

not answer this question satisfactorily, it is possible to consider other factors, gradually replacing the notion that "nations differ" by statements formulated in terms of specific variables. Instead of stating differences among countries with regard to perceived freedom to discuss politics, we may thus formulate a statement that explains freedom to discuss politics in terms of education, perceived distance among parties, and extent of exposure to mass media.

Can the entire content of system residua be exhausted? The answer in principle is positive. Since the number of societies, cultures of political systems is highly limited and the number of relevant variables is very high, however, we may often find that explanatory systems will be overdetermined. The number of observations or degrees of freedom will be too small to allow consideration of all relevant factors. This disparity between the model and the practice of science will result in statements that will generally have a historical residuum—statements in which names of social systems will be cited after theoretical explanations have been exhausted. Although "specific" factors may not be completely removed, they are reinterpreted as residua from theoretical explanation.

Summary

The role of social science is to explain social events. Explanation consists of applying general sentences or, more precisely, theories or sets of such general sentences, to particular events. If the explanation is to be general, parsimonious, and causal, then the accumulation of knowledge—confirmation and/or modification of theories—must involve comparative research. However, explanation in comparative research is possible if and only if particular social systems observed in time and space are not viewed as finite conjunctions of constituent elements, but rather as residua of theoretical variables. General lawlike sentences can be utilized for explanatory purposes. Only if the classes of social events are viewed as generalizable beyond the limits of any particular historical social system can general lawlike sentences be used for explanation. Therefore the role of comparative research in the process of theory-building and theory-testing consists of replacing proper names of social systems by the relevant variables.

CHAPTER TWO *Research Designs*

"Most Similar Systems" Designs. "Most Different Systems" Designs. Univariate Comparisons. Comparing Relationships.

Most comparative studies take as their point of departure the known differences among social systems and examine the impact of these differences on some other social phenomena observed within these systems. An alternative strategy, however, is available. With this strategy, differences among systems are taken into account as they are encountered in the process of explaining social phenomena observed within these systems. Although emphasis will be placed on the latter strategy, the assumptions and implications of both strategies will be the subject of this chapter.

As discussed in the previous chapter, a general theory is composed of propositions formulated in terms of variables observed either within social systems or at the level of systems, but devoid of the names of social systems. Since the number of the relevant determinants of any kind of social behavior is likely to exceed the number of accessible social systems, the objective of a theory free of all proper names will not be easily reached, and thus procedures must be formulated to maximize this objective.

All research involves defining the population for which the study is to be conducted and selecting a sample from this population. Sampling methods vary greatly, depending upon the problems of the research and the nature of the population. Sometimes the sample is a random selection from the entire universe; sometimes it is selected in several steps in which some larger social units are chosen first and other social units within them are sampled subsequently; in other cases the sample is "stratified"—individuals are selected on the basis of their position on some variable, such as income or education. The common and obvious procedure in cross-systemic re-

search is to first select systems and then to sample individuals or groups within them.

For practical reasons the selection of countries can rarely be random. Even though the universe of social systems—countries, nation-states, cultures, and so forth—is fairly limited, the costs of conducting a study within random samples taken within each system will for a long time remain prohibitive. Therefore cross-national studies often have a quasi-experimental form, and the tactical choices are limited to the question of the “best” combination of countries, given the overwhelming limitations of money, access, and social scientists.

“Most Similar Systems” Design

The currently predominant view among social scientists seems to opt for the strategy that Naroll calls studies of “concomitant variation.”¹ Such studies are based on the belief that systems as similar as possible with respect to as many features as possible constitute the optimal samples for comparative inquiry. For example, Scandinavian countries or the two-party systems of the Anglo-Saxon countries are seen as good samples because these countries share many economic, cultural, and political characteristics; therefore the number of “experimental” variables, although unknown and still large, is minimized. This type of design is a “maximim” strategy. It is anticipated that if some important differences are found among these otherwise similar countries, then the number of factors attributable to these differences will be sufficiently small to warrant explanation in terms of those differences alone. A difference in the intensity of political partisanship between Sweden and Finland can be attributed to a smaller number of intersystem differences than between Sweden and Japan.

