CHAPTER THREE

Social Laws, the Unity of Scientific Method, and Situational Analysis

This chapter continues our exploration of Popper’s wider philosophy and its implications for situational analysis, again using his response to various aspects of positivism as our guide. We will focus on the other key tenets of positivism that I have identified—skepticism toward causality, the covering-law model of explanation, and the unity of scientific method. Our main findings will concern lawlike regularities in the social world and the unity of scientific method. We will find that, despite Popper’s claims (especially his earlier claims) to the contrary, laws play essentially no explanatory role in his social science. Moreover, his claim that the methods of the natural and social sciences are essentially the same will be shown to be plausible only if their methodologies are described in a highly abstract way. When more concrete and stringent criteria are posited for the scientific method, important differences remain between natural and social inquiry. The most important difference, we shall see, involves falsifiability—and thus the very practice of situational analysis.

CAUSATION, COVERING LAWS, AND REALISM

Much of what Popper wrote appears completely at odds with the fifth tenet of positivism, designated in the previous chapter as a skeptical attitude toward causes. For instance, he dismissed the claim that “the aim of science is merely to establish correlations between observed events, or observations (or, worse, ‘sense data’)” (MF, 105). Popper held that the true goal of science is to discover “new worlds behind the world of ordinary experience: such as, perhaps, a microscopic or submicroscopic world—gravitational, chemical, electrical, and nuclear forces, some of them, perhaps, reducible to others, and others not” (ibid.). That claim is consistent with his critique of induction and naïve empiricism. In fact, it is merely a restatement of his realism—science attempts to discover real structures, forces, and entities that lie behind the world of
everyday experience. It also expresses a realist notion of causation insofar as a scientific explanation would require identifying the forces and mechanisms that produce various phenomena. Interestingly, however, Popper also embraced what I have designated as the sixth tenet of positivism—the covering-law model of explanation—and upon first inspection his notion of a causal explanation appears identical to the “standard” positivistic account (LScD, 59–62; PH, 122–124; RAS, 131–147). According to Carl Hempel, a central figure in the development of the model, a scientific explanation “may be conceived as a deductive argument” in which the initial conditions and general laws function as the premises (Hempel 1965, 336). Similarly, in The Logic of Scientific Discovery, Popper asserted that “[t]o give a causal explanation of an event means to deduce a statement which describes it, using as premises of the deduction one or more universal laws, together with certain singular statements, the initial conditions” (LScD, 59; Popper’s emphasis). Hempel cites Popper as among the principal developers of the covering-law model, and, indeed, it is sometimes referred to as the “Popper-Hempel theory” (Hempel 1965, 337). Popper also endorsed the symmetry of explanation and prediction—that is, the claim that to explain an event is the same as predicting its occurrence (PH, 124). Positivists embraced this account of explanation and causation because it locates causality in the logical structure of an explanation rather than in nature itself. In doing so, it circumvents the problem of identifying a “necessary connection” between events, which Hume famously demonstrated could not be uncovered by induction alone.

Popper initially avoided discussion of ontological necessity or causality. In the first publication of The Logic of Scientific Discovery, he noted that the initial conditions of a covering-law explanation were “usually called the ‘cause’” and that the predictions described what was “usually called the ‘effect,’” but he added that he himself would not use such terms, apparently considering them superfluous (LScD, 60). However, he later revised his position, although one has to do a little digging outside the main text of his works to uncover the genesis of the change. In a footnote in The Open Society and Its Enemies and in an appendix added to the 1959 edition of The Logic of Scientific Discovery, Popper embraced the notion of natural necessity and announced no more hesitation in using the word “cause” to describe it (OSE II, 362–364; LScD, 421–441). Popper reached this new stance by characterizing universal laws as conjectures about the “structural properties of our world” (LScD, 432). As such, he says, a universal hypothesis “asserts the truth of the statement that A causes B, provided that the universal hypothesis is true” (OSE II, 363; my emphasis). In other words, if the proposed law is true (something that we can never know for certain), then it entails certain naturally or physically necessary consequences. So in Popper’s revised version of covering-law explanations, causality seems to reside ontologically in conjectural universal laws, while logical causality is located in the deductive structure of a particular explanation. Thus causal connections are hypothesized to be real—that is, necessary—connections, but,
owing to the conjectural nature of all knowledge, we can never say for certain that the causal account offered is true.

Yet this account still seems to be in some tension with Popper's realism. For a positivist, any unobservable forces or entities cited in the laws and initial conditions of a scientific explanation are merely useful fictions that help the scientist organize observable phenomena. But, as we saw above, for Popper theoretical entities are potentially real, and a realist ascribes causal powers to structures, theoretical entities, and forces. Thus it would seem that for Popper the forces or entities or structures—and perhaps even abstract structures like World 3—that produce phenomena, including universal laws, should be saddled with the actual causation. In any event, most realists reject the covering-law model of causation. As Ian Hacking has argued, the covering-law model only makes sense within a positivistic framework that denies or downplays cause, metaphysics, and theoretical entities (Hacking 1983, 44–53). But for a realist, as William Outhwaite has argued, “deducibility from a general law is not an explanation, but merely a regularity to be explained by demonstrating the existence and functioning of a mechanism which produces the regularity” (Outhwaite 1987, 34). Thus, from the realist’s perspective, the covering-law model is like a consolation prize, a second-rate account of causality that positivists offer because they believe that, at best, talk of causally efficacious theoretical entities and forces is unverifiable and, at worst, metaphysical nonsense. But because Popper believed that unobservable entities, forces, and fields are potentially real and that we can come to know something about their nature, he should have had no use for the covering-law consolation prize. I therefore propose that the covering-law model of explanation is best seen as an artifact of Popper’s early philosophy and can be severed from the core ideas of his mature thought without damaging them. Causation can be understood in purely realist terms and remain consistent with Popper’s philosophy of natural science. However, later in this chapter I will argue that a realist understanding of causality probably should not be extended to Popper’s situational analysis, at least with respect to the actions of the human agents. For Popper, human action should not be understood as causal, at least insofar as it is rational.

