# Chapter 1 Empiricism

To explain, to establish some relation of dependence between propositions superficially unrelated, to exhibit systematically connections between apparently miscellaneous items of information are distinctive marks of scientific inquiry.

Ernest Nagel1

.... as Albert Einstein once remarked, politics is like physics, only harder.

Michael Brown<sup>2</sup>

### Introduction

Modeled on the principles and methods of inquiry in the natural sciences, empiricist approaches to interpreting politics seek to explain political life and experience by treating political experience *as if human beings behave like objects in the natural world*. Just as, for example, physicists may explain the movements of objects in space and time as part of patterns of law-like, cause and effect relations in nature, empiricists in political inquiry use scientific methods of observation and analysis to discover what they understand as *general* patterns of law-like, cause and effect relationships in politics. Importantly, however, the objectives of empiricism in both the natural and social sciences go beyond offering accurate, descriptive explanations of political

<sup>&</sup>lt;sup>1</sup>Ernest Nagel, *The Structure of Science: Problems in the Logic of Scientific Explanation* (Indianapolis: Hackett Publishers, 1987), p. 5.

<sup>&</sup>lt;sup>2</sup>Michael E. Brown, "Causes and Implications of Ethnic Conflict", in Montserrat Guibernau and John Rex, eds., *The Ethnicity Reader: Nationalism, Multiculturalism, and Migration* (Cambridge: Polity Press, 2010), p. 99.

life. Empiricist scientists in both realms seek to use their general knowledge about observable patterns in social and political life to *predict* and, in turn, to *manage*, *control*, and even *engineer* the future behavior of their objects of study. Empiricist political inquiry thus uses scientific principles and methods to generate practically useful knowledge in a very particular sense: useful to produce certain desired political phenomena and to prevent others.

Despite the range of powerful, contemporary critiques and alternatives to empiricist science (that we shall carefully explore in subsequent chapters), empiricism is the single, most influential theoretical foundation for the interpretation of politics in the world today. In offering empiricist scholars a way to achieve neutrality and "objectivity" in collecting and analyzing evidence and drawing conclusions about political institutions and behavior, empiricism profoundly shapes thinking in both academic teaching and research throughout the world. It functions as the foundation for legitimate thinking about policy in governmental deliberation and decision-making, in media representations of political phenomena and events, and in many institutional domains that are only vaguely connected to what people think about as politics, such as business modelling, legal argumentation, data journalism, and sports analysis. Indeed, the new crave for statistical data in sports analysis (see, for example, Moneyball by Michael Lewis) rests on quintessentially empiricist presuppositions about employing general patterns of cause and effect relations to produce predictable outcomes. Empiricism is such a dominant way of thinking in modern society that, as you study empiricism's approach to interpreting politics, we are sure that you will agree that it is the most widespread way of seriously thinking, talking about, and participating in social and political life today.

Within the realm of political inquiry alone, the influence of empiricism on the study of politics has been so profound since the turn of the twentieth century that, to underscore their commitment to the empiricist *scientific* approach to the study of politics, many colleges and universities have either established Departments of Political Science or transformed their previously existing "Departments of Government," "Departments of Government and Law," or "Departments of Politics" into "Departments of Political Science." We hasten to note as well that, as a methodological framework, empiricism is not only dominant within political science; it occupies a place of special prestige in sociology, history, and especially economics and psychology. Regardless of whether the names of particular departments explicitly signal a commitment to empiricism, the dominant view of what it means to *interpret* or *explain* politics is significantly constituted by empiricist aims, presuppositions and interests. In this chapter, we explicate these aspects of empiricism as well as its profound appeal to generations of political science students. We shall do so in both abstract, theoretical terms and by way of examples that illustrate and concretize those theoretical points. Of course, like every novel intervention in domains of political inquiry, empiricist political science raises as many questions as it answers. Its philosophical foundations and its characterization of the relationship between the political analyst and the subject matter of politics have been subject to a great deal of intense critical scrutiny—scrutiny that has paved the way toward opening up alternatives to empiricism in the study of politics. We shall explore with interest many of these questions and criticisms toward the end of this chapter and in the chapters that follow. Let us begin, however, by looking closely at the content and appeal of the central theoretical premises of empiricism as a foundation for the study of politics.

#### Empirical Observation, Positivism, and the Unity of Science

According to empiricism, the study of politics ought to aspire always to be a thoroughly *empirical* science. Many people conflate these two terms, empirical and empiricism. In its most general and ordinary sense, empirical means, "based on observation and experience." Empiricism understands "observation and experience" in a very particular way, however. In empiricism, "empirical" means based on observation and experience of phenomena that are immediately present to the five senses—sight, hearing, taste, touch, and smell—or instruments used to enhance them, like microscopes and computers. In this way, empiricism views "empirical observation" as the observation and experience of those political phenomena that human beings can observe *directly*, in what empiricism understands to be an unmediated, unbiased, and objective way—that is, in a scientific way that is not shaped by the observers' values or beliefs. Empiricism strives to describe how the world *is*, not prescribe how it *ought to be*.

This view of the meaning of empirical, and the goals of empiricism that evolve from it, have many philosophical sources and historical trajectories, especially in the history of Western philosophy, from the writings of Plato and Aristotle through those of the philosophers of the European Enlightenment, such as René Descartes, John Locke, and David Hume. In contemporary times, the crispest expression of the meaning of "empirical" in empiricism may be found in the outlook of *positivism* as that outlook was articulated by a group of early twentieth century philosophers called the Vienna Circle. The philosophers of the Vienna Circle maintained that the only valid, legitimate, "meaningful" statements about knowledge are those that human beings

acquire through immediate sense-based experience.<sup>3</sup> Positivism sets itself up as an almost revolutionary doctrine against what it considers "meaningless" claims about the world, i.e., claims derived from sources other than direct sense-experience. Examples are statements about the world founded on "common sense" or what positivism views as pseudo-"knowledge" found in religious scriptures, pseudo-scientific texts, or expressed in the words of elders, priests, or Gods. The latter are not, in the lasting motto of the Vienna Circle, empirically *given*, that is, given to humans through observation, either directly or through instruments designed to enhance them. As such, nonempirical statements are *meaningless* in the context of the pursuit of knowledge. True knowledge of the natural and social world is only to be founded upon sensory experience. It is gathered and created, as empiricists understand it, by setting aside all a priori theoretical, philosophical, ideological, moral, or political judgments about the world. A common empiricist way of putting this is that knowledge is based on "reality"; it is "observation based," not "theory-based." In this formulation, the word theory refers to any *a priori* judgments made without reference to sensory experience that are, from an empiricist standpoint, invalid.

There are some important distinctions between positivism and empiricism—positivism, for example, inspired the creation of fully–fledged political parties in some countries, an issue to which we will return below—but in academic discourse today the two are understood to be so similar that they are often spoken of interchangeably. What we are describing as empiricism, you may hear others talking about as positivism, and vice-versa.

Grounding the meaning of "empirical" in sensory experience was a crucial component of the broader positivist and empiricist goal to *unify the sciences*, that is, to apply the principles of observation and explanation in the natural sciences to the study of human, social life—to produce a *social science!* The *unity of science* is based on two fundamental ideas that we have already briefly mentioned: first, that social beings, like objects in the natural world, behave predictably in accordance with natural "laws" of cause and effect and, therefore, secondly, that any differences between the natural and social sciences are only a matter of degree, and are not fundamental. The methods, concepts, forms of analysis and explanation, and analytical aspirations applied in the natural sciences ought to be applied within social, and thus political, inquiry as well. Positivism aspired to provide a philosophical standard that would guide inquiry for all legitimate, meaningful scientific analysis in the non-human natural and human-social realms of scientific inquiry. To achieve this goal, social scientists in general and political scien-

<sup>&</sup>lt;sup>3</sup>See, e.g., A. J. Ayer, ed., Logical Positivism (New York: The Free Press, 1955).

tists in particular need to adopt and adapt both the language and the analytical aspirations of the natural sciences in their methods, in their analysis of observations, and in their findings and conclusions.

