SECTION I

On Health and Behavior—An Introduction

CHAPTER 1

Introduction: The Links Between Health and Behavior

LEARNING OBJECTIVES

By the end of this chapter, the reader will be able to:

- Understand that there are multiple influences on health behavior
- Define what is meant by the *ecological model*
- Explain the types of factors influencing health that are covered in an ecological model

"Life is a voyage . . ."

—VICTOR HUGO, 1866, FROM *THE TOILERS OF THE SEA*

THE SETTING: DAILY LIFE

Any in-depth discussion of health behavior is, of necessity, going to involve a certain amount of wrestling with abstractions about motives, causal and contributing factors, contexts, cues, and other issues related to why people do what they do. To help make sense of such discussions, it may help to begin with a simple scenario about a "health behavior" that would seem to be very mundane—brushing teeth. It's the sort of thing that would *not* ordinarily be the object of much introspection, to say the least. It's the kind of behavior that is for the most part habit, far below the radar of our thinking selves, which makes it an ideal starting point for considering the issues raised in this book.

Suppose a friend of yours—we'll call him Sam—was brushing his teeth, and doing so very vigorously. If you asked him why he was doing this, your conversation might go as follows:

YOU: Hey Sam, why are you brushing your teeth like that?

SAM: What do you mean, why am I brushing my teeth? Don't you brush yours? I don't wanna get cavities or have my teeth fall out, okay? What kind of a question is that?

Well that's that, then, right? End of story. Sam is brushing his teeth (and doing it well) to maintain healthy teeth. Makes perfect sense.

But now suppose, as you continue watching Sam perform his tooth-brushing ritual, you see, lying conveniently on the sink, a copy of GQ magazine with a cover photo showing what appears to be the model of hip maleness—a chiseled figure leaning nonchalantly against a wall, comfortably worn leather jacket open and loose, hair just right even while a few strands display a defiant anarchy, and a carefully casual, unshaven jaw and chin. Punctuating this icon's studied hip gestalt is a set of perfect, strong, gleaming white teeth.

Hmm. The plot thickens. So maybe he is also trying in his own way to look like Mr. Ultimate Male. By brushing his teeth?

Whatever.

Now suppose, after completing the tooth-brushing scene, Sam, looking intense and preoccupied, digs through his closet for some clothes to wear. Clearly, he is not looking for just any clothes. He is looking through his meager and often rumpled wardrobe for something that will display just the right sense of *je ne sais quoi.*[*]

* French phrase meaning, literally, "I don't know what," but used to refer to someone who is cool and has a "special something" about them.

By this time, your curiosity can no longer be contained.

YOU: Okay, Sam, out with it. You going somewhere (heh, heh)?

SAM (trying to pretend that nothing out of the ordinary is going on): Uh, whaddya mean?

YOU: C'mon, Sam. What am I, an idiot? Going out? To dinner? A movie? A party? Whatever it is, it looks to me like it's no ordinary party.

SAM (letting down his guard): Okay, Okay. I was invited to this party, alright? And it's actually at her parent's house.

YOU (interrupting): Wait a minute. *Whose* parent's house?

SAM: Well, you remember a few weeks ago I mentioned that I met someone I think is . . . kinda special.

YOU: Okay, now I understand. The tooth brushing, all of it.

SAM: Here's the thing. I'm not exactly going to be the only person there, ya know what I mean? She didn't just invite me.

YOU: So you want to . . . stand out.

SAM: Yeah.

YOU: Got it. Lookin' sharp. Good luck.

After this, the plot is now more complete. If you were asked to explain the motivations behind Sam brushing his teeth (vigorously), you now have at least three possibilities:

1. For health reasons
2. To look as much as possible like the male icon in the magazine (a cultural factor)
3. (Related to #2) To stand out from the crowd and be as attractive as possible to a person of the opposite sex, and a special person at that

We can get more complicated with another question: Which of these three motivations do you think was dominant in the scenario we just described? Probably number 2 or 3, right? This time, anyway. But if you ask Sam the same question tomorrow, when, for example, he is barely awake and perhaps on his way to work, you might find that motivation number 1 is actually the most important, or even another one yet unnamed (e.g., "habit," or "so my breath won't smell bad").