Alford’s study of social determinants of voting was based on this kind of perspective. Describing the choice of countries, Alford noted:

“The Anglo-American countries—Great Britain, Australia, New Zealand, the United States, and Canada—are alike in the important respect that they may be termed “pluralist” political systems. . . . Each of the Anglo-American countries tends toward a two-party system. . . . The electorate is not fragmented into supporters of one or another small party hoping to gain a few seats and a voice in a coalition government.”²

¹ Raoul Naroll, “Some Thoughts on Comparative Method in Cultural Anthropology,” in H. M. Blalock and Ann Blalock, eds., *Methodology in Social Research*, McGraw-Hill, New York, 1968.

² R. R. Alford, “Party and Society,” in F. J. Munger, ed., *Studies in Comparative Politics*, Thomas Crowell, New York, 1967, pp. 66–67.

He then discussed the differences between this set of countries and the multi-party systems of continental Europe, such as the relatively minor importance of religion as a determinant of voting among the Anglo-American countries. Finally, Alford specified the factors that differentiate the Anglo-American countries and that might explain the differences in the extent of class-voting. Allardt considered in similar terms the differences in class-voting among the Scandinavian countries and attributed the relatively high extent of such voting in Finland to the comparatively lower mobility rates in that country.³ In their study of civic culture Almond and Verba chose countries that have a “democratic political system” but differ with regard to their level of development.⁴ Studies of social mobility⁵ and suicide⁶ in Scandinavia followed this strategy. Cantril’s⁷ and Dogan’s⁸ studies of Communist voting in France and Italy took as their point of departure the similarities between these political systems. This is also the perspective of the “area study” approaches in the social sciences, whether the area is defined in cultural or political terms.

Intersystemic similarities and intersystemic differences are the focus of the “most similar systems” designs. Systems constitute the original level of analysis, and within-system variations are explained in terms of systemic factors. Although these designs rarely have been formulated rigorously, their logic is fairly clear. Common systemic characteristics are conceived of as “controlled for,” whereas intersystemic differences are viewed as explanatory variables. The number of common characteristics sought is maximal and the number of not shared characteristics sought, minimal. The resulting statements will take the following form: “Among the Anglo-American countries, which share the following characteristics. . . , differences with regard to class voting can be attributed to the following factors. . . .” There is no reason why these statements have to be formulated exclusively at the systemic level. One might find, for example, that among democratic countries that are economically developed, church at-

³ Erik Allardt, “Patterns of Class Conflict and Working Class Consciousness in Finnish Politics,” *Publications of the Institute of Sociology, University of Helsinki*, No. 30, 1964.

⁴ G. A. Almond and Sidney Verba, *The Civic Culture*, Princeton University Press, Princeton, N.J., 1963.

⁵ Kaare Svalastoga, *Prestige, Class, and Mobility*, Gylden Scandinavian University Books, Copenhagen, 1959.

⁶ Habat Hendin, *Suicide in Scandinavia: A Psychoanalytic Study of Culture and Character*, Grune & Stratton, New York, 1964.

⁷ Hadley Cantril, *The Politics of Despair*, Basic Books, New York, 1958.

⁸ Mattei Dogan, “Political Cleavage and Social Stratification in France and Italy,” in S. M. Lipset and Stein Rokkan, eds., *Party Systems and Voter Alignments: Cross-National Perspectives*, Free Press, New York, 1967.

tendance is either positively or not at all related to party identification, whereas among the less-developed democratic countries the relationship is negative.⁹

If such a difference is found among the systems studied, the following theoretical implications follow: (1) The factors that are common to the countries are irrelevant in determining the behavior being explained since different patterns of behavior are observed among systems sharing these factors. (2) Any set of variables that differentiates these systems in a manner corresponding to the observed differences of behavior (or any interaction among these differences) can be considered as explaining these patterns of behavior. The second implication is particularly important. Although the number of differences among similar countries is limited, it will almost invariably be sufficiently large to "overdetermine" the dependent phenomenon. Although "most similar systems" designs focus on concomitant variation, the experimental variables cannot be singled out. There is more than one factor that ranks Great Britain, Australia, the United States, and Canada in the same order; there is more than one difference between the United States, Great Britain, and West Germany, on the one hand, and Italy and Mexico on the other. But even if we assume that some differences can be identified as determinants, the efficiency of this strategy in providing knowledge that can be generalized is relatively limited.

