Popperian Situational Analysis

As Popper acknowledges in his intellectual autobiography *Unended Quest,* he was always more interested in the natural sciences than the social sciences (*UQ,* 121). Nonetheless, Popper devoted considerable thought to the social sciences, and in the *Poverty of Historicism, The Open Society and Its Enemies,* and a number of essays, he offered sustained reflections on the methods of social science (*OSE II,* 89–99; *PS,* 357–365; *ISBW,* 64–81; *MF,* 154–181). In general, and especially in his earlier essays, Popper was largely intent on showing that the methods of the social sciences are, or at least should be, the same as those of the natural sciences.[1] But what *is* the method of natural science, according to Popper? In chapters 2 and 3 I shall consider in some detail Popper's highly original answer to this question. But here I can briefly note that Popper contended that, fundamentally, the natural and the social sciences both involve proposing hypotheses and testing them against empirical evidence— the bolder the hypotheses, the better. The most daring of such hypotheses, and the ultimate aim of any mature science, are scientific laws, Popper says (*RAS,* 134). Because scientific laws are universal in their scope, they permit parsimonious explanations and produce genuine predictive power. But, at the same time, the far-ranging explanatory power of general laws exposes them widely and repeatedly to falsification. For this reason, falsifiability—especially a high degree of falsifiability—became the hallmark of science for Popper.

Especially in his earlier writings, Popper argued that hypotheses testing and the search for general laws should also be the goal of the social sciences (*PH,* 61–62).[2] However, despite Popper's strong support for the unity of scientific method, he also recommended a unique approach for studying the social world—a method that, he admitted, has almost no direct parallel in the natural sciences and that represented "perhaps the most important difference" between the natural and social sciences (*PH,* 141; see also *UQ,* 117).[3] That method is, of course, situational analysis. In chapter 3, I will argue that Popper himself did not fully appreciate how different situational analysis is from the method of natural sciences. We will see that the difference between the two

approaches is so great that the unity of scientific method can only be retained by describing methodology at a highly abstract (and therefore largely uninformative) level. But in this chapter, I want to present the concept of situational analysis as proposed by Popper, including its relationship to other Popperian ideas on social inquiry, especially his support for methodological individualism and his rejection of psychologism and methodological collectivism. The following discussion will draw mainly upon Popper's lengthiest and last sustained explanation of situational analysis—his "Models, Instruments, and Truth" essay. However, I will also draw liberally upon Popper's other discussions of situational analysis and social science generally.

BUILDING MODELS

Popper begins his discussion of situational analysis by positing that the fundamental goal of science is problem solving and that there are, broadly speaking, two types of problems in need of explanation: singular events and types or kinds of events (*MF,* 162–166; *PS,* 357). Explaining a singular event—such as the collision of Shoemaker-Levy 9 comet with Jupiter in 1994, the eruption of Mount St. Helens in 1980, the French Revolution, or the near collapse of Asian economies in 1997—merely requires identifying some relevant initial conditions along with some universal laws in order to predict (or retrodict) and explain the event. For example, to explain Shoemaker-Levy 9's collision with Jupiter, one would need to identify such initial conditions as the position, mass, and velocity of the comet and other celestial bodies at successive points in time, combined with some relevant universal laws, including gravity and Newton's laws of motion.

Explaining a kind or type of event—that is, an event that recurs in a more or less predictable pattern—requires a somewhat different approach, Popper says. Examples of types or kinds of events would be lunar eclipses in general (not last month's eclipse), cycles of economic expansion and recession (rather than the U.S. recession in 1991–92 and the following expansion), political revolutions in general (not the French Revolution or the American Revolution or the Iranian Revolution). The best way to explain types of events, Popper suggests, is to construct a "model," which, he says, is merely a simplified representation of reality. Being a simplification of reality, it will of necessity be a false depiction of reality. For instance, in order to simplify calculations, a model of the solar system might assume that the various planets are points and that comets and other extraplanetary objects have no gravity, even though such assumptions are plainly false. No model can incorporate all elements of the phenomena to be explained, nor would such a model be desirable. Rather, a good model represents the most important features of reality, given our explanatory interests. Popper acknowledges that there is probably no formal way to state beforehand how those features should be selected; rather, a model's value will ultimately be proved by its usefulness. "I think we have to

admit," he says, "that most successful scientific theories are lucky oversimplifications" (*MF,* 171–172).

However, the elements or structural features alone of a model are not enough to explain a typical event. To "animate" the model, Popper says, we need universal laws. Thus the planets in a model of the solar system are set in motion by Newton's laws of gravity and momentum, and a model of an atom is animated by the strong and weak forces, and electromagnetism. No model can do without animating universal laws, Popper claims, for we can "never reduce animating laws to structural properties of the model" (*MF,* 164). This is not to say that we can never offer a deeper explanation of a universal law by developing a model of the law itself—a mechanistic description of the elements and structures that explain how the law operates and produces its effects. In fact, Popper encourages such mechanistic reductions; indeed, he says, they are an important goal of science (*RAS,* 134). Popper's point is rather that a model, no matter how fine-grained, can never animate itself, for new, deeper laws will be required to set it in motion and the process will begin anew. For Popper, there are no ultimate explanations that are "neither capable of any further explanation, nor in need of it" (*OK,* 194). This is one way of characterizing Popper's anti-essentialism, which claims that there can be no explanation of phenomena that is self-evident, intuitive, and irreducible. Science can and should always delve deeper into reality, Popper says, and thus there is never an end to scientific investigation (ibid.).

MODELS AND SOCIAL SCIENCE

Models are often essential for explaining types of events in the natural sciences. They are even more important in the social sciences, Popper asserts, because we "never have sufficient laws and initial conditions at our disposal to explain" social events (*MF,* 168).[4] As such, following Friedrich Hayek, Popper says that the social sciences generally must settle for "explanation in principle" rather than "explanation in detail"—that is, explanation of typical events rather than explanation of actual events (*MF,* 166). The best way to produce such explanations, he argues, is to construct models of typical social situations. For this reason, he says, constructing models of social situations is a central task of social science: "The fundamental problem of the social sciences is *to explain and understand events in terms of human actions and social situations. The key term here is 'social situation*'" (*MF,* 166; Popper's italics).[5]

But what does a model of a social situation contain? Popper says that it consists of people and social relations, broadly understood. Social relations would include, for example, social institutions (such as bureaucratic regulations, financial markets, legal codes, and the like) as well as traditions and social norms. In addition to other people and social relations, a situational model will also include relevant features of the natural environment, such as natural laws and physical barriers that constrain people's behavior. At the center of the situational model is

the human actor, whose aims and knowledge of the situation are also part of the model. To illustrate this idea, Popper imagines the situation confronting a person—Popper dubs him "Richard"—attempting to cross the street (*MF*, 166–168). The physical barriers encountered by Richard in such a situation might include cars, other pedestrians, median strips, and so forth. The institutional and social elements might include rules of the road, traffic signals, crosswalk markings, and such. The situation also includes Richard's goals or aims—in this case, to cross the street—and the person's knowledge of the situation, which includes relevant theories and concepts that he possesses. Knowledge of the social situation in Popper's example of the pedestrian would include not only the physical obstacles that the person can see and hear, but also his understanding of social institutions that influence his action, such as the rules of the road and the meaning of traffic signals.

Of course, a person's understanding of the situation may be imperfect, and these imperfections may affect his or her actions. Richard's failure to notice a speeding car—a physical component of the situation—might explain his failure to cross the road. Similarly, Richard's misinterpretation of a social rule may also affect his action. Perhaps, improbably, he interprets the red light on the traffic signal to mean "go." A full-blown situational model will include both a description of the situation as it actually was and the situation as the actor perceived it (*MF*, 183 n. 19). In other words, the social scientist must strive to produce an objective reconstruction of situation faced by Richard, as well as a reconstruction of Richard's own assessment of the situation. Often, disparities between the two accounts will prove key in explaining the agent's behavior.

The Rationality Principle

To complete the situational model, Popper says we need to animate it by means of what he calls the "rationality principle." Unlike economists and rational choice theorists, Popper never developed a precise definition of rationality in this context. In chapter 4, we will examine Popper's rationality principle in greater depth, especially vis-à-vis economic theory, but a brief account is in order here.

Popper says that the rationality principle is merely the assumption that a person will act "adequately" or sensibly, given his or her goals and the situation. The idea is that a person simply "work[s] out" what is implicit in the situation, as posited by our model (*MF*, 169). Popper's account of the rationality principle is surprisingly and disappointingly vague, but the principle can be plausibly interpreted as a very "thin" model of rationality. No prespecified general aims or goals, such as wealth or power maximization or even happiness, are assigned to actors prior to the situation; nor, apparently, does Popper assume that agents always act instrumentally (that is, in a means-to-end fashion). Norm- or tradition-guided behavior can also be construed as rational (or so I shall argue on Popper's behalf in chapter 4). Similarly, there is no presumption that persons will act in a strictly self-interested or egoistic manner. As such, nearly all the

explanatory power of situational analysis lies in the situation itself rather than with the rationality principle. In fact, Popper says, the rationality principle should not be viewed as "the empirical or psychological assertion that man always, or in the main, or in most cases acts rationally" (*MF,* 169). Instead, it should be viewed as "the methodological postulate that we should pack or cram our whole theoretical effort, our whole explanatory theory, into an analysis of the *situation*—into the *model*" (ibid.; Popper's italics).

Popper admits that the rationality principle is an "almost empty principle" (*MF,* 169). Nonetheless, it plays a central and twofold role in situational analysis. The first role is essentially the same as that played by natural laws in models of the natural world. Whereas Newton's laws of motion and gravity could be said to animate a model of the solar system, the rationality principle animates a model of a person crossing the street. The rationality principle produces its general explanatory power by turning persons in the situational model into abstractions; they behave how "anybody" would behave in the situation. An actor's particular psychological idiosyncrasies are not relevant, Popper says, nor are any of the actor's beliefs, values, or goals that are not directly related to the goal that is implied by the situation (*MF,* 168). For instance, we should disregard the fact that Richard the pedestrian was humming a passage from a Verdi opera or contemplating Sanskrit texts as he crossed the road (*MF,* 168). Popper's point is not so much that such thoughts could not affect Richard's street crossing in any way—in fact, it is possible that in some situations they might (if, say, they distracted him). Rather, the point is that the situational model is supposed to be an abstraction, an ideal type of sorts, capable of explaining the behavior of abstract, typical persons acting in numerous structurally similar situations.