The aspirations of the Vienna Circle are *modern* in the sense that they express the prior philosophical ideals, found in the work of thinkers like John Locke and Immanuel Kant, that human beings are capable of using their *innate* faculties of perception and cognition, including their powers of observation and logical reasoning, to both know and make the world in which they live. That is to say that, empiricists believe that scientific knowledge is both intrinsically and instrumentally valuable. It both provides an understanding of the cause and effect relations between observable objects in the world, and it gives human beings the power to manage, if not master, that world. This is the essential goal of scientific explanation according to empiricism: to know the cause and effect relations between observed phenomena at the most general level to use that knowledge at any time and place, both to predict what may happen and to control what will happen (if those predictions are founded on disciplined scientific observation and, therefore, accurate). Think about the underlying logic: If one knows that there is a "causal relationship" between a certain cause, call it X, and a certain effect, call it Y, and one desires to produce effect Y, then one can intervene in the world by producing X to produce Y. This is a relatively abstract formulation of something we experience and usually take for granted on a daily basis.

Think of public policies and public relations campaigns regarding health and nutrition. From taxes on cigarettes that may lower the cost of health care by reducing the number of diseases caused by smoking to the recommendations of various departments of health about how many calories people ought to consume to how many steps they should take every day, public policies in the domain of health care are founded on empiricist studies about lawlike relationships between human behavior and health. Human beings use science to establish policies, institutions, and laws that govern our everyday lives. Abstractly speaking, then, if empiricist scientists can know and predict that a reduction in the number of people who smoke (the X, in this concrete case) will cause what many deem a desirable effect, namely, a reduction in the cost of health care to taxpayers (the Y), then legislators might consider creating policies that reduce the number of smokers to reduce the costs of health care. General knowledge about the cause and effect relations between things that happen in the world enables human beings to intervene in those relations, both to predict outcomes and to create or avoid them. Herein lies a tension within empiricist thought and practice in the realm of political inquiry. Recall that empiricism requires that knowledge be value-free. Once knowledge is ascertained, however, empiricists seek to use it to produce spe-

cific outcomes, outcomes that carry with them many values. (As we shall see in subsequent chapters, empiricism's value-free claim has been subject to intense critical scrutiny.)

The capacity to know and intervene in the world to create outcomes by controlling causes that are ascertained through value-free observation leads empiricists, therefore, to see their role both as *objective* and *progressive*, in very particular ways. It is objective in the sense that empiricists believe they have "universal" knowledge of the world as-it-is, available to all human beings and exclusive to empiricism. According to empiricism, all human beings have the sensory faculties it takes to truly know anything (those without some of the sense faculties may rely on others who possess them). Whereas, in what is understood as the pre-modern past, knowledge was the province of only a few, select human beings with special access to the truth, now all human beings are viewed as knowers and creators of, and in, worldly affairs. Human beings have also become the ultimate judges of the ends to which their knowledge is used. Their powers of prediction and transformation, grounded in scientific observation, have replaced the power of the gods. Empiricism is thus also *progressive*, in the sense that empiricists can *improve* the world into what it *ought-to-be*. This is an important *normative* dimension of empiricist scientific activity: empiricist science can cause desired and predictable outcomes to make the world better.

Undergirding positivism and empiricism is the *Enlightenment* belief that human rational capacities offer the basis for freeing human beings from a prior state of tutelage and giving them full control over their own destinies. They can control that world by creating technologies and institutions based upon their reasoned analysis of their observations of social behavior. History is now something human beings can make on their own, toward ends they determine on their own, with new scientific methods guiding their way. If we know the general causes of war and we want to prevent it, then we can intervene to adjust those causes and prevent war; similarly, if we know the causes of war and we want to create it, we can intervene in a different way, producing causes of war instead of causes of peace. If we know what leads students to join clubs or workers to join unions, and we want more clubs and unions, then we can establish the conditions that cause the formation of clubs and unions. If we don't want clubs or unions, then we can establish the conditions that prevent their formation. Note the intimate relationship between the knowledge of cause and effect and the capacity to design, manage, produce, and engineer a world that human beings most desire.

This notion of active human intervention in causal processes was concisely formulated in the foundational, positivist treatise about the need for scientific inquiry written in the mid-nineteenth century by the French phi-

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losopher Auguste Comte (1798–1857). In *A General View of Positivism* (1848), Comte asserted: "From Science comes Prevision; from Prevision comes Action." Prevision refers to the predictive capacity that comes with knowledge of causal relations. Prediction allows scientists to see the future—such as, the reduction in health care costs by reducing smoking—before it happens! Comte thus attacked persistent "theological" and "metaphysical" (non-empiricist philosophical) claims to know and understand the world. He boldly declared that the days of knowing things through "traditional" means like prayers, oracles, soothsayers, magicians, or abstract philosophical postulations are over. Real knowledge is not based on abstract notions derived from religious, philosophical or ideological commitments. It must be based on what is *immediately given* to the senses.

Comte had philosophical and political followers of his positivist doctrine around the world. His motto "order and progress" - knowing the cause-andeffect order of nature and, on that basis, making progress—became the beacon call for movements all over the world seeking to transform their societies according to scientific reason. The curved band on the blue globe of the flag of Brazil still reads, *Ordem e Progresso*—a legacy of positivism's influence at the explicitly political ideological level. Similarly, in Turkey, the main ideologue of the Turkish national revolution, Ziya Gökalp, bluntly declared that, "a modern nation is a creature that thinks in terms of the positive sciences."<sup>4</sup> In the United States, as George A. Reisch has shown, efforts by original members of the Vienna Circle to popularize their "scientific world-conception" fizzled in the context of the Cold War and McCarthyism. As a result, their "unity of science program transformed from a practical, collaborative goal to a more narrow academic thesis" in the philosophy of science.<sup>5</sup> To be sure, in North America, positivism's largest impact in name has occurred in the context of academic studies—our context of academic research and teaching where its major political manifestations are not well known. In the United States, positivism and empiricism are understood as synonyms for the same scientific methodology. For our purposes, because positivism may be distinguished from empiricism by pointing out its real-world manifestations in social and political movements like those in Brazil and Turkey, we shall proceed by referring to empiricism.

<sup>&</sup>lt;sup>4</sup>Ziya Gökalp, "Towards Modern Science," in Niyazi Berkes, ed, Ziya Gökalp, *Turk-ish Nationalism and Western Civilization: Selected Essays of Ziya Gökalp* (New York: Columbia University Press, 1959), p. 279.

<sup>&</sup>lt;sup>5</sup>George A. Reisch, *How the Cold War Transformed the Philosophy of Science: To the Icy Slopes of Logic* (Cambridge: Cambridge University Press, 2004), pp. 3, 15, 373–374.

# Legitimate Knowledge, Data, Operational Definitions, Facts, Causes, Correlations, Variables, and Explanation

How do the core philosophical premises and practical goals of empiricism manifest themselves in the context of actual political inquiry? In carrying out political inquiry, the phenomena that scientists observe through their five senses or instruments used to enhance them are variously referred to as evidence, sense data or simply data. We are certain you are familiar with this and other basic terms of empiricism through your schooling in science classes throughout your life. Scientists begin by making *hypotheses* about the cause and effect relationship between the phenomena they have observed. At the most basic level, they assign words to these phenomena-"cloud," for example, to formations in the atmosphere observed with the senses and instruments; "vote" to markings observed on a ballot through their sense of sight, or with computers; "revolution" to a radical change in government, society, or culture. In the scientific process, words such as "cloud," "vote," and "revolution" are defined through a procedure that empiricists call operationalization. Operationalization involves assigning, fixing and stabilizing the meaning of each concept according to each observation, such that vote or revolution consistently correspond to precisely characterized sense data observations.

Operationalization often involves specifying how a particular concept may be measured. Measurement can take a variety of forms, such as quan*tification* or, more simply, counting. "Growth of revolutionary fervor," for example, may be operationally connected to observations of large numbers of anti-government protests. Each of the terms in the compound concept, "antigovernment protests," must be operationalized to be valid, because validity depends on connecting each concept with observable data-data that is understood as given directly to the senses or instruments used to enhance them, such as media and computers. "Protest" might be operationalized to correspond to large gatherings in public spaces where speeches are made and slogans are voiced against a government. "Fervor" may be operationalized and measured, according to the seen and heard intensity of the speeches and behavior specified by the empiricist observers as "fervor." Similarly, the concept of an "anti-immigrant nation" may be connected to observed groupings of peoples according to political boundaries experiencing mass migration and high levels of unemployment, with high numbers of organizations that speak, organize, and publish political positions against immigration. "Anti-immigrant nation" might be measured according to the numbers of citizens in that country who are unemployed, immigrant workers entering a country, and identifiable anti-immigrant organizations. Empiricism requires

consistency in operationalized meanings and precise stipulation for measurement to enable hypothesis building and repeatable testing of observations of sense-grounded observations. In this way, empiricism establishes an unambiguous and specific relation between the elemental sense data observed in the world and the language used to describe that data.