**Popper and Social Laws**

As with his account of laws in the natural sciences, Popper’s thinking on universal laws in the social world underwent a dramatic change over the years. Let us first consider what Popper had to say about social laws in his early work, and then we will discuss how his ideas on social laws shifted as he developed his theory of situational analysis.

In *The Poverty of Historicism* and *The Open Society and Its Enemies*, Popper insists that one of the aims of social inquiry should be to uncover social laws. Furthermore, he expresses confidence that social laws do exist, even going so far as to describe them as “natural laws of social life” (*OSE* 1, 62; see also *OSE* 43).
In *The Poverty of Historicism*, Popper cites a number of supposed social laws, most of them from economics (PH, 62). They include “You cannot introduce agricultural tariffs and at the same time reduce the cost of living,” and “You cannot have full employment without inflation.” From the field of politics he cites, “You cannot make a revolution without causing a reaction,” and “You cannot introduce a political reform without strengthening the opposing forces, to a degree roughly in ratio to the scope of the reform.” However, a moment’s reflection reveals that Popper’s “laws” are either trivial, such as his maxims about revolutions and social reform, or simply false, such as his conjecture regarding the relationship between employment and inflation. For instance, such a relation need not apply to socialist economies and probably does not apply to capitalist economies in all conceivable situations. Indeed, Popper’s examples do not fulfill the requirements for universal laws that he himself enumerates elsewhere. Those criteria include that a law shall be applicable “everywhere, and at all times” and that it admit of no exceptions (RAS, 134; see also RAS, 66–67, 137; PH, 103; OSE I, 57–58; LScD, 62).

That Popper could not provide examples of genuine lawlike regularities in the social world is not surprising. They are probably nonexistent, and the reasons for their absence are several. Among the most important is the constant flux of the social world. As institutions, practices, and beliefs invariably change, the regularities associated with those institutions and practices alter or even completely disappear. To illustrate, consider that until recently there was something of a consensus among mainstream economists that unemployment in the U.S. could not sink below 6% without triggering inflation. But from 1998 to 2000 the U.S. unemployment level hovered around 4% while inflation remained low, leading some economists to suggest that the U.S. had entered a “new economy.” Owing to computers and other technological innovations that increase productivity, economists hypothesized that businesses were able to hold prices down even as competition for workers forced wages up. Thus the presumed lowest noninflationary unemployment level of 6% was never a constant like the constant in the law of gravity—that is, timeless and universal. Rather, it was merely a by-product of certain institutional arrangements, beliefs about the economy, and human knowledge. In this case, the change in the lowest noninflationary unemployment level was presumably the result of growth in human knowledge, specifically new technological innovations. Importantly, changes in human knowledge, including those that alter economic regularities, cannot be predicted, as Popper himself persuasively argued in the preface to *The Poverty of Historicism* (PH, vi–viii). Therefore, there is no way to predict how social regularities might alter in response to new developments in knowledge. We might also note that theories about the economy may themselves affect the regularities associated with the economy. If, for instance, the chairman of the Federal Reserve Board believes that the U.S. has entered a new economy, this will affect his decisions to raise or
lower the prime lending rate, which in turn will affect bond prices, employment rates, and other economic values. This so-called reflexivity of social theories is ubiquitous in social life, but there is no comparable phenomenon in the natural world—that is, our theories about the natural world do not affect the laws that govern it.

Popper was not unaware of the claim that social regularities are relative to particular cultures and historical periods. In fact, in *The Poverty of Historicism*, he explicitly addressed the contention (PH, 97–104). He acknowledged that there are social regularities that hold good only for certain historical periods, but he claimed that, in the first place, the situation is no different in the natural sciences. Many of the regularities of the natural world, he noted, are specific to time and place, such as the length of days, which varies as one moves away from the equator. Even the enduring regularities of the planets’ orbits in the solar system are confined to our solar system only. But, he argues, the fact that such time- and place-specific regularities are part of the natural world in no way bars the existence and discovery of truly universal laws that span all times and places. And, of course, many such laws have been discovered—Newton’s laws, to name the most obvious—and these are the most prized findings in natural science. He then adds that

there seems no reason why we should be unable to frame sociological theories which are important for all social periods. The spectacular differences between these periods are no indications that such laws cannot be found, any more than the spectacular differences between Greenland and Crete can prove that there are no physical laws which hold for both regions. (PH, 101)

But, significantly, Popper offers no examples of social laws that are not dependent on time and place, whereas the supposed laws he does offer elsewhere (such as those noted above) are the sort that are obviously dependent upon time-specific social institutions or are examples of natural, not social, laws. For instance, he claims that an historian’s explanation of Bruno Giordano’s death at the stake relies on the “tacitly assumed” law that “all living things die when exposed to intense heat” (PH, 145). But such a law is clearly a physical law, not a social one. Presumably, genuinely universal social laws would somehow be impervious to alterations in social structures such as institutions, culture, and norms. But Popper does not even hint at the form such laws might take.