The second role of the rationality principle may be described as its "searchlight" power. Popper initially suggested the metaphor of the searchlight to describe the role that theories (or, more broadly, expectations) provide in scientific investigations and, indeed, all human knowledge (*OK,* 346). Popper claims that expectations always precede observations and are necessary to illuminate our investigation of the external world.[6] However, following James Farr (1985; 1987), we can extend the metaphor of the searchlight to describe the rationality principle's ability to illuminate the situation that actors confront. Popper says that we "learn more" by holding fast to the rationality principle (*MF,* 177). By retaining the presumption that actors behave rationally, even in the face of prima facie irrationalities, the rationality principle helps illuminate aspects of the situation that might have otherwise remained obscure. That is, we are led to explore dimensions of the situation that might explain why the person engaged in the apparently irrational behavior. Often new facts about the situation will be discovered that show the actor's behavior was, in fact, rational. Understanding a person's actions, then, becomes an exercise in developing a detailed description of his or her situation rather than an attempt to describe the individual's psychological state. Thus situational analysis can be

described as an interpretive method as well as a method for explaining social phenomena. Popper himself characterized situational analysis this way in his later work (*OK,* 162–180; see also Farr 1983a). In particular, Popper presented situational analysis, guided by the rationality principle, as the best method for history, at least insofar as the aim of historical inquiry is to understand the actions and beliefs of individuals in history. "My thesis," Popper writes, "is that the main aim of all historical understanding is the hypothetical reconstruction of a historical *problem-situation*" (*OK,* 170). Popper himself made occasional forays into the history of science where he employed situational analysis to enhance our understanding of, for instance, Galieo's theory of the tides and Kepler's metaphysics (*OK,* 170–180; *ALPS,* 74–78).

Merits of Situational Analysis

Much of this book will be dedicated to assessing the merits of situational analysis. As indicated in the introduction, I do not believe that situational analysis can function as the sole method for social inquiry. Nor do I think that situational analysis, as developed by Popper, is without shortcomings. That said, I think that situational analysis provides a suggestive model for social inquiry. Most importantly, it offers a way to transcend idiography—that is, mere particularistic explanations—without invoking universal laws, which, as we will see in chapter 2, are apparently not available in the social world. By constructing models of typical situations, social scientists can aspire to explain particular events as instances of typical events described by a situational model. This is not to say that situational models will resemble the overarching, powerful theories of natural science. The regularity of the regularities, so to speak, that situational models seek to describe will be limited by the extent to which people behave in typically rational or (as I will argue in chapter 6, contra Popper) typically irrational ways. Of equal importance, the regularities of the social world will be in part dependent upon social institutions, beliefs, and values. Because these undergo change—sometimes swiftly, sometimes slowly—so too will the regularities described by situational models. Thus situational models will largely remain ridden by exceptions and bound by time and culture. As such, situational models can be described as resembling the "theories of middle range" urged by Robert Merton (1967, 39–72). However, unlike those Merton describes, middle-range theories produced by situational analysis should not be thought of as placeholders for which theories of greater scope and power might one day be substituted.

Also to its credit, situational analysis is compatible with the fundamental insights of the interpretive approach to social inquiry—namely, that human action is meaningful and that any satisfactory social science must take this fact into account. In fact, as Popper himself claimed, situational analysis can be characterized as an interpretive method and as a general contribution to hermeneutics (*OK,* 178).[7] Situational analysis conceptualizes human action as

intentional and requires that we unpack the beliefs, values, and social rules that inform an agent's behavior. Thus if our situational model is well constructed, it will advance our understanding of the situation and the individuals who inhabit it. But situational analysis also aspires to transcend the idiography and thick description of interpretive social inquiry by constructing models of *typical* situations capable of unveiling similarities of logic underlying a variety of social phenomena. For social science, these models will chiefly be institutional models, such as models of parliamentary structures or bureaucracies. Such models will never produce precise predictions, but the best of them might produce tolerable retrodictions and help us with the practical problems involved in building institutions.

Another strength of situational analysis is that it reminds us to incorporate the physical environment into our situational models. Often the effects of the physical environment will be of little importance compared with the social environment, but in some cases reconstruction of the physical realm will prove crucial. Indeed, in some cases reconstructing the physical environment faced by an agent will help us understand his or her social environment better. As Noretta Koertge has argued, situational analysis helps to break down the dichotomy between material and ideological explanation by revealing that both approaches are subsets of situational explanation (Koertge 1985, 130–131).

Finally, situational analysis need not be used solely for the construction of models of typical social situations. Popper also sees situational analysis as the principle method for explaining particular social events—that is, as the method of history (*OK,* 186–190). As with the construction of situational models, Popper recommends that we ignore psychological factors and assume that the actions of a historical figure are guided by the rationality principle. Rather than a real person who holds particular and specific theories about the world animating a particular historical situation, an abstract typical person with abstract typical aims and beliefs animates a typical situation.[8]

AGAINST PSYCHOLOGISM AND CONSPIRACY THEORIES

To fully understand Popper's situational analysis, it will be helpful to contrast it with what Popper viewed as competing but flawed approaches to social inquiry—psychologism and conspiracy theories of society.

Psychologism

Popper offers the rationality principle as a superior substitute for what he labels "psychologism." Psychologism, a view that Popper ascribes to John Stuart Mill and unnamed others, is the belief that social behavior and social institutions are ultimately "reducible to the psychological laws of 'human nature'" (*OSE II,* 89). According to proponents of psychologism, the proper aim of

social science should be to uncover such laws of human behavior and then use them to explain complex social phenomena—in the same way that, say, astronomers use the laws of physics to explain celestial phenomena. Proponents of psychologism, Popper says, would seek to animate a situational model with laws of human psychology rather than the rationality principle. That is, when trying to determine what a person would do in a specific situation, instead of asking what would be rational for the person to do, the doctrine of psychologism says that we should determine what behavior the laws of human psychology would dictate. Presumably, such laws would be uncovered through social and psychological experiments or by surveying historical and social data. Popper also compares psychologism to "behavioristic" approaches to social explanation (*OSE II,* 90).

In chapter 14 of *The Open Society,* Popper mounts a concerted attack on psychologism, arguing that it is both philosophically dubious and impossible in practice. His primary objection to psychologism is grounded in his claim that human actions can never be explained by citing psychological motives only; a complete explanation will always include reference to the situation faced by the human actors, especially the social components of the situation (*OSE II,* 90). To illustrate this point, Popper asks us to consider a person seeking to buy a consumer good (*OSE II,* 96). A certain set of psychological facts about the person—say, his *desire* to purchase a television or his *belief* that this particular model is the best—might motivate the person to buy the television. However, those same psychological facts might produce different social effects if the situation facing the person were different. In one circumstance, his purchase of the television might contribute to a rise in the price for televisions (by increasing demand for the product). But in another market situation, his action might lower the price of television, (say, by making its mass production more profitable). Whether the person's actions decrease or increase the price of the good is dependent upon a host of situational factors—such as the number of televisions available or the number of buyers appearing on the market—that are clearly not reducible to psychological facts about individuals. Popper's point is that mere reference to a person's desires and beliefs will seldom be sufficient to explain all social phenomena. One must also make reference to the social situation that they confront. In this sense, social inquiry cannot be reduced to psychology.

Popper says advocates of psychologism generally concede that social explanations must make reference to the social environment, but they claim that the *formation* of human institutions can, at least in principle, be explained solely by human psychology. Thus strict adherence to psychologism forces one to trace the formation of social institutions back to the origin of society, where presumably psychological drives and dispositions were free of social influence. From that vantage, one could supposedly show how the laws of human psychology produced social institutions. Popper shows that Mill himself realized that social institutions affect human behavior and that therefore he was led to

the conclusion that an explanation of human behavior and social phenomena that relied solely on psychological descriptions would have to begin with human society's beginning. But this would be an impossible task, Popper claims, for at least two reasons.

First, humans—or what later evolved into Homo sapiens—were social before they were human. Thus in order for such a reduction to be possible even in principle, a presocial "man" would have had to exist prior to society. But this is a historical myth, of course; prehuman primates and their societies evolved together for millions of years before Homo sapiens arrived on the scene. Second, even granting that a presocial man once existed, it would still be impossible in practice to reconstruct the course of history and, in particular, the development of social institutions, owing to the incredible complexity of the exercise and to our vast ignorance of the subject. Mill himself was quite aware of this latter problem, as he makes plain in an observation from Book VI of his *System of Logic:*

> I do not think any one will contend that it would have been possible, setting out from the principles of human nature and from the general circumstances of the position of our species to determine *a priori* the order in which human development must take place, and to predict, consequently, the general facts of history up to the present time. After the first few terms of the series, the influence exercised over each generation by the generations which preceded it becomes . . . more and more preponderant over all other influence. . . . So long a series of actions and reactions between Circumstance and Man [i.e., human nature], each successive term being composed of an ever greater number and variety of parts, could not possibly be computed by human faculties from the elementary laws which produce it. (1987/1872, 104–105)

Simply put, after "the first few terms of the series," the social environment would become the dominant influence on human behavior (*OSE II,* 91–93). Popper agrees, but goes on to claim that human nature itself—which he defines in terms of "hopes, fears, and ambitions"—is largely a by-product of social institutions, and as such, he says, it would make more sense to try to reduce human psychology to its social roots rather than the other way around (*OSE II,* 93–94).

Popper further argues that psychologism fails to appreciate the fact that many, perhaps most, of our social institutions are not consciously designed. They are, rather, the unintended—and often unwanted—by-products of human actions. He compares social institutions to animal paths cut through a dense forest (*OK,* 117). Such paths usually arise without any creature's intention; rather, they emerge over time as one animal after another follows the tracks laid down by others before it. The same is often the case with human-made paths, too. Of course, in one sense, such paths are the product of human intention, insofar as they result from individuals' intentions to pass through the forest. But, in most cases, nobody ever intended to create the path as such. Further,

once the path emerges, it creates its own set of constraints and problems that affect human behavior and even human aims. Similarly, most social institutions are the product of a slow accretion of countless human actions. The institution of the "free market," for instance, emerged in Europe over hundreds of years, beginning perhaps with small exchanges of goods between traveling salesmen and local nobility at medieval fairs. Over time, tariffs between local principalities and fiefdoms were relaxed or eliminated, the notion of a "just price" gradually gave way to the notion of a fair market price, standards and norms of bookkeeping emerged, and so on (Heilbroner 1954, 18–41). No one ever intended to create such a market; it simply emerged as the aggregate result of countless individual acts over many centuries. In fact, there was a lag between emergence of the institution and full consciousness of it as an institution.

