

## Explanation and prediction in political inquiry

The philosopher of science Ernest Nagel has written that ". . . the distinctive aim of the scientific enterprise is to provide systematic and responsibly supported explanations."<sup>1</sup> If Nagel's view is representative of most students of scientific method, we can conclude that those doing political research and those reading the results of such research ought to know something about the nature of scientific explanation. Furthermore, it is evident that political scientists are forever trying to answer, explicitly or implicitly, "why" questions: Why did the Supreme Court make the *Baker v. Carr* deci-

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<sup>1</sup> Ernest Nagel, *The Structure of Science* (New York: Harcourt, Brace & World, 1961), p. 15.

sion? Why does the United States have a two-party system? Why do businessmen tend to vote Republican? Why did President Ford pardon Richard Nixon? Why did Russia invade Afghanistan? When a question begins with *why*, an explanation is being asked for. In addition, such frequently used words as *consequently*, *hence*, *therefore*, *because*, *obviously*, and *naturally* are good indicators that one is face-to-face with, or in the midst of, an explanation.

### Explanation and political inquiry

Of course, much of political science is descriptive, and, as we have seen, many political scientists devote their energies to discovering and describing political facts. However, while recognizing the importance of description to a science, especially an immature one, we must not assume that it is the end of science. Emphasizing this point for behavioralists (but really for all political scientists) is Heinz Eulau: "No piece of political behavior research is content to describe the universe of politics. . . . The goal is the explanation of why people behave politically as they do and why, as a result, political processes and systems function as they do."<sup>2</sup>

One more justification of the political scientist's concern with explanation should be mentioned. A characteristic of scientific explanation which will be examined later in this chapter is its logical identity with scientific prediction. That is, the logical structure of explanation and prediction is the same; the difference between them is pragmatic, that is, based on the way they are used. Is the objective to account for a past event or a present state of affairs (explanation), or is it to describe a future event or state of affairs (prediction)? If this identity is valid, then prediction, and therefore explanation, ought to be a major concern of political scientists. For one of their primary activities is to provide advice on policy matters, and policy decisions are always based on an expected outcome, a prediction about the best means for implementing a given end. In fact, David Truman has written, "we cannot . . . escape the necessity to predict. Governmental officials and private citizens anticipate as best they can the consequences of political actions with which they are in-

involved."<sup>3</sup> Consider the two examples of a farmer trying to decide which of two senatorial candidates will be more likely to support his interests, and the President developing a policy to slow down inflation. In both cases a prediction (whether realized or not) is necessary; in the first instance about the behavior of potential senators, in the second about the reaction of the economy to alternative policies.

There are, then, some fairly convincing methodological reasons for political scientists taking an interest in the logic of explanation. But there is a more commonsensical way of making the point. One merely has to consider how everyone, both the scientist and the man in the street, attempts to cope with the world. It is by trying to explain the things that happen to him. We have argued in Chapter 2 that scientific knowledge is superior to common sense. This is not contradicted by the present argument, for we are now claiming that since explanation and prediction are basic human activities, it is not unfair to request that those dealing with the empirical world at more sophisticated levels have a basic understanding of the nature of the explanatory process.

### THE NOMOLOGICAL MODEL OF EXPLANATION

Philosophers of science admit that there are many uses of the word *explain*. We can explain (describe) the structure of the Interstate Commerce Commission or explain (explicate) the meaning of "writ of certiorari." These are both acceptable dictionary uses of *explain*. Yet neither gets at the basic nature of scientific explanation, the answering of *why* questions. The *why* can be answered only by showing that the fact to be explained either follows logically from premises or is highly probable based on the premises. One might say that a specific event(s) causes another event, X. But we can explain X only by stating the general law which indicates that the relationship is normal—to be expected under the circumstances. If this discussion seems a bit technical, let us make the basic point in a more down-to-earth way. This is possible because scientific explanation is based upon a commonsensical idea, namely that in order to explain something one needs specific knowledge about the phenomenon

<sup>2</sup> Heinz Eulau, *The Behavioral Persuasion in Politics* (New York: Random House, 1963), p. 24.

<sup>3</sup> David Truman, *The Governmental Process* (New York: Alfred A. Knopf, 1951), p. 504.

and general knowledge which links it to other phenomena which preceded it. The soundness of our explanation will thus depend mainly on how much general knowledge we have—no knowledge, no explanation.

Political scientists appear to employ many kinds of explanation to account for political phenomena, but these are all patterns of one model of scientific explanation; they are variations on a single theme, not distinct logical types. This single logical type of explanation is usually called the "nomological" or "covering-law model." Stated simply, it claims that explanation is achieved by subsuming what is to be explained under general laws. Most people say that Watergate caused President Nixon to resign his office. But the events of Watergate cannot be used as causal factors unless we have available generalizations such as, "Whenever a President feels that he is about to be impeached, he will resign." If we really know nothing about why presidents resign, if we have no laws linking presidential resignations to other factors, then we cannot explain.

Let us now examine the structure of nomological explanation in more detail. Our objective, in addition to describing the model, is a demonstration that it is a flexible and not unrealistic basis for explanation in political science. That is, in addition to the fact that the nomological model can include within its boundaries many of the patterns of explanation used by political scientists, it is also useful even though it must be considered an ideal not yet fully realizable in political science.

In the first place, an explanation can be divided into that which explains and that which is explained; the former will be called the "explanans," the latter the "explanandum."<sup>4</sup> The explanans includes two kinds of statements: general laws, and sentences stating initial or antecedent conditions. Together, they imply the explanandum. More accurately, initial conditions are necessary only when the explanandum is an individual fact. For instance, the fact of the United States' two-party system might be explained by (1) the generalization that all political systems with single-member districts have two-party systems, and (2) the initial condition that the political system of the United States is one of single-member districts. However, suppose that we would like to explain the generalization

<sup>4</sup> Carl Hempel and Paul Oppenheim, "The Logic of Explanation," in Herbert Feigl and May Brodbeck, eds., *Readings in the Philosophy of Sciences* (New York: Appleton-Century-Crofts, 1953), p. 321.

itself. The point can be made if we translate the two arguments into simple deductive logic. If  $A$  = "single-member district system,"  $B$  = "two-party system,"  $C$  = "third parties are undercut," and  $\supset$  = "If . . . then," the explanation of the singular fact would be:

$$(1) \begin{array}{l} A \supset B, \text{ and of the law:} \\ \underline{A} \\ B \end{array} \quad (2) \begin{array}{l} A \supset C \\ \underline{C \supset B} \\ A \supset B \end{array}$$

What is so special about a deductive explanation? The answer lies in the logical connection between the premises and the conclusion, the premises and the conclusion, the explanans and the explanandum. To understand this connection is to grasp the power of deductive explanation. If the premises are true, the conclusion must be true.<sup>5</sup> Here is where the necessity of the argument exists. As Abraham Kaplan puts it, "In the deductive model the necessity does not lie in the premises, but rather in the relation between the premises and the conclusion which they control."<sup>6</sup> In addition, for an explanation to be truly explanatory, its generalizations must be well-confirmed by empirical evidence. This rather obvious requirement refers to the generalizations themselves, not to the logical structure of the argument. So, a sound scientific explanation accounts for a fact by showing that it is one instance of a general tendency. This is what a political scientist does if he explains a political phenomenon. If all sample surveys indicate that all businessmen are Republican, it is not surprising that businessman  $X$  is a Republican;  $X$  is included in the generalization.

