John Dewey did not develop a theory of knowledge in the usual sense of “epistemology,” but he did have a well-developed theory of inquiry.¹ He was in fact highly critical of what he called “the epistemology industry” because of its tendency to treat knowledge as something separated from the contexts in which actual inquiry takes place.

He thought that when epistemologists start out by positing cases of “certain” knowledge, or “justified true belief,” as they sometimes do, and then attempt to find out how it is justified, they tend to get matters backwards. It is more productive, he suggested, to examine how actual cases of inquiry are related to one another and how they increase our stock of guides for future action. In other words, analysis should be a tool for the production of satisfactory outcomes, not an end in itself. Epistemology as usually practiced was in Dewey’s view a conflicted mixture of proven and relevant logical tools, on the one hand, and irrelevant psychological and metaphysical preconceptions, on the other. If such preconceptions could be jettisoned, he thought,
then epistemology would be freed to do its real work as a theory of inquiry. The terms “epistemology” and “logic” would then become synonymous.

Although he did in fact use the term “knowledge” quite frequently, Dewey thought that it had so many infelicitous connotations that it needed to be replaced. He tried to do this in two ways. First, for the reasons I just indicated, he often used the gerund “knowing” in place of the substantive term “knowledge” in order to emphasize the fact that knowing is always a part of a larger process of inquiry.

But even this did not entirely convey what he had in mind, so he invented the phrase “warranted assertibility.” The two parts of this somewhat cumbersome but descriptive phrase point in different directions. “Warranted” points backward in time toward something that has been accomplished. What is warranted is the result of reflection that has been effective in the sense that some specific doubt or difficulty has been resolved. “Assertibility” points forward in time toward something yet to be done. What is assertible is something general, and therefore something potentially applicable to future cases that are relevantly similar to the one by means of which it was produced. Unlike the alleged knowledge (or justified true belief) studied by most epistemologists, however, warranted assertibility is claimed to be neither certain nor permanent. The best it can offer is a measure of stability in an otherwise precarious world.

Inquiry as Organic Behavior

The work of Charles Darwin exerted a profound influence on Dewey’s thought from the time he was an undergraduate during the 1870s until his death in 1952. In 1909, on the occasion of the fiftieth anniversary of The Origin of Species, Dewey wrote an essay in which he characterized his own work as doing for philosophy what Darwin had done for biology. Just as Darwin had proved the notion of fixed biological species untenable, Dewey would seek to demonstrate that there are no fixed or certain truths. Contrary to the claims of some
of his critics, however, this project was motivated by neither skepticism nor nihilism. It was based on a candid recognition of the observable fact that living beings must constantly adapt to changing environmental circumstances. Even though they require overlapping and interpenetrating patterns of stability for their continued existence, their lives are at bottom and in the long run highly precarious.

Dewey identified inquiry as the primary means by which reflective organisms seek to achieve stability through adaptation. It is by means of inquiry that humans are able to exert control over their own habit formation, thereby creating new instruments. In the short run, these instruments enable us to improve conditions that we deem unsatisfactory. In the long run, they enable us to influence the course of our own evolution.

Because inquiry is an organic activity, and because organisms encounter constraints as well as facilities, assertions must continually be tested and new warrants must continually be issued. Successful living requires an active and ongoing reconstruction of experienced situations. Dewey’s notion of warranted assertibility, therefore, unlike the concept of knowledge as it has functioned in systems such as those of Plato, Descartes, and many contemporary philosophers, is not a matter of a spectator getting a better view of a fixed state of affairs that is already “out there” (or even “in there”).

Dewey constantly reminded his readers that if contemporary science has taught us anything, it is that there is nothing “out there,” in any permanent sense of “out there,” of which we can get a better view. At the level of immediate or unreflective experience, what is “out there” is always changing. And at the level of reflective or organized experience, what we count as being “out there” at any given time is a result of the activity of human intelligence as it takes into account the materials it finds in immediate experience and the tools currently at its disposal. The aim of inquiry is therefore to reconstruct both found materials and available tools in ways that render them more richly meaningful.
Dewey rejected versions of naive realism which claim that things already are as they will eventually be for us, even prior to our taking them into account. He also rejected the version of scientific realism just described, which claims that there is a fixed reality that is simply discovered by scientists and to which scientific “laws” therefore correspond. As a result, some of his earlier critics read him as advancing one or another variety of idealism, such as the view that the laws of science—or logic—are wholly a matter of coherence within a human or divine mind.

More recently, some of Dewey’s interpreters have argued that he held a type of relativism similar to that of some of the French postmodernists, according to which human beings as language-users are caught in an infinite web of metaphors or tropes, none of which are any more privileged or warranted than any other. Richard Rorty, for example, has claimed Dewey’s authority in advancing the view that there is no real distinction between the sciences and the arts, but that both are just types of literature. Dewey regarded both of these views—scientific realism and extreme relativism—as flawed, and he vigorously opposed them.