Popper was also aware of the reflexivity of social predictions, dubbing it the “Oedipal effect” (PH, 12–17; OSE I, 22). This effect may bar precise prediction of future social events, but, he says, this merely adds weight to his argument against the possibility of historical forecasts. Among the key arguments undergirding *The Poverty of Historicism* is that knowledge affects the future, and because we cannot know what we will know in the future, we cannot predict the future. The Oedipal effect is just another factor that tends to undermine prediction in the social sciences. However, what Popper apparently failed
to notice is that the Oedipal effect not only bedevils attempts to predict future social events, but it also may undermine social regularities themselves. If a theory about the social world, including a hypothetical social law, becomes public knowledge, it might encourage the taking of measures to alter the social regularity. For instance, steps could be taken to counter Popper’s “law” regarding agricultural tariffs and the cost of living, price controls being the most obvious. This might have some unwanted consequences, but it nonetheless could alter the purported regularity. Or, in the realm of politics, consider Robert Michels’s “iron law of oligarchy,” which says that popular political movements, no matter how democratically inclined, will gradually become hierarchical in their organization (Michels 1949). But if the members of certain political organizations learn of Michels’s law by reading his Political Parties, they might then take steps to counter it, perhaps by imposing certain institutional reforms designed to ensure maximum participation in decision making and frequent rotation of leadership positions. In their 1957 study of the International Typographical Union, Seymour Lipset et al. identified a number of factors that they believed explained how the union had been able to resist the pull of Michels’s “law.” These included relative homogeneity of interest among union members, high levels of interaction between union members off the job, low levels of bureaucratization, and relatively small differences between status of union leaders and rank-and-file members (Lipset et al. 1957, 413–418). The union might also have chosen to reinforce norms of democratic participation. In fact, as James Farr has noted, Michels himself recommended that his “law” might be thwarted in working-class movements by taking steps to enhance the intellectual awareness of its members (Farr 1987, 60). If such steps proved successful, we would have an example of the Oedipal effect undermining a social regularity uncovered by social science.

Where does this leave social laws then? To the extent that social regularities depend upon the existence of certain institutional, cultural, or normative arrangements—and to the extent that such regularities may be undermined by social reflexivity—there would appear to be little chance that genuine lawlike regularities will emerge in the social world. Still, because many social relations and institutions are relatively enduring, and because human behavior in certain circumstances is fairly consistent, it seems possible that some wide-ranging and long-term (but not universal or timeless) social regularities might very well exist. So, if we relaxed our definition of a social law somewhat, we might be able to speak of “laws” of the social world. These would presumably include many of the regularities of economics, as well as of politics, such as Michels’s iron law of oligarchy and perhaps Popper’s laws regarding political revolutions noted above. Still, even permitting such a relaxation, daunting impediments remain to thwart social scientists’ ability to identify the regularities that do emerge in the social realm. Such factors include the sheer complexity of social phenomena and the frequent impossibility of performing controlled experiments, either for practical or moral reasons. And, in any event, we should not
forget that this relaxed notion of a law would not count as a law at all by Popper’s definition. At least in his early work, Popper demanded the real thing.

**Situational Analysis and Social Laws**

Significantly, it appears likely that Popper eventually abandoned his belief in reality of lawlike regularities in the social world. To my knowledge, he never acknowledged his rejection of social laws in print, but references to them in his writings disappeared after *The Poverty of Historicism* and *The Open Society*. The Australian economist Colin Simkin, a friend and colleague of Popper, wrote in his 1993 book *Popper’s Views on Natural and Social Science* that “Popper has come to doubt whether there are universal laws in economics, and hence in any of the social sciences” (Simkin 1993, 112). Simkin, however, does not cite any textual evidence for this claim. He and Popper were longtime friends, and his claim about Popper’s beliefs appears to be grounded in his personal familiarity with Popper. Also, Rafe Champion, a Popper scholar, has claimed that in informal conversations in the early 1970s Popper acknowledged that he had become convinced that there were no genuine social laws (personal e-mail communication with Champion, October 2001). In any event, regardless of whether Popper ever formally repudiated his belief in social laws, when we turn to his most sustained consideration of social science methodology, and specifically to situational analysis, we find that laws perform no explanatory role. Indeed, Popper never even mentions social laws in his discussions of situational analysis. The reader will recall from chapter 1 that Popper accepted the claim that his rationality principle, despite being nearly vacuous, was in fact false, albeit a useful falsehood (*MF*, 177). Like the laws of physics that animate models of the solar system, the rationality principle animates a situational model. But the rationality principle cannot be described as a genuine law because it is already known to be less than universally valid. Also in chapter 1, we saw that Popper rejected psychologism as well as the claim that the regularities of the social world can be reduced to laws of “human nature,” or laws of biology or physics for that matter. Rather, Popper says, the regularities found in society are the result of persons acting rationally within a social situation, and he explicitly describes the social situation as a malleable human construct:

> It must be admitted that our social environment is man-made in a certain sense; that its institutions and traditions are the work neither of God nor of nature, but the results of human actions and decisions, and alterable by human actions and decisions. (*OSE II*, 93; my emphasis)

To the extent that social regularities are dependent upon institutions and traditions, the emergence of genuine—that is, timeless and universal—social laws would seem to be barred.