We must at this point make a distinction between two kinds of explanation, deductive and statistical-probabilistic. As the label implies, the former is an exercise in deductive logic. As already noted, in a valid deductive explanation the logical connection between the explanans and the explanandum is such that if the former is true, the latter must be. A deductive explanation employs universal laws or generalizations stating that *all*  $A$ s are  $B$ s. This is why the explanation can be deductive. Now, as we saw in Chapter 6, a universal law is never necessarily true. An empirical generalization must be test-

<sup>5</sup> For the nature of deductive logic, see any logic text. Two of the most highly respected are Irving M. Cope, *Symbolic Logic* (New York: The Macmillan Co., 1954), and Patrick Suppes, *Introduction to Logic* (Princeton, N.J.: Van Nostrand, 1957).

<sup>6</sup> Abraham Kaplan, *The Conduct of Inquiry* (San Francisco: Chandler Publishing Co., 1964), p. 339.

able and potentially falsifiable. The difference between a universal law and a statistical law is the kind of claim we make about each, based on the evidence. Neither is necessarily true.

A statistical or probabilistic explanation is one in which statistical laws are employed. It should be of greater interest to political scientists because the generalizations which political science has generated have up until now been statistical. Unlike a deductive explanation, the inductive-statistical explanation of an individual event does not necessarily imply that event; the premises can be true and the conclusion false. The explanation, then, consists not of showing why the conclusion is true, but why it is probable. Thus the explanation of the voting behavior of a certain group or the behavior of Congress may be explained by statistical laws, their actions accounted for by showing that they were highly probable based on the evidence contained in the laws and initial conditions of the explanans. But let us repeat: A single event cannot be accounted for deductively by means of a statistical law. The law and initial conditions can be true and the event might not take place. Thus even if we have a well-substantiated law to the effect that approximately 75 percent of all businessmen are strong Republican party-identifiers, we cannot deductively explain the Republican beliefs of a single Republican as we could if the law stated that all businessmen are Republican. Thus his party identification is explained because it is highly probable or rationally credible that he is a Republican<sup>7</sup>—but, of course, he need not be, given the evidence, and this is what makes it a probabilistic and not a deductive explanation.

All this about inductive logic applies to statistical explanations accounting for individual events. What about the explanation of statistical laws? We have seen that universal laws are explainable by deductive logic. It is the same with statistical laws. That is, a statistical-probabilistic law can be explained with other laws, universal and statistical; yet this will be a deductive argument—if the premises are true, the conclusion is. For instance, the statistical law that 12 percent of all registered voters in city X are cross-pressured and identify with the Democrats can be explained by two other laws: (1) 30 per-

<sup>7</sup> The concept "rationally credible" is Carl Hempel's. See "Deductive Nomological vs. Statistical Explanations," in Herbert Feigl and Grover Maxwell, eds., *Minnesota Studies in the Philosophy of Science*, vol. 3 (Minneapolis: University of Minnesota Press, 1962), p. 149.

cent of registered voters are cross-pressured, (2) 40 percent of registered voters who are cross-pressured are Democratic. Let us repeat, this is a deductive explanation, since if it is a valid argument and the premises are true (the probabilities are true), then the conclusion must follow. From the standpoint of logic then, the explanation of universal laws and that of statistical laws exhibit no differences, since in a sense they are both "universal" statements. The distinction is that one states that in a certain universe all individuals exhibit a certain characteristic, while the other states that 60 percent have the attribute. So the tricky facet of statistical explanation is the explanation of the single event.

#### OTHER NOTIONS OF EXPLANATION

We must now consider an alternate notion of explanation and try to describe its shortcomings. Robert Brown speaks for many philosophers and social scientists when he gives the following definition: "All explanations are attempts to explain away impediments of some kind."<sup>8</sup> This implies an interpretation of scientific explanation that is psychological. That is, "to explain" means "to make understandable," to reduce the unfamiliar to the familiar.<sup>9</sup> In the words of the well-known physicist P. W. Bridgman, "Explanation consists merely in analyzing our complicated systems into simpler systems in such a way that we recognize in the complicated system the interplay of elements already so familiar to us that we accept them as not needing explanation."<sup>10</sup> This notion of explanation is in opposition to the nomological interpretation advocated in this book, and, as will be demonstrated, it misses the point of what explanation is all about.

The power of scientific explanation lies in the logical connection between the evidence and the conclusion (fact to be explained), not in the degree of psychological familiarity the argument has. According to Carl Hempel, "the covering-law concept of expla-

<sup>8</sup> Robert Brown, *Explanation in Social Science* (Chicago: Aldine Publishing Co., 1963), p. 41.

<sup>9</sup> For an interesting discussion of explanation and understanding, see A. James Gregor, *An Introduction to Metapolitics* (New York: The Free Press, 1971), esp. chaps. 7 and 8.

<sup>10</sup> P. W. Bridgman, *The Nature of Physical Theory* (Princeton, N.J.: Princeton University Press, 1936), p. 63.

nation . . . refers to the logic, not the psychology of explanation. . . ."<sup>11</sup> Thus there is a clear distinction between having an explanation and understanding it. One can give a good explanation of a political phenomenon using unfamiliar concepts and newly discovered relationships. On the other hand, one might think he has explained a fact because his argument appeals to common sense, while in reality, no explanation has been provided; the required generalizations do not exist or those used do not properly imply the conclusion. Thus, their familiarity is neither a necessary nor a sufficient condition of valid explanations. The distinction can also be stated as one between a psychological and a cognitive meaning of explanation. In explaining an event to someone, we study her reactions as clues to her understanding of the explanation. She comprehends and accepts the explanation to a greater or lesser degree. This has to do with communicating a fact and depends in part upon my ability to articulate and her power of intellect and is thus psychological; it has no logical relation to the cognitive soundness of the explanation. In short, the soundness of an explanation and its psychological familiarity or attractiveness are distinct properties.

We have based our argument upon the requirements of scientific explanation; psychological understanding is neither a necessary nor a sufficient condition. But there is a more pragmatic reason for rejecting this interpretation of explanation. It is the simple fact that an idea or argument will appear more or less familiar to different people and at different times. Thus, psychological familiarity cannot serve as an objective standard for assessing the soundness of an explanation. An explanation is objectively valid to one degree or another; its cognitive value can be uniformly evaluated by numerous analysts—each will reach the same conclusion. This is how a science operates. It does not base its knowledge on psychological familiarity. It must be admitted, however, that we would like our explanations to be understood. Even the soundest explanation is of limited use if only one person understands it. This is, however, another attribute of the explanation, independent of its soundness. And this is the gist of our argument.

A related model of explanation assumes that a fact has been ex-

<sup>11</sup> Carl Hempel, "Reasons and Covering Laws in Historical Explanation," in Sidney Hook, ed., *Philosophy and History* (New York: New York University Press, 1963), p. 147.

plained when it can be fitted into a pattern<sup>12</sup> or system.<sup>13</sup> "According to the pattern model, then, something is explained when it is so related to a set of other elements that together they constitute a unified system. We understand something by identifying it as a specific part in an organized whole."<sup>14</sup> If this model proposes another mode of explanation which is nonnomological, then it should be pointed out that one does not account for something simply by showing that it fits into a pattern. This might describe some of its relationships, but it doesn't answer the why question. On the other hand, the pattern model might be interpreted in a nomological sense if the relationships of the pattern or system are taken as manifestations of generalizations. In this case it cannot be considered a distinct model.