Conspiracy Theories of Society

In addition, not only are institutions rarely the product of human design, but the same also holds true for most social events and phenomena, such as wars, recessions, poverty, and unemployment. Popper calls the belief that the social world is the result of human design the "conspiracy theory of society" (*OSE II,* 94–95; *CR,* 123–124). This belief entails the view that history is largely the product of powerful individuals—capitalists, aristocrats, and politicians—manipulating the world for their own interests. But attempting to explain social phenomena by uncovering conspiracies is the very opposite of good social science, Popper claims. Owing to the immense complexity and general unpredictability of the social realm, attempts by the powerful to manipulate it—especially covert attempts—will usually come to naught, or even backfire. This being the case, the aim of social inquiry should not be to show how individuals with various aims achieve their goals; rather, the "main task" of social science should be to uncover the unintended consequences of human action or to lay bare the "less obvious dependencies with the social sphere" or the "unintended social repercussions of intentional human actions" (*OSE II,* 94–95). In fact, Popper contends, to the extent that human action produces its desired effect, there is no problem for social science to study.

Popper claims that the conspiracy theory of society is widely held but he seems to view it is as mainly a "folk" or vulgar theory of society rather than an influential view among serious social theorists. However, though the conspiracy theory is generally false and enjoys little respect among informed social observers, to understand and explain much political phenomena it is important to acknowledge that many political actors in history have subscribed to the conspiracy theory and acted to counter it. Hitler, Popper says, tried to thwart the (nonexistent) conspiracy of the Learned Elders of Zion. "Vulgar Marxists" effectively adhere to a conspiracy theory of society—for instance, they hold that the impoverishment of the working class is the

result of a conspiracy by capitalists. But, Popper claims, Marx himself held no such view. Marx believed that capitalist and worker alike were caught up in social situation that resulted in such phenomena as overproduction of goods, declining wages, and economic depressions that nobody intended. In fact, Popper cites Marx as an early and forceful critic of the conspiracy theory of society (*CR,* 125 n. 3).

METHODOLOGICAL INDIVIDUALISM

Understanding Popper's opposition to psychologism proves key to illuminating an important but somewhat confusing aspect of his philosophy of social science—namely, his embrace of methodological individualism (*OSE II,* 98, 323 n. 11). Popper tells us that psychologism shares with methodological individualism a "sane opposition to collectivism and holism" (*OSE II,* 91). That is, psychologism "rightly insists that the 'behavior' and the 'actions' of collectives, such as states or social groups, must be reduced to the behavior and to the actions of human individuals" (ibid.). So, having just declared "the autonomy of sociology" and rejected reductionistic psychologism, Popper now tells us that we must "reduce" the behavior of collective entities to that of individuals. At first glance, this injunction might seem to contradict Popper's rejection of psychologism. But the following analysis will show, I hope, that there is no contradiction here.

Popper's support for methodological individualism is a well-known feature of his philosophy and dates back to his earliest writings on social science. With the possible exception of J. W. N. Watkins, whose work drew largely on Popper, Popper is cited as an authority on methodological individualism perhaps more frequently than any other thinker. Indeed, in scholarly essays on methodological individualism, it is practically de rigueur to begin with a nod to Popper's contributions to the topic (see, for instance, Lukes 1994, 451; Miller 1985, 459; Little 1998, 25 n. 1). However, despite Popper's emphatic, even impassioned support for methodological individualism, the version of the doctrine that he supported is actually rather trivial and perhaps should not even be considered a form of methodological individualism at all. In fact, Popper wrote surprisingly little about methodological individualism per se; instead, he devoted much more ink to describing what he saw as its methodological rivals—psychologism and an approach he dubbed "methodological collectivism." As such, deciphering Popper's understanding of methodological individualism is largely an exercise in discerning what it is not. That said, we can begin our examination of Popper's understanding of methodological individualism by considering the few and scattered places in Popper's work where he comes close to defining the term.

We have just seen that in chapter 14 of *The Open Society and Its Enemies* Popper claims that methodological individualism "insists that the 'behavior' and the 'actions' of collectives, such as states or social groups, must be reduced

to the behavior and to the actions of human individuals" (*OSE II,* 91). Later in the same chapter Popper adds that methodological individualism

> lends support to the important doctrine that all social phenomena, and especially the functioning of all social institutions, should always be understood as resulting from the decisions, actions, attitudes, etc., of human individuals, and that we should never be satisfied by an explanation in terms of so-called "collectives" (states, nations, races, etc.). (*OSE II,* 98)

And in *The Poverty of Historicism,* Popper described methodological individualism as the

> quite unassailable doctrine that we must try to understand all collective phenomena as due to the actions, interactions, aims, hopes, and thoughts of individual men, and due to traditions created and preserved by individual men. (*PH,* 158)

Unfortunately, these three passages represent about all that Popper offers by way of definition of methodological individualism; and there is a fair amount of ambiguity in these accounts. For instance, his claim that social phenomena should be viewed as due to the actions of individuals *does* seem "quite unassailable" if Popper is merely claiming that the actions of individuals must *somehow* figure into an explanation of a social event. So much seems self-evident, thus it is hard to imagine what doctrine Popper is implicitly attacking. But perhaps Popper is making a stronger claim. He does call for the actions of social groups to be "reduced" to those of individuals, but it is by no means clear what such a reduction would entail for Popper. However, we already know, given our previous discussion of Popper's anti-psychologism, that Popper was adamantly opposed to attempts to reduce sociology to psychology.

To help determine just what type of reductionism Popper has in mind, it will be helpful to consider Steven Lukes's examination of methodological individualism and reductionism in his widely cited essay on the topic (1994). We can start by noting that Popper's account of methodological individualism at first glance seems roughly equivalent to the definition offered by Lukes. After surveying the relevant literature, Lukes defines methodological individualism as the claim that "facts about society and social phenomena are to be explained solely in terms of facts about individuals" (Lukes 1994, 452). However, just as with Popper's definition (and as Lukes acknowledges), there is a good deal of ambiguity as to what should be permitted to count as facts about individuals.

Lukes suggests that there are at least four possible types of facts about individuals that methodological individualism can permit (ibid.). Type (1) facts describe humans as material objects. These sorts of facts neither refer to nor presuppose anything about human consciousness, much less anything about individuals' social relations. Such facts would include descriptions of brain states or human genetic properties. Permitting only these sorts of facts,

an adequate explanation of some social event—say, a revolution or presidential election—would have to be reduced to facts about patterns of neural firings in individuals' brains or to facts about their DNA structure. Obviously, Type (1) facts entail an extreme reductionism. Not only do Type (1) facts bar any inclusion of facts about social relations, but they also bar descriptions of facts about human consciousness.

Type (2) facts, as defined by Lukes, are descriptions of psychological dispositions or psychological processes that presuppose human consciousness but need not require any reference to social groups or institutions. Aggression, gratification, aversion, excitement, stimulus-response, and imprinting would be included among such facts.

Type (3) facts are what we might call minimally social facts about individuals. Included in Type (3) facts would be such concepts as power, authority, cooperation, anomie, and conflict. These sorts of facts do presuppose a social context, but they do not presuppose any *particular* type of social institution. For instance, this approach might describe a person as wielding a certain amount of power without describing the particular institution wherein he or she wields that power. One could simply say that a person exercised power over a certain number of other individuals.

Finally, we arrive at the least restrictive Type (4) facts. These types of facts are maximally social because they refer to particular social institutions or groups, or to particular types of institutions or groups. Such facts might include descriptions of individuals voting, cashing checks, getting baptized, issuing an injunction, or using cash to purchase a car. These facts, in turn, respectively presuppose a democratic government, a banking system, a church, a legal system, and a monetary system. Obviously, most explanations of social phenomena, whether those of laymen or social scientists, are replete with Type (4) facts.

We are now in a better position to consider what Popper might have meant when he called for explanations of social phenomena in terms of the behavior of individuals. First, it is clear that Popper would have rejected any call for social science to be reduced to Type (1) facts. We shall see in chapter 2 that Popper, swimming against the tide of materialism, argued that it is impossible to reduce mental states to brain states. But here we can simply note that Popper's anti-psychologism would surely rule out this version of methodological individualism. He could hardly argue the impossibility of reducing sociology to psychology while at the same time advocating that sociology be reduced to biology. We should note that very few serious thinkers want to reduce social science to Type (1) facts. Even if such an approach were possible in principle—which is doubtful—the technical knowledge needed to produce such an explanation is eons away, if it will ever be attained.

It is also evident that Popper would reject the claim that in the social sciences explanations must be couched solely in terms of Type (2) facts. Again, given Popper's rejection of psychologism, his version of methodological individualism

surely cannot be interpreted to permit only such nonsociological, psychological dispositions into an explanation of a social event. As we saw above, Popper emphatically rejected Mill's claim that social events and facts can be explained by reference to "the psychology of 'human nature'" alone (*OSE II,* 90). This would surely encompass such traits as indolence or propensity toward violence, as well as more obviously socially oriented human traits.

Upon initial inspection, it appears that Popper's recommendations for social science might be compatible with explanations limited to Type (3) facts. However, these minimally social facts are still too confining for Popper's version of methodological individualism. In fact, Popper explicitly rejects the claim that social science can be reduced to these sorts of facts. He admits, for instance, that such "psychological facts" about individuals as "the craving for power" are no doubt important for the study of politics. But he adds that craving for power is "undoubtedly a social notion as well as a psychological one," by which he means that to gain a complete understanding of this craving, we would have to trace its development within the framework of some particular social institution, such as the family (*OSE II,* 97). In other words, to understand the craving for power, we would have to examine the social institutions and the socialization process that help to inculcate such psychological dispositions in an individual. Popper also says that such psychological concepts as love, ambition, and even his own notion of the "strain of civilization"—a feeling of uneasiness that Popper says is the cost of living in an open society—are both psychological *and* sociological concepts because they cannot be fully characterized without relating them to the social situation (*OSE II,* 98). So it is clear that for Popper explanation of social phenomena by means of such minimally social concepts as power and authority would require reference to specific social situations.