"Most Different Systems" Design

The alternative strategy takes as the starting point the variation of the observed behavior at a level lower than that of systems. Most often this will be the level of individual actors, but it can be the level of groups, local communities, social classes, or occupations. Although the goal of this strategy is the same as in the "similar systems" design, systemic factors are not given any special place among the possible predictors of behavior. For example, we may be interested in explaining variations in college student attitudes toward personal adjustment,¹⁰ perceptual illusion of movement,¹¹ values of youth,¹² or values of local leaders.¹³ The initial assumption is that

⁹ G. A. Almond and Sidney Verba, *op. cit.*

¹⁰ J. M. Gillespie and G. W. Allport, *Youth's Outlook on the Future: A Cross-National Study*, Doubleday, New York, 1955.

¹¹ G. W. Allport and Thomas Pettigrew, "Cultural Influence on the Perception of Movement: The Trapezoidal Illusion among Zulus," *Journal of Abnormal and Social Psychology*, 55, 1957.

¹² H. H. Hyman, Arif Payaslioglu, and F. W. Frey, "The Values of Turkish College Youth," *Public Opinion Quarterly*, 22, 1958.

¹³ P. E. Jacob, Henry Teune, and T. M. Watts, "Values, Leadership, and Development," *Social Science Information*, 7, 1968.

individuals were drawn from the same population; in other words, that systemic factors do not play any role in explaining the observed behavior. Further investigation consists of testing, step by step, this assumption in the course of cross-systemic research. As long as this assumption is not rejected, the analysis remains at the intrasystemic level; whenever the assumption is rejected, systemic factors must be considered.

The first step in this design is to identify those independent variables, observed within systems, that do not violate the assumption of the homogeneity of the total population. Although the samples are derived from different systems, they are initially treated as if the population from which they are drawn is homogeneous. If the subgroups of the population derived from different systems do not differ with regard to the dependent variable, the differences among these systems are not important in explaining this variable. If the relationship between an independent and the dependent variable is the same within the subgroups of the population, then again the systemic differences need not be taken into consideration.

To the extent that general statements can be validly formulated without regard to the social systems from which the samples were drawn, systemic factors can be disregarded. If rates of suicide are the same among the Zuni, the Swedes, and the Russians, those factors that distinguish these three societies are irrelevant for the explanation of suicide. If education is positively related to attitudes of internationalism in India, Ireland, and Italy, the differences among these countries are unimportant in explaining internationalist attitudes. Whereas studies of concomitant variation require positive identification of relevant systemic factors, the "most different systems" design centers on eliminating irrelevant systemic factors.

The difference between the two strategies should not be overemphasized. Both strategies can result in the confirmation of theoretical statements and both can combine intrasystemic and intersystemic levels of analysis. In the most different systems design, the level of analysis is shifted to systemic factors when the formulation of valid general statements is no longer possible for all of the subpopulations. If it is found that attitudes of internationalism in India and Iran depend upon exposure to mass media but do not in Ireland and Italy, then the differences between the two sets of systems become relevant and reference must be made to the systemic level. When this is necessary, concomitant variation is studied *ex post facto*, and intersystemic differences are attributed to the observed variations within systems.

Concomitant variation studies are focused almost exclusively at the level of systems. Certain systemic traits are held constant, and others are allowed to vary. Denumeration in terms of national social or political systems or

cultures is only one of the many possible ways of conceptualizing social systems as the units of analysis in any theory. One could design research at the level of the American states, Finnish regions, Peruvian villages, Northern Californian tribes, and so forth. Similar systems designs, however, require an a priori assumption about the level of social systems at which the important factors operate. Once a particular design is formulated, assumptions concerning alternative levels of systems cannot be considered. The original assumption can be tested only in its entirety—either the systemic factors of the specified level of social systems are or are not relevant.

In the most different systems design, the question of at which level the relevant factors operate remains open throughout the process of inquiry. *The point of departure of this design is the population of units at the lowest level observed in the study, most often individuals.* The design calls for testing whether this population is homogeneous. If subgroups of this population that correspond to some identifiable levels of social systems can be distinguished empirically, then factors operating at this level of systems will be considered. If a population of individuals is sampled from several communities within several countries, then differences among individuals will be tested both within and across communities and within and across countries. If communities differ, systemic factors operating at the level of local communities will be considered; if nations differ, national factors will be examined; if neither countries nor communities differ, the entire analysis will remain at the individual level and no systemic factors will be considered. The level that reduces to the greatest extent the within-group variance will be considered.

Although the subsequent technical discussion is based on a multiple regression model, it is also possible to visualize this design as one in which the patterns of interaction are being systematically examined for alternative ways of grouping individuals, whether based on a classification of various levels of social systems or some attributes measured at the individual level.¹⁴ Whenever classification into some level of systems results in the greatest reduction in variance and therefore yields the greatest gain in prediction, the level of analysis is shifted to factors operating at this level.