There is another intellectual position that comes to mind in a discussion of the nature of explanation and psychological understanding. It is the argument that the nomological model of explanation does not really explain at all. Using the generalization, "Workers tend to vote left," and the statement, "X group is made up mainly of workers," to explain the group's voting left, does not, according to this criticism, really show why the behavior occurred. Something else is required, so the argument goes. For instance, W. G. Runciman has written, "Given that being a Catholic is correlated with being a Democrat, the question why is not so much answered as asked."<sup>15</sup> At one level, this is a version of the claim that no explanation is final. All explanations are, to use Abraham Kaplan's terminology, "indefinite." That is, "every explanation is in turn subject to being explained."<sup>16</sup> This is a reasonable claim, and one that the practicing political scientist would do well to keep in mind. However, it tends to cast doubt upon an argument such as Runciman's, for it makes clear that there are different levels of explanation. One of the tasks of any science is to search constantly for more refined laws to account for more variance (speaking statistically); in other words, to explain a wider range of phenomena more completely. But this does not

<sup>12</sup> Kaplan, *The Conduct of Inquiry*.

<sup>13</sup> Eugene Meehan, *Explanation in Social Science: A System Paradigm* (Homewood, Ill.: Dorsey Press, 1968).

<sup>14</sup> Kaplan, *The Conduct of Inquiry*.

<sup>15</sup> W. G. Runciman, *Social Science and Political Theory* (Cambridge, Eng.: Cambridge University Press, 1963), p. 92.

<sup>16</sup> Kaplan, *The Conduct of Inquiry*, p. 354.

mean that the initial rough generalization fails to provide an explanation of sorts.

Returning again to Runciman's example, one can explain a group being Democratic (it is predominantly Catholic) using the law provided, and still seek to explain why Catholics tend to be Democrats. There is no contradiction here. The next step will simply be a more refined and inclusive law. Thus, if this argument merely boils down to a noting of the infinite regress of explanations, it need not trouble us. However, it can be pushed further. "There is a widespread notion that the hierarchy of explanations must ultimately ascend to the final comprehensive theory which is itself as ineluctable as a brute matter of fact. . . ." <sup>17</sup> What underlies this notion is a belief that the laws of nature represent the necessary order of the universe. That is, science's ultimate task is to show why things must be as they are. But as we have seen, this is not at all the objective of an empirical science. The laws of any science are contingent; they describe the relations of things as we observe them. Science cannot demonstrate their necessity.

### Explanation and prediction

One of the reasons for a political scientist taking an interest in explanation is the fact that all policy scientists have to predict. This justification is valid because of the logical identity between explanation and prediction. The identity is based upon the fact that both explanation and prediction require laws and initial conditions. Thus, if one has a valid explanation, he should be able to employ it to predict, and vice versa. If, given the proper initial conditions, one could not have predicted the event that was explained, the explanation was not adequate in the first place. If it is possible to explain adequately without having a potential prediction, then the door is left open for any pseudoexplanation of a given phenomenon.

As we shall see, an explanation may be incomplete and yet be accepted by political scientists. This has led some to argue that while one can explain, using such partial explanations, prediction is impossible. Abraham Kaplan then raises the question, "What shall we say, because they do not allow for prediction, that they are not

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

really explanations at all?" <sup>18</sup> In the strictest sense they are *not* explanations, and so naturally they do not predict. In this period of a developing science of politics, we must often content ourselves with partial explanations, or even less. But this practical concession does not allow us to weaken the model of explanation to the point that it no longer explains.

Kaplan also implies that statistical laws can often explain better than they predict. However, once again, the explanation only appears sounder because the event has already happened. If the laws of voting behavior assert that it is 80 percent probable that county X will vote for candidate A, we can predict as well as explain the county's behavior with 80 percent certainty. The fact that it does behave in the *predicted* manner does not make the explanation sounder than a prediction.

There is another argument often used by those who claim explanation is possible without prediction. A well-worked example has to do with the explanation of earthquakes. We can explain them after they have taken place (using the proper laws and citing relevant conditions), but it is usually impossible to predict a quake. Rather, the last clause should read "technically difficult," because we are often unable to know about the initial conditions. Shifting the example to politics, we might have rather sophisticated laws accounting for revolutions and civil wars, but the initial social, political, and economic conditions existing right now in a small Latin American republic that would allow us to apply the laws may never come to our attention until after the revolution has occurred. This is, then, a technical, not a logical difficulty and it in no way refutes the logical identity between explanation and prediction. Ernest Nagel has put it this way: "In many cases of physical inquiry we are ignorant of the pertinent initial conditions for employing established theories to make precise forecasts, even though the available theories are otherwise entirely adequate for this purpose." <sup>19</sup>

There is still another argument made by those who reject the logical identity of explanation and prediction. It is that we are often able to predict without being able to explain. This is, then, a reversal of the argument just considered. Abraham Kaplan has presented the following as a case in point. "Analysis of voting behavior, for exam-

<sup>19</sup> Nagel, *The Structure of Science*, p. 461.

apter seven

may have identified certain counties or states as barometers but making predictions from them is very different from having an explanation of the vote."<sup>20</sup> The prediction proceeds in the following manner:

If X counties vote Democratic, the Democrats tend to win the national election.

X counties have voted Democratic.

Therefore, the Democrats will win.

This is a very rough prediction. If we apply it to a past Democratic victory, we have a very rough explanation relative to the findings of survey research. Thus the explanation and prediction are equally gross and neither is causal. Only mass election results can be predicted (and explained), and then without much confidence. The generalizations coming out of the voting studies allow for better explanations (accounting for more variance and explaining at more refined levels) and more accurate and inclusive predictions. The X-county findings either represent accidental correlations or indicate that there are deeper causal factors at work. If the former is the case, we will have learned something; if the latter holds, an attempt would be made to discover these factors, thus leading to the development of more refined explanations and predictions. For instance, if there are social characteristics, attitudes, or personality traits at work, it would be more fruitful to have laws relating them to voting behavior than laws showing a correlation between counties and national elections. But this goes for both explanation and prediction. What if the Democratic-type people make a mass exodus from the X-counties? The laws will no longer be useful for explanation or prediction since they were such low-level arguments in the first place.

### The completeness of explanations

In examining the nature of scientific explanation, we have not meant to give the impression that political scientists ought to sit on their hands until they have before them full-blown deductive or statistical explanations. At this stage such a requirement seems unrealistic and overly restrictive. Thus, the arguments against the pos-

sibility of a science of politics (and therefore the scientific explanation of political phenomena), which we attempted to refute on methodological grounds in Chapter 3, are often of practical significance. For instance, while the complexity of political phenomena presents no logical barrier to nomological explanation, it can create difficulties for the political scientist conducting research. No claim is being made that political science is simple and that complete nomological explanation is immediately achievable. On the other hand, we have argued that explanation in any science must meet certain requirements, and it will only prove disillusioning to attempt to achieve explanation by drastically weakening these requirements. Taking a moderate position, one ought to realize that there are various degrees of completeness possible in explanation; one can make a series of distinctions between degrees of completeness and yet draw the line at inadequate explanations. In other words, if we are explicit, the class of incomplete but pragmatically acceptable explanation types can be distinguished from pseudoexplanations, arguments which have no explanatory value. The addition of one or several elements (usually laws) to an incomplete explanation makes it complete. But no addition could make a pseudoexplanation acceptable, short of complete revision.