Stated in more technical terms, operationalized concepts are logically and strictly connected to sense data using human reasoning about connections between concepts (e.g, "vote") and world (e.g., marking on page). The meaning of each term in a scientific statement is thus stabilized to create a one-to-one correspondence between the term—cloud, vote, revolution, protest, anti-immigrant nation, etc.—and specific phenomena observed in the world. Importantly, once this elemental correspondence is achieved, scientists can talk at various levels of abstraction about the data they observe. That is, they may begin by discussing "votes" and, based on empirical analysis of participation rates, might form hypotheses about "political participation." Those studying anti-immigration nations may form hypotheses about "intolerance." The latter concepts, "political participation" and "intolerance," are *second-order* operationalizations based on *first-order* operationalization of the primary sense data (vote or anti-immigrant nations).

Recall that the goal of empiricism is to generate very general statements about the causal relations between variables in the world. Before arriving at such statements, empiricists do a lot of work in terms of basic conceptualization. Operationalization of concepts is but one of the levels of imaginative thinking and reasoning. Empiricists also determine the validity of the observational statements that they make about the data they observe. It is not enough simply to name the world: they seek to test observational statements en route to discovering *facts* about the world, as well as to distinguish factual statements based on sense data from other kinds of statements that are categorically rejected and ruled out. These other kinds of statements may be of several kinds. The most important are what empiricists would call *false* statements, but there are also a whole range of truth claims that transgress the boundaries of empiricist analysis. Let us take an example.

What is the difference between saying—and let's assume it is raining outside, and the sun is still shining—"there is a rainbow in the sky" and "the rainbow is so beautiful?" The difference between the two statements is clearly not between truth and falsity. For the empiricist relying solely on observation through the five senses, only the first statement can be true or false. The second statement is a statement of judgment, taste, sentiment, or value. It expresses the judgment that the rainbow is "beautiful." Can the quality of beauty be ascertained through the five senses alone? We might, of course, attempt to operationalize "beauty," but we can quickly imagine

confronting a series of obstacles based on different sentiments of what counts as beautiful. This is why, for empiricism, statements of taste, judgment, and value are understood to be derived from sources other than direct observation of the world; they are derived from an observer's pre-observational commitments about what is beautiful and ugly, or good and evil, or just and unjust, etc. Thus the difference between the two statements is that the first— "there is a rainbow in the sky"—is a testable proposition; while the other— "the rainbow is so beautiful"-lies outside the realm of empiricist evaluation altogether because it expresses a judgment about the beauty or goodness or value of what is being observed. It lies outside the realm of science. This is a version of the famous *fact/value* distinction, a topic that we shall touch upon later. For now, we note that empiricists draw a very strong distinction between scientific statements derived from sense data that seek to offer objec*tive descriptions* about the facts of the world, on the one hand, and statements about judgment and value—what they see as *normative or value-laden* statements-on the other. The former constitute part of empirical science according to empiricism, the latter lie outside its realm of neutral observation.

So what makes the statement "there is a rainbow in the sky" a factual, scientific statement? Scientists have generated many criteria to determine what is a fact and what is not. Perhaps the most important is the criterion of intersubjective verifiability. This cumbersome term is actually relatively easy to understand, and we suggest that you test it as we explain it. To say that something is intersubjectively verified means that different individuals (referred to as "subjects" in philosophical discussions) have observed it through their senses and verified that their observations are the same. If we were all sitting in the same room, looking outside at the rainbow, we could say that the statement, "there is a rainbow outside the room" is, on these terms, a factual statement. Note that each and every term in this statement must be operationalized—that is logically connected to the observable phenomena in the world. This would be easy to do with "rainbow" and "room." We would establish, as generations have, a stable connection between the word "rainbow" and the multicolored phenomenon outside, as we would with "room" and what is meant by "outside." According to the criterion of intersubjective verifiability, we would subjectively observe (directly or through instruments, like eyeglasses, designed to enhance them) the rainbow and verify that we had observed the same thing outside the room. Those whose vision may be constrained for some reason could, just as scientists often rely upon the observations of other scientists, rely upon the vision of those who are observing the rainbow. Similarly, we could do the same thing with statements such as "Barack Obama won the 2008 and 2012 United States Presidential elections" or "There are homeless people in San Francisco." These are factual statements because they can be subjectively observed through our five senses or instruments used to enhance them and verified by a group of observers the scientific community studying elections and/or homelessness.

Try it yourself with statements like, "the lights in the room are on" or "the war in Syria generated a migration crisis." Statements of fact in the realm of the social sciences are not necessarily uncontroversial. For example, the statement, "the United States is a secular state" may be a brute fact for some, but controversial to others. What empiricists attempt to do with controversial statements is to operationalize their terms so as to ascertain agreement on precisely what is being observed. So, for example, note that "secular state" may be operationalized by the following observational criteria: "countries that have a constitutional clause or tradition of separating religion and politics." Notice as well how each of these statements can be intersubjectively verified, and thus considered a fact for the purposes of knowledge creation.

Now see if you can intersubjectively verify the statements, "The rainbow is beautiful," "the lights are too bright," "President Barack Obama was a successful president," "the economic crisis was necessary and inevitable," "all nations should welcome migrants," or "secularism in the United States is bad." Note how "beautiful," "too bright," "successful," "necessary and inevitable," "should," and "bad" are matters of taste, judgment, sentiment, and value. This means that they might not be subjectively observed by everyone, and thus these statements lie outside the domain of empiricist science. Privately, individual scientists may believe these things. They may hold very deep beliefs and cherished values about how things ought to be in the world; they may even pray and believe in ghosts, but such beliefs are not relevant, from an empiricist perspective, for the purposes of knowledge. They may be relevant for finding meaning and comfort, or for developing a sense of responsibility in the world, but *not* for knowledge. To know the world, one must conduct observation through the senses in the way we have discussed thus far.

Knowledge creation for empiricism does not simply stop at collection of facts either. Empiricist social scientists seek to take these factual observations and link them in a series of statements to *explain* the relationships between the observed phenomena in the world. To do this, they create hypotheses, which are statements about a presumed cause and effect relationship between facts in the world. They then test these hypotheses, and if the hypotheses are confirmed through repeated and systematic observation, they may become *theories*. Theories are statements about the relationships between observed data in the world that have undergone extensive observation and testing. Theories may be relatively simple or they may be extremely complex. We shall give some examples momentarily. Crucially, all the significant terms in

the theory must be operationalized, just as all the statements comprising the theory must be built on factual observations. The most general theories are called *laws*, and while most empiricists seek to discover laws, they most often work in the realm of *correlation* and *probability*.

There is another constraint in terms of establishing causality that haunts empiricism in the natural and social sciences. This constraint was pointed out by the philosopher David Hume (1711–1776) who noted that one can never know causality with absolute certainty, for, among other reasons, there may be intervening causes that we may not perceive, yet or ever. Therefore scientists can only know the constant sequential conjunction of observed events. To say that "A causes B" is tantamount to saying that "whenever we find A, B follows." Because of this built-in limit to all causal observation, rather than causality, most empiricists, though they may talk in terms of causes, aim to establish strong, observed and tested correlations or *relations of dependence* either *invariable* or *probabilistic*—between observed phenomena in the world. The events they seek to explain are formally called the *dependent variables*, while the one or more factors that are said to affect ("cause") the dependent variables are called the *independent variables*. The goal of all hypothesis formulation and theory building is to determine the nature of the relationships between the independent and dependent variables. When that is achieved, phenomena can be *explained*.