In the context of this design, the definition of comparative research becomes clear. *Comparative research is inquiry in which more than one level of analysis is possible and the units of observation are identifiable by name*

¹⁴ Computer programs that operate in a "tree" fashion and study interaction independently for each "branch" (e.g., the Automatic Interaction Detector) may be most suitable for this purpose.

at each of these levels.¹⁵ Thus a study of local leaders sampled from local communities in a single country is comparative, since research can proceed at both the individual and at the community levels. But if supranational regions are not identifiable, according to this definition a study conducted exclusively at the level of countries is not comparative.

Since the goal of research is to confirm general statements about human behavior, the process of sampling, even if it is not random, should be oriented toward this goal. No research based on a design other than a random multistep sample of all social systems will allow universal generalizations. The validity of generalizations and the guidelines for further research provided by the two research strategies will depend upon the nature of the findings that they respectively bring. Findings desirable in the most similar systems design are highly undesirable in the most different systems design and vice versa. Let us discuss this statement.

In the most similar systems design, systems with as many similar characteristics as possible are sought. Without attempting to provide a list, let the characteristics shared by the Scandinavian countries be denoted as X_1, X_2, \dots, X_k , and the characteristics that are not shared as $X_{k+1}, Y_{k+2}, \dots, X_n$. A dependent variable, whether it is a frequency distribution of one variable or a relationship between two variables, is found to vary among these highly similar countries. For example, according to Allardt the amount of class voting varies among the Scandinavian countries¹⁶. A data matrix for five countries in this kind of a design would assume the following form (all variables are dichotomized):

Country	Variables Controlled					"Experimental" Variables			Dependent Variable
	X_1	X_2	\dots	\dots	X_k	X_{k+1}	\dots	X_n	Y (or $X_i Y_i$)
A	1	1	\dots	\dots	0	1	\dots	1	1
B	1	1	\dots	\dots	0	0	\dots	0	0
C	1	1	\dots	\dots	0	1	\dots	1	1
D	1	1	\dots	\dots	0	1	\dots	1	1
E	1	1	\dots	\dots	0	0	\dots	0	0

The dependent phenomenon can either be a single aggregated attribute or a within-system relationship. Of course there are other factors that differentiate these systems in ways *not* associated with the variations of the dependent variable. The resulting finding, if stated carefully, may take the following form: "When the observed systems share characteristics $X_1, X_2,$

¹⁵ It should be noted that this is the meaning of the term "comparative" as used in psychology. Comparative psychology is a study of organisms at different levels of structural differentiation.

¹⁶ Erik Allardt, *op. cit.*

..., X_k , the variations of the dependent variable Y (or of the relationship between an independent variable X_n and the dependent variable Y_n , both measured within systems) are associated with the variable X_{k+1} (according to the hypothesis) or the alternative variables X_{k+2}, \dots, X_n (alternative hypotheses).¹⁷

What further implications follow from this finding? We obtain a positive, although overdetermined, explanation of the dependent variable Y —it either depends upon X_{k+1} , as hypothesized, or the variables X_{k+2}, \dots, X_n , which are not controlled. The original hypothesis is confirmed, although alternative hypotheses are not rejected. This certainly strengthens our confidence in the explanatory power of factor X_{k+1} , and, although no rigorous inferences are possible, further research is directed toward testing the influence of X_{k+1} in other settings.¹⁷ Thus if we find some other social system that shares with these systems all of the characteristics, X_1, \dots, X_k , it is likely that a similar explanatory pattern will be found. If, however, any one of these characteristics is different, no inferences are possible since it is likely that this particular trait interacts with the dependent variable.

If a hypothesis is confirmed as a result of the most similar systems design, we gain some encouragement about the generality of the hypothesis. For example, if we find that among Scandinavian countries frequency of social mobility is associated with the frequency of class voting, we will be prompted to test whether mobility is also associated with class voting among the Anglo-Saxon countries. Moreover if we find that among the Anglo-Saxon countries, which share characteristics *other* than those shared by Scandinavian countries, mobility is also associated with class voting, the confidence in the explanatory power of mobility will be further strengthened. If, however, mobility is not related to class voting among the Anglo-Saxon countries, we are back where we started. All we now know is that class voting depends upon mobility, which in turn depends upon other factors that cannot be isolated.