Thus, despite Popper’s early claim that social science should seek to uncover lawlike social regularities, it appears that we have two sound Popperian
reasons for supposing that genuine social laws do not exist: the falseness of the rationality principle and the malleability of the social world. And because Popper argues that situational analysis is the only proper method of the social sciences, it appears to follow that, from his viewpoint, it is the only method available for uncovering social regularities (MF, 166). Therefore there can be no hope—or, rather, nothing but pure hope—that social science will discover genuine social laws. Popper seems to accept this conclusion when he writes, “if my view of the social sciences and their methods is correct, then, admittedly, no explanatory theory in the social sciences can be expected to be true” (MF, 176). I say “seems” to accept the conclusion because Popper does not explicitly repudiate the reality of genuine social laws in this passage. However, in the context of the passage, Popper is discussing the falseness of the rationality principle, which, he recommends, should lie at the center of all situational models. The falsity of the rationality principle makes all social theories false. And why is the rationality principle false? Because individuals sometimes do not act rationally even in the broadest understanding of the term—that is, people sometimes act contrary to their own beliefs and goals, as in the case of the flustered motorists noted in the previous chapter. Because the rationality principle does not present a true account, always and everywhere, of human behavior, it is not a genuine law. Thus because the regularities described by situational models (including the “laws” of politics and economics) are animated by the rationality principle, they cannot be empirical laws at all; rather, they are best understood as useful analytical constructs or ideal types. And if this is the case for the purported laws of economics, it is likely so much more the case for “laws” in other branches of the social sciences.

**Free Will, Social Laws, and Situational Analysis**

There is yet one more reason to suppose that situational analysis is incompatible with the existence of social laws—namely, Popper’s belief in indeterminism and especially his belief in human free will.

Popper was an indeterminist; that is, he believed that the future was not strictly determined by the past. He allowed that the universe could be described as “partially but not completely determined,” by which he meant that “events follow each other according to physical laws” (OU, 126). But Popper held that “there is sometimes a looseness in their connection, filled in by unpredictable and perhaps probabilistic sequences similar to those we know from roulette or from dicing or from tossing a coin or from quantum mechanics” (OU, 126–127; Popper’s italics). This unpredictability does not stem solely from our less than complete understanding of causal processes. Rather, Popper spoke of “absolute chance”—chance built into the very nature of the universe (OU, 125). This absolute chance applies not only to quantum mechanics and its probabilistic laws, but to other, more mundane physical processes, too. “Although I do not believe that quantum mechanics will remain the last word in physics,” Popper
wrote, “I happen to believe that its indeterminism is fundamentally sound. I believe that even classical Newtonian mechanics is in principle indeterministic” (OU, 126). Popper held that, owing to the looseness of causal connections, even relatively simple events that can be easily predicted and explained—for example, the trajectory of a baseball or the movement of a clock—can never be predicted with infinite precision, not even in principle.

Is this indeterminacy of the physical world arising from causal looseness sufficient to establish human freedom? No, Popper answers—it is “necessary but insufficient” (OU, 127). Acknowledging an element of chance into causal processes does not help us understand free will because “what we want to understand is not only how we may act unpredictably and in a chancelike fashion, but how we can act deliberately and rationally” (OU, 126; Popper’s italics). The loose, unpredictable nature of causal processes “has no similarity whatever to the problem of the freedom to write a piece of poetry, good or bad, or to advance a new hypothesis concerning, say, the origin of the genetic code” (ibid.). To begin to account for human freedom, Popper argues, what is needed “is the thesis that World 1 is incomplete; that it can be influenced by World 2; that it can interact with World 2; or that it is causally open towards World 2, and hence, further, toward World 3” (ibid.; Popper’s italics). Earlier in this chapter, we reviewed Popper’s arguments for the reality and causal efficacy of Worlds 2 and 3, as developed in Objective Knowledge and The Self and Its Brain. Popper repeats those arguments in his discussion of free will and indeterminism, but adds a new argument in favor of the efficacy of Worlds 2 and 3: a causally closed World 1 is incompatible with a world filled with human creations. This holds regardless of whether the laws governing World 1 are held to be strictly deterministic or an element of chance is permitted within this realm. If, on the one hand, World 1 is deemed to be strictly determined and totally impervious to human thoughts and World 3 entities, all physical events and objects that humans have created—including Mozart’s music, Einstein’s theories, Monet’s paintings, and Shakespeare’s plays (as physical events or objects, not World 3 entities)—could be explained without remainder by the laws of physics and chemistry, and, moreover, were preordained at the beginning of the universe. Determinism implies, Popper argues, that “billions of years ago, the elementary particles of World 1 contained the poetry of Homer, the Philosophy of Plato, and the symphonies of Beethoven as a seed contains a plant” (OU, 127). If, on the other hand, an element of chance is permitted within World 1 (while still remaining closed to Worlds 2 and 3), the situation is no better: it entails that the product of human creativity—or, rather, the apparent products of human creativity—are “a matter of sheer chance” (OU, 128).

How then are we to explain human freedom? Popper suggests that understanding the interaction between the three worlds is central to explaining free will. Specifically, he says that human freedom may be partly understood as the product of the "causal openness of World 2 toward World 3, and vice versa" (OU,
114). Humans make decisions, solve problems, propose hypotheses, and create music in part by “grasping” and manipulating World 3 entities. Popper argues that this interaction introduced genuine novelty into the universe and resulted in an “open universe”—that is, a universe whose future is not preordained but is open, where genuine novelty is constantly being introduced as the result of interaction between the three worlds. This openness introduces another source of indeterminism into the universe, one that is of more interest and importance than causal looseness: “If man is free, at least in part free, then so is nature; and the physical World 1 is open” (OU, 127).