His name for his own view was “Instrumentalism.” In 1903 he and his students and colleagues at the University of Chicago published a collection called *Studies in Logical Theory* which announced Instrumentalism as a school of thought and attempted to work out its implications.

Seen in the context of his Instrumentalism, warranted assertibility results from the experimental manipulation of tools, materials, and conditions as they are experienced. And the whole point of experimentation is to see whether we can make things better by finding out how experienced situations (which of course include ourselves as components) can be reconstructed.

Contrary to the position advanced by much of traditional philosophy, Dewey was convinced that the tools that we use in inquiry are
not given to us a priori. They are instead instruments that have been developed in the course of inquiry that has proven successful. Inquiry is thus a reflective activity in which existing tools and materials (both of which may be either tangible or conceptual) are brought together in novel and creative arrangements in order to produce something new. The by-products of this process often include improved tools and materials which can then be applied to the next occasion on which inquiry is required.

To miss this point is to misunderstand the radical nature of Dewey’s theory of inquiry. His view was that logical forms accrue to inquiry as a result of the subject matter it takes up and the conclusions it finds warranted. He put this matter very precisely in 1938, in *Logic: The Theory of Inquiry*: “logical forms accrue to subject-matter in virtue of subjection of the latter in inquiry to the conditions determined by its end—institution of a warranted conclusion” (LW 12.370).

One of the things that makes this claim so controversial is that traditional logic had claimed just the opposite—that logical forms are imposed upon the subject matter of inquiry. Dewey thus turned traditional logic on its head. This is an extremely important point, so I shall return to it later in the chapter.

**The Role of the A Priori in Inquiry**

Especially since Kant, the concept of the a priori has played an important role in philosophical discourse. It is therefore important to understand the two senses in which Dewey employed the term. What he called the “external” a priori corresponds to the way the term was used by Kant and subsequently in much of Anglo-American analytic logic and epistemology. What is a priori in this sense is strictly speaking prior to any experience. In Kant, for example, what is a priori provides the very conditions under which any experience is possible. Kant thus treats space and time as a priori forms that must be imposed on what is perceived in order for there to be any experience at all. Dewey denied that there is any such thing as an a priori in this sense. In his view, for example, space and time are not forms that are
brought to experience, but conceptions that are constructed on the basis of experience.

Dewey did allow, however, the “operational” a priori. In inquiry, he observed, we develop habits of action that are known as “laws of inference.” Because these are habits, rather than specific actions, they are general. Like other sorts of habits, they have been adopted (and they continue to be adapted) over time because they have been found to produce successful consequences. Dewey used the term “successful” in its precise Instrumental or Pragmatic sense. The laws of inference, he wrote, are successful when they are “operative in a manner that tends in the long run, or in continuity of inquiry, to yield results that are either confirmed in further inquiry or that are corrected by use of the same procedures” (LW 12.21).

He provided several excellent examples of what he meant by this. Take a logical postulate, he suggested, such as the “law” of the excluded middle (also called the “tertium non datur,” which states that a thing is either A or not A, say, either a liquid or a non-liquid but not some third thing). This is a logical “law” in the sense that if we are going to reason at all, then we must take it (as well as other logical laws) into account. But there is nothing a priori in the external, or Kantian sense, about these laws. Dewey called such “laws” stipulations, or “formulations of formal conditions . . . to be satisfied.” As such, he said, they are “valid as directive principles, as regulative limiting ideals of inquiry” (LW 12.345). Dewey called our attention to the obvious fact, for example, that at a certain temperature near the freezing point, water is neither precisely a liquid nor precisely a non-liquid.

Dewey argued that these “laws” are stipulations in much the same sense that the laws of contracts are stipulations that regulate business arrangements. If we are going to do business at all, then we must take into account as “directive principles” certain forms that have proven to be successful, that is, that have been proven to regulate a wide range of particular transactions in ways that keep the business community functioning. And if we are going to engage in inquiry at all, then we must take into account, again as “directive principles,” certain logical
forms that have been proven to be successful in precisely the same sense.

But these “laws” are not a priori in the sense that they are applicable regardless of subject matter. They accrue to inquiry in virtue of its subject matter. They arise out of subject matter, and they are returned to subject matter as tools for testing our conceptions of it: as such, they are conditions to be satisfied. In his treatment of the law of the excluded middle, for example, Dewey pointed out that the “fact that disjunctions which were at one time taken to be both exhaustive and necessary have later been found to be incomplete (and sometimes even totally irrelevant) should long ago have been a warning that the principle of excluded middle sets forth a logical condition to be satisfied in the course of continuity of inquiry. It formulates the ultimate goal of inquiry in complete satisfaction of logical conditions. To determine subject-matters so that no alternative is possible is the most difficult task of inquiry” (LW 12.344–45).