We are left to consider Type (4) facts, and there is no doubt that Popper permits—in fact, requires—the inclusion of these types of facts into social explanations. Popper, who dubs his approach to social inquiry "institutionalist," is quite explicit on this point (*OSE II,* 90). Institutionalists

> can point out, first of all, that no action can ever be explained by motive alone; if motives (or any other psychological or behaviorists concepts) are to be used in the explanation, then they must be supplemented by a reference to the general situation, and especially to the environment. In the case of human actions, this environment is very largely of a social nature; thus our actions cannot be explained without reference to our social environment, to social institutions and to their manner of functioning. (*OSE II,* 90)

Elsewhere, Popper even goes so far as to assert that the chief goal of social inquiry should be the analysis of "abstract relations." By this he appears to mean that social scientists should analyze the rules and regulations that govern individuals' behaviors, as opposed to analyzing the actual individuals who are governed by such rules and regulations (*OSE I,* 175).

Noting that Popper called for social explanations that include references to the social situation, Lukes registers some puzzlement as to why Popper (and Watkins, too) insisted on calling his position methodological individualism (Lukes 1994, 457).[9] And it is puzzling. If Popper permits maximally social propositions into social science's explanations, what type of social explanation is he conceivably rejecting? Surely Popper envisioned his version of methodological individualism as barring some types of explanations. The answer, I think, is that Popper's main goal in developing his account of methodological individualism was to counter what he believed to be a widespread but deeply misguided approach to social inquiry—the approach he dubbed "methodological collectivism." This is the approach that he accused Hegel and, at times, Marx of employing.[10] It entails the belief that some sort of transcendent entity or suprahistorical force can impose its will on individuals and thereby produce social phenomena. In other words, supraindividual entities are deemed to be prior to individuals in order of explanation; individuals are merely puppets to such forces. For Hegel, Popper says, this force would be the "national spirit"; for Rousseau, it would be the "general will" (*PH*, 148–149). Another holistic entity would be Reason, in the Hegelian sense, which directs the dialectical march of history. Watkins seems to have had something like Popper's methodological collectivism in mind when he attacked "*sinister*" or "*in*human" social explanations (Watkins 1994, 445; his italics). Watkins says that these types of explanations account for social phenomena not in terms of "human factors," but rather in terms of "an alleged historicist law which impels people willynilly along some predetermined course" (ibid.). In contrast to the methodological collectivist, "the methodological individualist denies that the individual is ever frustrated, manipulated or destroyed, or borne along by irreducible sociological or historical *laws*" (Watkins 1994, 450 n. 8).

Watkins's comments not only help elucidate Popper's discontent with methodological collectivism, but they also intimate a link between historicism—the view that the aim of social science is to predict the course of history—and methodological collectivism. Popper viewed methodological collectivism and historicism as natural allies (*PH*, 71). Historicists often posit some holistic entity—for example, the Nation or Reason—that subsumes and controls individuals and thereby determines the course of history. However, we should note that for Popper historicism need not entail methodological collectivism. Popper argued that Mill was at once an historicist and a proponent of psychologism. For Mill, it was human nature that ultimately determined history's procession rather than some holistic or suprahistorical force.

Given our analysis, how should we understand Popper's version of methodological individualism? It appears that Popper intended something like this: Explanations in social science always require a description of individuals acting within social situations. The agency of the individual can never be made subservient to the will of some holistic entity; it is ultimately the individual

that animates the social world and never the other way around. At the same time, however, the social situation cannot be reduced to facts about individuals—whether as isolated beings, psychological entities, or material properties. In fact, most of the work involved in developing a situational model will be dedicated to producing a description of the social situation. The actions of the individual, on the other hand, will be assumed to be guided by the rationality principle regardless of the situation.
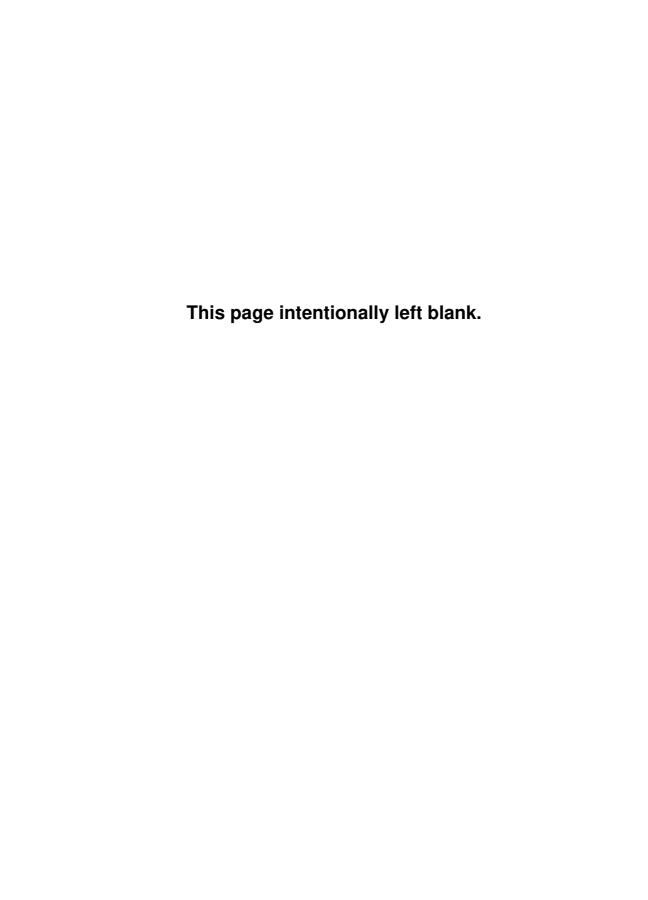
The Ethics of Methodological Individualism

Popper's strong opposition to methodological collectivism cannot be explained solely on methodological grounds. As noted above, Popper considered methodological individualism to be not only methodologically mandatory, but ethically mandatory as well (Stokes 1998, 80; Lukes 1994, 454). For Popper, the methodological priority of individuals was linked to the moral priority of individuals. This is a prominent theme in *The Open Society* as well as *The Poverty of Historicism* (see *OSE I,* 86–119). In both works, Popper repeatedly warned against the dangers of presuming that holistic entities such as the state or the nation have wills or interests of their own that somehow supersede or transcend those of individuals (*OSE II,* 98–99). Social science based on methodological individualism, he believed, would mitigate the danger of reifying such holistic entities. In *The Poverty of Historicism,* Popper goes so far as to claim that methodological individualism is a "democratic-individualist" approach to social investigation, whereas methodological collectivism entails a "collectivist-nationalistic" stance (*PH,* 148). Popper feared that belief in the reality of collective "spirits" would lead to injustice and suffering on the part of individuals in the name of the "interests" of states or nations or tribes. This was his moral indictment against Plato and Hegel—that they sacrificed the individual on the altar of, respectively, the city and the state. For Popper, methodological collectivism was the handmaiden to the "totalitarian justice" of Platonism and Hegelianism. As we have seen, Popper believed that social institutions and entities have a reality insofar as they influence individuals,[11] but he argues that it does not follow from this that institutions themselves have interests or needs or goals. Institutions exist solely for the interests and needs and goals of the people who compose them. Popper espied a methodological parallel to this point, namely that the existence as well as the behavior of collective entities—states, nations, institutions—are always dependent upon the existence and behavior of individuals. In Popper's words, we need people to "animate" social entities. But, as Popper realizes, it does not follow from this that the behavior of collective entities is *reducible* to the actions of individuals

Thus Popper tries to find a sensible middle ground with his version of methodological individualism and his attack on psychologism and methodological collectivism. Although clarifying his position is made difficult in part

by his confusing labels, for Popper, methodological collectivism is the belief that the attributes and behavior of a collective entity are prior to and independent of the attributes and behavior of individuals. One wonders if any serious thinker actually advocates such a bizarre and seemingly indefensible position. Popper's other methodological opponent—psychologism—is, at first glance, more plausible, but as Popper makes clear, it too is an untenable reductionisistic strategy. It seems, then, that Popper must reject both approaches if sociology is to remain largely autonomous from psychology.

SUMMARY

The goal of this chapter has been to introduce Popper's theory of situational analysis. To bring situational analysis into sharper relief, we also considered some approaches to social science that Popper rejected—namely, psychologism and methodological collectivism—as well as one important social science doctrine that he embraced, methodological individualism. In the following chapters, we will further explore (and sometimes criticize) situational analysis by considering Popper's encounters with positivism, hermeneutics, economics, Marxism, and psychology.

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Metaphysics, Realism, and Situational Analysis

The previous chapter introduced Popper's situational analysis and considered how it relates to other aspects of his philosophy of social science, including his support for methodological individualism and his rejection of psychologism, conspiracy theories, and methodological collectivism. This chapter and chapter 3 will place situational analysis within the even broader framework of Popper's overall philosophy, especially his philosophy of natural science and his metaphysics. Tracing Popper's encounter with positivism provides a guide for elucidating his philosophy of natural science, given that he developed his most important ideas on scientific explanation in the 1920s and '30s largely in response to the positivism dominant at that time. By the end of this chapter and the next, I hope to accomplish two goals. The first is to offer a more refined and modestly reformulated understanding of situational analysis. The second is to produce a richer understanding of Popper's overall philosophy of science, which will include noting some potential problems and inconsistencies in his thought.

This chapter will attempt to enrich our understanding of Popperian social science by reflecting upon Popper's response to four tenets of positivism—verificationism, empiricism, antimetaphysics, and antirealism. Popper, we will see, made important modifications to the first two tenets and totally rejected the latter two. Our emphasis will be on Popper's defense of metaphysics and scientific realism because Popper's stance toward these two doctrines has especially important ramifications for situational analysis. In particular, we will consider Popper's own contribution to metaphysics and ontology—namely, his theory of Worlds 1, 2, and 3—and the realist understanding of social entities it entails. Our examination of Popper and positivism will continue in chapter 3, where we consider his response to three other key tenets of the doctrine—skepticism toward causes, the covering-law model of explanation, and the unity of scientific method.