Carl Hempel has explicated this criterion of completeness for explanations rather thoroughly.<sup>21</sup> Using his analysis as a guide, we can spell out a typology of completeness for political scientists. First, of course, are complete explanations, those that explicitly state all laws and initial conditions. Hempel points out that such perfectly complete nomological explanations are rarely achieved by scientists. In the natural sciences this is usually because the explainer assumes that certain laws will be presupposed, and so formally states only the necessary facts. "If judged by ideal standards, the given formulation of the proof is elliptic or incomplete: but the departure from the ideal is harmless; the gaps can readily be filled in."<sup>22</sup> In other words if asked to, the scientist could easily provide the missing laws (or initial conditions) that would completely account for the phenome-

<sup>21</sup> See, especially, "Explanation in Science and History," in Robert G. Colodny, *Frontiers of Science and Philosophy* (Pittsburgh: University of Pittsburgh Press, 1962), pp. 7-33; and "The Function of General Laws in History," *Journal of Philosophy*, vol. 39 (1942), pp. 35-48.

<sup>22</sup> Hempel, "Explanation in Science and History," p. 14.

<sup>20</sup> Kaplan, *Conduct of Inquiry*, p. 350.



characterizing the Bolshevik-type personality and then relating it to political behavior (decision-making, etc.). Leites' explanations are speculative and, like most psychoanalytic analyses, a bit short on scientific rigor. But as explanation sketches they are interesting and potentially useful, for they point out some possible explanatory factors—in short, a start is made. Once again we must admit that in its present stage of development, political science must often be satisfied with the explanation sketch. But that is an empirical, not a logical, shortcoming.

All of these incomplete explanation types can be distinguished from the pseudo or nonexplanation according to one main criterion: No matter how incomplete, it will be possible to test even an explanation sketch (admittedly, this may take some doing). That is, even in its rough state, the incomplete explanation makes some reference to empirical entities—to the world of experience. Such is not the case with nonexplanations. "In the case of nonempirical explanations or explanation sketches . . . the use of empirically meaningless terms makes it impossible even roughly to indicate the type of investigation that would have a bearing upon these formulations. . . ." <sup>26</sup> This distinction between incomplete and pseudoexplanations is important to our analysis. Many of the explanations that one comes across in political science are incomplete rather than pseudo. Thus, while they should be evaluated and criticized according to the standards of sound scientific explanation, they ought not to be dismissed as useless. To the contrary, their explication should lead to more complete explanations when more sophisticated laws are available. A framework for such explication will be discussed in the next section.

### Patterns of explanation

The first part of this chapter described the nature of explanation in political science. We argued that only nomological explanations can account for political scientists' *why* questions. What might appear to be different types of explanation are actually variations on a single logical model; they share the basic characteristic of employ-

non in question. The number of elliptical explanations in political science is not great. The discipline is simply not well enough developed to allow a political scientist the luxury of assuming that others are aware of the laws he is implying. This is one reason for asking that political scientists explicitly formulate their generalizations.

Hempel's scheme has a category that is more relevant to political science. This he calls the *partial explanation*.<sup>23</sup> Like the elliptical type, it fails to explicitly formulate all the generalizations upon which it is based. But even when the generalizations are made evident, the explanandum is not completely accounted for. All that is demonstrated is that something in a particular general class is to be expected. Thus, suppose we want to explain why a certain presidential decision (*S*) was to send troops to nation Alpha (*W*). A partial explanation would only show (for example) that (1) *S* was an aggressive act (class *F*); (2) in these circumstances an *F* is to be expected; and (3) *W* is in the class *F*. Thus the aggressive act would be explained completely, the sending of troops partially. As we have said, partial explanations are important for political science. An explanation is partial because its laws cannot completely account for its explanandum; this is the nature of most, if not all, laws about political phenomena.

One might have an explanation of sorts, but still not think it meets even the requirements of the partial explanation. In this case, we might classify the argument as an *explanation sketch*.<sup>24</sup> Such an argument is characterized by a lack of explicitness and logical rigor; yet it seems to be pointing to an explanation. Thus, it serves as a sort of outline or sketch to direct one's attention toward possible relationships and ultimately a more complete explanation. The social sciences, including political science, abound with such explanation sketches. They are valuable if it is kept in mind that a complete explanation is still far in the future. Take, for instance, Nathan Leites' explanations of Soviet politics which begins with the maxim, "Character determines behavior."<sup>25</sup> They boil down to attempts at

<sup>23</sup> *Ibid.*, p. 15.

<sup>24</sup> *Ibid.*

<sup>25</sup> Nathan Leites, *A Study of Bolshevism* (Glencoe, Ill.: The Free Press, 1954), and *The Operational Code of the Politburo* (New York: McGraw-Hill Book Co., 1951).

<sup>26</sup> Hempel, "The Function of General Laws in History," p. 42.



ing laws to explain. This section will describe a typology of patterns of explanation based on a survey of political science literature. If it is at all inclusive, then the argument that every sound explanation in political science contains at least one law becomes stronger, for the nomological character of each pattern will be demonstrated.

The patterns are six in number. The first three, dispositional, intentional and rational, employ human characteristics as independent variables. The others are macroinstitutional, system-maintaining, and genetic. It will become clear that a single criterion has not been used to classify patterns. For instance, dispositional explanations are distinguished from macroexplanations mainly on the basis of content, that is, the different types of concepts used as independent variables in their generalizations. On the other hand, a dispositional explanation and a genetic explanation have different structures. But we need provide no lengthy justification of this multiplicity of criteria, since our basic thesis is that all sound explanations are nomological. In this section we are interested in describing the methods (patterns) of explanation actually used by political scientists.

Before moving on to the patterns themselves, one more point needs clarification. Each of the patterns is an ideal-type of sorts. The explanations that one comes across in the literature of political science are often mixed. However, in most explanations either one pattern is dominant, or the two or more coequal patterns are distinguishable; therefore we are justified in speaking about six patterns and assuming that such discussion is useful for the practicing political scientist.

### THE DISPOSITIONAL PATTERN

The dispositional pattern in political science is so labeled because it uses dispositional concepts. A disposition is a tendency to respond in a certain way in a given situation. Included in the class of dispositional concepts are attitudes, opinions, beliefs, values, and personality traits. The dispositional pattern can be distinguished from the intentional pattern because the former makes no reference to conscious motives. In other words, the link between the disposition and behavior is not "out in the open."

May Brodbeck has pointed out that the dispositional definition

itself may be employed as the generalization in an explanation.<sup>27</sup> Thus we might explain an individual's electoral decision by stating the following definition: "A leftist is one who votes left" (voting left defines the disposition), and then claiming that the individual is leftist. However, the explanation is then, in May Brodbeck's words, "vacuous and circular."<sup>28</sup> That is, useful dispositional explanations which tell us something about the world will relate the disposition to another factor, the result being an empirical generalization. Such an explanation is not vacuous and circular. Thus the pattern's nomological nature becomes evident. Dispositions are antecedent conditions, independent variables which must be linked to resulting actions by covering laws before they can explain anything.

There are as many types of dispositional explanation as there are kinds of dispositions. Some of these we have already mentioned. However, there are several other dimensions according to which dispositional explanations can be classified. The dispositions may be attributed to individuals, decision-makers, groups, types of people, classes, nations, or all men. The laws or relationships can be explicitly stated, consciously assumed, or unconsciously implied; and based on controlled analysis of statistical evidence, observation and experience, or commonsense speculation. A succinct statement of these dimensions can be made in the form of a series of questions, the answers to which provide a clear categorization of any dispositional explanation:

1. What kind of dispositional concept?
2. Who has the disposition?
3. How is it related to behavior (how well-developed and articulated are the laws)?
4. What kind of evidence is provided (how scientific)?