What is operationally a priori, then (and this is the only kind of a priori that Dewey admitted), is what has been brought to current inquiry as a byproduct of prior inquiry. There is nothing that is a priori in the Kantian sense. There is no a priori that is absolutely prior or external to experience.²

Common Sense and Science

Dewey thought that the splits within experience posited by most philosophers, especially since Descartes, were not only unwarranted but debilitating. He thought that the split between scientific inquiry and common sense which resulted from these philosophers’ penchant for skepticism was no exception. Dewey characterized common sense as the part of experience in which humans make required behavioral adjustments as a response to “direct” involvement with the circumstances of their environing conditions. In other words, common sense involves ordinary use and enjoyment, and it is concerned with what is practical.
Dewey rejected the common notion that there are metaphysical or ontological differences between common sense and science. He did think, however, that there was a logical difference between these two types of inquiry: they use different logical forms. Science grows out of common sense as its tools of inquiry become more refined. But science is not final in the sense of being the end or point of inquiry. It does not tell us how the world really is in any final sense, and it is not the paradigm for all other forms of inquiry. It is not, to use Jean-François Lyotard’s phrase, a “grand narrative.” Scientific inquiry is in Dewey’s view inquiry for. It is a theoretical enterprise that must ultimately return to the world of use and enjoyment in order to check its results.

Historically, one of the great philosophical errors has been the treatment of objects produced by abstraction from common sense experience as if they were prior to and independent of the experience from which they were abstracted. They are then said to exist in a realm that is separate and superior to common sense. Having then created this fracture within experience, some philosophers have spent inordinate amounts of time attempting to show how the two realms might be related.

Dewey thought this utter nonsense, and referred to it as “the philosopher’s fallacy.” His suggestion was that once it is recognized that there is a continuity between common sense and science, the purported fracture between these areas of inquiry will be recognized for what it is—nothing more than a difference of logical form. Metaphysical or ontological fractures will never open up in the first place.

*Logical Objects*

In 1916 Dewey gave a talk to the philosophy club at Columbia University in which he shed a good deal of light on these matters. The subject of his remarks was what he called “logical objects” or “logical entities.” These were said to include such items as “between,” “if,” numbers, and essences. Historically, Dewey observed, these entities have been treated as 1) physical properties of objects, 2) mental or
psychical properties, or 3) some sort of “tertium quid” which is neither physical nor mental but “metaphysical.”

Dewey rejected all three of these views. He argued instead that logical objects are just that—logical. By this he meant that they are the by-products of inference. They are thus “things (or traits of things) which are found when inference is found and which are only found then” (MW 10.90).

The key to understanding Dewey’s radical innovation on these matters lies in his argument that what is logical must be separated from what is purely mental or psychical. Of course Dewey did not wish to deny that inquiry involves mental processes, or that there are psychological factors that are present in inquiry. His point was rather to insist that inquiry is always a behavioral response of a reflective organism to its environing conditions. As such, he wrote, it belongs to “action, or behavior, which takes place in the world, not just within the mind or within consciousness” (MW 10.90). This means that whatever mental processes may accompany a particular inquiry, it is its behavioral results, and not some accompanying psychic or mental process, that identifies it as inquiry. Inquiry, just as much as walking or eating, is what Dewey termed an “outdoor fact.”

Dewey’s treatment of this subject was typical of his broader philosophical outlook. He undermined the customary ontological approach to the problem of logical objects (which relied on sorting them into pre-existing categories) and then he argued that they should be treated in functional terms. He thus identified inquiry as an art, and its products and by-products (including logical connectives such as “and,” “or,” and numbers) as manufactured articles. Such artifacts, he reminded us, are manufactured for some purpose; or at least they are connected to some process. To treat them as having existence apart from such purposes and processes is to fall back into the older practice of giving them a spurious ontological status.

Geometrical points, temporal instants, and even logical classes provide excellent examples of what Dewey had in mind. They refer to a kind of reality that is neither physical, psychical, nor metaphysical.
The reality to which they do refer is no more or less than the behavioral reality of controlled inquiry. To treat them as something apart from inquiry, as has traditionally been the case, would be to make the same type of mistake that a biologist would commit if he or she were to infer from the conditions of a fish in water to those of a fish out of water (MW 10.95).

Abstraction

That Dewey used this particular figure of speech as a part of his discussion of abstract objects was perhaps occasioned by his reading of William James. James had observed that anyone who looks up through the side of an aquarium can see an object across the room, such as a candle, reflected from the bottom of the water’s surface back down into the water. The water, he suggested, is like the world of sensible facts. And the air above it is like the world of abstract ideas.

Both worlds are real, of course, and interact; but they interact only at their boundary, and the locus of everything that lives, and happens to us, so far as full experience goes, is the water. We are like fishes swimming in the sea of sense, bounded above by the superior element, but unable to breathe it pure or penetrate it. We get our oxygen from it, however, we touch it incessantly, now in this part, now in that, and every time we touch it, we are reflected back into the water with our course re-determined and re-energized. The abstract ideas of which the air consists are indispensable for life, but irrespirable by themselves, as it were, and only active in their re-directing function. All similes are halting, but this one rather takes my fancy. It shows how something, not sufficient for life in itself, may nevertheless be an effective determinant of life elsewhere.¹

In his own treatment of abstraction, Dewey elaborates on James’s simile. First, there is a living relation of transaction between the abstract and the concrete. Just as the fish draw their oxygen from the air above their everyday environment, human experience draws nourishment from abstract entities and relations. When this living relation is ignored, abstraction tends to become something negative
and even the subject of parody. It becomes something arbitrary and aloof from everyday experience.