THE VIENNA CIRCLE'S POSITIVISM

To help assess Popper's relation to positivism, I want to present a sketch of the key ideas that undergird the doctrine. Such an account is necessary because today the term *positivism* is often used loosely and often used as a term of abuse. For many critics of positivism, the doctrine means nothing more than the attempt to model the social sciences on the natural sciences or, even more broadly, any attempt to quantify social phenomena.[1] Further, positivism is often—and wrongly—associated with political conservatism. In fact, nearly all of the key figures of twentieth-century positivism were leftists, and some—including Otto Neurath, Rudolf Carnap, and Moritz Schlick (who was killed by a Nazi student)—were socialists with Marxist leanings (Hacohen 2000, 186–195; Ayer 1959, 6–7). In order to understand Popper's philosophy we will need to understand the positivism that he was reacting to and eventually claimed to have "killed"—namely, the logical positivism of the Vienna Circle (*UQ,* 88).

Positivism, needless to say, has a long history. Following the hints of his teacher Saint-Simon, August Comte coined the term *positivism,* although the deeper roots of the doctrine can be traced to the British empiricists, such as Bacon, Locke, and Hume, in addition to its French sources. These thinkers emphasized the primary importance of sensory or empirical data in producing our knowledge of the world and expressed skepticism toward any assertion that could not be verified by empirical observation or demonstrated through logical or mathematical analysis. Leszek Kolakowski, in his history of positivism, described the essence of the doctrine as follows:

> Defined in the most general terms, positivism is a collection of prohibitions concerning human knowledge, intended to confine the name of "knowledge" (or "science") to those operations that are observable in the evolution of the modern sciences of nature. More especially, throughout its history positivism has turned a polemical cutting edge to metaphysical speculation of every kind, and hence against all reflection that either cannot found its conclusions on empirical data or formulates its judgments in such a way that they can never be contradicted by empirical data. (Kolakowski 1968, 9)

The central importance of sensory data and the skepticism toward metaphysics remained the key ideas animating the version of positivism developed in the 1920s and 1930s by the Vienna Circle, which included such thinkers as Rudolf Carnap, Otto Neurath, Herbert Feigl, Carl Hempel, A. J. Ayer, and the young Ludwig Wittgenstein (Ayer 1959, 3–28; Hacking 1983, 41–57; Hacohen 2000, 41–57; Joergensen 1970; Kolakowski 1968, 174–206). It is the Vienna Circle's account of scientific knowledge and explanation, usually referred to as "logical positivism" or sometimes "logical empiricism," that philosophers of natural science generally have in mind when they speak of positivism (with or without a preceding adjective). As with any philosophical

movement, there were significant differences among the views held by prominent members of the Vienna Circle. Still, the core ideas of the Vienna Circle's positivism can be identified, which I have broken down into seven key tenets. These tenets are, admittedly, simplifications that overlap considerably. Moreover, in developing these tenets, I have been influenced by Popper's reaction to positivism as he defined the doctrine. It may be that Popper so urgently wished to demonstrate that he had killed positivism that he simplified or distorted the doctrine in order to make it an easier target. But since my goal is to elucidate Popper's ideas, and not to develop a separate nuanced historical account of positivism, this simplification of positivism is acceptable for my purposes.

The seven tenets are as follows: (1) *Primacy of sensory data:* data gained through the senses provides the foundation for our knowledge of the world. (2) *Verificationism:* the only statements or theories worthy of being called scientific are those that have been shown to correspond to empirical facts via observation and experiment. (3) *Antimetaphysics:* statements that cannot in principle be verified by empirical observation are, strictly speaking, meaningless. (4) *Antirealism:* unobservable entities, structures, and mechanisms invoked by scientists are at best useful fictions that help us organize phenomena, but they do not really exist. (A weaker formulation of this tenet is that scientists must remain agnostic about the existence of unobservables because it is impossible to establish their reality.) (5) *Skepticism about causes:* necessary connections between events cannot be demonstrated empirically and lie outside of legitimate science. Thus positivists often interpret the claim that one event causes another as nothing more than the claim that the first event always precedes the second event. (6) *Support for deductive-nomological or "covering-law" explanation:* explanation of an event requires demonstrating that the event was logically necessary given certain initial conditions and the presence of one or more universal laws of nature. (In its strongest formulation, positivism denies that science explains anything; rather, it claims that science merely organizes phenomena or experience). (7) *Unity of scientific method:* the above six principles embody the one, true path to knowledge about the social as well as the natural world.[2]

VERIFICATIONISM, EMPIRICISM, AND METAPHYSICS

Popper was often called a positivist by philosophical friends and foes alike, but this was a label that he adamantly rejected (see *UQ,* 87–90; and *ISBW,* 89). In fact, his first major published work, *Logik der Forschung,*[3] was largely an attack on the Vienna Circle, and Popper himself described that work as such (*ISBW,* 89). The essence of the Vienna Circle's positivism, Popper contends, was a combination of Ernst Mach's claim that "nothing exists other than sensations," Comte's doctrine that "[k]nowledge consists of *descriptions of facts (and not of explanations and hypotheses),*" and Bertrand Russell's "'logistic' philosophy

of mathematics" (ibid.; Popper's italics). But Popper held that his own philosophy was anathema to the Vienna Circle's because he was "an anti-inductivist; and anti-sensationalist; a champion of the primacy of the theoretical and the hypothetical; a *realist*" (ibid.; Popper's italics). Let us consider Popper's reasons for describing himself this way by exploring his positions vis-à-vis the tenets of positivism that I have identified.

Regarding (1), *the primacy of sensory data,* Popper argued that there are no unmediated, theory-free observation statements that scientists can use to construct or corroborate theories (*LcSD,* 422–424). Popper insisted that conjecture about the world always precedes observation. Even in our simplest encounters with our environment, expectation about the world is prior to our experience of it and indeed makes experience possible; there is no such thing as pure experience for Popper. Of course, Popper did not deny the importance of empirical investigation and experiment for testing theories. But he adamantly rejected the contention that genuine knowledge is obtained by purifying the data we receive via our senses—an approach he derisively referred to as the "bucket theory of the mind" (*OK,* 258–259, 341–347). Popper also insisted that the objectivity of science does not depend upon purification of sensory data; rather it depends on the critical spirit of scientists—that is, their willingness to put theories, whether their own or those of others, to the test—and on institutional settings that permit free exchange of ideas and criticism (*OSE II,* 217–220).

Popper's rejection of (2), *verificationism,* was part of his most famous and important contribution to philosophy of science, namely his claim that falsifiability rather than empirical verifiability distinguishes science from nonscience. In contrast, the logical positivists held that empirical verifiability demarcated science from nonscience. But Popper argued that theories, hypotheses, conjectures, or presumed laws of nature can never be proved true no matter how many times they have been corroborated by empirical observation. This insight, which marked Popper's most fundamental criticism of the logical positivists, stemmed from Hume's notorious problem of induction. In the eighteenth century, Hume had scandalized philosophy when he pointed out that our (supposed) knowledge of the world relies upon induction: from repeated, observed instances of some phenomenon we reach conclusions about unobserved instances of that phenomenon. Such reasoning leads us to conclude, for instance, that the sun will rise again tomorrow, that bread nourishes, that water flows downhill. Moreover, the laws of nature discovered by natural science, Hume held, are no different in kind. We conclude that the law of gravity will continue to hold true merely because it has repeatedly done so in the past. But such knowledge can never be rationally justified, Hume argued, because induction is always logically invalid. As Popper put the matter, "rationally, or logically, *no amount* of observed instances can have the slightest bearing on unobserved instances" (*PS,* 107). The problem of induction plunged Hume into radical skepticism, concluding that neither our common sense beliefs about the world nor the laws of nature discovered by science could ever obtain the status of justified knowledge. However,

despite the logical invalidity of induction, Hume argued that induction remains psychologically compelling. We are psychologically wired to expect that future experiences will conform to the patterns of past experiences of the same kind. Or, in Hume's language, "custom and habit" derived from repetition compel us to believe that fire warms, water quenches thirst, and unsupported objects always fall to earth, even as philosophical reflection convinces us that such beliefs are unwarranted.

Popper agreed with Hume that induction is invalid, but disagreed with Hume's claim that humans (and other animals) nonetheless rely upon induction to reach conclusions about the world. "The belief that we use induction is simply a mistake," he said. "It is a kind of optical illusion" (*PS,* 104). Humans do not develop expectations about their world through repeated observations of instances; instead, Popper argued, the opposite is the case. Expectation precedes observation:

> Without waiting, passively, for repetitions to impress or impose regularities upon us, we actively try to impose regularities upon the world. We try to discover similarities in it, and to interpret in terms of laws invented by us. Without waiting for premises we jump to conclusions. These may have to be discarded later, should observations show that they are wrong. (*CR,* 46)

The pursuit of knowledge about our world always begins with hypotheses, expectations, theories, or guesses, and we learn only when we put them to the test. All human knowledge, including scientific theories and purported laws of nature, is thus conjectural and grows through trial and the elimination of error. We learn about the world, Popper said, when our expectations prove false. Hume was correct when he argued that no repeated confirmations of our theories can demonstrate their truth. For this reason all empirical knowledge remains fallible, and the pursuit of *demonstrable* knowledge about our world must be in vain. However, though we cannot be rationally justified in holding that a theory is true, we may be justified in holding that it is false:

> Thus we can say: Hume was right in his negative result that there can be no logically valid positive argument leading in the inductive direction. But there is a further negative result; there are logically valid negative arguments leading in the inductive direction: *a counterinstance may disprove a law.* . . . But the second negative result concerning the force of counterinstances by no means rules out the possibility of a positive theory of how, by purely rational arguments, we can *prefer* some competing conjectures to other. (*PS,* 111)

We may rationally conclude that those theories that make daring, wide-ranging conjectures about the universe—and have withstood rigorous attempts to falsify them—are preferable to timid and untested theories (*LScD,* 112–135; *OK,* 1–31). Accordingly, Popper held that the only theories worthy of the being called scientific are those that are susceptible to falsification, and the more susceptible, the better.