*Explanation* has a very specific meaning in the context of empiricism. It means to show how an observable fact—a single dependent variable—is an instance of a larger causal pattern. As Roger Trigg has concisely put it, the goal of empiricist explanations is "to fit particular instances into a network of regularities which are established through observation."<sup>6</sup> The most fundamental aspiration of empiricism, then, is to produce knowledge of laws that show how specific cases are instances of general patterns. This aspiration has several crucial components intimately tied to the broader empiricist goals of prediction and control, so let us elaborate on this at some length and then provide examples that demonstrate all of the theoretical points we have made thus far.

# The Deductive-Nomological Model as the Analytical Imperative of Empiricism

The famous twentieth-century philosopher of science, Carl Hempel (1905– 1997), examined the logical structure of empiricist knowledge and cast empiricist aims in the form of a logical argument, what has come to be known as

<sup>&</sup>lt;sup>6</sup>Roger Trigg, *Understanding Social Science*, second edition (Oxford: Blackwell, 2001), p. 8.

the *deductive-nomological model of explanation*. This model summarizes all of the most fundamental conceptual presuppositions and analytical aims of the empiricist approach to interpreting politics and is, thus, highly instructive for our purposes. Deductive here indicates that empiricist explanation ultimately takes the form of a logical argument, the premises of which, begin at the most general level and proceed to the most specific. "Nomological" here means concerned with general rules or laws. This indicates that empiricist explanation aims toward the most general forms of understanding. As we have noted, the goal is to discover strongly correlated patterns at a general level into which particular instances of that pattern fit. Insofar as it summarizes the goals of empiricism, the D-N model, as it is known in shorthand, is extremely important to understand. So let us examine it closely.

Hempel's example, elaborated slightly for our purposes, was drawn from the non-human natural sciences and was something like the following.

- 1. All sodium salt, when placed in the flame of any Bunsen burner, turns the flame yellow.
- 2. (a) This piece of rock salt is a sodium salt, and (b) it is placed in the flame of a Bunsen burner.
- 3. The flame turns yellow.<sup>7</sup>

This model summarizes the imperatives of empiricist explanation in several ways. First note the logical character of the argument: the conclusion follows necessarily from the premises. The entire argument could be written in the form of a very common syllogism, known in logic as *modus ponens*:

If P, then Q P  $\overline{Q}$ 

Or:

If any piece of sodium salt is placed in a flame, the flame turns yellow.

This piece of sodium salt is placed in a flame.

A yellow flame.

<sup>&</sup>lt;sup>7</sup>Example adapted from Carl G. Hempel, *Philosophy of Natural Science* (Englewood Cliffs, NJ: Prentice Hall, 1966), p. 10.

Also note the logically *deductive* character of the explanation: the premises proceed from most general theoretical statements to the most specific empirical observations. The first premise is the theory, stated in the most general form about all sodium salt and any flame. It specifies a strong correlation, indeed, an *invariable* relation of dependence between salt and flame. The second premise is really a set of two sub-premises -(a) and (b). These specify the particular conditions under which the outcome, the phenomenon to be explained, occurs. The two sub-premises are: there is a piece of sodium salt, and there is a flame (of the Bunsen burner). Note that these sub-premises are very specific *instantiations* of the independent variables stated at the most general level in premise 1. That is, in premise 2, the language is specifically about particularly observed conditions: *this* piece and *this* flame. Finally, the argument is logical insofar as the conclusion follows from the premises. The conclusion, therefore, is the specific effect—the outcome of the relationship between this sodium salt and this flame. Importantly, "the yellow flame" is said to be *explained by the conjunction between premises one and two*. To repeat, explanations show how specific observed phenomena are part of a larger pattern. Note that the "premises" and "conclusion" allow us to think about empirical relationships in logical terms.

This example also illustrates how explanation is intimately tied within empiricism to prediction and control. Explanation is achieved by showing how the yellow flame is an outcome of the strong correlation between salt and flame (under the conditions of there being a salt, a flame, and the one placed into the other). One can say therefore that explanation is achieved by moving upward in the argument, from the conclusion to premise one. That shows how the single instance fits within the larger pattern. Prediction, on the other hand, is achieved by going in the other direction from premise one to the conclusion. Think about it: if one knows the causal relationship between variables stated at the most general level, then one can predict what will happen when particular instances of those variables occur. That is, if one knows that "all sodium salt, when placed in any flame of a Bunsen burner will turn the flame yellow," one can predict that if one places a piece of salt into a flame, the flame will turn yellow. As Auguste Comte said: with explanation, comes prevision. Furthermore, control is achieved insofar as this knowledge allows one to produce a yellow flame, if one seeks to do so, by placing salt into a flame.

Hempel's brilliant insight was that any empiricist explanation was, in principle, capable of being reconstructed according to the pattern of this deductive-nomological model. Important to note is that all of the terms of the model also follow the standards of operationalization and intersubjective verifiability. That is, all of the conceptual and analytical presuppositions we discussed above are embedded in the model. Represented in its most abstract form, the D-N Model looks as follows:

- 1. A statement about the strongly correlated relationship between observable variables in the world stated in their most general form. (This may take the form of "All..." or "If the independent variables obtain, then the dependent variable occurs.")
- 2. Statement or statements about the particular observed independent variables. These statements instantiate the generally stated variables of the first premise.
- 3. Description of the specific, observed phenomenon; the dependent variable.



This abstract representation describes the D–N model in the language of the philosophy of science, but empiricist social scientists (political scientists among them) frequently talk in these terms as well. In his now classic introduction to empiricist political science, *The Craft of Political Research*, W. Phillips Shively describes the meaning and importance of the first premise—the theory.

Social scientists carry out this simplification by developing theories. A theory takes a set of similar things that happen—say, the development of party systems in democracies—and identifies a common pattern among them that allows us to treat each of these

different occurrences as a repeated example of the same thing. Instead of having to think about a large number of disparate happenings, we need only to think of a single pattern. Some people vote and others do not; in some elections, there are major shifts, in others, there are not; economic development programs succeed in some countries, but fail in others; sometimes war occurs, sometimes it does not. In order to have any hope of understanding why such things happen or don't happen, in order to have any hope of predicting and controlling what happens, we must produce and rely on theories that simplify our perceptions of reality.<sup>8</sup>

This imperative is pervasive among empiricist political scientists. "The purpose of a theory is not to suggest a full (or better than particular) accounting for any individual case,"<sup>9</sup> asserts one political scientist in a debate over the causes of terrorism. What good would such an account be for empiricism? The goal is "to identify common causation across similar types of cases."<sup>10</sup> Let us look closely at a classic empiricist theory discussed by Shively: Maurice Duverger's theory of two-party formation, and let us reconstruct it according to the terms of the D-N Model. Shively summarizes the theory as follows:

A country will develop a two-party system (1) if there are only two distinct political positions in the country, or (2) if in spite of the presence of more than two distinct political positions, the electoral law forces people of diverse positions to consolidate into two large political parties so as to gain an electoral advantage.<sup>11</sup>

This is Duverger's theory (sometimes referred to as his "law," because of the generality it achieves). It posits a strong correlation between observable variables in the world, but it alone is insufficient for *explanation*. Explanations require all three steps of the D-N Model. Thus for there to be an explanation, we need a particular phenomenon and particular statements about the conditions under which that phenomenon occurs.

Suppose we were to explain the mainly two-party system in the United States. Starting from premise three, we would say that the phenomenon to be

<sup>&</sup>lt;sup>8</sup>W. Phillips Shively, *The Craft of Political Research*, sixth edition (Upper Saddle River, New Jersey: Prentice Hall, 2005), p. 2.

<sup>&</sup>lt;sup>9</sup>Michael Mousseau, "Correspondence: The Sources of Terrorism," *International Security*, Vol. 28, No. 2, 2003, p. 196.

<sup>&</sup>lt;sup>10</sup>Ibid.