The logic of the most similar systems design is based on the assumption that characteristics shared by one group of systems, such as Scandinavian countries, can be removed one-by-one in quasi-experimental manner. But this is an unrealistic assumption. As we argued previously, social phenomena vary in syndromes and it is difficult to isolate experimental factors.

¹⁷ Let us note that we are talking here in psychological and not in logical terms. Within the present logic of inference, one cannot make any generalization beyond the population from which the sample has been drawn. However, it is apparent that such theory of induction is not appropriate for social science and that, in their practical activities, social scientists are actually willing to take the risk of false generalizations rather than satisfy themselves with rigorous inferences about accidental populations.

The most different systems designs eliminate factors differentiating social systems by formulating statements that are valid regardless of the systems within which observations are made. As long as these statements continue to be true in all systems, no reference to systemic characteristics is made. As soon as additional statements cannot be validly formulated across systems, however, the hypothesis concerning no difference among systems has to be rejected and the level of analysis is shifted to systemic factors. At this point, the association of the intersystemic variations with the intrasystemic differences would be examined. For example, if in a group of systems political participation is positively related to education but the remaining differences in political participation cannot be explained by any other variable measured within systems, it would be necessary to identify the systemic factors associated with these differences. It should be emphasized that the systemic characteristics need not be dichotomous. For example, one may relate the within-system correlations between budgetary requests and budgetary appropriations to characteristics of American states, such as their per capita income or the degree of interparty competition.

Both of these strategies are based on some expectations about social reality. The most similar systems design is based on a belief that a number of theoretically significant differences will be found among similar systems and that these differences can be used in explanation. The alternative design, which seeks maximal heterogeneity in the sample of systems, is based on a belief that in spite of intersystemic differentiation, the populations will differ with regard to only a limited number of variables or relationships. On the one hand, if it turns out that Swedes, Finns, Norwegians, and Danes are alike in all of the examined aspects of their social behavior, then the study of these countries will not permit the identification of the systemic factors relevant for a particular kind of behavior. If, on the other hand, Americans, Indians, Chileans, and Japanese show no common patterns of behavior, a study of these countries will end up with four separate sets of statements contributing equally little to general theory.

Univariate Comparisons

Underlying the preceding discussion is a set of statements concerning the "sameness" of samples derived from different social systems. Systemic factors can be attributed to within-system variables if the systems are found to be "different" either with respect to a single variable, aggregated at the system level, or with regard to within-system relationships. By the same token, systemic factors can be eliminated from explanation if within-system patterns are found to be the "same." Any formulation of a problem of inquiry as comparative is based on the assumption that factors subsumed

under the proper names of systems may potentially influence the phenomena that are being explained.

If systemic factors do indeed influence the within-system patterns, whether univariate or multivariate distributions, then identification of the system within which an observation is made raises our ability to predict a score on the dependent variable above the prediction based only on the mean score for the entire, or "total" population. The coefficient of regression of an individual's score on a variable representing his membership in a particular system must be larger than zero if the population is heterogeneous in terms of systems.

As an example, suppose we are examining individual propensity to vote for the parties of the right among Western European countries. If the proportion of the electorate voting for the parties of the right is the same in all countries, it becomes quite irrelevant whether an individual is a Frenchman or an Italian. Other factors are important, for example, social class or religion. If the members of the Western European elites share similar attitudes toward European integration, again it is not important whether a particular person is a member of the Dutch or the Italian elite. To the extent that identifying the social system does not help predict individual characteristics, systematic factors are not important. The total population is homogeneous, and further research is not distinct from investigations customarily conducted within a single social system. The analysis can proceed at the level of individual characteristics without resorting to any system-level variables.

If it can be assumed that the measurement of a given variable is relatively free of systematic error at the system level and if the scale of measurement is known, a simple test concerning differences among means (one-way analysis of variance) can be used to ascertain whether social systems differ with regard to this variable. The question we want to answer is whether the extent of variation of a given characteristic within each country is smaller than variation among countries. If all trains in England move at a speed of 50 miles per hour and all trains in France move at a speed of 60 miles per hour, then knowing the fact that someone is traveling in France rather than in England will be helpful in predicting the duration of a journey. But if the speed of trains in both England and France varies between 30 and 70 miles per hour, the difference of 10 miles per hour in average speed may not be sufficient to improve a prediction about the duration of a trip. The type of train or time of the year may be much more important than the country.

