

this non-random sample of citizens into lawyers and doctors. Then, further selection and socialization take place between specialties within the law and medicine.

Once you see this complex web of events as the result of sampling, selection, and socialization, you readily understand why members of a particular job or position resemble each other in backgrounds, behavior, and beliefs.

ISSUES FOR DISCUSSION AND REVIEW

- A> Select a report of a recent political poll from the local newspaper. Analyze and discuss it. Does it report sampling error? Does it report its non-response rate? How might the results be different if the non-response rate were high?
- B> How did you get to college? Consider the various factors that may have been involved—from society's allocation (selection) processes to your choices.
- C> Have you decided what career you wish to pursue? If so, are you already socializing for such a career? Have you started to presocialize—thinking about what it would be like in the future to be in that career? Have you had a summer job or any other opportunity related to your career choice? If so, did socialization processes begin to shape you into the career role?

RECOMMENDATIONS FOR FURTHER READING ON ISSUES RAISED IN THIS CHAPTER

On Probability Sampling for Surveys:

For readers new to the idea:

- C. M. Judd, E. R. Smith & L. H. Kidder. 1991. *Research Methods in Social Relations*. New York: Holt, Rinehart & Winston. Chapters 6 and 9.
- R. L. Scheaffer, W. Mendenhall & L. Ott. 1986. *Elementary Survey Sampling*. 4th ed. Boston: PWS-Kent.

For readers who wish to read a basic source:

- A. Chaudhuri & H. Stenger. 1992. *Survey Sampling: Theory and Methods*. New York: Dekker.

On How Cumulative Barriers Operate Against Black Americans:

For readers who wish to read a basic source:

- G. D. Jaynes & R. M. Williams, Jr. (Eds.). 1989. *A Common Destiny: Blacks and American Society*. Washington, DC: National Academy Press.

T. F. Pettigrew. (1995) How To Think Like a Social Scientist? Harper Collins, Chapter

6

Keeping Our Levels Straight

American society suffers from widespread violence. It endures high rates of both homicide and suicide—a rare occurrence among the world's nations. National violence is a *societal* problem, so social scientists look to the *societal* level of analysis to explain this dark side of American life. The nation's frontier history, massive gun sales, widespread use of drugs, and maldistribution of wealth are all proposed contributors to this pattern of violence.

By contrast, popular analyses typically debate this societal issue as if it were simply a problem of disturbed *individuals*. The National Rifle Association, the gun manufacturers' lobby, typifies this tendency with its slogan—"guns don't kill people; people kill people." Even trained observers are prone to reducing this societal problem to a personality issue. In doing so, they mix their levels of analysis.

Consider one such analysis by a psychoanalyst. *Our Violent Society* (Abrahamson, 1970) casts the national problem almost completely in personal terms. It views society as simply the source of stress that triggers sick individuals. The argument is that "[t]he roots of our violence thus lie in unresolved hostile aggression . . ." (Abrahamson, 1970:128). Such personal conditions as loneliness, frustration, and a desire to dominate are all implicated. Society must recognize and treat these sick people who are prone to act out their hostility.

Such an argument vividly illustrates how *not* to think like a social scientist. Were the analysis limited to a discussion of violent *individuals*, it would be an interesting treatise. As an analysis of national violence, however, the healthy skepticism of social science raises a host of questions. Is violence due only to sick, frustrated people? If so, why is there a higher percentage of such people in the U.S. than in the many societies with far less violence? How can

this analysis explain the sharply different rates of violence within the U.S. by time, region, and ethnicity?

What major remedy does this analysis advance? Do Americans need thousands of hours of treatment on the psychoanalytic couch so each citizen can resolve her or his "hostile aggression?" Such questions underscore the difficulties of such analyses. By confusing levels of analysis, both the explanation and the remedy prove inadequate.

A similar confusion of levels gained currency in 1954, when the U.S. Supreme Court handed down its historic ruling that racial segregation of public schools was unconstitutional. Many wondered how white Southerners would accept this decision. After all, the ruling threatened to end their region's rigid system of racial segregation. Pessimists claimed that mass psychiatric therapy for millions of white Southerners was the only way the Court ruling could win acceptance, and anti-black racism would be reduced. This represents another naive misuse of personality explanations for a societal problem. It was actually a not-so-subtle way of saying that racial change in the South was impossible.

I argued the opposite sequence for remedy (Pettigrew, 1961, 1991a). The popular argument held personality change to be necessary to trigger social change. Social science evidence shows that structural change to which individuals (even highly prejudiced people) must adapt is both more practical and effective. Altered social structure leads to altered attitudes.