<sup>&</sup>lt;sup>11</sup>Shively, *The Craft*, p. 3.

explained, or the dependent variable, is the two-party system in the United States. Using Duverger's theory, we would be able to articulate premise two by *instantiating* each of the generally stated variables in the theory with specific reference to observations we would make about the United States. There are many ways to do this, but let the following serve as one possible, illustrative example. We will operationalize the concept "political position" (in Duverger's theory, the first premise) by linking it to attitudes about particular issues. Such attitudes may be observed and measured through survey research. And we will operationalize "electoral law" by observing the rules that govern elections in the United States. As you will see, it is the second part of the theory—the part that pertains to the laws governing elections in any given country—that helps to explain the two-party system in the United States. We encourage you to read this slowly and relate what is happening in each premise to the abstract definitions of each part of the D-N Model that we have described above:

- 1. A country will develop a two-party system (1) if there are only two distinct political positions in the country, or (2) if in spite of the presence of more than two distinct political positions, the electoral law forces people of diverse positions to consolidate into two large political parties so as to gain an electoral advantage.
- 2. In spite of the presence of more than two distinct political positions in the United States on issues such as reproductive rights, immigration, gun rights, policing, health care, environmental regulation, campaign finance (and so on);<sup>12</sup> by law, elections in the United States are single-

<sup>&</sup>lt;sup>12</sup>There are, for example, those who believe in large government, those who believe in small government, those who believe in changing the size of government to meet the challenges the society faces at a given time; those who believe in reproductive rights, those who believe in ending abortion, those who believe in abortion under some circumstances; those who are hawks when it comes to war, those who are doves, those who are pacifists; those who believe that religion and politics should always mix, those who believe that religion and politics should never mix, those who believe that they should sometimes mix; those who believe that immigration is good, those who believe that immigration is bad, those who believe that it is good in some cases and bad in others; those who believe public funds should be used for some purposes and not others; those who believe that wetlands should be protected, those who believe that economic needs supercede environmental regulations; those who believe that deficit spending is appropriate, those who believe it is inappropriate [and so on]. And, importantly, sometimes those who believe strongly in one of these premises may not believe in others, or may hold what are seemingly contradictory beliefs. In short, in the United States, there are more than two distinct political positions.

member district or winner-take-all elections, in which the candidate who wins the most votes wins the office, forcing the American electorate to consolidate into two major political parties, the Republican and Democratic Parties.

#### 3. The United States has a two-party system.

To comment a bit on the second premise: The electoral laws in the United States are such that winners of elections do not share the office for which they ran. They are single-member district "first-past-the-post" elections in which the person who gets the most votes in a district (not even a majority) wins the position of power. Because of this, alliances between groups with different political positions in the United States are made prior to an election, under the tents of the two main parties, to appeal to the most possible voters—to gain just one more vote than the opponent(s). (By contrast, elections that are run according to laws of proportional representation systems give different parties positions of power according to the proportion of votes they receive in the population. In such systems, alliances for the purposes of governing are more often made *after* the election, when parties know how much power they can expect to have.)

Duverger's theory can thus be said to explain the two party system in the United States. And, perfectly illustrative of the empiricist nomological aim — that is to produce the knowledge of the most general level into which specific instances fit—Shively writes: "Having formulated his theory, Duverger no longer had to concern himself simultaneously with a great number of idio-syncratic party systems. He needed to think only about *a single developmental process*, of which *all those party systems were examples*" (emphases added).<sup>13</sup>

Let us take another example drawn from political science studies of voting behavior—an example we will return to in subsequent chapters as well. Political scientists frequently study voting behavior to explain why individuals vote in particular ways and to predict the outcomes of elections. Sometimes their knowledge is employed by political actors in an attempt to control the outcomes of the elections. Elections are extremely important political phenomena, because their outcomes determine who governs and to what ends. The concern among political scientists to understand voting behavior is thus not trivial.<sup>14</sup> Let us look at an example of empiricist explanations of

<sup>&</sup>lt;sup>13</sup>Shively, op. cit., p. 3.

<sup>&</sup>lt;sup>14</sup>See, e.g., Richard G. Niemi, Herbert F. Weisberg, and David C. Kimball, *Contro*versies in Voting Behavior, fifth edition, (Washington: Congressional Quarterly Press, 2011).

how individuals vote under particular circumstances. It is no accident that the following example, drawn from a portion of a textbook on how to carry out political science in an empiricist fashion, uses empiricist language and is stated in such a way that it conforms precisely to Hempel's formulation.

[A]ssume the phenomenon to be explained is the Labour Party vote of an Indian émigré in Britain, a person whose socioeconomic status is clearly lower class. One may understand such a vote as a particular case of the proposition that lower-class members of frequently oppressed ethnic or racial minorities tend to vote for parties to the left of the middle of the political spectrum. Since this individual is such a minority in this context, and since the Labour Party is the viable alternative on to the left of the political spectrum, the case is scientifically "explained" by this general proposition.<sup>15</sup>

This explanation may be reconstructed according to the features of the D-N Model, but an important alteration must be made, because the theory is stated in terms of probability. As we have noted above, many empiricist social scientific explanations in the study of human affairs are *probabilistic* for several reasons internal to empiricist thinking. Given the breadth of human experience, it is certainly impossible to cover all cases or to study all the causes that would make an outcome necessary, validating the conclusion of the theory. In fact, the difficulty of verifying universal generalizations applies to the non-human natural sciences as well. Speaking of the natural sciences, Ernest Nagel writes, "Often the best that can be established with some warrant is a statistical regularity."<sup>16</sup> Even Hempel noted that "it remains quite possible that new kinds of sodium salt might yet be found that do not conform to [the] generalization" above.<sup>17</sup>

The fact that probability is the norm, therefore, need not prevent us from working within the framework of the D-N Model. Hempel accommodated this reality by slightly altering the model for probabilistic explanations. "We will say, for short, that the *explanans* [premises 1 and 2] implies the *explanan-dum* [phenomenon to be explained], not with "deductive certainty," but with

<sup>15</sup>From the 1996 edition of *Comparative Politics: Nations and Theories in a Changing World*, by Lawrence C. Mayer, John H. Burnett, and Suzanne Ogden (Upper Saddle River, New Jersey: Prentice Hall) p. 3.

<sup>&</sup>lt;sup>16</sup>Nagel, op. cit., p. 23.

<sup>&</sup>lt;sup>17</sup>Hempel, op. cit., p. 11.

only near-certainty or with high probability."<sup>18</sup> Consistent with this adjustment, he proposed a slightly different schematization of probabilistic generalizations, namely, using two lines above the conclusion rather than one. A single line served:

to indicate that the premises logically imply the conclusion. The double line... is meant to indicate analogously that the 'premises' (the *explanans*) make the 'conclusion' (the *explanandum* sentence) more or less probable. Arguments of this kind will be called probabilistic explanations.... a probabilistic explanation of a particular event shares certain basic characteristics with the corresponding deductive-nomological model of explanation.<sup>19</sup>

The key words here are "analogously" and "share." Hempel is saying that the essential deductive and nomological requirements of the D-N Model apply even in probabilistic explanations. And for our purposes, this is the important point: because most of science is probabilistic, the underlying logic of the D-N Model applies; therefore, all social scientific empiricist explanations may be reconstructed according to its logic.

Let us then return to the above example and think about it in terms of the D-N Model. The phenomenon to be explained (the conclusion) is stated in the first sentence: "the Labour Party vote of an Indian émigré in Britain." The theory (premise 1) is the statement, "lower-class members of frequently oppressed ethnic or racial minorities tend to vote for parties to the left of the middle of the political spectrum." The initial and boundary conditions (premise two) are not stated completely in the excerpt, but we may infer them in the assertion: "Because this individual is such a minority in this context." If we were to reconstruct this according to the characteristics of the D-N Model, we would need to elaborate premise two to clarify this inference, that is, to instantiate the generalized variables in premise one by giving specific data about the person's "class," "oppressed," and "ethnic or racial" status. These would be the specific initial and boundary conditions under which a specific "Indian émigré" votes. We shall try to avoid prejudice by giving the specific content of this name "Ms. Émigé from India." This is because, according to the terms of the model, we need to instantiate the variables stated at the most general level in premise 1 by giving a *specific* name in premises 2 and 3 (as with "this piece of rock salt" in the sodium salt example).

<sup>&</sup>lt;sup>18</sup>Ibid., p. 58.

<sup>&</sup>lt;sup>19</sup>Ibid., p. 59.

