possibility. In this respect, logical theory is no different from any other kind of inquiry. Logic has had a history in which it has not remained unaltered. New forms have resulted in its development through time.

What are these forms? Using the expression in two distinct senses, without acknowledging their difference, Dewey provides both a restricted and a generalized meaning for "logical forms." The narrow sense refers specifically to the canons of logic, while the wider one extends to events in general. I shall begin by treating the narrow sense. This is the new meaning Dewey introduces in the *Logic*, and his alternative to other logical theories is based on it. The more generalized meaning will be discussed afterward.

Dewey identifies logical forms with "proximate logical subject-matter" (LTI 19), and explains the latter in the following way: "Proximate subject-matter is the domain of the relations of propositions to one another, such as affirmation-negation, inclusion-exclusion, particular-general, etc. No one doubts that the relations expressed by such words as *is*, *is-not*, *if-then*, *only* (*none but*), *and*, *or*, *some-all*, belong to the subject-matter of logic in a way so distinctive as to mark off a special field" (LTI 9). Given Dewey's intentions in this text, this kind of explanation is exactly what one would expect. Logical forms are the relations of propositions to one another which have been standardized in the procedures of formal logic. It is these forms—modus ponens, for example—that Dewey wishes to claim arose within the context of actual inquiries.
Dewey argues that these forms, much like legal and artistic forms, can be isolated from the context in which they occur. They can then be applied to new situations. But, as he reminds his readers time and again, the context may be abstracted from for practical purposes, but it must never be forgotten. "Just as art-forms and legal forms are capable of independent discussion and development, so are logical forms, even though the 'independence' in question is intermediate, not final and complete. As in the case of these other forms, they originate out of experiential material, and when constituted introduce new ways of operating with prior materials, which ways modify the material out of which they develop" (LTI 107).

When the logical forms are isolated, they can help guide reasoning to valid conclusions. In this way, they resemble formal legal descriptions, such as the statutes dealing with contracts. People have always engaged in making mutual promises, but the growing complexity and variety of these promises led to the necessity for codifying the conditions under which they must be kept. This formal codification could then be applied to the situations in which various individuals are involved in this kind of mutually dependent relationship. If properly applied, they lead to settlements of disputes concerning just when a valid contract has been made. 20

The important fact for Dewey is that the formal conditions, once codified, may then be applied to the very kinds of situations which occasioned them, and may even "modify" those situations. In the same manner, logical forms may act as normative guidelines for inquiry, even though they were ultimately developed out of just those kinds of situations. Contractual forms guide the validity of mutual promises, and logical forms ensure the accuracy of reasoning processes. Yet neither comes from a separate realm of absolute certainty. Both, Dewey argues, have developed temporally.

Given the kind of endeavor Dewey undertook, that of providing a new explanation for logical forms, it would seem that the meaning just explained would have been fully satisfactory for his purposes. Indeed, so astute a commentator on Dewey's logic as Ernest Nagel explains logical forms in just this manner. He gives no indication that Dewey may have employed the expression in another, wider sense. 21 Yet there is sufficient textual evidence to suggest that, for Dewey, the label "logical form" has two clearly distinguishable meanings, both of which have to do with inquiry. The first, as we
have already seen, results from inquiry into inquiry itself, and refers
to the different ways in which propositions may be related to each
other as means to consequences.

The second deals with inquiry into situations in general. It also
offers some confirmation for the type of interpretation I have been
suggesting. Logical forms in this sense are presented by Dewey as
alternatives to the fixed ontological forms of traditional thought.
These logical forms are those forms that have arisen, not as a result
of inquiry into inquiry, but within the process of inquiry into
events. Logical forms are not restricted therefore to the relations
of inference that a formal logician would discuss, but apply where­
ever inquiry has been successful.

Dewey's own manner of introducing the novelty of his approach
to logical theory allows both the restricted and the generalized in­
terpretations. "The differential trait of the variety of this type of
theory expounded in this Part is that logical forms accrue to subject­
matter in virtue of subjection of the latter in inquiry to the con­
ditions determined by its end—institution of a warranted conclu­
sion" (LTI 370). The importance of this characterization is that its
scope is wide enough to allow the inclusion of natural and artistic
forms under the heading "logical form." This is fully consistent
with the Deweyan position as it has been explained thus far. Forms
in general exist originally as possibilities, and the only manner in
which they are realized is the experimental method. Inquiry is the
name for the activity which employs this method, and for Dewey
inquiry is identified with logic. Thus, all inquiries can in a sense be
labeled logical, and all results called logical forms.