With respect to (3), *antimetaphysics,* Popper held that metaphysical specu-
lation, while unfalsifiable, could nonetheless be rationally criticized (*CR,*
193–200). Indeed, far from being an opponent of metaphysical discourse, Pop-
per devoted much of his time and effort in his later years to developing elabo-
rate arguments in favor of metaphysical theories. Among the metaphysical
doctrines that he defended were free will, indeterminism, scientific realism,
and his theory of an ontological realm of abstract and autonomous thought
that he dubbed "World 3."[4] Moreover, Popper maintained that all scientific
theories contain metaphysical elements that cannot be purged, although he
did encourage, to the extent possible, their elimination in order to make the
theory more testable (*RAS,* 179). In addition, Popper contended that meta-
physical theories with apparently no testable consequences may one day
become testable. As an example he cited atomic theory, originally an unfalsifi-
able metaphysical conjecture when first proposed by Democritus (*OSE II,*
299). Popper might also have characterized ancient Greek theories about the
composition of planets and stars as metaphysical theories that later became
scientific when techniques were developed to test them. Of course, once a the-
ory becomes testable, it is by definition no longer metaphysical. However, Pop-
per admitted that many metaphysical problems are likely to remain so forever,
such as the problem of other minds and the determinism versus indetermin-
ism debate.

But how can we assess the validity of a metaphysical theory, given that it
is, by definition, incapable of being falsified by empirical evidence? Though
metaphysical conjectures are unfalsifiable, Popper said, they can still be subject
to critical discussion. He claimed that we should prefer theories that are more
consistent with well-corroborated knowledge, prove better at solving problems
than other theories, and generate solutions to related problems (that is, prove
to be "fruitful") (*CR,* 199). But how does one assess whether a metaphysical
theory "solves" a problem better than its competitor if one cannot use logical
analysis or empirical evidence as the final court of appeal? Popper was vague
here, but his criteria for evaluating a metaphysical theory are akin to the crite-
ria used in assessing the persuasiveness of a textual or historical interpretation.
Though Popper himself does not explicitly make this claim, he comes close to
doing so in *The Open Society.* Remarking on his interpretation of Plato, Popper
says that he does not

> claim scientific status for [his interpretive] method, since the tests of an his-
> torical interpretation can never be as rigorous as those of an ordinary [scien-
> tific] hypothesis. The interpretation is mainly a *point of view,* whose value lies
> in its fertility, in its power to throw light on historical material, to lead us to
> find new material, and to help us rationalize and to unify it. (*OSE I,* 171;
> Popper's italics)

The parallel between this description of the merits of a good interpretation
and a good metaphysics is obvious. Most importantly, neither an interpretation

nor a metaphysical theory can be decisively falsified by empirical evidence (which is not to say that empirical evidence cannot be of some importance in reconstructing an historical event or a text's meaning). I might elaborate on this comparison by noting that, in general, assessing the validity of an interpretation of, for instance, a particular passage from a novel will entail assessing how well it fits with the overall theme or context of the novel as well as, perhaps, the social context in which the novel was written. In turn, assessing the overall theme of the novel will require interpretation of the individual passages that compose it. The pattern is therefore, to some extent, circular—thus the so-called hermeneutic circle. Unlike scientific inquiry, there is no way, as it were, to break out of the circle and anchor the interpretation to something that is purportedly beyond human judgment—namely, empirical evidence. But though we lack such an external reference point in textual interpretation, it hardly follows that all interpretations of a text are totally arbitrary or that any interpretation is as good as the next. Similarly, while a metaphysical theory can never be definitively falsified, much less verified, we can say that some metaphysical theories seem more plausible and more consistent with other knowledge. And surely lack of falsifiability in no way makes metaphysics meaningless, as the positivists would have it. In chapter 3 I will suggest that the falsifiability of a situational model lies somewhere between empirical testing of a scientific theory and interpretation of a text. This, in part, stems from the inability of situational models to produce precise predictions, which in turn stems from the absence of lawlike regularities in the social world and in human psychology.

POPPER'S METAPHYSICAL AND SCIENTIFIC REALISM

Among the metaphysical theories that Popper embraced was realism; thus he rejected (4), *antirealism,* and the instrumentalism implicit in it as well (*OK,* 37–44; *RAS,* 80–88; *SIB,* 9–10). When Popper defended realism, he was often concerned with the mostly uncontroversial view that the objects of our everyday experience are real and partly cause our experiences rather than being creations of our own mind (idealism). Popper dubbed this common-sense approach "metaphysical realism." He acknowledged that metaphysical realism could neither be corroborated nor falsified via empirical investigation, nor conclusively demonstrated through logical argument. Any conceivable evidence corroborating the claim that there is a real world "out there," could always be countered by the assertion that the evidence itself is just a dream. Nonetheless, metaphysical realism is much more plausible than idealism, Popper contended. Citing an argument against idealism by (surprisingly) Winston Churchill, Popper notes that our senses are not our only portals to the external world. Churchill argued that one could use machines equipped with sensory devices to independently verify the existence of certain objects in the external world, such as the sun (*OK,* 43–44). But, Popper acknowledges, someone could always

claim that the machines themselves were a dream or otherwise a product of the human mind. This argument against realism is "silly," Popper admits, but he also acknowledges that it cannot be disproved (ibid.). Against the most extreme form of idealism, namely solipsism, Popper makes the following argument. He says that he has experienced many amazing creations that he cannot conceive of having produced—Bach's musical compositions and Shakespeare's plays, or even cartoon illustrations and television advertisements (*RAS*, 83; *OK*, 41). Solipsism implies that his mind somehow subconsciously generates such creations—an exceedingly bizarre and improbable result that, in addition, "amounts to megalomania" (*OK*, 41). But again, he admits, solipsism nonetheless remains neither empirically falsifiable nor demonstrably false.

More importantly for our concerns, Popper also embraced scientific realism—the view that unobservable theoretical entities, structures, and forces described in some scientific theories are potentially real, as opposed to being merely useful fictions that help scientists organize phenomena (*SIB*, 10). The aim of science for Popper is to produce better explanations of the world, not merely to produce greater predictive power. This enterprise

> can hardly be understood if we are not realists. For a satisfactory explanation is one which is not *ad hoc;* and this idea—the idea of independent evidence—can hardly be understood without the idea of discovery, of progressing to deeper layers of explanation: without the idea that there is something for us to discover, and something to discuss critically. (*OK*, 203)

However, owing to the conjectural nature of all knowledge, the most we can say about any entity or force described in a scientific theory is that it is *potentially* real, its reality being dependent upon whether or not the theory in which it is implicated is true. But the truth of a theory is something we can never know for certain. Thus Popper thought we could never know for certain if particular theoretical entities are real. Nonetheless, Popper held that it is reality that our theories bump up against when they are falsified or corroborated.

Popper's conjectural theory of knowledge makes asserting scientific realism less problematic—though perhaps also of less importance—than it is for positivists. As we saw above, positivists claim that knowledge about the world is gained through the senses, and as a result they tend to view sensory data as the most fundamental type of knowledge—even, in earlier extreme forms of positivism, as the *only* type of knowledge about the world. Thus a sort of hierarchy of knowledge emerges from this perspective: the macroworld, the observable world of everyday experience, becomes the paradigm of what is real, while the reality of unobservable theoretical constructs becomes problematic. But for Popper, this view rests on a false distinction: *all* knowledge is conjectural and theory dependent, whether it is knowledge of the everyday world or of the unobservable world of microphysics. Theories and conjectures must be understood in the broadest sense to include inborn expectations and intuitions acquired through evolution, as well as abstract theories of physics.

Even our simplest observation of the everyday world involves an active and conjectural process rather than a passive reception of data. Popper notes, for instance, that

> the neurophysiology of the eye and that of the brain suggest that the process involved in physical vision is not a passive one, but consists in an active interpretation of coded inputs. It is in many ways like problem solving by way of hypothesis. (Even the inputs are already partially interpreted by the receiving sense organ, and our sense organs themselves may be likened to hypotheses or theories—theories about the structure of our environment, and about the kind of information most needed and most useful to us.) (*SIB,* 45)

Moreover, just like abstract theories of science, inborn expectations are potentially false. Of course, such expectations will usually be at least good approximations to the truth, else they would be removed from the population through natural selection. For instance, it appears that infants are born with a number of intuitions about the physical world that are useful for everyday life but are at best crude approximations to the truth judged by the standards of contemporary physics, or even Newtonian physics (Pinker 1997, 319–320). Inborn intuitions about, for example, momentum and falling objects have to be corrected through scientific training. We might even describe science as the project to improve or even supersede our intuitions about the world. Kant was right, Popper says, in arguing that we necessarily impose categories and structures onto our world, but wrong in supposing that these impositions have a priori validity and cannot be transcended (*RAS,* 152–155). Thus for Popper our knowledge about the realm of microphysics lies along a continuum with our knowledge of the observable macroworld. *All* our knowledge is conjectural, potentially false, and likely capable of improvement.

Given the conjectural and theory-bound nature of all knowledge, what criteria can we establish for determining whether or not we are warranted in calling something "real"? Popper suggests two standards. The first is efficacy upon something that is unproblematically real.[5] The material world is the paradigm of reality, so anything that can affect material things is ipso facto real. But common sense tells us that mental events—pain, emotions, thoughts—are also real, so anything that affects them should be considered real, too (*OU,* 117). The second criterion for realness is independent corroboration of a theoretical entity's existence—or, as Popper says, "by the discovery of effects that we would expect to find if [the entity] did exist" (*SIB,* 10; see also *OU,* 116). It is preferable for both of these criteria to be fulfilled, but the first criterion, efficacy, is sufficient to warrant calling something real. Thus for Popper theoretical entities and forces and even abstract concepts are candidates for reality, just as are the objects of everyday experience. Einstein's theory of Brownian motion hypothesized that, under certain experimental conditions, unobservable theoretical entities (atoms) would cause observable objects (very small particles suspended in liquid) to move. The experiment proved a success, satisfying Popper's two

criteria for realness; therefore, atoms are real (*SIB,* 9). Moreover, while Popper acknowledges that, probably owing to our early childhood experiences, material objects form the "paradigm of reality" for us, nonetheless we should not concede that "material things are in any sense 'ultimate'"(ibid.). Material things, modern physics has taught us, may in certain cases be "interpreted as very special physical processes" (ibid.).