This case is an example of the greater effectiveness of top-down rather than bottom-up approaches to social change—an emphasis of this chapter. That is, structural change in society's laws and norms leads to behavioral and then attitude changes at the individual level. The rival model holds that the attitudes of individuals must first change before structural change is possible. The old saying for this belief is "laws cannot change the hearts and minds of men."

Four decades later we can assess the two theories. Without psychotherapy being necessary for white Southerners, the slow but relentless destruction of racially segregated institutions in the South has had major effects. Deep racial problems remain in the region, but consider the changes since 1954. Racially desegregated schools and workplaces led to new interracial situations. These new situations required new interracial behavior that led to more tolerant racial attitudes. Indeed, white Southerners' racial attitudes have improved more over these years than those of other Americans (Schuman, Steeh and Bobo, 1985). And, as predicted by the institutional-change-first model, these changes in behavior and attitudes followed the desegregation of public facilities. The institutional alterations were wrought by court decisions and black American protest, and were initially unpopular in the white South. Yet white Southerners in time not only came to accept the changes, but have had their racial views altered by these institutional changes.

Laws did change the hearts and minds of many white Southerners. They did so by first changing the institutional arrangements in which black and white Southerners interacted with each other. These altered situations shaped

new behavior that in turn began to erode the racist beliefs that have burdened the South for centuries.

This structural way of thinking not only keeps the levels of analysis straight, but differs from popular thought. Many maintain that such sweeping societal alterations as ending racial segregation cannot happen without widespread support from individual citizens. Yet a far higher percentage of black children now attend desegregated public schools in the southern United States than any other region of the nation (Farley, 1984).

6.1 THE COMPOSITIONAL FALLACY: CONFUSING MICRO WITH MACRO LEVELS

Both examples illustrate the compositional fallacy. This fallacy is a special case of Aristotle's famous dictum—"the whole is greater than the sum of its parts." We shall consider the theoretical implications of this dictum in the next chapter. Gerald Weinberg neatly captures the logical problem involved.

I stand on a bridge and spit in the river. Seeing that it makes no noticeable difference in the purity of the water, I go to the polls and vote against the municipal bonds for a new water-treatment plant. (Weinberg, 1975:42)

In social research, the compositional fallacy occurs when an analyst considers only individual people, but draws conclusions about the entire society. This procedure is a fallacy, because the micro-level units are too small to represent phenomena and processes at the societal level.

To reduce societal-level (macro-level) issues to individual-level (micro-level) terms is to ignore that each level of analysis has its own unique processes and properties. Societies and institutions are not simply the sum of the individuals who comprise them. These macro-level entities have their own properties, and these properties are a primary focus of social science. Societies and institutions are more than mere collections of people. By their very structures and functions they are different in kind from micro-level entities.

When you think like a social scientist, you are wary of drawing simple analogies between levels. In popular language, you will observe the compositional fallacy when people use individual terms to describe societies and institutions. Japanese society is "anal retentive" (Gorer, 1943); South African society is bigoted. *Some individual* Japanese are anal-retentive, and *some individual* South Africans are bigoted. Societies require terms that correspond with their macro-level status.

The compositional fallacy is more than an interesting point for social scientific thinking. It can lead to serious mistakes in interpretations and policy recommendations. Consider the two examples we have just discussed. By using only individual terms, *Our Violent Society* ignores the structural issues that the U.S. must address if it is to reduce its violence. Similarly, those who saw implementing racial change in only individual terms would

have prevented the Supreme Court from acting decisively in outlawing racial segregation.

6.2 THE ECOLOGICAL FALLACY: CONFUSING MACRO WITH MICRO LEVELS

The ecological fallacy also involves a confusion of levels. It presents precisely the opposite problem, however, from that of the compositional fallacy. Some call it the *decompositional fallacy*. It maintains “the part is more than a fraction of the whole.” Weinberg captures the illogic here with another story.

I stand on the bridge and notice that the river is clean, so I conclude that nobody spits in it. (Weinberg, 1975:43)

The ecological fallacy occurs in social analysis when only data from large macro-units are available, with no data from individual people. Nevertheless, the analyst draws conclusions about individuals. This procedure is a fallacy in so much as the macro-units are too large to represent individual differences within the unit (Robinson, 1950).