Or, suppose Sam was the first person to go to college from his small rural town, and his family had little income and no health insurance. Because of the precariousness of his (and his family's) position, he was very concerned about maintaining his health lest he have to go to a doctor with no money to pay. And a dentist? That would be out of reach. So, as a result, he was very, even overly, concerned with preventing such a situation.

In yet one more wrinkle, suppose Sam's mother instructed him, when he was very young, to brush his teeth religiously after every meal. Every day, his mother drilled into Sam's head that he just was not *clean* or presentable to the world without doing so. The reason for her intense dental vigilance was that she herself lost most of her teeth at an early age because, as a child, neither she nor her parents knew much about teeth or the role of brushing. Of course Sam would not likely know the reasons behind her admonitions—all he would know was that it was a big thing for his mother, and that he had grown up not feeling very presentable somehow, unless his teeth were brushed.

THE QUESTIONS

The moral of the story is this: There is an entire field of study and practice concerned with the complex nature of health behavior, with a goal of implementing programs and interventions that seek to promote *change* in behavior in order to improve the health of the public or a segment of the public. You are undoubtedly familiar with these kinds of programs—campaigns to stop smoking, warnings on advertisements and on cigarette packaging, and lawsuits against tobacco companies; television advertisements and school programs warning young people about drug and alcohol use, or about drinking and driving; public campaigns, including billboard ads, metro and bus ads, and television ads, about the risks of transmitting HIV and the benefits of HIV testing; and public campaigns about cardiovascular health and diet, about low-carb diets or about low cholesterol food choices. There are many more such examples.

Most of these programs and interventions rely on a body of knowledge about *what motivates and influences human behavior*. In other words, if the public health question is:

Why do people behave in healthy (or unhealthy) ways?

This question is really just a more focused version of the following:

Why do people do what they do?

Thus, in order to understand something about human behavior as it relates to health, we have to think about this subset of behavior in the context of what generally motivates or influences human behavior. Moreover, as you saw in the example of Sam and brushing teeth, behavior that is often categorized as "health behavior" is not necessarily motivated or influenced by concerns about health. It may be in some

cases. Or it may be health concerns mixed together with other concerns. Or it may be based on concerns that have nothing to do with "health" per se. Or it may be based on ideas about being healthy that are different than the standards of health common to Western medicine. A case in point: For many cultures, being thin is not viewed as healthy. A large man—one that we might call overweight—is viewed as healthy and "doing well." This is particularly true for peoples who have experienced food shortages throughout their history.[1] Being thin is a reminder, a symbol, of starvation.

And that is only part of the story. Often, what people do or don't do related to health has more to do with socioeconomic circumstances, or environmental conditions, or public policies and regulations. A woman may not get routinely screened for breast cancer simply because she lives in a rural area and health care providers who do the screenings are not easily accessible. This doesn't have as much to do with her motivation as it does her social and geographic situation. People living downstream from a factory that is polluting the waterway may suffer health consequences from eating fish or other animals contaminated by the pollutant, or from contaminated drinking water. It may be the case that they are not sufficiently aware of the risk. Yet they may also be heavily dependent on fishing for their livelihood, and may have been dependent on fishing for many generations—enough to build up a local culture related to the fishing life. If you were trying to pinpoint where to start in reducing the health risk for these people, what would you address first?

In some parts of the rapidly developing world, economies and societies that were once rural and agrarian have experienced a dramatic shift to urban and more industrialized economies. This process has many implications for health and social conditions in general. In their former rural life-pattern, people may have lived in small villages that did not put much pressure on the local environment, and food may have been relatively easy to obtain. Once in the urban context, the picture changes. Living conditions are more crowded (see Figure 1-1). Food is not as easily obtained.

FIGURE 1-1 Shanty town in Manila, Philippines.

Copyright Flat Earth/FotoSearch. Retrieved from "Shanty town," http://en.wikipedia.org/wiki/Shanty_town.