But Popper realized that his admittedly vague description of the interaction between the three worlds in no way amounted to a satisfactory, much less complete, explanation of human freedom. He suspected that full understanding of human freedom and creativity may be beyond our comprehension. Indeed, he called the emergence of the human brain and of human freedom “the third great miracle” of our universe—the other two miracles being the emergence of life and animal consciousness (OU, 122–123). Understanding these three phenomena may be forever beyond human reach, he believed.

It is not my intention here to evaluate the persuasiveness of Popper’s argument for free will and indeterminism. What is important for our discussion is to consider how his support for these metaphysical ideas affects his philosophy of social science, especially situational analysis. Quite obviously, for Popper the human action at the center of situational analysis is not strictly determined or even governed by laws. The actor in a situational model responds to the situation rationally and, we can now say, freely. This freedom somehow arises out of the interaction between the actor’s conscious mind and the World 3 and World 1 entities that he or she encounters. There might be an obvious, rational (or “adequate”) response to many situations that will help us predict how people will behave. But other situations, most notably those involving creativity in the arts and sciences, will naturally elude prediction. We could not predict, for instance, that, given his problem situation, Einstein would propose that time and space are relative. Nor could we predict that Picasso would decide to use only shades of gray to paint Guernica, given his problem of visually depicting the horror of aerial bombardment. Those are creative acts (creative acts of genius, actually). This is not to say that situational analysis and the rationality principle cannot help us understand the actions and ideas of scientists and artists. On the contrary, as Popper argued in Objective Knowledge, situational analysis can help us understand why certain artists and scientists might reject or embrace certain theories (OK, 170–177). For instance, returning to Popper’s account of Galileo’s theory of the tides discussed in chapter 2, Popper argued that we need to understand Galileo’s problem situation in order to understand why he rejected the theory that the moon affected the earth’s tides. Galileo, Popper says, was committed to explaining celestial phenomena using only his law of inertia and the law of conservation of rotary motion (OK, 173). Lunar effects on the tides could not be accommodated within this
framework. Galileo’s refusal to incorporate the moon’s effects into his explanation of the tides was rational, rather than obstinate, given his beliefs. Indeed, science requires a certain tenacity in defending one’s theories, especially parsimonious theories such as Galileo’s. However, given our analysis above, situational analysis cannot help us predict genuinely creative acts, including creative scientific acts. We could not predict, for instance, that Galileo would propose his law of inertia given his problem situation. We could not say that any rational person, given Galileo’s situation, would propose the law of inertia, for positing the theory was an act of creative genius. (However, understanding his problem situation would surely help us better comprehend why Galileo saw his theory as a solution to his problem.) This unpredictability places a clear limit on the usefulness of situational analysis. But this may not be a particularly damaging limit if, as Popper says, the main purpose of situational analysis in the social sciences is to generate situational models of typical events involving routine, adequate action.

It should now be clear that laws play no role in Popper’s situational analysis. In the first place, the social situations that permit the emergence of quasi regularities in the social realm undergo constant change, which in turn causes the regularities associated with them to change or disappear entirely. More fundamentally, human behavior is not determined; it is free. This means that there can be nothing necessary about even the most regular of social regularities. In the end, I think it is impossible to reconcile what Popper says about laws of the social world in *The Poverty of Historicism* and *The Open Society* with what he says about situational analysis (including his discussion of situational analysis in chapter 14 of *The Open Society*). But I think we can say that situational analysis is clearly central to Popper’s methodological recommendations for social science, whereas his comments on laws and social science are mostly made in passing while discussing other topics. Whenever he engages in an extended discussion of social science method, situational analysis emerges in the forefront and laws fade into the background. Clearly Popper’s support for universal social laws stemmed from a desire to stress the continuity between natural and social science. But I think Popper’s claim that situational logic marks the most important difference between the natural and social sciences was of greater import than he himself realized (*PH*, 141). In any event, an unacknowledged shift occurs in Popper’s thoughts on laws and social explanations in his later works. By the 1960s, the need for uncovering laws in the social world almost completely disappears from his recommendations for social science. For instance, in his essay “The Logic of the Social Sciences,” written in 1961, universal laws are not even mentioned (*ISBW*, 66–68).

But if situational analysis cannot make use of laws to explain social behavior, how does it explain? This is a question that I will address more fully in the next chapter. Here I will simply contend that situational analysis should not be understood as a type of causal explanation at all. If human beings’ actions are not wholly causally determined—as the doctrine of free will maintains—then,
with rational agents at the center of a situational model, situational analysis cannot be construed as producing causal accounts of behavior. In chapter 4 I will argue that situational analysis explains by uncovering and untangling hidden connections—in a phrase, by laying bare the logic of the situation.3

THE UNITY OF SCIENTIFIC METHOD

Finally, we need to consider Popper’s stance toward one of the central ideas of positivism—the unity of scientific method. Popper emphatically and repeatedly endorsed the unity of scientific method, although he also rejected unreflective “aping” of the natural sciences by social scientists, which he called “scientism” (MF, 75). He specifically objected to attempts to apply naïve empiricism and inductive methods to exploration of the social as well as the natural world. In his support for scientific unity, he thus repudiates other elements of positivism. However, as we have just seen, Popper at least initially claimed that natural and social science both seek to uncover lawlike regularities, but this claim appears to be incompatible with Popper’s situational analysis, and Popper probably eventually rejected the notion that there are genuine social laws.