The classic illustration of the ecological fallacy occurred in Emile Durkheim’s (1951) famous study of suicide. This 19th-century investigation is an early example of non-experimental research on a major societal phenomenon. Durkheim had data on religion (the independent variable) and suicide (the dependent variable) from various nations and regions of Europe. He uncovered a striking relationship between the two variables. Heavily-populated Protestant areas had high suicide rates, while heavily-populated Catholic areas had low rates.

Durkheim concluded that Protestants were individually far more likely to commit suicide than Catholics, but there is a problem with this conclusion. Durkheim had not kept his levels straight. His conclusion involved *individual* Protestants and Catholics (the micro-level of analysis), but his data involved nations and regions (the macro-level of analysis).

The rareness of suicide heightens the ecological fallacy. Few people, fortunately, commit such a drastic act. Here, a plausible rival hypothesis presents itself. Maybe the Catholic minorities living in mostly Protestant areas commit most of the suicides. This would explain the macro-level finding, but it leads to precisely the opposite conclusion at the micro-level. Even though the Protestant areas had high suicide rates, the individual Catholics living in them could have been responsible for these high rates. A possible explanation leaps to mind for this rival interpretation. Perhaps, Catholics in largely Protestant regions were victims of religious persecution, and this situation led to committing suicide.

Durkheim, however, was a careful researcher and aware of the problem. Since he could obtain only fragments of individual data on suicide to strengthen his conclusion, he did the next best thing. He checked on his finding in increasingly smaller and smaller regions—thus getting closer and closer to the micro-level of individuals. His initial hypothesis continued to hold true:

even small Protestant areas had higher suicide rates than comparable Catholic areas. Thus, Durkheim did not eliminate the ecological fallacy, but he did narrow the problem as much as his data allowed. By the way, Durkheim *was* right. Later research with individual data established that suicide is more prevalent among Protestants.

We need not look back to 19th-century research to uncover instances of the ecological fallacy. As with the compositional fallacy, examples of this confusion of levels regularly occur. One illustration of the fallacy occurred during the 1964 presidential election. George Wallace, then Governor of Alabama, ran for President on a third-party ticket. As a racial segregationist, he sought northern votes with a campaign that combined racism with a social class appeal to white workers. In parts of the industrial Midwest, Wallace received sizeable support.

The southern governor’s ability to attract northern votes surprised the mass media. In trying to explain this unexpected phenomenon, media analysts committed the ecological fallacy. The data available were largely macro-level data—voting percentages from various areas. The popular explanations, however, involved micro-level, individual phenomena. The analysts described northern voters for Wallace as angry white workers who left the Democratic Party to engage in a “racial backlash” against black Americans. Note the problem here is the same as Durkheim’s in analyzing suicide. The media drew inappropriate conclusions about individual people from macro-level data.

What these analysts overlooked was that the *total* vote increased in areas where Wallace ran well in the North. As with Durkheim’s case, the ecological fallacy allows another hypothesis. The increased vote suggests that *new* white voters had entered the electorate, people so alienated that they had seldom voted in the past. Wallace’s message induced them to vote in 1964. Thus, according to this interpretation, no “racial backlash” had occurred. These new voters had long been racially prejudiced, but only Wallace expressed their views and attracted them into the electorate. Closer examination of both voting and survey data showed that this rival interpretation accounted for much of the northern voting for Wallace (Pettigrew, 1964).

A similar phenomenon of new voters occurred in 1990 when David Duke, a former Ku Klux Klan leader, ran for the U.S. Senate in Louisiana (Giles & Buckner, 1993:708). Duke lost this race, his 1991 contest for Governor, and his bid for the Republican presidential nomination in 1992. Yet, like Wallace, he won large votes in selected areas in part because of new white voters.

6.3 DIFFERENT LEVELS OF SOCIAL ANALYSIS

Figure 6.1 presents a simplified diagram of three levels of analysis. The broadest level is the macro-level. It includes an array of expansive entities that all evolved from human efforts—societies, nations, cultures, economic and political systems, institutions and organizations. To speak of Canada, Mexican culture, Arizona, your high school, or the Girl Scouts is to refer to the macro-level. Obviously, this broad sweep covers a wide variety of social structures.

The various social science disciplines, as their names suggest, carve out for study different slices of this macro terrain. Cultural anthropology specializes in cultures. Political science studies political systems, nations, other political units, and political parties. Economics focuses on economic systems, while sociology concentrates on societies as a whole as well as on institutions and organizations. There is, of course, overlap among the disciplines in their various interests, yet there is not as much interdisciplinary work on common problems as one might wish. Each discipline acts like a fiefdom in the Middle Ages, complete with a moat around its intellectual castle. Students who take courses in several social sciences must develop their own syntheses.