Second, the living relation between abstract and concrete is maintained by means of experimentation. Abstraction is not an end in itself, but instead a tool for developing new meanings that can be brought back down into the realm of concrete, existential experience. Inquiry always involves abstraction, since it always involves hypotheses that articulate alternative courses of action. It also relies upon relations (and relations of relations), which are the by-products of previous inquiries. Ultimately, however, inquiry is undertaken for the sake of effecting change in a concrete, existential world; it is there and only there that abstractions are determined to have succeeded or failed, that is, to have been useful or not.

Third, and contrary to the long tradition of Western philosophy, abstractions do not belong to a metaphysical or ontological order that is higher or more noble than that of concrete experience. James uses the term "superior" in his analogy to designate spatial location, not metaphysical preeminence, and Dewey's account makes it clear that abstract and concrete are coequal phases or moments within inquiry. In his account of the history of abstraction, Dewey reminds us that Socrates rendered a great service to his fellow Athenians by urging them to avoid excessive reliance on the concrete, that is, to avoid reasoning by simple enumeration of examples. Socrates's attempts to get his fellow Athenians to engage in hypothetical reasoning constituted a great step forward in the history of inquiry. But Plato made the opposite mistake: when he began to treat abstractions as metaphysical entities, he set an unfortunate course for 2,500 years of Western philosophy.

One of the reasons why philosophers since Plato have tended to think of abstractions as higher and more perfect than concrete experience is that they are said to afford a level of "certainty" that ordinary experience does not. The mathematical proposition \[2 + 3 = 5\] has, for example, been treated as a timeless truth, metaphysically superior because applicable everywhere and everywhen. But Dewey saw matters differently. The reason why mathematical propositions are often taken as timeless truths is that
qua mathematical, [they] are free from the conditions that require any limited interpretation. They have no meaning or interpretation save that which is formally imposed by the need of satisfying the condition of transformability within the system, with no extra-systemic reference whatever. In the sense which “meaning” bears in any conception having even indirect existential reference, the terms have no meaning—a fact which accounts, probably, for the view that mathematical subject-matter is simply a string of arbitrary marks. But in the wider logical sense, they have a meaning constituted exclusively and wholly by their relations to one another as determined by satisfaction of the condition of transformability. (LW 12.395–96)

In other words, mathematical propositions may be meaningful in either of two senses. In terms of their relation to other elements of a formal system, they are meaningful in virtue of satisfying certain conditions of transformability within a system. It is in this sense that they appear to be true everywhere and everywhen. Their place in the formal system is secure, and results of transformation within the system that depend on them are uniform and dependable within that limited scope. In this sense, mathematical propositions refer to no existential individuals.

In a second sense, however, the sense in which mathematical propositions refer to some existential individual or another, they are not dependably applicable. Experimental science, as well as everyday experience, is replete with cases in which abstract mathematical propositions are too “thin” to apply to experience in all its robustness. It is important to note that Dewey does not think that mathematical propositions, or any other type of propositions, for that matter, are true or false. I shall discuss this matter in more detail later, in the section on propositions.

*Matter and Form in Inquiry*

It is now time to return to the matter of the relation of form and matter within inquiry. According to his critics, one of the scandals of Dewey’s *Logic: The Theory of Inquiry* was its paucity of symbols. How,
they asked, in a time when logic was increasingly symbolic, could they be expected to take seriously a book about logic that contained so few symbols?

Dewey addressed this question in the introduction to his book. Many of the problems of logic, he argued, have been the result of the separation of form and matter. This has in turn been the result of a rush to symbolize in the absence of a “general theory of language in which form and matter are not separated” (LW 12.4).

Dewey thought that logical forms are disclosed as inquiry is undertaken, but even more importantly, he thought that they originate as the by-products of inquiry. In order to understand this point it is necessary to differentiate inquiry, which Dewey sometimes calls “primary” inquiry, from logic, which he terms the “theory” of inquiry. “Primary inquiry,” he writes, “is itself causa essendi of the forms which inquiry into inquiry [or logic] discloses” (LW 12.12). It is the function of (primary) inquiry to arrange its subject matter into settled forms. It is the function of inquiry into inquiry (logic) to take account of those forms, disclosing their relations to other forms and arranging them in ways that facilitate their use in further inquiries. When these things (settled forms) are used in further inquiries, they become the means to further results. But viewed retrospectively, they become objects. Dewey thus makes a radical move: he functionalizes objects by characterizing them in terms of their roles in continuing inquiry. “Objects,” he writes, “are the objectives of inquiry” (LW 12.122).