Even after social laws lost their role in Popper’s social science, Popper continued to insist on the unity of scientific method. What, then, did he view as the method that all sciences share? In his most sustained discussion of the issue—the essay “The Logic of the Social Sciences”—Popper declares his “main thesis” to be the following: “The method of the social sciences, like that of the natural sciences, consists in trying out tentative solutions to those problems from which our investigations start” (ISBW, 66; see also MF, 92–101). As we saw in chapter 2, according to Popper all science involves proposing solutions to problems, whether of the practical or theoretical type, and the method of problem solving is trial and error: propose solutions to problems and then test those proposals. More specifically, Popper argues, all science follows the following pattern: \( P_1 \rightarrow TT \rightarrow EE \rightarrow P_2 \). That is, science begins with a problem \( (P_1) \), and then a tentative theory \( (TT) \) is proposed to solve it. Next, the theory is tested, and an effort is made to eliminate errors \( (EE) \) in the theory. Following error elimination a new problem emerges \( (P_2) \), and then the process begins anew. Popper says elsewhere that this notion of scientific method can be viewed simply as “systematiz[ing] the pre-scientific method of learning from our mistakes” (MF, 100).

What are we to make of Popper’s account of scientific method? On the one hand, it is hard to quarrel with the claim that all science involves critical problem solving.4 On the other hand, one must admit that this is not a terribly discriminating view of science. Most social science research programs could probably be construed as exercises in critical problem solving—but, then again, so could a whole range of activities that we would not normally be inclined to call scientific. By broadening the definition of science thus, Popper
seems to have drained the concept of much of its interest. Indeed, describing science as nothing more than critical problem solving would seem to incorporate mathematics and metaphysics into the scientific fold. We might even describe art, music, literature, athletics, automobile repair, or any other systematic human endeavor as exercises in problem solving. Popper himself often characterizes art and music this way (OK, 182). For instance, he describes Beethoven as being confronted with the problem of how, and at what point, to introduce singing into his Ninth Symphony (ibid.). Further, Popper’s own attempts to defend his pluralist ontology, indeterminism, and human free will are surely exercises in problem solving, but Popper described his queries into those topics as metaphysics, not science. Thus, despite what Popper claims, we need a criterion to unify the natural and social sciences that is more discriminating than critical problem solving, one that, we may hope, is consistent with Popper’s overall thought.

We can begin by noting that elsewhere in “The Logic of the Social Sciences” Popper argues that the primary aim of all scientific theories is to produce a true description of the world (ISBW, 76). Following Alfred Tarski, Popper argues that “true description” should be understood as correspondence to the facts. By adding that science involves attempts to describe the world, we can at least remove art, music, logic, and mathematics from under the rubric of science. Those endeavors do not make factual claims about the world, or at least that is not their defining element. But we are still stuck with metaphysics, which, like science, involves attempts to describe and explain the world. The difference between science and metaphysics, by Popper’s own definition, is that the former can be empirically tested whereas the latter cannot. This immediately suggests a genuinely Popperian candidate to unify the sciences—empirical falsifiability. As we saw in chapter 2, Popper argued that falsifiability is what separates science from nonscience. This was no minor proposition for Popper; it was the central idea governing his philosophy of natural science. It would not be surprising, then, if Popper suggested falsifiability as a unifying feature of the natural and social sciences. Oddly enough, in “The Logic of the Social Sciences,” Popper does not explicitly argue that falsifiability is an essential property shared by theories in both the natural and social sciences, though this conclusion would seem to follow from his general account of science. Let us consider, then, how falsifiability might work as a unifying feature of the natural and social sciences.

FALSIFICATION AND SITUATIONAL ANALYSIS

Given Popper’s argument that all empirical observation is laden with theory, all attempts to falsify a theory, whether of the natural or social sciences, become problematic. In the absence of theory-free observations, it is always possible to challenge the empirical evidence scientists employ to try to falsify a theory. This is because it is always possible that the theories that undergird
observations themselves are flawed, biased, or misinterpreted in some way (although the degree to which theory informs empirical evidence surely varies greatly). Thus, Popper admits, even in the natural sciences no falsification can ever be deemed clear-cut or final (MF, 90). Evidence in the social sciences is also always theory-laden, and often to a greater degree than in the natural sciences. But social science also suffers from its own unique—and perhaps more daunting—problems of falsification. Among the most significant is the difficulty of making precise predictions. Some of the reasons for this difficulty have already been discussed, including the lack of lawlike regularities in the social world, the difficulty if not impossibility of conducting controlled experiments, the complexity of social phenomena, and the Oedipal effect. Naturally, without precise predictions it is difficult to test a theory, and therefore the falsifiability of social science theories suffers.