Water and sanitary systems may be overwhelmed by the number of people. Housing is hard to come by. Diseases like tuberculosis spread more easily. Women may come to the cities from the rural areas and find themselves forced to engage in the sex trade in order to survive, placing themselves and their partners at great risk for HIV/AIDS or other sexually transmitted infections (STIs). Knowledge about some of these risks may be limited. In the latter case, attitudes about gender roles may restrict women from seeking other types of work. Where, then, would you begin to address the health problems that arose? What would you point to as key influencing factors?

THE COMPLEX SOCIAL-ECOLOGICAL WEB

These examples illustrate the complexity of factors that influence human behavior with respect to health and other issues. Until the late 1970s/early 1980s, health promotion professionals and programs focused primarily on the knowledge, attitudes, and motivations of *individuals,* without much attention devoted to the social, cultural, and economic circumstances that are also major determinants of behavior.[2] The more recent focus on the multiplicity of influences on behavior is called the *ecological model.*[2] Under this model or approach to understanding health behavior, it is assumed that no one factor influences people's behavior; instead, the complex interaction between individuals and an environment is a process that, taken together, influences behavior. In other words, *behavior doesn't exist in a vacuum.*

So, for example, think of the following factors as a sampling of potential contributors to the behavior of individuals:

Individual factors

- Awareness and knowledge (about health risks, ways to prevent health problems, etc.)
- Biophysical characteristics (e.g., genetics, systemic vulnerabilities)
- Personal attitudes and motivations
- Developmental stage (e.g., adolescent, adult)
- Behavior/habit socialization (e.g., from parents, family)

Social/cultural/group factors

- Social/peer group lifestyle patterns
- Cultural attitudes/beliefs (and their implications for health)
- Level of social support

Socioeconomic and structural factors

- Poverty
- Education
- Access to health care and prevention services/information
- Social stressors such as civil strife, neighborhood violence, racial and other discrimination
- Access to clean water

Political factors

- Policies and funding for health promotion programs
- Health insurance (policies, cost, availability)
- Regulations that impact health risk (e.g., prohibiting sale of cigarettes to minors)

Environmental factors

- Presence of an environmental risk, such as air and water pollution
- Disasters
- Conditions for spread of an infectious disease

This list of factors, however, doesn't operate in the world as simply a collection of separate items. The factors tend to operate *together.* The term *ecology* is thus useful to describe this system of relationships. Its origin is in biology, where it generally refers to:

- A system of interactions between organisms and an environment
- The complex relationships between organisms in the system (e.g., niches)
- The dependent relationships between members/components of the system, where if one part of the system is disturbed, other parts will be affected

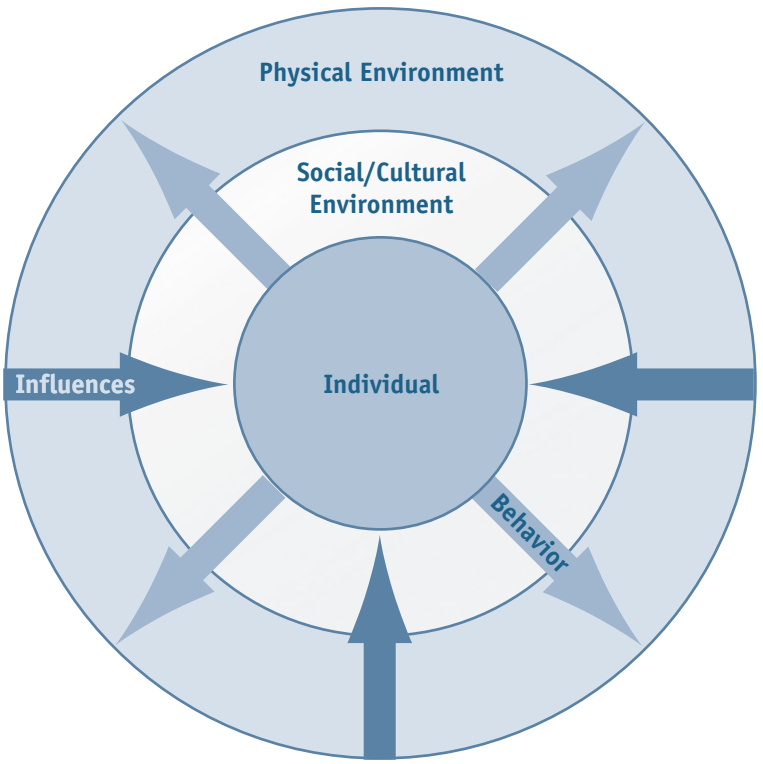
Although the concept originates in biology, the basic idea is useful in thinking about human behavior in context. The diagram in Figure 1-2 may help. It shows the linkages and connections among people, an environment,† and behavior.