Once established, objects (or settled forms) tend to persist long after their originating subject matter has been altered. Old forms are imposed on new subject matter. In some cases this works well enough, but in other cases the old forms are not really relevant to the new subject matter. Their use results in error and confusion. Dewey thought that this is precisely what had happened in the case of the Aristotelian syllogism. “The perpetuation of the forms of the Aristotelian tradition,” he argued, “with elimination of the subject-matter of which they were the forms, also ruled out inquiry (which is effective reflection) from the proper scope of logic. The syllogism in the
original logic was in no way a form of inferring or reasoning. It was immediate apprehension or vision of the relations of inclusion and exclusion that belong to real wholes in Nature” (LW 12.93).

Dewey freely admitted that logic has to do with formal relationships, and he accepted the widely held notion that this is what sets logic off from other sciences. But he also noted that logicians have tended to disagree about what this means. Their debates have been particularly sharp regarding the question of how logical form is related to subject matter. Logical formalists, for example, tend to hold that there is no relation between logical form and subject matter. But they disagree among themselves about how this tenet is to be interpreted. Some of them argue, for example, that forms constitute a separate realm of metaphysical possibilities (possible worlds). Others, exhibiting a less mystical temper, hold that logic is the study of the formal syntactical properties of sentences or propositions. Still other logicians, of a more realistic bent, oppose both types of formalism. They argue that logical forms are abstracted, rather like Aristotle’s “intelligible species,” from pre-existing materials.

Dewey rejected each of these views. As I have already indicated, he argued that “logical forms accrue to subject-matter in virtue of subjection of the latter in inquiry to the conditions determined by its end—institution of a warranted conclusion” (LW 12.370). In other words, logical forms accrue to subject matter in the process of inquiry. The subject matter does not have the logical forms prior to inquiry.

Dewey illustrates these points by drawing our attention to the history of jurisprudence. He observes that there have been numerous occasions on which forms of procedure had become the controlling factor at the expense of substance. In such cases, they ceased to be forms-of-matter and were so isolated that they became purely formalistic—a fact which perhaps contains an instructive lesson for logic, since it is clear that legal forms should be such as to serve the substantial end of providing means for settling controversies. . . . These rules of law provide multifarious examples of the ways in which
“natural” modes of action take on new forms because of subjection to conditions formulated in the rules. As new modes of social interaction and transactions give rise to new conditions, and as new social conditions install new kinds of transactions, new forms arise to meet the social need. When, for example, a new type of industrial and commercial enterprise required large capital, the form known as limited liability supervened upon the forms constituting the legal rules of partnership. (LW 12.370–71)

It is the business of controlled inquiry, then, to manipulate its subject matter in ways that allow new forms to accrue to it. After these new forms originate, it is the business of logic (as the theory of inquiry) to disclose the ways in which they are related to one another and to determine their potential use in further inquiry.

**Judgments**

Books about logic often begin with a discussion of terms. They then take up the various ways in which terms are joined to make propositions or judgments, and the various ways in which propositions or judgments are combined to make arguments. Aristotle, for example, combined terms into four forms of judgment: All S is P, Some S is P, No S is P, and Some S is not P. He demonstrated that when these judgments are combined into forms consisting of two premises and a conclusion (a syllogism), some of the arguments thereby constructed are valid, while others are invalid.

Dewey begins differently. In his view, terms and propositions can only be understood as *correlative* with judgment, which he terms the “settled outcome of inquiry” (LW 12.123). As already indicated, inquiry begins when a situation is doubtful or problematic. Tools and materials are then brought to bear on the situation in question. Hypotheses are formed and then tried out in what he calls “dramatic rehearsals” with a view to alleviating the undesirable circumstances of the situation. Along the way appraisals are made. Finally, where inquiry is successful, the situation is reordered in a way that renders it stable and unproblematic.
In Dewey’s usage, therefore, a judgment is not the same as a proposition. A proposition is just that—a proposal which is only intermediate within inquiry. A judgment, on the other hand, carries what he calls “existential import.” Whereas propositions affirm, judgments assert. Dewey uses a baseball metaphor to clarify this point. Drawing on the slang of his day, he writes that “a pitched baseball is to the batter a ‘proposition’; it states, or makes explicit, what he has to deal with next amid all the surrounding and momentarily irrelevant circumstance” (MW 10.356). Continuing this analogy, we could say that a judgment is what is made by the batter as a result of (rapid) deliberation about whether he or she will swing the bat at the ball. The pitched ball is thus the proposition and the swing of the bat is the judgment. In this case, as others, deliberation takes into account observed conditions as well as established rules, such as those established to determine strike zones.

Switching to a different analogy, we might say that a proposition in a court of law is what is affirmed by one of the parties to a dispute, whereas a judgment is the assertion that is handed down by the court as a result of deliberation with respect to the evidence and its relation to established legal precedent. Of course intermediate judgments, or what Dewey calls “appraisals,” such as those that determine the admissibility of evidence, are also a part of the overall process of inquiry that eventuates in a final judgment or settlement of the affair before the court. But whereas both propositions and intermediate judgments (appraisals) are intermediate, propositions are less determinate than are intermediate judgments.