The last two questions can be asked of any pattern, of course.

Let us consider an example. Lewis Dexter has attempted an explanation of the proposed fact that congressmen believe the mail they receive from their constituents is valuable and worthy of consideration.<sup>29</sup> The explanation is based on a number of attitudes and

<sup>27</sup> May Brodbeck, "Explanation, Prediction and 'Imperfect' Knowledge," in Feigl and Maxwell, *Minnesota Studies*, p. 268.

<sup>28</sup> *Ibid.*

<sup>29</sup> Lewis Dexter, "What Do Congressmen Hear?" in Nelson Polsby et al., *Politics and Social Life* (Boston: Houghton Mifflin Co., 1963), pp. 485-95.

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iefs that Dexter thinks lead to the general disposition (the belief). Discusses five such dispositions. Included are values: "Most congressmen genuinely treasure the right of petition and the opportunity of the individual citizen to complain about mistreatment";<sup>30</sup> beliefs: "Some congressmen actually believe and many others to feel that on any issue of national significance rational communication between them and any constituent is possible."<sup>31</sup> Dexter characterizes these as dispositions peculiar to congressmen. In order to use them in explanations, they must be related in the form of generalizations to the phenomenon being explained. Dexter also uses another kind of dispositional concept. This is a general psychological attitude attributed to all or most people. Most people seem to prefer to know what they are supposed to do.<sup>32</sup> helps explain the congressman's desire for indications of constituents' wishes. It is clear that the statement containing dispositions concerning most people can be considered a generalization about most people. And since congressmen are people, and the generalization applies to them. We can conclude, then, that dispositions employed in explanations must be found in generalizations. For this reason, the dispositional pattern has explanatory power.

#### THE INTENTIONAL PATTERN

The existence of a dispositional pattern in our typology indicates that much political behavior is not intentional. Still, there is a class of actions which do seem to manifest such purposive behavior. This, then, is the basis for the inclusion of an intentional pattern. The term intention refers to all actions (not necessarily successfully carried out) that are consciously purposive. And as a matter of fact, political scientists often attempt to explain political phenomena by showing that the explanandum is the result of some sort of intentional action.

The simplest kind of intentional explanation can be schematically presented: "X does Y because he intended to do it." But this is not a complete explanation of Y, because no grounds are given for expecting its occurrence. Just because X intended to do Y doesn't mean X will actually do it, unless of course we have a law, based on

empirical evidence, that such a person as X acts upon his intentions. Thus it can be seen why at least this simple law is necessary: intentions need not result in actions. Some sort of statement is required which provides grounds for explaining the action. Thus, for instance, saying that Senator Smith lent his support to the Civil Rights Act of 1969 because that was his intention doesn't explain anything unless we include the very general law that "When a senator intends to support a bill, he usually does." Thus even in this overly simplified case, a generalization is necessary for sound explanation.

Usually, however, what we have called an intentional or purposive explanation includes more justification of its explanandum than "because he wanted or intended to," and "he who intends to, does." For if we want an intentional explanation of a political phenomenon X that goes beyond this trivial argument, we will probably have to refer to goals or objectives. It can be asserted, then, that another important characteristic of most intentional explanations is that there is some reference made to goals, purposes, or objectives. The structure of the pattern then becomes, "X did Y because he wanted G," based on the generalization "people who want G tend to do Y under these particular conditions."

We have now noted two kinds of intentional explanation based on two kinds of intentional generalizations. The second clause is important because, as we have argued, intentional explanations, whether of the simple ("because he intended to") or more important goal-seeking (because he had X-goal) type, require laws that relate the intention to the explanandum phenomenon and therefore demonstrate why it is as it is. The mere stating of an intention or a goal does not explain (unless, of course, there are laws implied and we accept it as a partial or elliptical explanation).

Lewis J. Edinger's explanation of why the nonpolitical elite in postwar Germany was not anti-Nazi is intentional because it is based on the proposed fact that the costs of a purge of pro-Nazi officials would have been more than the Allies were willing to pay.<sup>33</sup> In effect, Edinger explains the lack of a purge by setting forth the conditions for the decision to carry one out—that is, recruiting an entirely new group of anti-Nazi nonpolitical leaders. His explanatory law is, "The more extensive the purge the more it will cost. . . . On

<sup>30</sup> Ibid., p. 487.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid., p. 486.

<sup>33</sup> Lewis J. Edinger, "Post-Totalitarian Leadership: Elites in the German Federal Republic," *American Political Science Review*, vol. 54 (1960), pp. 58-82.

On the other hand, the less the victor is willing to pay one or the other price, the more difficult it will be to carry through such a purge."<sup>34</sup> Clearly, the term which makes this a variation on the intentional theme is "willing." If X is not willing to pay the price, it will not carry out the purge. The explanation is not, "X failed to carry out the purge because it didn't want to," but, "because it didn't want to pay the price required." The lawful relationship exists between purging and willingness to pay the price. In short, goals are cited to explain the action.

So intentional explanations, like all other sound explanations, are nomological. They differ from the other patterns only in the type of concepts used and the way in which generalizations are arranged. However, some philosophers of social science see in intentional explanation a unique way of accounting for social phenomena—a method of explanation logically distinct from the nomological model. The basis of this position is a belief that a citing of intentions explains by showing the meaningfulness of the behavior under question. "The explanatory force of learning the agent's intention depends upon the author's familiarity with intentional behavior; the explanation must solve a puzzle and in order for the puzzle to exist there must be a 'previous stock of knowledge and beliefs' with which the perplexing event is at variance."<sup>35</sup> This interpretation of intentional explanation is based upon an assumption that we tried to refute in the first section. We contended that the psychological fact of familiarity has nothing to do with the logical requirements of explanation. There does seem to be an added attractiveness in viewing intentional explanation as being somehow more "meaningful" than other kinds. However, an intention explains a political fact only insofar as it is lawfully related, directly or indirectly, to it. That the fact is thereby made psychologically meaningful is neither a necessary nor sufficient condition of the explanation.

### THE RATIONAL PATTERN

A rational-type explanation is based on the presumed or demonstrated rationality of men (all or types of men). This pattern may be considered as a special case of intentional explanation in the most

<sup>34</sup> *Ibid.*, pp. 80-81.

<sup>35</sup> Brown, *Explanation in Social Science*, p. 66.

general sense. However, it is sufficiently distinct and in wide enough use among political scientists to justify separate consideration.

A rational explanation has the form, "X because Y is rational," or, bringing out its nomological nature, "X because Y is rational and in situation S a rational man does X." There are obviously many points in this basic characterization that require explication, but first a preliminary definition of rationality is in order.

Most definitions talk about rational behavior or action; thus, people are rational insofar as they behave rationally. Robert Dahl and Charles Lindblom have stated what seems to be the consensus definition of rational behavior: "An action is rational to the extent that it is correctly designed to maximize goal achievement, given the goal in question and the real world as it exists."<sup>36</sup> So an individual is rational if his pursuit of goals is as efficient as possible. The importance of goals to rationality indicates why we could say at the outset that rational explanation is, in a way, a special kind of intentional explanation. According to the definitions we have been considering, all rational behavior is goal-seeking. The only difference between it and the intentional pattern is the claim that rational action is the best way to achieve a goal. An intentional explanation makes no such claim; it merely states that X has goal Y and in situation S, people with Y tend to do W to achieve it—W is not necessarily the best method. J. W. N. Watkins has succinctly made his point: "If we define purposeful behavior as trying . . . to do or achieve something, it follows that fully rational behavior is a limiting case of purposeful behavior."<sup>37</sup> So we can now see why the rational pattern is often confused with intentional explanation.