Situational analysis in particular is hampered by falsifiability problems. Recall from chapter 1 that Popper argues that science tries to explain two basic types of phenomena: singular events and repeating events (or regularities). Explaining the former, Popper says, requires scientists to invoke initial conditions and universal laws; the latter requires construction of a model. Social science, Popper contends, is usually confined to constructing models of typical social situations. This is because “explaining and predicting singular events by universal laws and initial conditions is hardly ever applicable in the theoretical social sciences” (MF, 165–166). Later in the same essay he claims that “sufficient laws” and initial conditions are “never” available in the social sciences (MF, 168), though he does not really explain why this is so. Laws are simply not available in the social realm, and, owing to the complexity of the social world, it is difficult to isolate initial conditions. Models, Popper says, are necessarily simplified depictions of the real world and therefore are false (MF, 172–173). In addition, lacking genuine lawlike regularities, situational models must rely upon the rationality principle to set them in motion. But, as we saw in chapter 1, the rationality principle itself is false; Popper acknowledges that people usually act adequately to the situation but sometimes do not (MF, 172). The rationality principle is adopted not because it is a well-corroborated principle or because it is presumed to be valid. Rather, it is a useful methodological device to help social scientists construct models of social situations. That is, it is useful to assume that people, in the main, act adequately to the situation.

There is, we might say, a dual falseness built in to every situational model, which arises from the falseness of all scientific models and the falseness of the rationality principle. Popper acknowledges as much:

Now if the rationality principle, which in the social sciences plays a role somewhat analogous to the universal laws of the natural sciences, is false, and if in addition the situational models are also false, then both the constituent elements of social theory are false. (MF, 173)
But this means that testing a situational model will often be a highly uncertain enterprise, more so than with a natural science model, which will usually have the advantage of employing well-corroborated universal laws. It will never be safe to assume that any of the constituent parts of a situational model are even provisionally beyond criticism. Thus when predictions generated by a model do not bear out, it will be especially difficult to know which part of the model is at fault.

But in addition to the dual falseness of situational models, there is an even more important reason for supposing that falsifying situational models will always be more problematic than falsifying theories of natural science—a reason that Popper did not fully appreciate. This stems from the inherent and unavoidable interpretive element in most social science theories, including situational analysis. To understand why the interpretive element is central to social inquiry and why it makes unambiguous falsification of situational models problematic, we will need to pause briefly to consider interpretive theory, especially as it relates to social inquiry.

Interpretivism, or hermeneutics, offers an alternative approach to social inquiry with radically different epistemological and methodological assumptions than those of mainstream social science. The central claim advanced by interpretivists is that the social world is unlike the natural world in that the social world is a realm of meaning that includes both the subjects and objects of inquiry (i.e., people), whereas people impose whatever meaning the natural world may possess. As such, the social world—which includes social practices, institutions, beliefs, values as well as language itself—is analogous to a text insofar as it involves engagement and interpretation. Given this, advocates of interpretivism contend that the appropriate methods for understanding the social world are fundamentally different from those of natural science. For interpretivists, the goal of uncovering social laws, and then using them to explain social events or individual actions, is thoroughly misguided. Explaining—or, as they prefer to say, understanding—a particular action of a person simply involves showing that the person's actions made sense, given his or her values, beliefs, and the social institutions in which he or she is embedded in. It does not involve subsuming the particular action under a general law in order to predict human behavior. In fact, interpretivists tend to eschew causal language and typically argue that reasons should be understood not as causes of action but rather as rationale. Uncovering a person's reason for action is usually an adequate explanation in itself; no deeper or general explanation is required.

To his eternal annoyance, Popper was often called a positivist, but his recommendations for social inquiry have rarely been dubbed interpretive (Farr [1983; 1985] is an exception). Yet we can already see from the brief description above that interpretive social inquiry bears a resemblance to situational analysis. Both approaches seek to explain individuals' actions by placing them within the broader social context, and both approaches conceptualize human
action not in causal terms but rather as reasonable or adequate behavior, given a person's beliefs, goals, and social environment. The similarity between situational analysis and the interpretive approach was actually noted by Popper himself. In fact, in his 1968 essay "On the Theory of Objective Mind" he presented situational analysis as the proper method for interpreting human action (OK, 178). Although Popper had previously described situational analysis as a method of explanation and understanding, he had tended to stress its continuity with natural science rather than its compatibility with the humanities. Now he presented situational analysis as a full-blown interpretive approach. The 1968 essay was also significant because, for the first time, Popper explicitly tied situational analysis to his ontological theory of the three worlds. Specifically, Popper hoped to make a contribution to hermeneutics by positing that interpretation entails "the understanding of objects belonging to the third world which constitutes the central problem of the humanities" (OK, 162). He claimed that this marked a "radical departure" from the traditional understanding of hermeneutics, which held "that the objects of understanding belong mainly to the second world, or that they are at any rate to be explained in psychological terms" (OK, 162). In other words, Popper argued that understanding does not lie in disclosing the subjective mental states of a person (a view that Popper attributed, questionably, to Collingwood and Dilthey); rather, it lies in elucidating—that is, interpreting—the World 3 entities that the person encounters. Such World 3 entities would include theories, norms, arguments, conjectures, and language itself, which, Popper said, is a repository of theories about the world (OK, 165).