The middle level of analysis in Figure 6.1, the meso-level, involves face-to-face situations. Unlike the macro-level above it, it is small enough for the participants to interact with each other. Unlike the micro-level below it, it involves more than one person. Sandwiched between the broadest and narrowest of the levels, the situational level mediates the effects between the macro- and micro-levels. For example, we noted how changed interracial situations, wrought by Supreme Court rulings at the macro-level, led many white Southerners to alter their attitudes toward black Southerners at the micro-level.

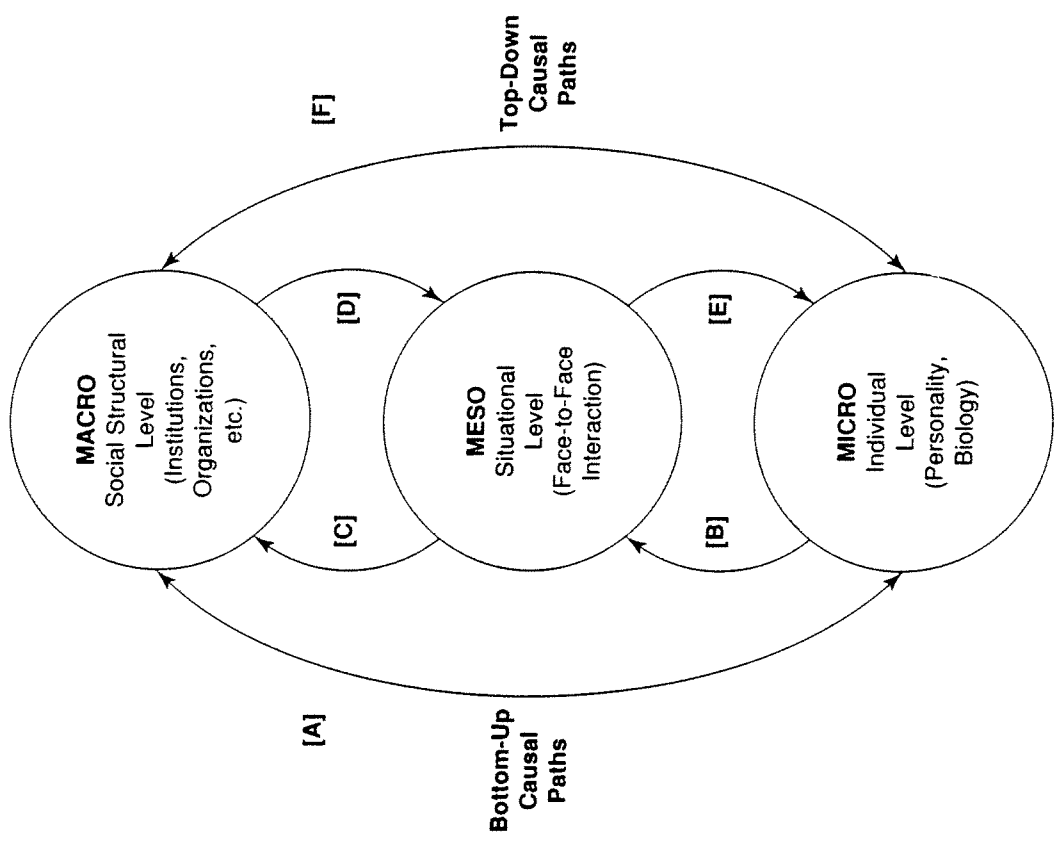
Many social sciences have interests at this intermediate level, too. For example, cultural anthropologists, demographers, sociologists, and developmental psychologists all study the family—a meso-level unit of analysis. One discipline, social psychology, centers its attention primarily at this level. We have described several studies from this field in earlier chapters. Recall the laboratory study that induced hostile behavior through a self-fulfilling prophecy, and the Robbers' Cave field study of intergroup prejudice. Notice how social psychological research focuses on the face-to-face level of individuals interacting with each other.

Figure 6.1's third level of analysis is the most familiar. The micro-level considers human beings one at a time. We could elaborate on this level, too, with smaller biological units down to the gene. Again, we choose to keep Figure 6.1 as uncluttered as possible. Yet we need to remind ourselves that the figure is a schematic presentation of a highly-complicated picture.