We have referred to the nomological nature of rational explanation. Let us now show in more detail why this pattern shares the basic logical structure of all adequate scientific explanations. Saying that "A man, M, voted for candidate X because M was rational," while providing the outline of an explanation, does not really account for the behavior—show why it happened. It lacks the information that relates the initial condition, "M is rational" to the expla-

<sup>36</sup> Robert Dahl and Charles Lindblom, *Politics, Economics and Welfare* (New York: Harper Bros., 1953), p. 38.

<sup>37</sup> J. W. N. Watkins, "Ideal and Historical Explanation," in Feigl and Brodbeck, *Readings*, p. 742.

nandum, "M voted for candidate X." This is provided by the generalization that, "A rational man, in situation S (the available candidates) would vote for X (or an X-type candidate)." Given the condition that M is indeed rational, the direction of voting is explained (or predicted). If we adopt the consensus definition of rationality—the rational seeking of given goals—then the explanation takes the form: "M has goal G (to have his interests acted upon); M is rational; in situation S, a rational man with goal G will vote for an X-type candidate; X is an X-type candidate; therefore, M will vote for X." The structure of the two is the same, the second case is simply more refined.

According to Carl Hempel's formulation of the rational pattern, rationality becomes a sort of dispositional concept, for it presents A's action, as it were, as a manifestation of his general disposition to act in characteristic ways—in ways that qualify as appropriate or rational—when in certain situations.<sup>38</sup> To have the disposition of being rational, then, is not logically different from identifying with the Democrats (attitude) or being authoritarian (personality trait). We have previously classified rational explanations as a special case of the intentional pattern. Now, "being rational" has been characterized as dispositional. These two ideas can be integrated, with the result being an interesting formulation of the rational pattern. We can say that explaining rationally consists of stating an agent's goal; attributing a disposition, rationality, to the agent; and, finally, formulating a law relating them to the action being explained. "If X has A goal and is rational, then he does C."

Another portrayal of the rational pattern is Graham Allison's attempt to explain Soviet and American decisions during the 1962 Cuban missile crisis.<sup>39</sup> According to his formulation (it should be noted that this is one of three patterns Allison tries out) one begins with an action, the decision of the Soviets to place missiles in Cuba, then makes the assumptions that Premier Krushchev made the decision and that he was rational. The explanation would involve determining what the goal of a rational leader making such a decision would be. After sifting through a number of possible goals and considering the potential gains and losses of each, Allison reaches the

<sup>38</sup> Hempel, "Reasons and Covering Laws in Historical Explanation."

<sup>39</sup> Graham Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (Boston: Little, Brown, 1971).

conclusion that Krushchev was trying to close the missile-gap—decrease the American superiority in nuclear weapons by placing Russian missiles at America's doorstep. According to this rational account, this is the only goal that was worth the great risk of an American retaliation.

This appears to be a very reasonable explanation of the Soviet decision yet it should be noted that we don't actually know what the intentions of the Soviets were. Thus, as Allison himself would point out, he has not actually explained that decision but rather given it a rational reconstruction: it might be that Krushchev had other goals and/or was not rational. We might view this example as an explanation sketch; if Krushchev was rational, if his goal was to close the missile gap, and if there is a generalization which indicates that leaders in this kind of strategic situation will usually take great risks in order to improve their nation's position, then we have begun to explain the decision.

#### THE MACRO PATTERN

We have now analyzed three patterns of explanation. Each accounts for political phenomena in a different way, on the basis of different types of independent variables. Yet all are similar in that (1) they are nomological, and (2) the concepts, and subsequently the generalizations containing them that account for the explananda explicitly refer to human characteristics, whether individual or group. The pattern of explanation which will be analyzed in this section parts company with the first three on the latter point. That is, the generalizations that a macroinstitutional explanation employs have as antecedent factors or independent variables institutional or physical concepts, so that in an institutional law  $A \rightarrow B$ , the A is such a concept. There are consequently two variations of the macro pattern, the institutional and the physical.

The dispositional pattern already analyzed includes some group properties—group dispositions—such as public opinion and national character. These are properly considered as statistical averages of many individual opinions or individual personality traits. Thus, since we have classified such concepts as dispositional, they will not be included in this section. What we are saying, in effect, is that there is a difference between an institution (admittedly made up

defined in this book, this approaches the most nearly perhaps to a true sociological law."<sup>44</sup> These arguments are important to us because they represent straightforward institutional explanations. The fact of having a two-party system is adequately accounted for by laws relating it to institutional properties of the electoral system.

We have now sketched the general nature of the macro pattern and provided a justification for its consideration as a separate kind of explanation. One kind of macro explanation uses institutions and properties of institutions. There is another subclass of the macro category. Besides institutional explanations there are those employing physical characteristics of the environment. Thus David Easton identifies three categories of, as he calls it, situational data: "(1) the physical environment; (2) the non-human organic environment; and (3) the social environment or patterns of human activity flowing from social interaction."<sup>45</sup> The latter is close to the institutional category we have just discussed, and the former refers, of course, to our present concern. Easton goes on to say that, "Our physical environment influences our activity, regardless of the kind of people we are. Our nonorganic resources, topography, and spatial location, such as being near or distant from the seat of government, influences the kind of political lives we lead."<sup>46</sup> A physical explanation in political science in simplest terms takes the form "A; if A (a physical fact), then B; therefore B (explanandum)." Physical facts include geographical variables and characteristics of the political system; for instance, the type of electoral ballot can be considered as a physical explanatory factor.

Some students of politics have noticed a relationship between the type of ballot and the incidence of straight-party voting. Angus Campbell states the association in the following manner: "We find, in the states which make it relatively easy for the voter to mark a straight ticket, that the number of a straight tickets marked is some 20 percent higher than in those states where the ballot requires a series of separate decisions among the candidates for each of the various offices."<sup>47</sup> And in a study of the impact of the Australian

<sup>44</sup> Ibid.

<sup>45</sup> David Easton, *The Political System* (New York: Alfred A. Knopf, 1953), p. 194.

<sup>46</sup> Ibid., pp. 194-95.

<sup>47</sup> Angus Campbell, "Recent Developments in Survey Studies of Political Behavior," in Austin Ranney, ed., *Essays on the Behavioral Study of Politics* (Urbana: University of Illinois Press, 1962), pp. 31-46.

of individuals and properties of individuals) and a group property such as public opinion. The opinion of a group is a direct disposition of the individuals who make up the group. When an institution such as the party system is cited as the cause of a political phenomenon, a property of that institution, its decentralized nature for instance, is usually being referred to implicitly or explicitly. Thus one might want to call decentralization a disposition of a party, since its existence is determined by observing certain behaviors of political parties in given situations. This is not incompatible with our macro pattern, even when we add the additional assumption that such dispositions as party decentralization and group cohesion are ultimately reducible to laws about individual behavior. That is, we can give this interpretation of party decentralization and still opt for the usefulness of a macro pattern of explanation in political science because the decentralization of a party is not a direct characteristic of its members as is a public's opinion. While according to methodological individualism this concept is definable in terms of individual behavior, an individual is not cohesive; but, of course, an individual does have opinions or personality traits. Therefore, we talk about the decentralization of the party, of the institution. This is because, while the party's decentralized nature is in part a result of human dispositions, these interact in such a way as to give the institution a characteristic which none of the individuals possess.