The nature and the extent of intersocietal differences have long been subjects of theoretical formulations in the social sciences. Anthropologists

tend to perceive societies as highly different. Although individual personalities are "potentially" the same, culture, social organization, child-rearing practices, or some other factors result in the predominance of certain personality types in particular societies. These cultural configurations, or "patterns of cultures," were originally identified from folk themes, customs, and so forth. Patterns of culture were not based on the notion of frequency distribution of personality types within a culture but on an ideal-type personality model. Subsequently, however, the concept of modal personality replaced the concept of patterns. Modal personality, defined as the product of interaction between "fundamental physiologically and neurologically determined tendencies and experiences common to all human beings" and their cultural milieu, became a subject of statistical analysis of distributions of personality types. Furthermore, if Singer's conclusions are correct, projective techniques indicate that the distributions within societies are flat, and within-culture differences of personalities are therefore larger than the between-culture differences.¹⁸ It is not clear to what extent these findings can be generalized, but they are certainly surprising. Concepts of "cultural patterns," "modal personality," and "social character" and the problems of relating sociocultural settings to individual traits have an extensive theoretical tradition, but the empirical findings are scarce and thus inconclusive. As Inkeles and Levinson emphasize, "If national character refers to modes of a distribution of individual personality variants, then its study would seem to require the psychological investigation of adequately large and representative samples of persons, *studied individually*."¹⁹

One set of attitudes that has been extensively studied concerns evaluations of occupational prestige in different societies.²⁰ Although the methodology of these studies has not been uniform and the samples have varied greatly, the general findings seem to indicate a high degree of intersocietal uniformity. These findings again run counter to our theoretical intuitions in light of which the prestige of occupations ought to be related to industrialization or social division of labor. But if the methodology of

¹⁸ This discussion is based on Milton Singer, "A Survey of Culture and Personality Theory and Research," in Bert Kaplan, ed., *Studying Personality Cross Culturally*, Row, Peterson, Evanston, Ill., 1961.

¹⁹ Cited in Singer, *op. cit.*, p. 55.

²⁰ Alex Inkeles and Peter Rossi, "National Comparisons of Occupational Prestige," *American Journal of Sociology*, 61, 1956; Alex Inkeles, "Industrial Man: The Relation of Status to Experience, Perception, and Value," *American Journal of Sociology*, 66, 1961; E. M. Thomas, "Reinspecting a Structural Position on Occupational Prestige," *American Journal of Sociology*, 67, 1962; A. O. Haller, D. I. Lewis, and Iwao Ishino, "The Hypothesis of Intersocietal Similarity in Occupational Prestige Hierarchies," *American Journal of Sociology*, 71, 1966. Research reports on occupational status are available from at least 16 countries.

these studies is sound—if Americans and Japanese, Poles and Brazilians, Germans and Indonesians evaluate particular occupations alike—theories relating the socioeconomic structure to these attitudes will have to be revised. Social science theories may in general overstate intersocietal differences and the role of system-level factors, and in this era of empirical truth many myths might have to be revised. When Lipset and Bendix stated that “the overall pattern of social mobility appears to be much the same in the industrial societies of various Western countries,” they felt it necessary to emphasize that this finding “runs counter to widely held impressions concerning the different social structures of American and Western European societies.”²¹

If no differences are found among systems, the population is homogeneous and systemic factors cannot be expected to be important as determinants. Thus the test of differences between or among national means—either a mean test or a variance test—provides a general estimate of the relevance of systemic factors and a guideline for the choice of the proper level of analysis. If the sample is differentiated in terms of systemic characteristics, generalizations beyond the examined sample of countries seem relatively safe. If the Indian, Polish, Yugoslav, and American local leaders do not differ in their orientation toward change, it can be expected that local leaders in other countries are not significantly different, and, in general, that systemic factors are not important in explaining this particular attitude.

These examples of intersystemic similarities with regard to a single phenomenon, such as personality types, evaluation of occupations, social mobility, or values of local leaders, are by no means intended to support a thesis that social systems do not differ. Illustrations, both of an impressionistic and systematic nature, of intersystemic differences are abundant. The examples discussed were merely intended to show that the assumption of intersystemic similarities, underlying the most different systems design, should not be discarded a-priori as invalid. To our surprise and contrary to many theories, such similarities are indeed being discovered. The validity of this assumption, of course, will depend upon the nature of the social phenomena under consideration: one may expect that psychophysiological phenomena will be less dependent upon the social system than are political phenomena.