The study of personality in psychology concentrates completely on this level. Other disciplines also have components that are primarily micro-level in scope. Micro-economics, in contrast with macro-economics, centers on this level, as does much of behavioral political science and its attention to the individual voter. Social psychologists and sociologists also study individual phenomena.

Thus, social science thinking does not overlook the micro-level in spite of its primary focus on social structures at the macro-level. It differs from popular thought by insisting on placing micro concerns in their larger social structural contexts. The chief problem at this level of analysis becomes: "How can the individual be both a cause and a consequence of society?" (Allport, 1968:9) To show how social science tackles this question, Figure 6.1 traces the various causal paths between the levels.

Figure 6.1 Six Causal Paths



We could complicate Figure 6.1 by separating the macro-level into many structures of varying size. For our purposes, however, we will consider them one level, as they are all macro compared to Figure 6.1's other levels.

The macro-level of analysis is the major focus of social science. It is this level where the central concept of social structure is essential in social science analysis. Recall from Chapter 1 that social structure refers to relatively persistent social patterns of many types. While popular thought centers on individuals and the micro-level, thinking like a social scientist entails concern for such structural entities as nations, societies, and institutions.

6.4 DIFFERENT CAUSAL PATHS: BOTTOM-UP AND TOP-DOWN

Social scientists usually answer questions of what causes what within levels of analysis. Hence, macro processes explain macro phenomena, and micro processes explain micro phenomena. The most interesting causal questions span levels. Figure 6.1 traces six cross-level paths of causation (A through F).

The three paths on the left (A, B, and C) are all bottom-up paths that extend from the narrower micro- and meso-levels *up* to the macro-level. The three top-down paths on the right (D, E, and F) extend from the broadest macro- and meso-levels *down* to the micro-level. These terms—bottom-up and top-down—are useful for classifying causal theories. Popular analyses favor bottom-up arguments, while social science favors top-down ones. We can gain a better sense of what these cross-level causal paths entail by reviewing theories and research that typify each.

6.4.1. Individuals Shape Social Structure Directly

(*Path A*) Sweepingly global “great man” theories of history put in disrepute the contention that a single individual can change history. Had Napoleon not lived, goes the counter, the *zeitgeist* might well have produced another charismatic French leader with little change on history. At this gross level of abstraction, of course, such popular arguments are of little value. Yet personality *can* shape social structure once there is careful specification of the measures and the effect.

Max Weber's (1930) theory of the rise of capitalism is the classic Path A linkage between individuals and social structure. In his *Protestant Ethic and the Spirit of Capitalism*, Weber held that such micro-phenomena as beliefs, motives, and values independently shape macro-structure. Focusing on the 17th-century Dutch, Weber explained why ascetic Protestant sects often meet with economic success. These austere Protestants frequently became rich, although they viewed wealth as dangerous for the soul. His theory maintained the *Protestant ethic*, epitomized in the stern religious doctrine of John Calvin, explained the puzzle. This doctrine had its believers follow a frugal, work-oriented routine in preparation for God's final judgment of salvation. This rigorous routine frequently led to wealth.

Weber also held that social structure, once established, shaped personality in a reciprocal cycle. He understood that family, work, and other face-to-face situations (Paths B and C) partly mediated the Protestant ethic's influence on capitalism. Yet his famous theory remains the prototype of a Path A causal theory involving personality and social structure.

Building on Weber's theory, David McClelland (1961) advanced the theory that one particular human motive at the micro-level is critical to this process. He held that such Protestant ethic values as frugality and hard work create child-training practices that develop in children a high need for personal achievement. This *achievement motive*, McClelland argues, is the im-

portant causal link underlying Weber's observation that the Protestant ethic and capitalistic success occur together.

McClelland, a personality psychologist, shows that the need for achievement is both challenged and satisfied by operating small businesses. This activity characterizes capitalism in its early stages. Both high-need achievers and small-business people are independent strivers for success. They like situations where they feel personally responsible for clearly measurable results of their efforts (Atkinson & Hosenitz, 1958).

Carrying his analysis to the macro-level, McClelland (1961) attempts to show that the micro-level achievement motive played a part in the economic growth of the West. He emphasizes cross-national and longitudinal relationships between levels of achievement and several measures of technological growth.

Psychohistorical studies, from biographies of Luther and Gandhi (Erikson, 1958, 1969) to analyses of racism (Kovel, 1970), offer further examples of sweepingly broad Path A theories. More recently, however, research and theory in this area are more limited in scope. For example, Gluckstern and Packard (1977) studied change in a prison. In viewing change agents, they noted that different personality styles are important at different times in the process of organizational change in the prison. Such results suggest the interactive nature of personality and social structural relationships.