Dewey provides examples which explicitly illustrate this extended
sense.

Form and matter may become so integrally related to one another
that a chair seems to be a chair and a hammer a hammer, in the
same sense in which a stone is a stone and a tree is a tree. The in­
stance is then similar to that of the cases in which prior inquiries
have so standardized meanings that the form is taken to be inherent
in matter apart from the function of the latter . . .

These instances exemplify the principle stated in the first part
of this chapter; namely, that forms regularly accrue to matter in
virtue of the adaptation of materials and operations to one another
in the service of specified ends [LTI 383].
Dewey is stating here that the examples he has provided are illustrations of his teaching concerning logical forms. Yet the examples chosen are not the sort that deal with the formal processes of inference. Instead, he chooses items from *techne* and *phasis*, arguing that their formed character must not be interpreted as *a priori* or pre-existent, but be viewed as having accrued during a temporal process.

Chairs, hammers, stones, and trees do possess standardized meanings. As we saw in the last chapter, Dewey is willing to admit that certain meanings may be focused on somewhat exclusively. But what Dewey wants to suggest is that even such standardized meanings do not indicate the presence of eternal essences. Other forms, other meanings, are possible. This is why he extends the notion of logical forms to cover such instances not directly related to formal logic. Other inquiries, he is saying, would result in the accrual of other forms. Since logic is the theory of inquiry, these resultant forms can appropriately be called “logical.” On a Deweyan interpretation, forms primarily indicate the relationship of means to consequences and of parts to wholes. Since these relationships can become realized only in the methodological procedure of inquiries, and since method for Dewey is logic, then all forms are in a very real sense logical forms, not just those relating specifically to the subject matter of formal logic.

A similar analysis is presented elsewhere in the *Logic* as the contrast between the ontological and the logical. In this instance as well, the clearly generalized thrust of “logical” becomes manifest. Dewey is discussing “substance,” and he argues that this is not an ontological (i.e., fixed, eternal) determination, but a logical one.

It [substantiality] is a form that accrues to original existence when the latter operates in a specified functional way as a consequence of operations of inquiry. It is not postulated that certain qualities always cohere in existence. It is postulated that they cohere as dependable evidential signs. The conjoined properties that mark off and identify a chair, a piece of granite, a meteor, are not sets of qualities given existentially as such and such. They are certain qualities which constitute in their ordered conjunction with one another valid signs of what will ensue when certain operations are performed. An object, in other words, is a set of qualities treated as *potentialities* for specified existential con-
sequences. Powder is what will explode under certain conditions; water as a substantial object is that group of connected qualities which will quench thirst, and so on [LTI 132].

We find in this lengthy passage strong confirmation that the expression "logical forms" possesses a significance for Dewey much wider than either he openly admits or commentators like Nagel will allow. The substantiality that accrues as a result of inquiry is that of a chair, meteor, water, or powder. These are logical forms, ordered complexities exhibiting characteristic behaviors which have been realized in the process of inquiry.

At this point, we are in a position to ascertain the significance of *Logic: The Theory of Inquiry* for the present investigation. I mentioned at the beginning of this chapter that the *Logic* could be viewed as exemplifying the continuation of the growing prominence of forms in Dewey's thought. Because of this, it reinforces the interpretation I have been presenting of Dewey's philosophical endeavor. It has been my intention to demonstrate that, when Dewey is read carefully and interpreted properly, he can be viewed as presenting a coherent doctrine concerning the manner in which permanence is integrated with change. By concentrating on permanence, which few commentators have done, and especially on form, which no commentators have dealt with, I undertook to reconstruct a significant aspect of Dewey's ontology.

My interpretation that there is a revised doctrine of forms in Dewey's writings seems to be successfully established in three of his major works, but not yet in an important logical text. The topic of forms was conspicuous by its absence in the last book on the subject, *Essays in Experimental Logic*, published in 1916. Would a logical text written after the books on art and nature reflect the doctrinal developments that I had traced? Specifically, would a positive, reconstructed outlook on forms take a prominent place in a new exposition of logical theory? Such questions are the reasons why Dewey's *Logic* is in major respects a test of my interpretation.