A limitation on comparing systems with regard to individual-level phenomena must be emphasized: the problems of measurement. Cross-system comparisons of single variables will be dependent upon the units and the scale of measurement within each social system. Very often such direct

²¹S. M. Lipset and Reinhard Bendix, *Social Mobility in Industrial Society*, University of California Press, Berkeley, 1960, pp. 11 and 13.

comparisons will not be possible, either because the scales of measurement are unknown (e.g., is political participation in the Soviet Union higher than in the United States?) or because the investigator may choose to quantify the variables in a way that precludes this kind of comparisons (e.g., by dichotomizing at the national medians). This limitation will be discussed in greater detail in Part Two.

Comparing Relationships

Descriptive, univariate comparisons may often not only be difficult, they may also be less interesting than the multivariate patterns of determination. Since most theoretical propositions are formulated in terms of predicting one variable by some other variables, the form and the fit of these predictions are of central importance for a theoretically minded social scientist. Within-system predictions and the fit of these predictions, or “relationships,” often constitute the focus of analysis. When leaders and citizens in several countries are studied, one can ask whether membership in India or Yugoslavia has more effect on the values of an individual than a position as a local leader. When perceived freedom to discuss politics is studied, one can ask whether education or the system better predicts individual perceptions. If achievement motivation is studied in Brazil and in the United States, one can ask whether social class or nationality is a better predictor.

The question is whether the relationship between the variable being explained and an independent variable is the same within all systems: whether systemic characteristics are important in determining the form and the fit of theoretical predictions in different social systems. Again, if values in all countries are in the same way associated with political positions, or if freedom to discuss politics is related to education, or achievement motivation to social class, then systemic factors are not important in explaining the dependent variable. And again, as additional independent variables are considered, it may very likely transpire that at some point systemic characteristics do influence the observed relationships. But each finding of similarity of relationships across social systems reduces the number of potentially relevant systemic characteristics. The most different systems design implies an analytical strategy in which the overall influence of systemic factors is assessed step-by-step with the addition of each new variable.

Illustrations of similar relationships in various social systems are plentiful. Most recent comparative studies of political behavior seem to discover that relationships among individual attitudes are the same regardless of political system. In his inventory of research on political participation, Milbrath found only two instances in which a relationship was not the same in all

political systems.²² The study of civic culture consistently shows that education is the most powerful determinant of political attitudes in five countries. Indeed, Almond and Verba conclude the following:

"It is . . . among the most important facts we discovered that most of the relationships between education and political orientation are of the first type: educational groups differ from one another substantially, and in a similar way, in each nation."²³

Rokkan reports similar findings in the study of attitudes toward European integration:

". . . Gallup International, in its study of *Public Opinion and the Europe of the Six*, found that 62 percent of the Dutch sample was strongly in favor of unification, and only 36 percent of the Italians. This difference, however, tells us very little about the chances of strains between the two countries in the articulation of policies toward Europe. It turns out that the *better educated in the two national samples think practically alike*: 70 percent of them were strongly in favor of European unification. The difference between the two countries resulted almost entirely from a contrast in levels of education and information. . . . [emphasis added]"²⁴

Converse and Dupeux report major differences in the frequency of party identification between France and the United States. Seventy-five percent of Americans identify themselves with a political party, while only 45 percent of the Frenchmen perceive themselves in partisan terms. This difference, however, can be attributed to the higher rates of political socialization through the family in the United States. The authors show that in both countries those persons who know their father's party preference are very likely to have a party preference themselves—79.4 percent in France and 81.6 in the United States. Converse and Dupeux conclude:

"Where the socialization processes have been the same in the two societies, the results in current behavior appear to be the same, in rates of formation of identification. The strong cross-national differences lie in the socialization processes. In other words, we have come full circle again: we

²² L. W. Milbrath, *Political Participation*, Rand McNally, Chicago, 1965.

²³ G. A. Almond and Sidney Verba, *op. cit.*, p. 317.