6.4.2. Individuals Shape Social Structure Indirectly

(*Paths B and C*) Individuals also indirectly influence social structures by first changing situations (Path B in Figure 6.1). These changes in turn cause changes at the macro-level (Path C). In short, the situational level *mediates* the micro causes of macro changes.

The importance of Path B can be dramatic. Many studies show how a single disruptive person (a mental patient, an untreated alcoholic, a schoolroom deviant) can radically alter a family or classroom (Yarrow, Clausen, & Robbins, 1955; Jackson, 1956; Gnagey, 1960). Relevant social psychological work studies small groups in the laboratory. One impressive model anticipates from personality variables alone what behavior is likely to occur in small, task-oriented groups. Freed Bales (1970) accurately predicts which members of a group are likely to form coalitions, and which are likely to assume *task-oriented* and *socio-emotional* (joker) roles.

Path B often involves subjective interpretations of the social environment. For example, people widely vary in how much control they think they have over events in their lives (Rotter, 1966). Some see most events as under their personal control (*internals*). Others see most events as beyond their control and caused by external agents (*externals*). These different types of people are obviously going to perceive the same situations in contrasting ways and respond differently.

Applied social psychology's remedies for problems using this bottom-up direction involve special training. The critically ill, the shy, the elderly, job

burnouts, rape victims, and those facing major surgery learn how to reconceptualize their situation. Often these people blame themselves for their difficulties in life, and this self-blame adds to their problems. Special training converts such maladaptive dispositional causal attributions to situational attributions when appropriate.

Path C from face-to-face situations to social structures is of special interest to sociologists and organizational specialists. Often these studies involve give-and-take negotiation over the way the organization informally operates. Such informal communication at the situational level can cause continual changes in how highly-structured governmental agencies work (Blau, 1955). Similar negotiation even occurs in prisons. Sykes (1958) showed how prisoners, working collectively at the situational level, altered the structure of a maximum-security prison. Unpopular rules went unenforced, and prisoners wrested considerable control over their lives while neither escaping nor rebelling.

6.4.3. Social Structure Shapes Individuals Directly

(*Path F*) The top-down causal links are the most studied in social science. Instead of being the initial causal agent, personality and other micro-level factors are now the dependent variables. Two paths are possible—the direct, unmediated route (Path F) and the mediated route (Paths D and E). In the latter, structural changes shape personality by first altering face-to-face interaction in situations.

Path F examples are rare in social research. One famous political science study comes closest. Almond and Verba (1965) studied five democratic nations with varying political cultures. They used surveys to measure the political attitudes in each nation, then they compared these data with each nation's political institutions.

Their Path F contentions advance structural explanations for the extensive attitudinal differences they found across the five populations. These differences in political views remained even after the investigators controlled for such variables as education. Thus, British respondents evinced considerable confidence in both their administrative and legislative officials. Germans showed particular confidence in administrative officials, Americans in legislative officials, and Italians and Mexicans in neither.

Almond and Verba explain these individual differences as reflections of the contrasting structural histories across the countries. Germany established an early and stable bureaucracy, but had a late and unstable political development. The United States had the reverse history, with a late-developing civil service but an early foundation of its political structure. The United Kingdom experienced early development of both institutions, while Italy and Mexico had late development of both.

Note the top-down form of this causal theory. The independent variables are the depth and time of the political entity's establishment—macro-level

variables. The theory holds them to be the major *causes* of the wide variance across the nations in the micro-level dependent variable—the public's confidence in different political entities.

6.4.4. Social Structure Shapes Individuals Indirectly

(*Paths D and E*) Social science prefers mediated causal theories, because they more precisely specify the links between levels. Direct effect theories (Paths A and F) usually signal a failure to specify how the causal sequence carries through the face-to-face interaction stage. Most top-down theories in social science are Path D and E contentions. So social science is rich with studies that specify all three levels of Figure 6.1.

Many of the best examples of Paths D and E focus on social class. The longitudinal research of Sewell and Hauser (1975), for instance, shows the strong influence of socioeconomic status on educational aspirations and attainments. Middle-class children typically develop more ambitious goals than working-class children. In predominantly middle-class schools, the question is usually *which* college are you going to attend? In predominantly working-class schools, the question is often *are* you going to college? Chapter 5 mentioned how such situational contexts as neighborhoods and schools *mediate* social class effects. Sewell and Hauser show these strong effects of social class remain even after they control for sex and measured achievement.