But I should stress here that, for Popper, in claiming that certain theoretical entities, such as atoms or neutrinos, are real, we make no claim to have described those entities completely. Popper held that good scientific theories get closer to the truth (they have greater "verisimilitude"), but no theory ever produces an ultimate explanation—that is, an explanation whose truth would be somehow intuitively obvious and in no need of further refinement (*OK,* 194–195). Popper rejected such "essentialism" (ibid.). Science, he said, does "probe deeper and deeper into the structure of the world," but there can be no end to science; rather, the task of science continually renews itself (*OK,* 196). We can always seek a deeper, "more essential" explanation of the phenomena described by any given theory (ibid.). And, because verifying—as opposed to falsifying—a theory is impossible, even if we did produce a complete, exhaustive, irreducible account of some phenomena, we would have no way of knowing that the theory was in fact perfect and final. A theoretical entity such as the atom might one day be superseded by a theory with a richer, deeper account of the microscopic world. Nonetheless, the older atomic theory has, however imperfectly, described reality and that description accounts for the predictive power atomic theory has so far produced.

REALISM, WORLD 3, AND SOCIAL INQUIRY

What relevance does Popper's realism have for social inquiry? This is a question of some importance, although it has scarcely been explored in the literature on Popper. This is unfortunate because a full understanding of Popper's ideas on social science, including situational analysis, requires an understanding of his realism. In particular, to fully understand the connection between Popper's realism and his understanding of social science, we need to consider Popper's theory of the three worlds. This was Popper's highly original contribution to ontology, which he began to develop in the 1960s in such essays as "Epistemology Without a Knowing Subject" and "On the Theory of Objective Mind" (*OK,* 106–190). He further developed this pluralist ontology in *The Self and Its Brain,* an inquiry into the mind-body problem published in 1977. A brief account of Popper's theory is needed before we explore its relevance to social inquiry.

Popper claimed that the world could be divided into "at least three ontological distinct sub-worlds," which he called Worlds 1, 2, and 3 (*OK,* 154). Worlds 1 and 2 correspond respectively to body and mind in the traditional mind-body dualism. That is, World 1 represents the material world, and World

2 is the realm of subjective mental states. Like other advocates of mind-body dualism, Popper held that World 2 was an irreducible, nonmaterial, and autonomous realm. However, Popper was not a mind-body dualist—he was an ontological pluralist. He held that there was a third ontological realm beyond the material world and the world of subjective experience. This was Popper's World 3, which he described variously as "the world of *objective contents of thought*," "the world of the products of the human mind," and "the world of intelligibles, or *ideas in the objective sense*" (*OK,* 107, 155; *SIB,* 38; Popper's italics). This world, according to Popper, includes "stories, explanatory myths, tools, scientific theories (whether true or false), scientific problems, social institutions, and works of art" (*SIB,* 38.).

In positing World 3, Popper placed himself in the company of another ontological pluralist, Plato. Specifically (as Popper himself emphasized), World 3 in some ways resembles Plato's Forms. Like the Forms, World 3 objects are real and autonomous entities that play a central role in human cognition. Plato thought people were born with an intellectual intuition that allowed them, however dimly, to "see" the Forms, and that they used this faculty in making intellectual judgments. Indeed, philosophy could be described as the task of learning to see the Forms better. Similarly, Popper said that people think largely by "grasping" World 3 entities, as when they try to solve a problem by contemplating a scientific theory (*SIB,* 43).

However, there are important differences between the Forms and World 3. Unlike the Forms, which Plato held to be eternal, immutable, and divine in origin, Popper's World 3 is a purely human construct. But despite their human origins, Popper argued that World 3 entities take on a life of their own—they become "autonomous"—once they are created. That is, World 3 objects become independent and objective features of our universe and continue to exist regardless of whether any person happens to be thinking about a particular World 3 object at any given moment: "[A] book remains a book—a certain type of product—even if it is never read" (*OK,* 115). What Popper meant is that the objective knowledge contained in the book—say, a series of mathematical formulas—continues to exist and continues to retain the potential to affect human (or other intelligent beings') consciousness regardless of whether it is ever read. Moreover, Popper contended, the creation of a World 3 object typically produces new and, as a rule, unintended problems and facts in the World 3 universe that may not be initially evident. For instance, Popper held that natural numbers are a human creation. Yet with their invention "there came into existence odd and even numbers even before anybody noticed this fact, or drew attention to it" (*SIB,* 41). Prime numbers were also brought into existence with the creation of natural numbers, and this in turn created a new World 3 problem: namely, whether or not there are an infinite number of prime numbers (*OK,* 118). It took some time following the invention of natural numbers for this problem to be noticed, and many years more before the problem was solved. Finally, Popper argued

that World 3 contains false as well as true theories about the world, unlike Plato's Forms, which were flawless, ethereal exemplars of imperfect ideas and objects found in the terrestrial world.

Now, as we saw above, Popper argued that efficacy on material objects is a sufficient condition for calling something real. And, indeed, Popper argued that World 3 is real just because it affects World 1, via World 2 (*SIB,* 38): "[I]nteraction with World 1—even indirect interaction—I regard as a decisive reason for calling a thing real" (ibid.). When, for instance, a person grasps or attempts to grasp a World 3 object—say, for instance, a scientific theory—it affects her mental state (World 2), which in turn may affect the physical world (World 1). For example, an electrical engineer might study a physics theory to help her construct a new type of computer chip. Thus her interaction with a World 3 theory, through the medium of World 2, leads to an alteration of World 1—namely the creation of the new computer chip. We could also say that World 3 affects World 1 simply by altering the brain states of the engineer. But, according to Popper's theory, this interaction would still take place with World 2 as the medium through which World 1 is altered. That is, grasping a World 3 object causes a change in an individual's subjective mental state (World 2), which in turn causes a change in the person's brain state. Finally, it would be consistent with Popper's position to say that the theory's effect on the engineer's mental state is sufficient to show the reality of World 3, although perhaps not quite as decisive as its efficacy on World 1, if only because the reality of World 2 is not universally acknowledged.

As noted above, scientific and mathematical theories are not the only inmates of World 3. Its inhabitants also include social institutions, traditions, language, and values, and therefore Popper's theory has obvious relevance for his philosophy of social science. As we saw in chapter 1, Popper's methodological individualism in no way requires reduction of social institutions to facts about individuals; rather, it merely bars assigning intentions, wants, or beliefs to holistic entities. Now we can add that social institutions for Popper must be considered real in a very robust sense—namely, that they influence individuals, their bodies as well as their minds.[6] This influence has obvious importance for understanding situational analysis.

Let us return to the example of Richard the pedestrian, first discussed in chapter 1, which Popper used to describe the elements of a situational model. Recall that Richard faces social institutions as well as physical obstacles as he tries to cross the street. The social institutions, Popper says, might include "rules of the road, police regulations, traffic signals, zebra crossings," and the physical obstacles Richard encounters include such things as parked and moving automobiles and other people (*MF,* 167). Popper notes that some of the social institutions, such as the zebra crossings and traffic signals, are incorporated in physical objects, whereas others "are of a more abstract nature," such as the rules of the road (ibid.). In light of our discussion above, these social institutions and physical objects that Richard encounters can now be described as

World 3 and World 1 entities, respectively. Popper himself does not describe them as such in his discussion of Richard the pedestrian, written as it was in 1963, but this is clearly consistent with his later pluralist ontology. We can also say that the World 3 entities Richard encounters are real in the same sense that the traffic cones and median strip are. The social institutions affect Richard's behavior, as do the physical objects. Specifically, Popper says, social institutions and physical objects affect Richard's behavior as barriers. Indeed, Popper claims that Richard may experience the rules of the road and other abstract social institutions

> exactly as if they were obstacles, either physical bodies such as cars or physical laws (which are "prohibitions") such as the law of conservation of momentum pertaining to moving cars. In fact, I propose to use the name "social institution" for all those things which set limits or create obstacles to our movements and actions almost as if they were physical bodies or obstacles. Social institutions are experienced by us as almost literally forming part of the furniture of our habitat. (*MF,* 167)

A small inconsistency in this passage should be noted. At first Popper describes Richard's experience of social institutions as "exactly" like that of physical barriers, but then a moment later says the experience is "almost" the same. Nonetheless, Popper has laid out an account that is consistent with his argument for the reality of World 3. Acting as barriers, social institutions influence Richard's behavior; therefore, they are real. The fact that social institutions are abstract entities, rather than physical bodies, in no way detracts from their reality. For Popper, abstract entities can be just as real as physical entities: "World 3 objects are abstract (even more abstract than physical forces), but none the less real" (*SIB,* 47).

However, Popper's account of social institutions as barriers seems both incomplete and problematic. Incomplete because he leaves unanswered just how, exactly, social institutions function as barriers. Problematic because describing social institutions as barriers seems too confining, given Popper's robust account in other contexts of the way that people use World 3 entities to solve problems, create works of art, communicate with others, and so forth. In the following paragraphs I would like to attempt to remedy these shortcomings. First, I will try to develop a richer understanding of how institutions might function as barriers that remains consistent with Popper's situational analysis as well as his overall philosophy. Then I will suggest how Popper might have described social institutions as World 3 entities that enable as well as constrain situational actors, just as physical objects may both enable and confine human action.

We can begin by asking what, precisely, Popper meant when he claimed that social institutions are barriers (*SIB,* 47). One possible interpretation of this statement is that some social institutions, such as rules of the road, become so ingrained in our minds that they cause us to habitually, even subconsciously,

avoid taking certain actions. That is, they function as a kind of psychological barrier. From this perspective, Richard declines to walk outside of the crosswalk or declines to cross the street when the sign reads "Don't Walk" not because he reasons that such behavior might be dangerous or trigger public disapproval or generate some other "costs." Rather, without thinking he obeys the road rules. Now, this is certainly a plausible description of the way that some social institutions might function as background rules guiding our lives. It seems an especially apt description of such World 3 entities as norms because norms often become internalized. In fact, internalization is one criterion that social scientists sometimes use to distinguish between social institutions and social norms (Elster 1989, 147). From this perspective, social institutions rely on formal sanctions—for example, fines, punishment, or expulsion from a group—to influence behavior. In contrast, someone who has internalized a norm will obey it even if violation of the norm goes undetected. For instance, a person might choose not to litter even if there is no one around to observe his behavior. The norm might be so ingrained that he adheres to it in a completely subconscious and automatic manner.