One of the best-known explanations in the literature of political science is the accounting for of the U.S. two-party system. One of the first formulators of such an explanation was E. E. Schattschneider.<sup>40</sup> The general hypothesis from which he operates is, "The American two-party system is the direct consequence of the American election system, or system of representation."<sup>41</sup> Two institutional features of the electoral system in particular are cited as antecedent conditions—single-member districts and plurality elections.<sup>42</sup> The French sociologist Maurice Duverger has stated his version of the law: "The simple-majority single-ballot system favours the two-party system,"<sup>43</sup> and says about it, "Of all the hypotheses that have been

<sup>40</sup> E. E. Schattschneider, *Party Government* (New York: Holt, Rinehart & Winston, 1942), pp. 67-84.

<sup>41</sup> Ibid., p. 69.

<sup>42</sup> Ibid., p. 74.

<sup>43</sup> Maurice Duverger, *Political Parties* (New York: Science Editions, 1963), p. 217.

Ballot on voting behavior in the United States, Jerold Rusk concludes that "institutional properties of the electoral system, considered either as an entity or as a network of component parts, have played and continue to play a crucial role in influencing and shaping voting behavior—in essentially defining the conditions and boundaries of decision making at the polls."<sup>48</sup>

Enough has been said to indicate that the macroinstitutional pattern is, like all sound explanatory types, nomological. In fact, macro explanations are perhaps more readily recognized as such than many other patterns because they claim simply that a political phenomenon is associated with a certain institutional characteristic or physical fact. That this association has to be expressed in a law seems evident.

#### THE SYSTEM-MAINTAINING PATTERN

There are many activities in political science called functional or system-maintaining. Some of these will be examined in Chapter 14. Our pattern includes only those which attempt to provide sound explanations of political phenomena. Thus several types of functional analysis have been rejected for inclusion in this section because they are not explanatory.

An important case of presumably sound, but in fact invalid, explanation must be distinguished from the potentially sound variety of system-maintaining explanation. In it the behavior pattern, institution, etc., that is the explanandum is supposedly explained by showing that it is necessary for the performance of functions that in turn are required by the system. The application of the label teleological can be seen as justified, for in effect, the present existence of a political phenomenon is being explained by its end. As a matter of fact, this kind of functional-teleological explanation is not sound. It is difficult enough to demonstrate that a certain function is necessary for the maintenance of a system—for instance, the allocation of values. However, it is another thing to prove conclusively that a particular political institution or activity is the only thing that can perform the function. Thus we might be able to present evidence that

<sup>48</sup> Jerold G. Rusk, "The Effect of the Australian Ballot Reform on Split-Ticket Voting: 1876-1908," in Richard G. Niemi and Herbert F. Weisberg, eds., *Controversies in American Voting Behavior* (San Francisco: W. H. Freeman, 1976), p. 512.

a certain political function is necessary for the maintenance (continued existence) of the social system. But one cannot show that a particular political institution is the only one that could perform the function.

At this point, we can discuss the sound type of system-maintaining explanation. Its main feature is the assertion and perhaps demonstration of a causal relationship between variables and a system. "It should be apparent that functional explanation is essentially causal; if it is concerned with the effects of a given activity or practice on a system, its purpose must be the establishment of cause and effect relationships."<sup>49</sup> Based on the analysis in Chapter 6, it seems reasonable to assume that if the notion of causality has any significance at all, it is because "to show cause" means "to subsume under general laws"; the concept of cause is reducible to the covering-law model. It follows that to explain functionally or to use the system-affecting pattern is to employ laws; thus, there is no difference in this respect from other sound patterns of explanation. In explaining a certain change, state, or maintenance of a system, we show what factors help produce it. The causal relationship can only be accounted for by citing a law that indicates the resulting state of affairs is expectable under the circumstances. The distinctive feature of system-maintaining explanations is the dependent variable, system maintenance. Such an explanation attempts to demonstrate that certain functions are necessary for the maintenance of the system and that specific variables fulfill these functions.

#### THE GENETIC PATTERN

Of the six patterns of explanation we have distinguished, the one that is the most distinctive structurally is the genetic pattern. Each of the other patterns can be reduced to the admittedly oversimplified schema, "If A (representing laws and initial conditions), then B (the explanandum)." But, in Ernest Nagel's words, "The task of genetic explanations is to set out the sequence of major events through which some earlier system has been transformed into a later one."<sup>50</sup> Thus, a genetic explanation does not fit the above schema because it

<sup>49</sup> Vernon Van Dyke, *Political Science: A Philosophical Analysis* (Stanford, Calif.: Stanford University Press, 1960), p. 32.

<sup>50</sup> Nagel, *The Structure of Science*, p. 25.

involves several stages. Its basic pattern (in its simplest form, involving only two stages) is, "If A (factors at time 1), then B (consequent factors); and if C (B plus other factors at time 2), then D (explanandum)." It is clear, then, that the factors in the schema occur or exist at different times. This is why we said the genetic pattern is characterized by stages. A simple causal explanation, "If A then B; A, therefore B," involves a time sequence. However, a genetic explanation is marked by at least two explanation stages, each of which can be considered a separate explanation, which together show why a political phenomenon is as it is or was what it was.<sup>51</sup> In other words, an explanation fitting the genetic pattern first explains a state of affairs X and then proceeds to explain, on the basis of X, another state of affairs, and so on.

Thus the genetic pattern accounts for the present state of a political phenomenon by showing how it developed over time from previous stages. It differs from other patterns because of this developmental element and the multiplicity of stages. From what we have said so far it seems reasonable to conclude that the genetic pattern is often identified with historical explanation. It is also interesting to note, in this regard, that much of the methodological analysis of the genetic pattern has been carried out by philosophers of history.<sup>52</sup> And, as a matter of fact, many of the explanations provided by political scientists that can be classified as genetic are actually historical. That is, in these instances the political scientist functions as an historian in accounting for political events or situations. For instance, Wilfred E. Binkley traces the development of the office of the Presidency using a narrative style that mentions the key historical occurrences that Binkley believes influenced the formation of the office.<sup>53</sup> But genetic and historical explanations are not identical. There are genetic explanations which are not historical in the technical sense, for instance, the explanation of the development of party identification in *The American Voter*.<sup>54</sup>

<sup>51</sup> A genetic explanation can be cut off at any point, so that the origin at one time may be a stage at another, and a stage may become the explanandum if we push the analysis back in time.

<sup>52</sup> See, for instance, W. B. Gallie, "Explanations in History and the Genetic Sciences," in Patrick Gardner, ed., *Theories of History* (Glencoe, Ill.: Free Press, 1959).

<sup>53</sup> Wilfred E. Binkley, *President and Congress* (New York: Vintage Books, 1962).

<sup>54</sup> Angus Campbell et al., *The American Voter* (New York: John Wiley & Sons, Inc., 1960).

A main characteristic of many genetic explanations, then, is a narrative style or chronicling of events. However, it is obvious that in accounting for a political phenomenon, not every antecedent event is relevant. We can say, at this point, that genetic explanations account for political phenomena by describing a series of relevant events which, in a chain-like fashion, determine the state of the explanandum.