Two research projects have helped to define top-down analyses of the structural and cultural shaping of personality. Melvin Kohn and his colleagues emphasize how the situational demands of parents' jobs (macro- and meso-levels) influence the way parents raise their children (meso-level—Path D). Then, Kohn checked on how parents shape their children's self-direction versus conformity (micro-level—Path E).

First, Kohn (1969; Pearlman & Kohn, 1966) showed that in both the U.S. and Italy middle-class parents stress self-direction, while working-class parents stress obedience to external authority. Next, he and Schooler (1969, 1973) found links between self-direction values and occupational position. Those in higher-status positions that allow self-direction on the job value self-direction for their children. Those in lower-status positions, who must obey orders on the job, value obedience to authority for their children. Thus, the demands of the work place generalize to the home and the preferred parental means of socializing children.

Thus, Kohn provides a three-level, top-down answer to a broad causal question: How do different jobs translate into different values? He shows the relationship between class and values derives from conditions of life, especially the work situation, that reflect social class differences. "It is chiefly by shaping the everyday realities people must face," he writes, "that social structure exerts its psychological impact" (Kohn, 1977:xlvi).

The second famous project using causal Paths D and E extends this analysis of occupational effects. Alex Inkeles (1969, 1978; Inkeles & Smith, 1974)

surveyed 6,000 industrial and agricultural male workers in six developing countries—Argentina, Bangladesh, Chile, India, Israel, and Nigeria. He carefully specified his independent variables at the macro- and meso-levels (the structural positions of the workers in society) and the dependent variable at the micro-level (modern man).

By *modern man*, Inkeles means people who are open to new experiences and ambitious for themselves and their children. These people follow modern leaders, plan ahead, and take an interest in local politics and news of the world. In all six nations, educated young people with factory experience, exposure to the mass media, and urban residence are more likely to exhibit this personality syndrome. From these results, Inkeles concludes that industrialization leads to similar forms of social organization across societies with contrasting cultures. These modern organizations in turn shape face-to-face situations (Path D) that produce similar patterns of modern beliefs, perceptions, and values (Path E).

Social psychology's Path E focus uses situational variables that are easily manipulated (Pettigrew, 1988). Chapter 4 noted that this is a big advantage when dealing with practical problems. It is both easier and more ethical to alter situations than to alter people. The Path E, top-down approach searches for features of situations that elicit specific behavior from individuals. When pressed for advice in solving practical problems, social psychologists typically advance top-down, situation-to-individual recommendations. Change the situation (increase choice, stop labeling people, allow more participation), and individual changes will result (improved morale, higher self-esteem, greater involvement).

Elliot Aronson's Jigsaw cooperative learning design for classrooms offers a superb example (Aronson, Blaney, Stepan, Sikes & Snapp, 1978). The city of Austin, Texas asked Aronson to help improve learning at their newly desegregated schools. After analyzing the classroom situation, he decided that intense individual competition hurt learning and interracial attitudes. He and his colleagues designed a classroom teaching method that requires students to work cooperatively in teams. Competition is now between teams, not individuals. Each team puts the parts of a lesson together, like a jigsaw puzzle. Each team member contains a needed part for the lesson, a device that encourages cooperation within the teams.

The student effects of this Path E, situational remedy are positive (Aronson, 1988:280–282). Compared to similar students in regular classrooms, the examination performance of minority children improves. In addition, children in the jigsaw classroom grow to like each other more, and this crosses racial and ethnic boundaries. They gain greater self-esteem, as well as an improved ability to see the world through other people's eyes. Thus, an extensive alteration in the classroom situation leads to a host of benefits for individual students.

Often the links invoked to explain Path E relationships involve family expectations or role playing. The double bind theory of schizophrenia pro-

vides an example of family involvement. This theory contends that children who later become schizophrenics are often caught in the midst of conflicting parental expectations (Bateson, Jackson, Haley & Weakland, 1956).

Lieberman (1950) showed how attitude changes followed role changes among industrial plant foremen and union stewards. Newly-appointed plant foremen soon became more pro-company in their attitudes, while newly-appointed union stewards became more pro-union. Within three years, the two groups had established almost “diametrically opposed sets of attitudinal positions.” Moreover, foremen and stewards who later returned to the production line as regular workers frequently reverted to their earlier attitudes.