That does make the task of understanding behavior more complicated, doesn't it?

Clearly, answering the question "Why do people do what they do?" or its public health version "Why do people behave in healthy (or unhealthy) ways?" is no easy matter. Yet to know this is good. Gaining a certain respect for the complexity of the task is, well, *healthy.* Because if you think it's simple, then you are more likely to implement a standardized or cookie-cutter program without much thought as to whether it is appropriate to the situation. And it is one goal of this book that you emerge with more wisdom than that.

† Here we are defining *environment* as that which exists outside the individual, so it could mean the social as well as the physical environment.

FIGURE 1-2 Diagram of linkages and connections among people, an environment, and behavior.



However, lest you throw up your hands and claim that behavior is just too complicated to do anything about, consider that a long tradition of researchers and practitioners have built up a considerable store of scientific knowledge, interpretive understanding, and practical application with respect to changing human behavior. There are, of course, many different schools of thought, many different applied traditions, and, in keeping with the complexity of the endeavor, many disagreements about basic scientific truths, approaches, strategies, and just what should be the focus of attention.

IN THIS BOOK

In this book, we are going to review some of these different approaches and theoretical traditions (to understand and change human behavior), with an eye toward providing you with enough tools so that you can make informed judgments about what theories and approaches make sense in a given situation. In doing this, we want you to understand some of the assumptions underlying the theory, and to take a look at where the various theories come from. Second, we are going to present you with a general planning approach for assessing a public health or social problem and, based on your assessment, tools to make a decision about what kind of program might work best to change it, and how to determine whether you have succeeded. Third, you will become acquainted with a range of settings in which you can apply social/behavioral theory to address a spectrum of health problems both in the United States and worldwide, including smoking, cancer, cardiovascular disease, HIV/AIDS, maternal and child health, youth violence, and obesity.

Treat this book not as a compendium of answers to all the questions posed, but as a resource that can help guide you in the ongoing search for answers—a resource that is based on a sampling of what is currently known in the field.

Chapter Questions

1. What is the goal of the field of study concerned with health behavior?
2. What is the relationship between health behavior and behavior in general?
3. List the ways in which a shift from an agrarian economy to an industrialized economy may impact health conditions.
4. What is the main assumption of the ecological model?
5. What types of broad factors exist in the ecological model?

YOUR THOUGHTS?

1. In the example of Sam and brushing teeth, what do you think were the most important factors behind his behavior?
2. Pick five things you do that could be called "health behavior." List three possible motivators for each of them. What's your pattern?

REFERENCES

1. Brown PJ, Konner K. An anthropological perspective on obesity. In: Brown PJ, ed. *Understanding and Applying Medical Anthropology*. Mountain View, CA: Mayfield Publishing; 1998.

2. Green LW, Kreuter MW, eds. *Health Promotion Planning: An Educational and Environmental Approach*, 3rd ed. Mountain View, CA: Mayfield Publishing; 1999.

CHAPTER 2

Health Issues and Behavior

LEARNING OBJECTIVES

By the end of this chapter, the reader will be able to:

- Describe behaviors related to obesity and its consequences (e.g., diabetes, cardiovascular health problems), and factors influencing those behaviors
- Describe behaviors related to youth violence and its consequences (e.g., injury), and factors influencing those behaviors
- Describe behaviors related to HIV/AIDS transmission, and factors influencing those behaviors

"He had had much experience of physicians, and said 'the only way to keep your health is to eat what you don't want, drink what you don't like, and do what you'd druther not.'"