Were these questions answered in the negative, then my interpretation would not have been automatically rejected, but it would certainly have been mitigated. For this would have meant that the seeming recognition on Dewey's part that forms are significant would have been just that, an appearance. Had forms been ignored in his *Logic*, this would have meant that Dewey did not consider
them to be of any special significance. The interpretation of the three books in which constructive analyses regarding form were found would remain valid, but truncated. Dewey's logical theory would have to be seen as standing apart from these texts, rather than as being continuous with them.

Of course, the two questions mentioned above are not to be answered in the negative. As a result, the Logic provides support for my interpretation in three ways. First of all, by choosing to deal with logical issues from the perspective of forms, Dewey reveals a conscious recognition that such a doctrine is present in his writings. Second, the manner in which he presents his discussion of logical forms is quite in accord with his positions in the previous books. Third, by using the expression "logical form" in a general sense, he explicitly recapitulates and retroactively validates the interpretive position that I have been developing.

5. Summary

The significant issues raised in this chapter can be summarized by examining one of the few neologisms Dewey coined. His career was one great effort to overcome the fixed oppositions of modernity. The realists were wrong to assume an order of natural entities which simply needed to be reflected by the human mind. The idealists were mistaken in assuming either that "mere existence" had to be structured by mind, or that a higher Reason or Absolute Spirit had to be posited to mediate the oppositions of subject and object.

The Deweyan alternative to this position is that forms accrue to subject matters in the process of inquiry. This means, to use his neologism, that nature is "logiscible." "Logiscible" signifies the possibilities that can be determined or realized through inquiry (which Dewey links to logic), and indicates the fact that nature will allow elucidation if the methodology of experimental logic is properly applied. "Logiscible" preserves the positive sense of "intelligible," but allows Dewey to stress the need for activity on the part of the inquiring individual. Otherwise the possibilities will remain unrealized. The term indicates a situation in which certain possibilities can be actualized if the appropriate procedures are utilized.

The main issues that have been raised in this chapter can be clustered around this technical term "logiscible." The first topic
attended to was the exact meaning that Dewey attached to the word "logic." We saw that, for Dewey, logic means primarily methodology. The experimental method, which he articulated at the beginning of the century and restated in the *Logic*, is still adhered to and held to be the main avenue for resolving tensional situations.

The second topic discussed dealt with Dewey’s claim that logic is independent of metaphysics. But “logiscible” refers to a trait of beings. It is an ontological assertion. This means that Dewey’s insistence on the separation of logic from ontology cannot be supported even by his own approach to logical issues. There may be a sense in which the isolation Dewey suggested is valid, but his categorical assertion was shown to be untenable.

Third, “logical forms” were revealed to be what results when the logiscible becomes actualized in inquiry. Logical forms are neither innate nor uncovered by any means other than the empirical. They are actualized, realized counterparts of the possibilities described by the term “logiscible.” We then came to understand that Dewey used the expression “logical form” in two senses. The first refers specifically to the procedures of formal logic; the second, to the results of any inquiry whatsoever. This generalized application led to the final issue discussed, a defense of the thesis I have been arguing. *Logic: The Theory of Inquiry* reinforces my ontological interpretation of the place of forms in Dewey’s thought. To argue that events in general are formed is but another way of saying that they are logiscible. The forms are possibilities in relation to the inquiring, logical consciousness.

NOTES

1. See chap. 3, sect. 3.3.
3. Ibid.
4. Ibid., pp. 8–9.
5. Dewey’s daughters have commented on this in the biography of their father prepared for the Schillp volume. “The influence of Professor Morris was undoubtedly one source of Dewey’s later interest in logical theory. Morris was given to contrasting what he called ‘real’ logic, and associated with Aristotle and Hegel, with formal logic of which he had a low opinion. Dewey, in his years of association with Morris in Ann
Arbor, developed the idea that there was an intermediate kind of logic that was neither merely formal nor a logic of inherent 'truth' of the constitution of things: a logic of the processes by which knowledge is reached" ("Biography of John Dewey," ed. Jane M. Dewey, in Philosophy of John Dewey, ed. Schillp, p. 18).

6. As we saw in chap. 1, Dewey's only real criticism of Leibniz was that he had steadfastly adhered to a formal logic that was inconsistent with the overall tenor of his philosophy. See chap. 1, sect. 2.243.

7. See chap. 4, sect. 3.4.

8. Speaking of all three disciplines within logic, formal logic, methodology, and philosophy of logic, Bocheński has the following to say: "The most important thing is to maintain a strict separation between the three fields. Much mischief has been caused by their not being kept sufficiently apart" (Methods, p. 9).