- Lower-class members of frequently oppressed ethnic or racial minorities tend to vote for parties to the left of the middle of the political spectrum
- 2. Ms. Émigré from India earns £6000 per year<sup>20</sup>, ethnic or racial minorities constitute close to ten perent of the total British population and less than five percent of the members of parliament<sup>21</sup>; the Labor party supports more active involvement by the government in the economy and education for society's disenfranchised<sup>22</sup> and it has held power [in 2016] for close to fourteen of the last twenty years; there is an election in Great Britain.
  - 3. Ms. Émigré votes for the Labour party.

There are many things to note and emphasize here: all of the variables in premise one are stated in their most general form. That statement could be rewritten in the "if, then" form as: "If a person is a lower class member of a frequently oppressed ethnic or rational minority, that person will tend to vote for parties to the left of the political spectrum." Note, furthermore, that all of the analytical terms throughout the model must conform to the empiricist standards of operationalization. That is, they must correspond to particular sensory observations in the world and, where necessary, be measurable as well. This operationalization is a requirement for all analytical concepts. Thus, when we imaginatively illustrate the content of premise two, we must think about how to operationalize each of the key variables in the theory in addition to instantiating the generally stated variables in premise one. This is a cognitive operation worth highlighting: In premise two, operationalization and instantiation go hand in hand. The former, operationalization, links each concept to observable phenomena and specifies a precise way to measure them; the latter, *instantiation*, gives a specific instance of the concept stated at the general level in the first premise. All the terms of any instantiation must be operationalizable.

<sup>&</sup>lt;sup>20</sup>The poverty line for a single person living in Britain, where the poverty line is understood as 60% of the median income. From the website of the Child Poverty Action Group, http://www.cpag.org.uk/povertyfacts/, accessed Friday July 29, 2011. <sup>21</sup>http://www.parliament.uk/about/faqs/house-of-commons-faqs/members-faq-

page2/, accessed July 30, 2011.

<sup>&</sup>lt;sup>22</sup>Note left could be defined by observing party programs wherein the party, for example, stands for rights for unions, supporting substantial governmental funding for welfare, etc.

Take for example, the concepts "lower class" and "frequently oppressed." These terms are highly abstract and meaningless for empiricist scientific purposes unless and until they are given some operational definition both by connecting them to observable phenomena in the world and stipulating a precise measure for them. Thus, for purposes of illustrating the analytics involved, we operationalized "class" by defining it according to income level, something that can be observed and measured through pay stubs or other data available from employers or employees; and we operationalized "lower class" by defining it according to the official poverty line in the United Kingdom in 2011, 6500 British pounds per year for a single person. We thus instantiated the concept of "lower class persons" by saying "Ms. Emigré makes 6000 British pounds per year." This makes her clearly lower class. Note that embedded in the instantiation is also the operational definition. Note as well that measurement, as is frequently the case in empiricism, amounts to *quantification*, that is, representing the variable in a numerically countable fashion.

This was the case as well with "frequently oppressed." To be scientifically meaningful for empiricism, "frequently oppressed" must be connected to observable and measurable phenomena in the world. In our example, we suggested operationalizing "frequently oppressed" by measuring the power of ethnic or racial minorities according to their proportion of representation in the British parliament, something that may be observed by quantifying their power in relation to the power of non-ethnic or racial minorities, i.e., whites. We thus instantiated "frequently oppressed ethnic or racial minority" by noting the very low numbers of ethnic or racial minorities in the British Parliament relative to their population in the United Kingdom. Admittedly, "frequently" remains a bit abstract, but here we assume that oppression occurs on a day-to-day basis and that, for years, the British Parliament has been overwhelmingly dominated by white British membership. Ethnic or racial minorities constitute approximately eight to tem percent of the British population, yet their representation in Parliament is slightly above four percent (an *increase* from 2.3% in 2008).<sup>23</sup> Indian parliamentarians are even fewer. Of course, one could operationalize "frequently oppressed" by defining it according to other sense data; for example, one could look at

<sup>&</sup>lt;sup>23</sup>Cf., Ben Smith, "Ethnic Minorities in Politics, Government and Public Life," paper for the Library of Commons, November 18, 2008; http://docs.google.com/ viewer?a=v&q=cache:D2mWwhq\_gA4J:www.parliament.uk/briefing-papers/ SN01156.pdf+who+are+the+ethnic+minorities+in+the+british+parliament&hl=en&g l=us&pid=bl&srcid=ADGEESiD-fRr3UtwC6iidNx1acSSebwSqoYLFHG8r30A4uRre0T5pdiUTId5nmDTtO--6iZNBgZddzt8ZA7DNxa2uF30b2WLZY2vur8MVh-FJYcNh7ECHjus5ZEBjSp6QrQKdW-7JFSHF&sig=AHIEtbSczPr8ZzSWLXCDLwvG qGayPfzLCg

data on the number of cabinet seats held by minorities, their numbers on local governing councils, demographic and residency patterns, rules governing membership in political associations, proportional incarceration and conviction rates, aggregate state income distribution, etc.

The same connection between operationalization and instantiation can be seen very simply in the words, "Ms. Émigré from India." The authors of the theory clearly included émigrés from India in their operationalization of "ethnic or racial minorities." We instantiated that category by stating, "Ms. Emigré from India." One could also give a particular name of a particular émigré. We operationalized "Left" by connecting it to a party's general support for more active involvement by the government in the economy and education on behalf of the disenfranchised, something that can be observed in party programs or policies it advocates or has undertaken. We operationalized a party's "viability" by linking that with the number of times and or years the party has held power, something that can also be clearly observed. And we therefore instantiated "viable alternative on the Left of the political spectrum" as the British Labor Party, whose policies on government involvement in the economy and education for the disenfranchised correspond to our operationalization of "Left" and whose "viability" may be observed in noting it had been in power for nearly a decade and a half before the 2010 elections, and it remains the main opposition party in British politics under conservative party control at the time of this writing. Finally, for the sake of completeness, just as we mentioned "the existence of a flame from a Bunsen burner" in the example by Carl Hempel, we note that "an election was held in Britain" as one of the conditions under which the vote occurs. Without the election, the event we seek to explain, namely Ms. Emigré's vote for the Labour party, would not have occurred. We have gone into significant detail to illuminate the kinds of efforts that may be undertaken to conceptualize empirical evidence in a "neutral" or "objective" way, according to empiricism. As our discussion proceeds throughout the book, we shall consider other approaches to the same empirical situation that interpret the situation differently, based on different analystical presuppositions, interests, and imperatives.

#### The Importance of the Deductive-Nomological Model

We have gone to some lengths to emphasize the importance of the deductivenomological model for several reasons: it summarizes all of the underlying aims, presuppositions, and analytical goals of empiricism, especially prediction and control. Note in the above example that by moving from premise one to the conclusion, social scientists are in the position of being able to

predict tendencies within the electorate. Note as well that the knowledge of which parties "lower class members of frequently oppressed ethnic or racial minorities" tend to vote for can be used to attempt to gain more of their votes, or if a party is not to the Left of the political spectrum, to try to position itself in a way to gain more of their votes, or just to understand that there are some votes that they will most likely never receive. The same could be true in each of the models we have constructed so far. If the citizens of the United States would like a multi-party system, they need to, according to Duverger's theory, intervene and alter the electoral laws. If they want to maintain a twoparty system in the face of such challenges, they need to intervene to defend the existing laws. Empiricist knowledge makes possible social and political engi*neering with a high degree of certainty.* It provides human beings with knowledge of what to do to control outcomes in their world. Note as well that the knowledge provided in these explanations is not Labour or Left knowledge, Conservative or Right knowledge, knowledge that is the property of proponents of two-party systems or knowledge that is the property of proponents of systems of proportional representation. It is nonpartisan and neutral scientific knowledge about, in the first case, the voting behavior of a precisely described group of voters, and in the second case, about political institutions in democracies. Indeed, it is knowledge that can be applied to many contexts beyond the borders of the United Kingdom or the United States. With this theory, one no longer needs, on empiricist terms, to be concerned simultaneously with a great number of idiosyncratic votes. One needs to think only about a single "causal" process, of which these votes and these institutions are examples.