In "On the Theory of Objective Mind," Popper was concerned with historical explanation, but his argument has obvious relevance for our understanding of situational models. As Popper himself emphasizes, a situational model will always include a description of the World 3 environment encountered by actors implicated in the model. This means that social scientists will have to interpret the World 3 entities that are part of the model. When the model is put to the test—that is, when social scientists try to falsify the model—critical attention will mainly focus on the World 3 environment. Social scientists will ask, Have we described the social institutions, norms, values, and practices accurately? But when they try to criticize the interpretation of the World 3 aspects of the model, the kind of criticism that they bring to bear on the problem will be different from that employed in natural science. We have already seen, in our discussion of the distinction between metaphysics and science in chapter 2, why this is so. According to Popper, we test a scientific theory by assessing how well it corresponds to reality, a reality that is objective and independent of us. If the predictions borne out by theory appear to be contradicted by the facts, we must revise or reject our theory. Similarly, we could posit a particular meaning of a World 3 object—such as a text, social practice, or social norm—and then test our theory. But we will not test our theory against an independent, external, objective reality. Instead, the validity our
conjectural meaning will be assessed by its overall coherence with other World 3 objects in a web of meaning. Establishing this coherence will be subject to the so-called hermeneutic circle. That is, the meaning of the World 3 object in question will depend upon its constituent parts, but the meaning of the individual parts will in turn be dependent upon the meaning of the whole. For instance, in order to understand a particular passage in a text, we must understand the general meaning of the whole text. But to understand the whole text, we must understand the individual passages that compose it. In seeking a fuller understanding of the text, we also might seek to incorporate it into a wider web of meaning, say, a tradition or social practice. However, in the end there will be nothing extratextual (understood in the broadest sense of “text”) against which to test our theory of meaning. It is precisely this difference in judging theories that, for instance, Charles Taylor sees as fundamental to the difference between natural and social science (Taylor 1985b, 17–18).

Popper acknowledges the existence of the hermeneutic circle (OK, 187 n. 39), but he never explicitly draws out its implications for testing conjectural reconstructions of World 3 problem situations. Recall also from chapter 2 that Popper, in another context, acknowledged that “the tests of an historical interpretation can never be as rigorous as those of an ordinary hypothesis [in the natural sciences]” (OSE I, 171). Popper did see a difference between testing interpretations and testing scientific hypotheses, but he seems to have viewed the difference as more a matter of degree than kind. However, there is a qualitative distinction between interpretive criticism and criticism in the natural sciences. Criticism of natural science theories mainly involves empirical testing. Even if the empirical evidence used to test a scientific hypothesis is always, as it were, encased in theory that requires interpretation, at the core there still lies a real, extratextual world that the theory attempts to explain. True, empirical evidence will often be important in criticizing interpretations of World 3 entities. For example, evidence obtained from an archeological dig might help anthropologists reconstruct the meaning of some ancient ritual. Nonetheless, a significant part of interpretive criticism will remain trapped inside the hermeneutical circle, with no extratextual court of appeal.

Where does this leave the falsifiability of situational models then? It appears that they are hampered by dual falseness and the hermeneutic circle. This means that falsification of a situational model will always be much more subject to debate compared with natural science theories, and no falsification of a situational model will ever be definitive. But, as Popper argued with respect to metaphysics, lack of falsifiability does not mean that situational models may not be rationally criticized. This suggests to me that, in terms of falsifiability, we should view situational analysis as lying somewhere in between natural science and metaphysics.

Regarding the unity of scientific method, our conclusion is as follows. In the broadest sense, Popper’s claim that natural science and social science may
be characterized as exercises in critical problem solving is unobjectionable as far as it goes. But this unity is gained only by eliding some very important differences between the two areas, especially with respect to falsifiability, which I have argued is a more worthy Popperian candidate for uniting the sciences than problem solving.

SUMMARY

This chapter completes our exploration of Popper’s response to positivism and its implications for his social science. We can now say that Popper clearly was not a positivist, at least not after the fashion of the Vienna Circle. In chapter 2 we saw that Popper rejected verificationism in favor of falsificationism, and he rejected the positivists’ claim that purified sense data form the foundation of science and knowledge, arguing instead that all scientific inquiry begins with theory and all empirical evidence is laden with theory. He also argued, against the positivists, that metaphysics is not meaningless but can be rationally criticized, and that the aim of science is to describe a real world that lies beyond appearance. That is, he was a scientific realist.

Our findings in this chapter regarding Popper’s stance toward other aspects of positivism—namely, causation as constant conjunction, the covering-law model of explanation, and the unity of scientific method—produced more ambiguous results. We saw that Popper embraced the notion of natural necessity and thereby repudiated causation as constant conjunction. However, he continued to endorse the covering-law model of explanation, which I suggested is at best superfluous if, like Popper, one supports the concept of natural necessity and, more broadly, scientific realism. I suggested that the covering-law model should be viewed as an artifact of his earlier philosophy of natural science and can be severed from his mature philosophy without harm. Turning to social science, I argued that the covering-law model of explanation can have no place in Popperian social science. This is because, first, genuine lawlike social regularities are nonexistent, and, second, laws play no role in Popper’s situational analysis anyway. Regarding causation and situational analysis, I contended that the actions of an agent at the center of a situational model should not be construed in causal terms. To be consistent with Popper’s support for the doctrine of human free will, we should view an agent’s action as freely chosen, albeit generally rational and therefore fairly predictable in many situations. Finally, we saw that models based on situational analysis are not subject to the same degree of falsifiability as natural science theories.

In the end, whether Popper should or should not be labeled a positivist is, in itself, ultimately of little importance. As Popper would surely say—in fact, as he did say with respect to this question—words do not matter (ISBW, 89). What matters are the ideas behind them. The main value of examining Popper vis-à-vis positivism is to elucidate his general philosophy of science and to enrich our understanding of Popperian social science and situational analysis in particular.