9. H. S. Thayer, explaining what Dewey means by logic, indicates this stress on inquiry and method. "The scope of logic, according to Dewey, may be described in a general sense as the articulation and explicit formulation of the controlling instrumentality and operations that function when problems are being inquired into and warranted solutions are arrived at. The theory of inquiry is a descriptive explanation of what happens when problems are investigated and solved logically or methodically and deliberately, with respect to the means taken to reach solutions. . . . What usually passes for logic and scientific method are not contrasted as two kinds of rational techniques for dealing with certain kinds of problems, but are incorporated as designating procedural and material means within the general movement of inquiry" (Logic of Pragmatism, pp. 9-10).

10. He uses the term explicitly in this sense later in the text. "The theory criticized holds that there is a cognitive subject antecedent to and independent of inquiry, a subject which is inherently a knowing being. Since it is impossible to verify this assumption by any empirical means, it is a metaphysical preconception which is then mixed with logical conditions to create a mode of 'epistemology' " (LTI 10; emphasis added).

11. "On the face of the matter, it does not seem fitting that logical theory should be determined by philosophical realism or idealism, rationalism or empiricism, dualism or monism, atomistic or organic metaphysics" (LTI 10).


13. Ibid.

14. Similar considerations were discussed in chap. 3, sect. 4.2.
15. I have already discussed Dewey's understanding of metaphysics in chap. 5, sect. 1.
16. See chap. 6, sect. 4.3.
17. Dewey's arguments against realism were discussed in chap. 3, sect. 3.2.
18. Dewey finds the Aristotelian logic to be an example of this procedure. "Traditional theory, however, takes the propositions as given ready-made and hence as independent and complete in themselves. They are just there to be noticed, with description of whatever properties they present. This mode of treatment becomes intelligible when it is viewed in conjunction with its derivation from the ontological logic of Aristotle, whence it ultimately derives. In the latter logic, species or kinds are the ultimate qualitative wholes or real individuals. Some of these species are by nature, or by inherent essence, exclusive of others" (LTI 182).
19. See above, sect. 3.
20. Dewey uses the example of contractual agreements at LTI 371.
21. Nagel explains what Dewey means by "logical form" in the following way. "According to him, things and qualities acquire functions in inquiry which they did not have antecedently to it, and the specifically distinct ways in which things function in this context is just what he understands by logical form. For example, perceptual material in its sheer existential status does not have the logical form of being evidence, nor does the occurrence of an idea in revery have the status of a hypothesis—any more than a bear is always a target—except on the occasions when these items enter appropriate contexts involving specific types of activity" ("Dewey's Reconstruction of Logical Theory," in The Philosopher of the Common Man: Essays in Honor of John Dewey to Celebrate His Eightieth Birthday, ed. Sidney Ratner (New York: Putnam's, 1940; repr. New York: Greenwood, 1966), p. 73.
22. See chap. 6, sect. 4.4.
23. There are echoes in this discussion concerning substance of the earliest, Kantian, phase in Dewey's development. He had struggled, at that time, with the distinction between "substance" and "mere succession of phenomena." (See chap. 1, sect. 2.1.) In the Logic, Dewey distinguishes between "substance" and "original existence." But the particular way in which he treats this distinction is indicative of the direction in which his development has moved since his earliest writings. Two points especially stand out in this regard: (a) Substance is determined no longer by a mind separate from the phenomena, but by an experimenter who actively engages in purposefully directed transactions with the subject matter; and (b) "original existence" must not be interpreted as an amorphous, unknowable "x." Since his Hegelian phase, Dewey has
been quite clear on the fact that there is no such thing as mere existence. "Original existence" means simply the subject matter as it exists at the beginning of inquiry. It may and probably does possess some standardized meanings that are susceptible of being transformed in a new inquiry.

24. The word "logiscible" is not found in many Deweyan texts, but Randall has focused on it as an important and accurate expression of what Dewey wanted to say. "Frederick J. E. Woodbridge, speaking as a structuralist, holds, 'Nature has a logical structure.' Dewey the functionalist preferred to say, "Nature has a 'logiscible' structure" ("T. H. Green and Liberal Idealism," Philosophy After Darwin, ed. Singer, pp. 68-69). He also refers to the word "logiscibility." See Nature and Historical Experience: Essays in Naturalism and in the Theory of History (New York: Columbia University Press, 1958), p. 134. One of the few places in which Dewey uses the term is in the article "The Applicability of Logic to Existence," The Journal of Philosophy, 27 (1930), 179.