—MARK TWAIN (1835–1910)

To give you a clearer sense of why an understanding of human behavior is important in addressing public health problems, let's take a look at a few selected health issues and how they are related to behavioral factors—remembering, as presented in the introductory chapter, that *behavior* (as understood within an ecological model) is just one factor that determines the nature of a given health problem. And, in turn, remembering that there are many factors that influence behavior.

OBESITY*

It is by now well-known that obesity and its consequences (e.g., diabetes, heart disease) have become a serious health concern in the United States and other industrialized countries,[*1,2] a concern that has received considerable attention from both the mass media and research journals. A recent edition of the *Journal of the American Medical Association*,[3] for example, reported that poor diet and physical inactivity caused 400,000 deaths in the United States in 2000, accounting for 16.6% of all deaths, second only to tobacco (18.1%). Recent estimates also suggest that 97 million adults in the United States are overweight or obese.[4] The trend has clearly been upward; in the last two decades mean body weights have increased by nearly 10%, and clinical obesity has nearly doubled in prevalence.[5] Overweight and obesity are risk factors for coronary heart disease, non-insulin-dependent diabetes, hypertension, certain cancers, and other conditions.[4] If the trend is not reversed over the next few years, some say it may overtake tobacco as the leading preventable cause of mortality.[3]

Where does behavior factor in? Because these trends in overweight/obesity are recent, most agree that interactions between people's behavior and the environment are the primary cause, rather than biological factors.[5,6] In other words, the situation is viewed as *preventable*. Explanations for these sudden and "epidemic" increases in body weight among Americans and populations in other countries generally emphasize *lifestyles* associated with increased overall energy

* The author wishes to acknowledge the contribution of, and material provided by, Kristen Corey, M.A., in compiling this descriptive section on obesity.

consumption and inactivity. A short list combining behavioral and environmental causes includes the following[5,6]:

- Extensive marketing of unhealthy food products (including fast food)
- Overeating
- Lack of exercise
- Increased reliance on vehicle transportation
- A sedentary lifestyle related in part to the ubiquity of television, computers, and other labor-saving technologies
- Changes in the quality of available foods
- Increased portion sizes
- Trends towards eating out
- The growth of the convenience food industry
- Increased advertising by the food industry

Think about it. How often do you eat out? When you do, what do you have? How often do you exercise?

For a while, public health efforts to address overweight and obesity concentrated on increasing awareness through education about healthy behaviors. Guidelines for exercise/diet and the health consequences of overweight and obesity aimed to change behavior by arming people with personal knowledge and skills. Despite moderate short-term successes, these approaches have not proved effective in the long term.[6,7] This issue is a good example of the ecological model at work, because the problem appears to be related to environmental factors that shape behavior, that *encourage* the overconsumption of food, and that *discourage* physical activity.[6]

Many of these earlier efforts also relied on the use of individual behavior change theories—including those we will be discussing in this book—that emphasize the individual as the target of change, and address knowledge, attitudes, decision-making processes, and skills. Critics of these efforts have cited the over-reliance on what individuals can and cannot do over sociocultural and physical environmental factors that play a role in their decision making. This can't necessarily be "fixed" simply by adding an intervention focusing on individual behavior to an intervention that targets an environmental cause, because behavior and the environment *interact*.[8]

Interact: "To act upon one another."[9]

This is where ecological models come in.[10] Ecological models integrate the various influences on health behavior, including interpersonal, organizational, community, and public policy factors, to name a few. So, you could say that obesity-related behavior is influenced by:

- Individual factors (e.g., genetics, taste/food preferences, attitudes, beliefs, knowledge, hunger)
- Social factors (e.g., interpersonal processes, relationships, social status)
- Cultural factors (shared beliefs/values related to food, the body, eating practices)
- Physical environment (availability/cost of food types or exercise options, physical layout of environment)

These factors interact, and to understand behavior, it is important to understand that interaction. An ecological intervention (with a goal of changing behavior) can then include components that address several factors where, for example, an environmental change supports behavior change.[11] For example, closing down vending machines, or altering the products they sell (an environmental change), will cut down on the eating of high fat snacks (a behavior).