Many logic texts treat the subject of a proposition as something given in a determinate fashion to the senses, and the predicate of a proposition as something conceptual that is attributed to the already determinate subject by means of an act of judgment. Dewey rejected this view. He argued that the subjects and predicates of judgments are determined correlatively to one another as a part of the process of inquiry (LW 12.128). The subject of a proposition is not given as already determined, he argued, since if it were there would be no occasion for inquiry in the first place. Since the point of inquiry is to
it follows that the subject of a proposition is something vague that requires further definition.

It may well be that what is taken as the subject of a proposition will have received determinate form in a prior instance of inquiry; but that does not insure that it will be relevant as such to the inquiry at hand. Progress in the sciences, as well as in common-sense inquiries, requires that the results of prior inquiries be treated as raw materials for further inquiries, and not as determinate results, established once and for all.

It is sometimes argued that pure reference can be established for the subject of a proposition merely by pointing to something and by referring to it as “this.” But Dewey argues that there is no such thing as pure referentiality. He makes the point (later taken up and capitalized upon by Quine in his famous remarks on “rabbit stages”) that even the act of pointing does not establish pure reference, since any of several sensory traits of an object (including its temporal stages) may be the object of the pointing. The fact is that subjects and predicates of propositions are determined correlatively to one another. Their definitions are refined as they are checked against one another. To establish a “this” in the first place is to establish it in terms of a predicate, that is, as provisionally one instance of a particular kind. A proposition, which associates a subject and a predicate, is therefore indefinite. It is an indication of tests to be made—of operations to be performed.

Dewey’s view also differs from mainstream theories of logic in terms of what judgment can accomplish. It is a commonly held view that the point of judgment is to make a difference in the mental states or attitudes of the judging subject. But Dewey thought that this view yields too much to subjectivism. According to his own view, the point of a judgment is to make a difference in the existential conditions which gave rise to the inquiry of which the final judgment is the termination. Changes in wider existential situations may involve alterations of mental states and attitudes, to be sure, since mental states and attitudes are also existential. But to ignore the wider existential
situation and to focus exclusively on mental states and attitudes is to open the door to the prospect of pure fantasy (LW 12.162).

This is particularly apparent in the case of what Dewey calls “judgments of practice,” or judgments which involve considerations of value. The point of a moral decision is not to choose from among certain pre-established ends and thereby to change one’s mental state. The point of a moral decision is to assess an existential situation, to bring the best instruments currently at one’s disposal to bear upon it, and to arrive at a judgment which changes the “indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole” (LW 12.108).

Propositions and their Relations

As I have already indicated, Dewey characterized propositions as different from judgments in the sense that propositions are intermediate, that is, instrumentalities for the final settlement (judgment) of a particular case. Beyond that, however, Dewey divides propositions into two distinct but correlative types. What he calls existential propositions have to do with “actual conditions as determined by experimental observation,” whereas what he calls ideational or conceptual propositions have to do with “interrelated meanings, which are non-existent in content in direct reference but which are applicable to existence through the operations they represent as possibilities” (LW 12.283–84). As we would expect, given the foregoing discussion of his treatment of abstraction, Dewey indicates that these two types of propositions are related not as inferior and superior, but as equal partners. He suggests that they represent a “division of labor” within inquiry.

From the viewpoint of some logic textbooks, Dewey’s contention that propositions are neither true nor false is nothing short of scandalous. But his point becomes clear enough when it is remembered that he views propositions as means rather than ends. As such, they
may be said to be effective or ineffective, strong or weak, or even relevant or irrelevant; they are not, however, said to be true or false. Propositions that are effective, strong, and relevant with respect to the advancement of inquiry are said to be “valid.” Propositions that are ineffective, weak or irrelevant are said to be “invalid.” Judgments are said to be true or false to the extent that they involve warranted assertibility. And arguments are said to be formally correct or incorrect. This usage has been the occasion for great offense to some mainstream logicians who are accustomed to characterizing propositions as either true or false and arguments as either valid or invalid.

In an attempt to clarify these matters, Dewey provides the following example. “The syllogism ‘All satellites are made of green cheese; the moon is a satellite; therefore, it is made of green cheese’ is formally correct. The propositions involved are, however, invalid, not just because they are ‘materially false,’ but because instead of promoting inquiry they would, if taken and used, retard and mislead it” (LW 12.287–88). In a sequence of inquiry in which the judgment that “the moon is made of green cheese” was accepted as settling the matter, then, such a judgment would be false in the sense that it would lack warranted assertibility.

Dewey’s full treatment of propositions is quite complex, so a complete discussion of it is well beyond the scope of this chapter. Nevertheless, before concluding I want to call attention to several additional points of interest.