However, there is more to genetic explanation than a listing of relevant stages in the development of a political phenomenon. A genetic explanation accounts for a political phenomenon by showing how it was changed or influenced at various stages in its development. Now the important point is that each stage supposedly has some influence on the following stage, and so on until the explanandum is reached; one talks about "necessary conditions." The question is, How can each stage be linked to the next? Our answer is, through the use of generalizations. That is, a law explains why the phenomenon changed from A to B, and then another law relates some part of B to C, and so on. Thus we see that if a genetic explanation is to be of any value, it must be nomological, for it depends on the demonstration that one stage has an effect on the next.

An example will help clarify our argument. William Riker's explanation of the decline of judicial review can be interpreted as a genetic explanation.<sup>55</sup> Taking some liberties with his analysis, we can present the following as an explanation of the phenomenon in question: (1) the Supreme Court's experience with the "Court-packing" bill of 1937 persuaded it to practice judicial restraint; (2) one manifestation of its judicial restraint was its periodic restriction of doctrines that had been used to justify striking down acts of Congress; (3) therefore, when acts of Congress that previously were affected by such doctrines come before the Court, it does not employ the doctrines. Thus, it does not practice judicial review. The explanation is genetic because the explanandum is the result of the relationships between three stages of the Court's history. And each relationship must be expressed in the form of a law; for instance, "a judicial body which is trying to divest itself of a power will give up devices that justify the exercise of the power."

In addition to laws, nomological explanations contain initial con-

<sup>55</sup> William Riker, *Democracy in the United States* (New York: The Macmillan Co., 1965), pp. 260-64.



ditions. The upshot of this fact is the realization that each stage of a genetic explanation is in effect a separate explanation. Thus, using the example from Riker, we see that the explanation of the Supreme Court's adoption of judicial restraint (because of the fear engendered by the attack of Roosevelt in 1937) is logically independent of the next step. And each of the consequent steps can be pulled out of context and made to stand as a complete explanation of a single development. The realization that initial conditions are a part of genetic explanations provides the foundation for an important caveat about the pattern. It is that the genetic pattern should not be thought of as an historical theory of society à la Spengler or Marx. That is, a genetic explanation merely states that, "At stage I, A happened, which because of events 1 and 2 at stage II, helped cause B, which because of events 3 and 4 at stage III, helped cause C." In other words, the explanation does not read,  $A \rightarrow B \rightarrow C$ , as it probably does in Marxian theory. This is because we are simply noting how a combination of conditions at each stage influenced the next stage. There is nothing inevitable about the outcome C, because events 1, 2, 3, and 4 did not have to happen (although of course they were caused).

### Combinations of patterns

We have now identified six patterns of explanation and their sub-patterns. Each was presented as an essentially pure pattern. That is, we analyzed a number of explanations as if each were only dispositional, only intentional, only system-maintaining, etc. However, practically speaking, one notices a great number of explanations in political science that are really combinations of patterns; in fact, most explanations are not pure, in the above sense. One could take the position that a pattern is characterized as dispositional, for instance, because dispositional laws are dominant but not exclusive; in other words, it is dispositional to a greater degree. In saying this, however, we should not overlook political science explanations that are pure; in short, this section is designed to refine or add to, not correct, the typology of patterns which has been presented in the previous section.

In discussing combinations of patterns, it should be realized that one of our patterns, the genetic, is naturally a mixture of sorts. We

pointed out that the stages of a genetic explanation can be analytically viewed as a series of separate explanations. Thus, a dispositional explanation may account for the movement from one stage, and an intentional explanation the movement to the next. If a genetic explanation uses dispositional generalizations at each stage, it might be classified as both genetic and dispositional.

The system-maintaining pattern is distinctive in that it is characterized by the nature of its explananda or dependent variables, namely, the maintenance of systems. As we have seen, various sorts of laws can account for this phenomenon. Thus, for instance, dispositional or macro concepts can be cited as antecedent conditions for the maintenance of systems. It is trivial, then, to say that system-maintaining explanations employ different kinds of concepts. This is simply a reiteration of the assertion that our typology of patterns lacks a single distinguishing criteria.

If this last point is kept in mind, the discussion to follow will be more meaningful. We will examine several ways that patterns can be combined (in addition to the sequential combining which occurs in genetic explanations). First, and most obvious, the types of laws that characterize several patterns may be employed jointly to account for a single explanandum. Take for instance, V. O. Key's tentative explanation of the U.S. two-party system.<sup>56</sup> He argues that instead of a single-factor explanation, "A more tenable assumption would be that several factors drive toward dualism on the American scene."<sup>57</sup> The factors he cites (with appropriate generalizations stated or implied) are: (1) the persistence of initial form—this implies both institutional and dispositional explanations; (2) the influence of institutional factors, such as the single-member district; (3) the existence of "systems of beliefs and attitudes"—this, of course, implies a dispositional explanation.

Another way of combining patterns in an explanation is to relate several of them in one of several ways. That is, instead of showing how a number of factors independently come together to influence the explanandum, the political scientist often attempts to demonstrate how several variables interact to bring about the phenomenon to be explained. The simplest type in this category is characterized

<sup>56</sup> V. O. Key, *Politics, Parties and Pressure Groups* (New York: Thomas Y. Crowell Co., 1958), pp. 227-31.

<sup>57</sup> *Ibid.*, p. 227.

by a linking of several factors in a "causal chain." John H. Fenton and Kenneth N. Vines' explanation of why blacks register more in southern than northern Louisiana is an example.<sup>58</sup> The explanandum is accounted for by the permissive-attitude differential between the two regions. The more permissive attitude of the southern area is in turn accounted for by an institutional property, the traditions of the Catholic Church, which is dominant in that area. The structure of the explanation is, then, "Registration because of attitudes; attitudes because of Catholic Church." This might be thought of as a sort of genetic explanation, but there seems to be a difference. A genetic explanation is constructed of a series of distinct stages in temporal sequence. The "mixed" explanation under consideration is not characterized by such distinct stages. Correlations have been discovered between two sets of factors and they have been combined to explain the political behavior in question. Furthermore, the implication is that the process continues to operate. In short there is structural difference between, "The Supreme Court is as it is today because X happened at stage I, which in turn caused Y to happen at stage II, etc." and "Negroes in southern Louisiana register more because the Catholic church lays the foundation for more permissive attitudes."

Besides horizontal causal chains, patterns may be combined in more complex arrangements. Thus dispositional, institutional, and intentional laws may interact in many complicated ways, determinable only by equally complicated statistical tests. A simple example of this sort is Robert Dahl's explanation of "why political influence is always distributed unevenly in political systems."<sup>59</sup> Dahl uses three factors, "the unequal distribution of resources, variation in the skill with which different individuals use their political resources, and the variations in the extent to which different individuals use their resources for political purposes."<sup>60</sup> These factors involve dispositions, intentions, and physical characteristics. While Dahl calls his explanation a causal chain, it differs from Fenton and Vines' in that it includes a notion of feedback. Thus, while differences in

<sup>58</sup> John H. Fenton and Kenneth N. Vines, "Negro Registration in Louisiana," *American Political Science Review*, vol. 51 (1957), pp. 704-13.

<sup>59</sup> Robert A. Dahl, *Modern Political Analysis* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970), p. 17.

<sup>60</sup> *Ibid.*

political skills and motivations lead to differences in political influence, the latter in turn helps determine the amounts of the former two factors. It can be seen, then, why such an explanation is more complex.

We have now distinguished three kinds of pattern-combination structures: the coming together of several independent variables; the arrangement of several variables in a causal chain; and the more complex arrangement of several variables, with provisions for interaction and feedback. The conclusion to draw from this discussion is that rarely will a political scientist discover a sound explanation which uses a single causal factor.