We are underscoring these aspects of the model because our goal in this work is to enable you as students to identify such thinking even when it is not explicit in the classes you take, the lectures you hear, or the reading assigned for your classes. Each approach we shall discuss offers some analytical imperatives, some model or guidelines for analysis. The deductivenomological model is the model for the empiricist approach to interpreting politics. To repeat, all empiricist explanation must conform to this model, whether the explanation is offered explicitly as such or not. As our discussion proceeds in the subsequent chapters, we shall outline alternative models, as we have with the deductive-nomological model, as well as draw out contrasts and critical comparisons between them. In fact, as we shall see, the assumptions contained in the D-N Model provide the starting point for discussions in the philosophy of science out of which the other models emerge. It is therefore very important that you carefully study its components. So let us take one more example, drawn from some very recent political science work. We will provide a sample reconstruction at the end of this section and

here, ask you to try, before looking at our answer, to reconstruct it according to the requirements of the D-N Model.

Some background information about this example will be helpful. In his article, "Politicized Places: Explaining Where and When Immigrants Provoke Local Opposition," Daniel J. Hopkins seeks to explain, in empiricist fashion, how immigrants have become "targets of local political hostility" in the United States.<sup>24</sup> He observes through quantification that "[i]n 2006 alone, at least 101 communities considered or passed anti-immigrant ordinances," and he seeks to explain this phenomenon against what he calls common theories of "racial threat." Such theories suggest that "the rising number of immigrants will threaten long-time residents' political power and economic status, and thus will generate political hostility in heavily immigrant areas." Hopkins asserts to the contrary that, "To date, the empirical evidence applying this [racial threat] theory to immigrant populations has been inconsistent, with some studies finding evidence of threat and others finding null effects or even positive ones." He observes that "Immigrants are often unable to vote, and they tend to work in segmented labor markets and live in segregated communities. All three factors minimize the threat they pose to long-time residents' interests, and even their visibility to nativeborn Americans."<sup>25</sup> Thus, as an alternative explanation for local opposition to immigrants, he proposes what he called "the politicized places hypothesis to explain how and when local demographics influence attitudes and local politics."

Hopkins proposes the following theory: hostile anti-immigrant ordinances are most likely to be considered or passed when communities are faced with a sudden destabilizing change in local demographics and when salient national rhetoric politicize that demographic change.<sup>26</sup> Note how the form of this statement parallels the form of the statement concerning voting for parties to the left of the political spectrum that we discussed above. Both are empiricist theoretical statements stating a strong correlation between observed variables in the world. The pace of demographic change along with the rhetoric of non-local, national political actors are stipulated as crucial independent variables to explain "the key dependent variable," namely "the consideration or passage of a local anti-immigrant ordinance by a U.S.

<sup>&</sup>lt;sup>24</sup>Daniel J. Hopkins, "Politicized Places: Explaining Where and When Immigrants Provoke Local Opposition," *The American Political Science Review*, Vol. 104, No. 1, February 2010, p. 40.

<sup>&</sup>lt;sup>25</sup>All quotes from Ibid.

<sup>&</sup>lt;sup>26</sup>Ibid., pp. 40, 56.

municipality."<sup>27</sup> Hopkins operationalizes "sudden, destabilizing demographic change" as occurring when "a county… has seen its percent foreign born rise by 7 percentage points in the past decade."<sup>28</sup> He further explains the data he collected to formulate this hypothesis:

We identified these localities by searching LexisNexis (a search engine for law and news stories) for the joint appearance of "local" and "anti-immigrant" anywhere in articles appearing in 258 regional newspapers from 2000 to 2006. We then conducted a separate search for articles using "English only" in their headline or lead paragraph, a phrase common in articles describing localities considering making English their only official language. We skimmed the resulting 3,378 articles to identify anti-immigrant proposals. For instance, towns such as Hazleton, Pennsylvania, passed measures mandating fines for those who employ or rent to undocumented immigrants, whereas others considered using zoning or policing to target undocumented immigrants. We also included symbolic measures, such as a mayor's request for a McDonald's to remove a Spanish-language billboard.<sup>29</sup>

Before proceeding any further, try to reconstruct the elements of Hopkins' explanation according to the requirements of the D-N Model. Try not to peek ahead at our reconstruction, just below this paragraph. To instantiate the theoretical terms of premise one in premise two, you will need to imagine some specific conditions and outcomes that are described by the theory, as we did with the poverty rate in the United Kingdom and "Ms. Emigre" above. And one hint: start with the phenomenon to be explained (the conclusion) before trying to complete the premises or sub-premises of the second premise. When you have completed the model, you will have an understanding all of the principled requirements and goals of empiricist explanation in political science.

 Hostile anti-immigrant ordinances are most likely to be considered or passed when communities are faced with a sudden destabilizing change in local demographics and when salient national rhetoric politicize that demographic change.

<sup>&</sup>lt;sup>27</sup>Ibid., p. 53.

<sup>&</sup>lt;sup>28</sup>Ibid., p. 41.

<sup>&</sup>lt;sup>29</sup>Ibid., p. 53.

- 2. [For purposes of illustration:] The percentage of foreign born residents in Hazleton, Pennsylvania rose eight percent in the preceding decade from 1997–2007; "English only" appeared in 152 articles between January 2004–January 2007.
- 3. The local government in Hazleton, Pennsylvania passed measures mandating fines for those who employ or rent to undocumented immigrants.

# The Dominance, Appeal, Prestige, and Legitimacy of Empiricist Social Science

We have gone into these examples at great length because of the important, dominant status of empiricism in both the academic and policy-related activities of contemporary political science. Although there are other models that we shall discuss as this book proceeds, empiricism remains very much the dominant language and outlook of social science, in political science as well as other social and policy sciences (e.g., public administration). If you have taken courses on politics before, or if you have applied for approval to carry out research or a research grant, the language of empiricism is most likely very familiar to you. Prominent and influential books and textbooks are written in political science that are fundamentally organized around empiricist aims, thus routinely advancing the positivist-empiricist aspiration for the unity of science. Such books include introductory textbooks about the field that equate political analysis with empiricist political analysis. In the sixth edition of their introductory textbook, Modern Political Analysis, Robert Dahl, one of the foremost political scientists of the last half century, and his coauthor Bruce Stinebrickner write,

For us, science constitutes a way of studying empirical reality. Indeed, the scientific method can be applied to the study of animal organs (biology), sound and light (physics), the composition of various materials (chemistry), the racial make-up of particular occupations (sociology), the ebb and flow of a country's money supply and inflation rate (economics), the connection between a party's majority in a legislature and its ability to pass party-sponsored bills (political science), and even the plots and authorship of a series of plays (literature).<sup>30</sup>

<sup>&</sup>lt;sup>30</sup>Robert Dahl and Bruce Stinebrickner, *Modern Political Analysis*, sixth edition (Upper Saddle River, N.J.: Prentice Hall, 2003), p. 144.

The unity of science knows few bounds. Around the world and throughout the classrooms of social science, teachers and policy makers ask for "data" and "hypotheses;" they seek evidence for certain "theories" about the causes between phenomena in the social world and the conditions under which they occur. In the political arena, when satisfied with an explanation, policy makers often vote in certain ways based on the most recent empiricist findings. They construct a world according to the knowledge that empiricism provides. This happens all the time, throughout the world.

Consider the most prominent theory of power in political science, namely, that of Robert Dahl. Dahl theorizes that an actor, "A" has power over a second actor, "B," if A can get B to do something B would not otherwise do.<sup>31</sup> This theory follows the empiricist model of thinking in the following way. "At the most general level," Dahl elaborates, "power terms in modern social science refer to subsets of relations among social units ["individuals, strata, classes, professional groups, ethnic, racial, or religious groups etc." | such that behavior of one or more of the units (the responsive units, R) depend in some circumstances on the behavior of other units (the controlling units, C)."<sup>32</sup> Dahl thus defines power at the most general level,33 calls for its "neutral study" using independent and dependent variables, and likens the power relation to a causal relation:<sup>34</sup> "The closest equivalent to the power relation is the causal relation. For the assertion "C has power over R" one can substitute the assertion, "C's behavior causes R's behavior. If one can define the causal relation, one can define influence, power, or authority, and vice-versa."<sup>35</sup> We shall return to this empiricist meaning of power in subsequent chapters. Here we note the empiricist quality of Dahl's emphases and the dominance of this kind of thinking about the meaning of power in the study of politics today.

Given empiricism's claim that its knowledge is causal and objective and its potential to allow human beings to intervene progressively in the world

<sup>34</sup>Ibid., 38–41.