But it seems unlikely that Popper intended, or would have embraced, this understanding of the way that social institutions function as barriers. First, it appears to run afoul of Popper's anti-psychologism; and, second, it loses plausibility when it is applied to social institutions other than norms. Recall that one of Popper's goals in developing situational analysis was to purge social explanations of psychological assumptions about actors. But this reading suggests that Popper has smuggled in psychology despite himself. By describing norms as internalized dispositions, we seem to be characterizing an actor's subjective state, a World 2 entity. However, it is important to emphasize that there is nothing wrong per se with incorporating norms into situational analysis. In fact, in chapter 4 we will see that openness to inclusion of norms is one way that situational analysis can be distinguished from rational choice theory. But to be consistent with Popper's anti-psychologism, a norm must be understood as something external that the actor consciously heeds and rationally responds to, rather than as a deeply embedded psychological disposition. As Popper says, in situational analysis "a man with particular memories or associations becomes a man whose situation can be characterized by the fact that he is equipped objectively with particular theories or with specific information" (*ISBW,* 79). In any event, even if norms and some social rules (such as rules of the road) can be understood as deeply ingrained psychological dispositions, it is certainly not possible to view *all* social institutions this way. Surely people primarily experience such institutions as markets, governmental organizations, and schools as external entities that they interact with and manipulate rather than as internalized dispositions.

How then might we conceptualize social institutions and norms as barriers in a manner consistent with Popper's anti-psychologism? This, it seems, would require that we ascribe agency to actors in their interaction with social

institutions. Social institutions must be understood as being external to actors, and as being entities that actors consciously interact with (or, at least, heed) in the same way that scientists use theories to solve problems. Imagine that the rules of the road include the injunction "Don't cross the street when the sign reads 'Don't Walk.'" Richard could respond to this rule in an instrumental manner. He grasps the rule, weighs the potential costs and benefits of adhering to the rule, and in the end elects to abide by it. The potential costs of ignoring it might include getting hit by an oncoming automobile, being fined, or being shamed in public. The benefits of heeding it in this case are perhaps nothing more than avoiding the potential costs. However, Richard's calculation need not be instrumental. He might reason that crossing the barrier is an option, but that he ought not do it, perhaps on the grounds that he has a duty to abide by the law. In chapter 4 we will see that it would be consistent with Popper's rationality principle for a citizen to vote out of a sense of duty rather than as a result of instrumental calculation. Note that in both of these examples social institutions do not function as barriers that strictly prohibit certain courses of action, as physical barriers sometimes do (especially laws of nature); rather, they make certain actions more attractive and others less attractive. Nor does this conception of social institutions imply strict determination of Richard's behavior. To be sure, Richard's behavior is *influenced* by the road rules, and for this reason we can say that they are real, in accordance with Popper's criterion. If he acts rationally or "adequately," he will follow the rules. But nothing prevents him from blithely ignoring the rules, just as he could ignore some physical barriers, such as an oncoming automobile, though obviously he might regret doing so, if he lives. People do not always act rationally, Popper admitted; that is, they sometimes act contrary to their own goals and beliefs. To use Popper's own example, a flustered motorist acts irrationally when he continues frantically seeking a parking space in a lot that he knows to be full (*MF,* 172). Therefore we cannot say that individuals' actions are strictly determined by their World 3 environment.

Though more plausible, this understanding of Popper's notion of social institutions as barriers is, however, surely an unacceptably restrictive understanding of human interaction with social institutions. We can start by noting that Popper himself hardly envisioned other World 3 entities, such as scientific theories, as barriers to human action—or, rather, *solely* as barriers to actions. Popper saw scientific theories as enabling human action in the sense that they organize experience so that nature can be explored. As we have already seen, for Popper there is no such thing as experience without expectation, and expectation may be provided by everything from an animal instinct to a full-blown scientific theory. Scientific theories—and nonscientific theories, too—are World 3 tools that we use to explore our world. They may be employed in a manner not unlike physical instruments, such as microscopes and radio telescopes. But it also true, of course, that scientific theories at the same time function as barriers. They may blind us to certain experiences or lead us to

interpret those experiences wrongly. Popper's discussion in *Objective Knowledge* of Galileo's rejection of the theory that the moon affects the tides provides a fine example of how theories may blind a scientist to alternative explanations of phenomena (*OK,* 170–176). Popper argued that Galileo rejected the now universally accepted lunar theory because he was wedded to the Copernican theory of circular planetary orbits. In turn, he was committed to Copernicus's theory because it could apparently be explained solely by two physical laws that he himself had discovered—inertia and conservation of angular momentum. But commitment to this theory blinded Galileo to scientific evidence that strongly corroborated the connections between lunar cycles and the tides. Of course, there is nothing exceptional about Galileo's case; all scientific theories constrain and enable at the same time. They necessarily close off certain interpretations of data while opening up others.

The power to constrain and enable are also properties of other World 3 entities, such as musical and artistic traditions. Popper quite properly saw these resources as aids to creativity, such as when an artist or musician draws upon a certain tradition when creating a composition (*OU,* 128). Traditions may be said to enable a musician or artist by providing guidelines for exposition and by generating the essential tension necessary for creativity. But at the same time traditions block potential avenues of artistic exploration. Remarking on Beethoven's creativity and musical tradition, Popper says the following:

> As a composer [Beethoven] freely subordinated his will to the structural restrictions of World 3. The autonomous World 3 was the world in which he made his great and genuine discoveries, being free to choose his path like a discoverer in the Himalayas, but being restrained by the path so far chosen and by the restrictions of the world he was discovering. (*OU,* 128)

So, given Popper's endorsement of the constraining and enabling powers of scientific, artistic, and musical theories, why might not social institutions— for example, schools, banking systems, legal codes, and churches—be understood similarly? Popper is certainly right to claim that social institutions may function as barriers, but in what sense can they be said to enable action? Popper's notion that science itself is a social institution provides an answer. For Popper, science conducted by a sole individual is simply not possible (*OSE II,* 219–220). Science is an inherently public enterprise that requires a community of scientists, each dedicated to subjecting other scientists' theories to critical scrutiny. Without such public scrutiny, science cannot progress, for no person can foresee all the shortcomings, misconceptions, prejudices, and lacunae in his or her own theories. Indeed, as Popper emphasizes, the objectivity of science does not reside in the subjective state of a scientific inquirer, that is, a state in which a scientist has purged his or her mind of all preconceptions (ibid.). Rather, objectivity depends upon the public character of scientific inquiry. This, in turn, partly relies on the presence of certain norms, or what Popper calls a "friendly-hostile" attitude among scientists (*OSE II,* 217).[7] Scientists

must believe that it is proper and fitting to publicly criticize each other and to be the subjects of such criticism.[8] Social institutions, such as scholarly journals and scientific conferences, as well as a liberal political environment, also contribute to public criticism. Popper argues that without such norms and institutions, producing a genuine scientific discovery would be almost "miraculous" (*OSE II,* 219). If we were to construct a model of the situation confronting a scientist (whether an actual scientist or a typical scientist), norms of friendly hostility and institutions that facilitate criticism would surely form part of the scientist's World 3 environment. And it is clear that these norms and institutions should be understood as enabling the scientist to carry on his or her work, rather than serving as barriers.

The example of scientific practice shows that social institutions may facilitate certain types of activities rather than serving as barriers, but there is a deeper and more important sense in which social institutions can enable certain actions. This involves the innumerable situations in which social institutions actually create the possibility of certain types of actions. For an example of this type of relationship between action and institution, consider the practice of voting in a democratic country. This type of action depends upon the presence of certain institutions, perhaps most obviously the institution of parliamentary elections, which enables citizens to participate in the election of representatives. But, unlike the case of scientific inquiry, the institution of parliamentary elections enables not by facilitating certain actions, but by creating the possibility of certain actions, namely the act of voting. The creation of the parliamentary system and elections quite literally gives citizens a power that they would lack in a nondemocratic system. The very concept of voting, thus the ability to vote, would not exist apart from the existence of certain democratic institutions. This point, incidentally, has been emphasized by social-scientific realists such as Roy Bhaskar, William Outhwaite, and Jeffery Isaac, theorists who see a continuum between realism in the natural and social sciences. Isaac, for example, develops what he calls a realist theory of power, wherein power is conceptualized as the capacities provided to people by virtue of institutional roles. He defines "social power" as "*the capacities to act possessed by social agents in virtue of the enduring relations in which they participate*" (Isaac 1992, 47; his italics). For example, a capitalist in a capitalist system has the power to purchase labor power and a worker has the power to sell his labor. A teacher has the power to assign grades, a student has the power to attend class, and to evaluate the teacher at the end of the course. Without the social institutions and social roles that create the categories of capitalist/worker and teacher/student, such "powers to" would be nonexistent. This insight seems to me to be wholly compatible with Popper's understanding of the interaction between agents and World 3 entities. Also, this similarity between Popper and social-scientific realists such as Isaac reinforces our finding from earlier in this chapter that Popper's realism is applicable to his understanding of social as well as natural science.[9] This is a somewhat ironic finding given that Isaac,

Bhaskar, and Outhwaite all single out Popper as an avatar of the reduction-sitic, positivistic social science that they wish to combat.

Thus, just like physical objects, social institutions may be understood as entities that both constrain and enable human actions. A brick wall might inhibit a person's movement, but a hammer or a microscope can enable a person to perform certain activities, like build a house or observe tiny organisms. Similarly, social institutions may inhibit certain behaviors, but they also facilitate certain behaviors, too, and often they create the very possibility of certain actions. Thus Popper's definition of social institutions solely as barriers must be rejected. Instead, social institutions should be viewed as both constraining and enabling. Happily, this expanded understanding of social institutions is completely consistent with Popper's situational analysis as well as his ontology of the three worlds.

SUMMARY

This chapter has shown that Popper's World 3 entities must be viewed as real if we are to understand situational analysis. In particular, the social institutions, practices, norms, traditions, and other World 3 entities that confront actors in situational analysis should be seen as real because they influence human behavior. However, Popper's view of social institutions solely as barriers is inadequate. Social institutions—along with other World 3 entities, such as scientific and artistic theories—may enable as well as constrain human action.

A subsidiary goal of this chapter was to make a contribution, however small, to the understanding of Popper's overall philosophy, including his views on natural science and metaphysics. At the very least, I hope to have made clear exactly why Popper should not be considered a positivist, given his opposition to positivist doctrines of verificationism, naïve empiricism, and antimetaphysics. And I hope to have demonstrated that Popper's stance with respect to these doctrines is relevant to his social science. In the next chapter, we will continue to develop our understanding of situational analysis by examining Popper's confrontation with three other tenets of positivism.