First, Dewey distinguishes “particular” propositions from “singular” propositions. Since they sometimes have the same grammatical form, he points out, these two types of propositions are sometimes confused. A particular proposition (such as “this is hard”), draws attention to some change, that is, to something taking place as a consequence of the operation of some sense organ (LW 12.289). Such propositions are particular in the sense that they have reference to a particular time and place; they do not in themselves allow further inference. Dewey tells us that particular propositions “represent the first stage in determination of a problem; they supply a datum which, when combined with other data, may indicate what sort of a problem
the situation presents and thereby provide an item of evidence pointing to and testing a proposed solution” (LW 12.290).

Although a singular proposition may be of the same grammatical form as a particular proposition (as in the case of “this is hard,” for example), the two types of propositions function differently within inquiry. Whereas a particular proposition merely indicates the presence of a change, thus possibly instituting a problem, a singular proposition determines the “this,” to be one instance of a certain kind. The logical structure of singular propositions is more obvious in the case of “this is a diamond,” which asserts that “what occurs at the time is being taken as evidence of the permanent traits which describe a kind” (LW 12.291). Since they assert inference beyond the here and now to “permanent” or “general” traits not immediately experienced at the moment they are asserted, singular propositions are thus said to have a certain representative quality.

Dewey introduces several technical terms to help clarify his treatment of these matters. When I merely notice at some moment that something is hard, he suggests, then I am aware of some quality. But since our experiences are complex and overlapping, many different qualities may be experienced in a given span of time. Some of these qualities are existentially involved with others. Mere recognition of existential involvement, however, does not do much to advance inquiry. There is still the need to discover which qualities are relevantly involved with one another (in terms of the problem at hand), and how they are so involved. As Dewey puts it, “reasoning and calculation are necessary instruments for determining definite involvements” (LW 12.277).

In other words, inference is required: inquiry intervenes with a view to determining which involvement-relationships are relevant to the solution of a particular problem. The proposition “this is a diamond,” for example, enables reasonably safe inference to still other qualities, such as that the “this” in question is not metallic. Under such conditions, a quality becomes a permanently distinguishing trait or character. Inference thus allows translation of existentially involved
qualities into a form in which they can become useful in inference. They are taken as signs of something not present.

*Generic* propositions, such as “things that are diamonds are among the things that glass cannot scratch” are expressions of relations among kinds. Rather than proposing that something is one instance of a certain kind, as do singular propositions, generic propositions propose membership of one kind in another, more inclusive kind. Dewey’s point here is not simply to construct a taxonomy of types of propositions. His point is rather to demonstrate how different types of propositions function differently within inquiry in ways that render judgment possible.

Generic propositions widen the scope of inference. They enable inference from traits of one kind to traits of another. And even more importantly, they provide the logical grounds for singular propositions. To say that something is one of a certain kind is unintelligible in the absence of a further condition, namely that “there are other kinds related to the one specified” (LW 12.294).

Unlike generic propositions, which are existential, *universal* propositions are conceptual. They formulate possible actions which may or may not be executed. As such, they do not even pretend to have direct existential import; they are instead relevant to inquiry into existence (LW 12.303). Here, as elsewhere, grammatical form may be misleading. The term “all” (and its correlate “anything”) may indicate an existential relationship between the terms of an existential proposition that expresses a high level of probability, such as is the case with “All diamonds are crystals.” On the other hand, it may express “a necessary relation which follows, by definition, from analysis of a conception” (LW 12.296), such as is grammatically more evident in the form “if anything is a diamond then it is a crystal.” In the first case, the proposal is generic because it concerns existential singulars of a certain kind (this diamond, that diamond, and so forth) as belonging to a more inclusive kind. In the second case, the proposal concerns relations between meanings which may or may not have to do with existential affairs. If all diamonds were to disappear, and all
crystals too, we might still (theoretically) make such a judgment. Universal propositions express meanings in terms of a system of related meanings. Rather than asserting existential relations, they advance procedures for finding out certain things about existential affairs. Generic and universal propositions are thus what Dewey calls “conjugate.” They interact as partners within a sequence of inquiry, as inquiry moves back and forth between them.

Universal propositions exhibit implication. After qualities experienced as existentially involved with one another have been taken as traits and characters (by means of the formulation of singular and generic propositions and in ways relevant to the inquiry at hand), such traits and characters may be further abstracted. “This is a diamond” becomes a dependable sign of other, conjoined characteristics, such as “This is a crystal.” Alternatively, “If anything is a diamond then it is a crystal.” Once abstracted in this manner, what formerly functioned as a trait or character, allowing reasonably secure inference, is then termed a property.

Whereas existential things or qualities are involved, and whereas the determination of a thing as one of a certain kind is a matter of inference, fully abstracted (nonexistential) properties are related as signs within a given conceptual system by means of implication. As Dewey notes, however, such systems do not come to us “from the blue.” They are “evolved and explicitly formulated in terms of conditions set by the need of dealing with actual cases of human action” (LW 12.278).