<sup>35</sup>Robert Dahl, "Power as the Control," 40, 46. See also discussion in the introductory textbook to political analysis by Dahl and Bruce Stinebrinker, *Modern Political Analysis*, sixth edition (Engelwood Cliffs, New Jersey: Prentice-Hall, 2003), p. 13.

<sup>&</sup>lt;sup>31</sup>Robert Dahl, "The Concept of Power," *Behavioral Science*, Vol. 2, Issue 3, 1957, pp. 201–215.

<sup>&</sup>lt;sup>32</sup>Robert Dahl, "Power as the Control of Behavior" in Steven Lukes, ed., *Power* (NYU Press, 1985), p. 40.

<sup>&</sup>lt;sup>33</sup>"Power terms evidently cover a very broad category of human relations. Considerable effort and ingenuity has gone into schemes for classifying these relations into various types, labeled power, influence, authority, persuasion, dissuasion, inducement, coercion, compulsion, force, and so on, all of which we shall subsume under the collective label power terms" (40).

by predicting and controlling outcomes according to the causal knowledge that it promises, its appeal to generations of students of politics is not hard to understand. Teachers of ours who were trained in the heyday of empiricism in the United States (1960s through 1970s) have told us that its causal, predictive, and control/engineering dimensions are what made it so appealing. Many of them wanted to change the world, and empiricism provided a means to do so. Generations of professional political scientists and policy analysts have been nurtured by this promise. "What makes causal analysis important to us," wrote Dahl as he offered the concept of power above, "is our desire to act on causes in the real world in order to bring about effectsreducing death rates from lung cancer, passing a civil rights bill through Congress, or preventing the outbreak of war."<sup>36</sup> And, as you might imagine, this appeal remains great today for many students of political science who are not only interested in gaining an intrinsic understanding of politics but also desire influence on what happens politically in their lives, to gain some power to help make, remake, or maintain a certain set of outcomes that they believe to be right and necessary.

No less important to empiricism's appeal is the prestige and legitimacy that the language of science provides. In what is properly thought of as the modern positivist era-the era which Comte argued would arrive when science is the most legitimate force in governing our world—the language of science offers *political science* enormous prestige. Even if scientific knowledge has been put toward controversial ends-like making gas chambers and nuclear weapons, or inventing sophisticated torture techniques-few can deny the remarkable successes of scientific explanation and discovery. Most people in the world, even if they do not place scientific knowledge upon a sacred pedestal, are simply fascinated by the scientific imagination and its achievements. Many need these achievements to survive – think of irrigation technologies, advances in health care, and environmental solutions, even the use of science to solve environmental problems created by science. Before the study of politics became a science for empiricist political scientists, analysts of politics seemed to act more like social, cultural, or legal historians. They would write about the history of the growth of particular political institutions and forms of governance.<sup>37</sup> Scientific inquirers say this is insufficient.<sup>38</sup>

revolution entailed a still more profound change: argumentation shifted from a

<sup>&</sup>lt;sup>36</sup>Dahl, "Power," in Lukes, op. cit., p. 47.

 <sup>&</sup>lt;sup>37</sup>Cf., Robert T. Holt and John E. Turner, "Crises and Sequences in Collective Theory Development," *The American Political Science Review*, Vol. 69, 1975, 979–994, p. 979.
 <sup>38</sup>Ronald Inglehart, commenting on the survey research techniques of the early behavioral (empiricist) studies of political participation in the late 1950s and early 1960s that transformed the field of political science, states: "But the early behavioral

Specific, non-scientific forms of knowledge cannot do what general scientific knowledge can, especially in terms of contributing to society. Hence the appeal of making the study of politics into a science.

To underscore this legitimation dimension of the empiricist appeal, Terence Ball has shown how practitioners of political science in the midtwentieth century were tremendously enthusiastic to be joining the ranks of science both for the "practical usefulness" of the unity of science and to legitimize their work in the eyes of the state.<sup>39</sup> Claiming that their work was based on scientific methods, not values, they were apt to "underscore... the scientific aspirations of the discipline" to justify their appeals for private and state grants and funds.<sup>40</sup> In this way, political scientists became part of the authoritative policy-making apparatus. Ball shows how a good deal of effort was at the time devoted to contributing to the study of policies during World War II:

Physicists might say how atoms behaved and engineers how weapons worked, but social scientists could explain, predict, and, possibly, help to control the behavior of those who pulled the triggers and dropped the bombs... The "policy sciences" (as Harold Lasswell was later to term them)—political science, public administration, and allied disciplines-were called upon to analyze the effects and assess the effectiveness of various wartime policies. They studied farm subsidy programs, recycling schemes, ad campaigns for war bonds, the draft-registration system, the beliefs and behavior of the American soldier, the determinants of military morale, race relations in the military, the effectiveness of different kinds of propaganda, the social causes of the spread of venereal diseases, and dozens of other wartime related phenomena.... Without exception, the social scientists testifying before congressional committees stressed the "scientific" character of their disciplines. All the sciences, natural and social, were said to subscribe to a single method – the "scientific method" of objective

given author's impressions and insights, supported by anecdotal illustrations, to testable hypotheses supported or disproven by quantitative data." Ronald Inglehart, "Changing Paradigms in Comparative Political Behavior," in Ada Finifter, ed., *Political Science: The State of the Discipline* (Washington, D.C.: The American Political Science Association, 1983), p. 430.

<sup>&</sup>lt;sup>39</sup>Terence Ball, "American Political Science in Its Postwar Political Context," in James Farr and Raymond Seidelman, editors, *Discipline and History: Political Science in the United States* (Ann Arbor: University of Michigan Press, 2000), p. 215.
<sup>40</sup>Ibid, pp. 202–203.

observation and controlled inquiry. The only differences between the natural and social sciences were ones of degree. They studied different subject matters and dealt in different degrees of probability; otherwise they were essentially identical. Thus, for example, Dr. E. G. Nourse, the vice president of the Brookings Foundation, assured the senators that "formal divisions between natural, biologic, and social sciences are arbitrary." Useful as they are in some respects, these formal divisions run the danger of obscuring "the inherent unity of science. The basic problem of all science is to get fuller and more accurate knowledge as to the materials to be found and the forces which operate in our world...." [ellipses in original]. Far from being wholly disinterested and academic, researching into these forces is undertaken "in order that they may be so controlled and utilized that mankind may have a safer and more satisfying existence."<sup>41</sup>

The empiricist program for interpreting politics has sustained this appeal and has been institutionalized as the most authoritative voice of political interpretation in the world. Empiricism is widely accepted as the way to interpret politics. So extensive is empiricist training, that it appears to many in political studies that there are no other alternatives. Even given the many impressive insights and contributions of empiricism, however, the problem with this view, as we see it, is that just as empiricism emerged from discussions in the philosophy of science over what constitutes real knowledge-recall the Vienna School-those discussions about how best to know, explain, interpret, and understand the world did not stop with the claims of positivism and empiricism. They continued, and as they did, alternative ways of thinking about knowledge and interpreting reality and human political experience emerged. As we shall see in the next chapter, even some of the people who subscribed to the premises of empiricism came to think differently about its scope and its limits. In the next chapter, we will begin by analyzing some of what we call empiricist critiques of empiricism, and how they ultimately led some interpreters of politics away from the study of cause and effect to alternative approaches, first to the study of meanings and then, through ongoing criticism of that focus, to even more alternatives. That is to say, that the range of possibilities for interpreting politics expanded as reflection at the philosophical level proceeded. In subsequent chapters we shall trace this discussion and outline the alternative approaches to interpreting politics that emerged from it. So, let us proceed.

<sup>41</sup>Ibid., pp. 209–213.

# STUDY QUESTIONS

- 1. What are three statements that would qualify as meaningfully empirical according to empiricism and three statements that would be seen as meaningless for the purposes of scientific inquiry?
- 2. What are the important distinctions between facts, theories, and explanations, according to empiricism?
- 3. What are some examples, in the context of your life or studies, of the use of empiricist knowledge to produce or engineer real world outcomes?
- 4. What do you think about the empiricist claim that its knowledge is objective and universal?
- 5. At this point in our discussion, what do you think are the most appealing aspects of empiricism and what concerns or questions to you have about it?