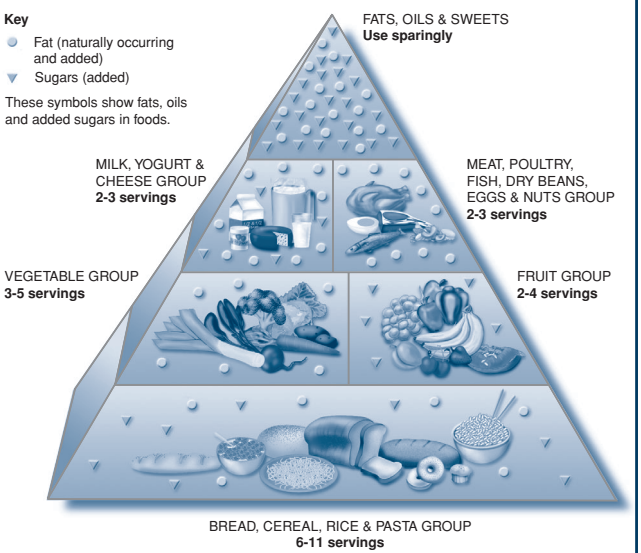
Food, Eating, and Obesity

We all know that eating involves choices about what to eat. So it is no surprise that taste, cost, convenience (availability), and individual food preferences are key influences on dietary choices.[12,13] This, however, does not say much in itself. A lot of factors go into the process of choice, including:

- *Availability of healthy food:* Many studies have documented the lack of supermarkets, farmers markets, and grocery stores in low-income areas.[14,15] These kinds of stores are more likely to have fresh fruits and vegetables. In other words, choice of food is limited by where one lives in some cases.
- *Attitudes, beliefs, and sociocultural norms related to diet:* The cross-cultural literature suggests that dietary choices also are shaped by social and cultural factors.[16,17] Foods are associated with individual or group identity and with ideas about "how daily life should be." Conceptions of what constitutes food or a meal, as well as how foods should be consumed and prepared, vary by ethnicity, geographic region, gender, age, and social class.[18-20] An important issue is demonstrated in this example: Peoples' ideas about *what constitutes a good or acceptable meal* differ. Typically, across cultures, definitions of the ideal meal include a meat or other protein source and a "starchy" food such as bread, rice, or one of numerous root crops. In many cases, the starchy food is the main component of the meal in part because it is more available or accessible.[17,18,21]

The cross-cultural literature also highlights many *meanings* associated with food and eating, and many of these have social implications. Food sharing is commonly associated with strong individual, family, and group ties and often

FIGURE 2-1 USDA Food Pyramid, 1999.



Source: U.S. Department of Agriculture Center for Nutrition Policy and Promotion.

FIGURE 2-2 USDA Food Pyramid, 2006.

Source: U.S. Department of Agriculture Center for Nutrition Policy and Promotion.

invokes values of hospitality, mutual caring, group solidarity, and common goals, as well as social and even political obligations.[17,18,22-25] Failure to share when it is socially expected or offering inappropriate foods is identified with negative values or used to express dissatisfaction with social relationships.[26-28] In contrast to nutritional models that determine the healthiness of foods based on their composition, investigations of local models suggest that the most commonly eaten foods that leave the consumer feeling full are often considered the most healthful.[17,29]

People may also be at risk for obesity-related problems because they do not know the relationship between diet and disease.[18,29] Remember that calling obesity a "disease" is a very recent phenomenon; until recently, many people would not have thought of it that way. In fact, "being large" has positive value in a number of societies. Weight gain, good appetite, and large stature have been considered signs of good physical and social health. By contrast, weight loss, poor appetite, and thinness have been considered signs of poor health.[30-35] Decisions about whether to choose low fat/healthy foods are affected by people's beliefs about how much benefit those foods will have and their "confidence" (usually referred to as *self-efficacy*—we'll talk about that in Chapter 5) that they can in fact manage their choices.[6] Obese individuals may also feel that obesity is not preventable given the social pressures surrounding eating, or they may expect a "cure" for the condition, rather than dietary advice.[36,37]

FIGURE 2-3 Family meal.