Dewey recognizes two logical types of universal propositions: those that may have quasi or limited existential import, and those that have no existential import. An example of a universal proposition of the first type is Newton’s law of gravitation. Even though it relates abstract characters such as mass and distance, Dewey tells us, it is “framed with reference to the possibility of ultimate existential application [and so] the contents are affected by that intent. Such hypothetical universals do not exhaust the possible existential affairs to which they may be applied, and as a consequence may have to be abandoned in favor of other hypothetical universals which are more
adequate or appropriate to the subject at hand. This is illustrated by
the change from the Newtonian law of gravitation to the Einsteinian
formulation” (LW 12.395).

A second type of universal proposition is illustrated by a mathe-
matical formulation. The proposition “\( 2 + 2 = 4 \)” is purely a relation
of meanings within a constructed system of meanings, and is there-
fore free of any “privileged interpretation” (LW 12.395). Technically
speaking, it has no extrasystemic reference whatsoever.

One final logical relation needs to be discussed. In addition to
involvement, inference, and implication, ordered logical discourse in-
cludes what Dewey calls “reference.” As opposed to the logical formal-
ists, Dewey thought that the point of inquiry is to settle existential
difficulties. He therefore thought that the “excursus” into deliberation
that involves the manipulation of conceptual material, that is, the de-
termination of implicatory relations between signs within universal
propositions, needs to be completed and complemented by a “recurs-
sus” that brings the results of such abstract thinking back down to the
existentially doubtful situation that originated the particular sequence
of inquiry in question. This is possible because of the conjugate rela-
tion between universal and generic propositions. In other words, sym-
bol relations used in inquiry may have reference to existential affairs.
The point of inquiry, it should be recalled, is to reorder involvement
relations in such a way that a problematic situation is brought to a
final resolution in terms of a judgment that carries warranted asserti-
bility. It is also interesting to note that whereas standard treatments of
logic tend to start out with reference, claiming that the subject term of
a proposition has determinate reference, Dewey’s theory of inquiry
ends up with determinate reference, namely as a name for how the
results of inquiry are applied to and checked against existential affairs.
Reference is thus for Dewey a relation within inquiry as it comes to a
close, and not something separate from inquiry that initiates it.

Inquiry as Social

Given the fact that he characterized propositions as being of two
types, namely those that are existential and those that are conceptual,
Dewey recognized that his readers might wonder which comes first: the constitution of abstract meaning relations in discourse, or the constitution of existential significance relations. His answer to this question has two parts. First, because the existential and conceptual propositions work together as conjugate aspects of inquiry, he suggests that the question remains “rhetorical.” He thus emphasizes what I have called the “excursus” and “recursus” movements within inquiry. As he puts it, the

ability to treat things as signs would not go far did not symbols enable us to mark and retain just the qualities of things which are the ground of inference. Without, for example, words or symbols that discriminate and hold on to the experienced qualities of sight and smell that constitute a thing “smoke,” thereby enabling it to serve as a sign of fire, we might react to the qualities in question in animal-like fashion and perform activities appropriate to them. But no inference could be made that was not blind and blundering. Moreover, since what is inferred, namely fire, is not present in observation, any anticipation that could be formed of it would be vague and indefinite, even supposing an anticipation could occur at all. (LW 12.61–62)

Even if the question of priority is “rhetorical,” however, it leads to a consideration that is itself quite fruitful. The context in which these conjugate aspects of inquiry work together is profoundly social both in origin and in import. The fact that existential things have signifying power is not a fact of nature per se, but a fact of a culture which supervenes upon it. Communication, which includes all the aspects of inquiry so far described in this essay, is the result of conjoint activities—both cooperative and competitive—among reflective beings. Culture is thus both a condition and a product of language (LW 12.62).

Inquiry promotes cooperation among reflective organisms because it allows them to “rehearse” or try out activities before making a final irretrievable commitment to some overt action. At a very primitive level, the threatening gesture supplants and obviates the attack. At a higher level of organization, two friends “talk over” some disagreement rather than risking a rupture of their relationship. At a still
more sophisticated level, complex political and economic plans of action are deliberated by a democratic electorate and orderly change ensues. These are among the developmental stages of inquiry. As Dewey puts it, “The habit of reasoning once instituted is capable of indefinite development on its own account. The ordered development of meanings in their relations to one another may become an engrossing interest. When this happens, implicit logical conditions are made explicit and then logical theory of some sort is born” (LW 12.63).

It should by now be clear that Dewey rejected the notion of inquiry as an end in itself, and he also rejected the notion of the theory of inquiry (logic) as a strictly formal discipline complete in itself and devoid of relevance to the affairs of daily life. It was for these reasons that he thought that the next great scientific-technological revolution, if it should occur, will involve advances in the social sciences. Inquiry, and the theory of inquiry, were in Dewey’s view among the most important tools at our disposal for learning to live together in ways that take into account the constraints of our environing conditions, as well as the full range of human needs and aspirations.