²⁴ Stein Rokkan, "Comparative Cross-National Research: The Context of Current Efforts," in R. L. Merritt and Stein Rokkan, eds., *Comparing Nations: the Use of Quantitative Data in Cross-National Research*, Yale University Press, New Haven, Conn., 1966, p. 19.

have encountered large national differences but have once again succeeded in moving them to the marginals of the table."²⁵

One could expect that in all the cases cited above the social system does not increase the accuracy of prediction of the dependent variable. If an illiterate Italian were an illiterate Dutchman, his attitude toward integration would have been the same. If an American who does not know his father's party preference were a Frenchman who did not know his preference, it would still be unlikely that he would have party identification. As long as the independent variables remain the same, membership in a social system is not important in predicting the dependent variable. Education is a good predictor; social system is not. Class is a good predictor; social system is not. What matters is not whether an individual's name is John Smith or Giovanni Bianco, but whether he went to school or not, whether he knows his father's party preference or not, whether he has a high income or not. The countries differ with regard to their levels of education, class structure, and family socialization, but they do not differ as *systems* so long as their patterns of relationships are the same. *Systems differ not when the frequency of particular characteristics differ, but when the patterns of the relationships among variables differ.*²⁶

The fact that a single independent variable measured within systems yields a gain in prediction of the dependent phenomenon does not preclude the possibility that systems may *also* contribute to the explanation. If a set of independent variables, measured within each system, predicts the dependent phenomenon independently of *all* systemic characteristics, the initial variation of the dependent variable will disappear when the means of the independent variables are adjusted. If the difference between Americans and Frenchmen disappears when the frequency of knowledge of father's party identification is adjusted, then systems cannot contribute to the

²⁵ P. E. Converse and Georges Dupeux, "Politicization of the Electorate in France and the United States," in L. A. Coser, ed., *Political Sociology*, Harper & Row, New York, 1966, pp. 233-34.

²⁶ A large number of examples of the structure of relationships among attitudes can be seen in several studies attempting to develop attitude-measuring instruments. These findings are most impressive in that, in spite of the difference among the cultures and the differences in the intensity of particular attitudes, the *structure* of inter-relationships among attitudes is highly invariant. See, for example, D. H. Smith and Alex Inkeles, "The OM Scale: A Comparative Socio-Psychological Measure of Individual Modernity," *Sociometry*, 29, 1966; J. A. Kahl, "Some Measurements of Achievement Orientation," *American Journal of Sociology*, 70, 1965; Howard Maclay and E. E. Ware, "Cross-Cultural Use of the Semantic Differential," *Behavioral Science*, 6, 1961; Salomon Rettig and Benjamin Pasamanick, "Invariance in Factor Structure of Moral Value Judgments from American and Korean College Students," *Sociometry*, 29, 1966.

explanation. If, however, the difference of achievement motivation between Americans and Brazilians does not disappear—if both class *and* nationality have an effect on achievement motivation—then further analysis must follow. Rosen found that both social class and nationality have an effect on the age at which achievement training is seen as proper, that social class is much more important than nationality for the age of independence training, and that nationality is more important than social class for actual achievement motivation scores. The system is an important predictor of achievement scores; it is less important than social class for predicting the age when independence training takes place; and it is as important as social class for predicting the age when achievement training takes place.²⁷

In general, when a relationship between two variables is found to be the same across social systems, the number of systemic characteristics operating on the dependent variable is reduced. The systemic factors, however, are not completely eliminated from further explanation. If and only if initial variation of the dependent variable disappears when independent variables are adjusted in each system can systemic factors completely be disregarded. But, if at some stage of analysis systems do yield a gain in prediction, systemic factors must be considered. Such cases will be discussed in the following chapter.

²⁷ B. C. Rosen, "Socialization and Achievement Motivation in Brazil," *American Sociological Review*, 27, 1962.

CHAPTER THREE

System Level Variables: Changing the Level of Analysis

Differing Relationships. Comparative Study and Levels of Analysis. System-Level Variables: Diffusion Patterns, Settings, and Contexts. Level of Analysis and Inference: Interpreting Ecological Correlations. Inferences when Within-System Relationships are Similar. Inferences when Within-System Relationships Differ Systematically. Conclusion.

Differing Relationships

It should be clear from the preceding chapter that whenever the within-system relationships are sufficiently different, identification of the social system will improve explanation. When systemic factors are introduced, the level of analysis is changed. Problems involved in this change constitute the topic of this chapter.

The most simple case requiring a change of level of analysis occurs when a bivariate relationship is different in two or more systems. Bendix and Lipset cite several such cases concerning political behavior of various occupational groups. For example, they report the following:

"Among workers in Germany and Sweden, the better paid and more skilled are more likely to be class-conscious, and vote social democratic or communist, than those who are less well paid and less skilled. In Britain, the United States, and Australia, however, the lower paid and less skilled