6.5 SUMMING UP

Thinking “straight” in social science means keeping your levels of analysis clearly in mind. Popular social analyses often confuse the micro- and macro-levels. They try to explain such societal problems as widespread violence in purely personal terms. This mistake results in remedial proposals, such as individual therapy, that are inappropriate for structural problems.

Two types of level confusion commonly occur. The compositional fallacy involves drawing conclusions at the macro-level of analysis from individual data alone. This is a fallacy, because organizations and societies are more than the sum of their individual members. They are social systems, as Chapter 7 will stress, not mere collections of individual people. Macro-level units have unique properties of their own—properties that social science specializes in studying.

The ecological fallacy involves the opposite confusion of levels. Here we draw conclusions about individuals from macro-level data alone. It is a fallacy, because the macro-units of analysis are too broad to determine individual data. Moreover, individuals, too, boast unique properties that we cannot infer from macro data. Hence, ecological fallacies allow plausible rival hypotheses to explain the results. We saw examples of this in studies of suicide and voting. The possibility that Roman Catholics in heavily-populated Protestant areas could have accounted for the high suicide rates of these areas undermined Durkheim's conclusion that Protestants committed suicide more than Catholics. In the political example, new, not “backlash,” voters were largely responsible for Wallace's northern support in 1964. A similar increase in voters took place more recently in the election races in Louisiana of the former Ku Klux Klan leader, David Duke.

Figure 6.1 outlines the basic contentions of the chapter. Three levels of analysis are delineated—the macro-, meso-, and micro-levels. Each level has its own properties, but each influences the others. Many causal social science

explanations remain within one level. The most interesting ones, however, cross levels. Six such cross-level causal paths emerge in Figure 6.1. Three are bottom-up paths: the initial causes are lower-level phenomena that effect higher-level phenomena. Three are top-down paths: the initial causes are higher-level phenomena that effect lower-level phenomena. Usually, popular analyses offer bottom-up arguments, while social science analyses offer top-down arguments.

The chapter reviewed examples of all six causal paths. Weber's thesis of Protestant ethic values leading to capitalism is a model bottom-up theory. McClelland shows how individual motivation for achievement serves as a personality link for Weber's theory.

Top-down analyses are more plentiful. In political science, the age and stability of political institutions helps to explain widely-varying attitudes toward these institutions across five democracies. In sociology, social class experiences help to explain widely-varying aspirations, values, and personalities at the micro-level. In social psychology, carefully altered situations cause helpful changes for individuals.

You may have asked yourself at this point if there is not a contradiction in the chapter's contentions. Are these cross-level causal paths not examples of the compositional and ecological fallacies? This is a good question that deserves an answer. The fallacies occur when the data come from only one level, and we apply their results to another level. All the examples described of cross-level causal path research carefully had their theories and data from each level involved.

In Chapter 7, we shall consider social dilemmas. These dilemmas occur when many actions of individuals acting at the micro-level cause problems at the societal macro-level. Once we begin to think of major social issues in multiple level terms, we need the concept of system. This concept introduces us to thinking in wholes and not in parts. Going beyond the search for simple relationships between variables and their effects, systems thinking encourages us to consider complex social processes. The idea of systems is basic to social science thought at all levels.

ISSUES FOR DISCUSSION AND REVIEW

- A> Find an example in the local newspaper of either a compositional or an ecological fallacy. Offer a rival explanation for the phenomenon that the fallacy caused the writer to overlook.
- B> Select a major study in social science not mentioned in this book. What level or levels of analysis is the research using? Trace the causal path that the author(s) uses. Does the causal argument remain at one level of analysis? If not, how is the cross-level causal path described in Figure 6.1?
- C> Consider several of the major problems facing the nation today, and the types of remedies often advocated to address them. Are the forms of these remedies bottom-up, top-down, or both? Which types do you prefer? Why?

RECOMMENDATIONS FOR FURTHER READING ON ISSUES RAISED IN THIS CHAPTER

On Compositional and Ecological Fallacies:

For readers new to the idea:

C. M. Judd, E. R. Smith & L. H. Kidder. 1991. *Research Methods in Social Relations*. New York: Holt, Rinehart & Winston. Chapter 16.

For readers who wish to read a basic source:

W. S. Robinson. 1950. Ecological correlations and the behavior of individuals. *American Sociological Review*, 15, 351-357.

On Causal Order in Explanations:

J. A. Davis. 1985. *The Logic of Causal Order*. Beverly Hills, CA: Sage.