Source: Ryan McVay/PhotoDisc/Getty Images.

Finally, it is just hard for people to take risks seriously if they are not meaningfully connected to lifestyle, personal experience, and ideas of lifelong health status.[38-41] Although many behaviors may threaten long-term health, the immediate benefits of risky behavior may be seen to enhance one's state of well-being. This has been demonstrated with respect to smoking and adolescent self-image;[38] with risky needle sharing among injection drug users, in relation to its perceived practical as well as social benefits;[42] with perceptions of alcohol use among American Indian adolescents;[43] and with other risky activities. Thus, if there are "positive" social/normative benefits associated with unhealthy eating habits, these may affect subjects' perceptions of risk in the same manner.

Physical Exercise and Obesity

Cost, time, safety, and access are major factors affecting an individual's decision to take on or increase regular physical activity. In the course of day-to-day life, the possibility of incorporating exercise as a common routine varies widely depending upon an individual's circumstances related to their job, the amount of free time, the availability of space or facilities, and the physical characteristics of the neighborhood, worksite, or school (commonly referred to as the "built environment").

> The *built environment* can be defined as, "the man-made surroundings that provide the setting for human activity, ranging from the large-scale civic surroundings to the personal places."[44]

A number of research studies have identified links between the built environment and physical activity.[45,46] If there are changes in the built environment that remove barriers, it may, for example, be more possible to walk or bike to destinations, to exercise on lunch breaks, and simply to take the stairs.[47] People will be more likely to do this on their own without the use of an actual intervention. Several promising studies support the idea that changing the built environment across different settings has an effect on behavior. Adding signs to increase stair use among shoppers,[48] providing showers and changing rooms for employees,[49]and increasing access to trails in rural communities[50] are examples of interventions that have increased physical activity.

YOUTH VIOLENCE

When we talk about youth violence as a public health problem in relation to behavior, the concern is the *injury and personal trauma* that violence causes—because, of course, violence is already a behavior and for youth, it has truly been a serious situation. In recent years, among young people ages 10–24, homicide was the *second leading cause of death* overall in the United States.[51] Specifically, in that age group, it was the leading cause of death for African Americans, the second leading cause of death for Hispanics/Latinos, and the third leading cause of death for American Indians, Alaskan Natives, and Asian/Pacific Islanders.[51] In 2001, 79% of homicide victims ages 10–24 were killed by firearms.[52] In the same year, 5,486 people ages 10–24 were murdered, about 15 every day.[52] Eighty-five percent of these people were young men, while 15% were young women. In addition, a study of 8th and 9th graders showed that 25% had been victims of nonsexual dating violence and 8% had been victims of sexual dating violence.[53]

Violence is clearly a problem with many variations—from intimidation and threat, to situational violence, to intentional violence—and it is largely a problem of young people. Research on youth violence has indicated that serious acts of violence generally begin between ages 12 and 20, with only a very small percentage initiating any violence before age 10 or after age 20.[54-57] Thus, the peak period for violence involvement (engaging in acts of violence) coincides with the developmental stage of adolescence.

Why is there so much violence among young people? There are biological and developmental explanations concerning aggressive behavior[54] and a range of social and psychological explanations that have to do, again, with behavior as it relates to interactions between youth and their personal, family, community, and school environments. Many of the latter explanations address violence as one of a number of adolescent "risk behaviors," including delinquency, substance abuse, sexual risk, school dropout, and others.

Let's take a look at a few of the explanations for youth violence.

Risk and Protective Factor Explanations

This kind of explanation describes violence-related behaviors by parents, peers, the community, and others that may *influence* or shape violent behavior engaged in by young people. These influences are said to be "risk factors" and include family problems, family conflict and violence, absence of positive role models, being a victim of violence, witnessing violence when young, poverty, living in a crime-ridden community where weapons are easily available, social norms that support violence, and other such factors.[58-62] Typically, many of these risk factors are present as influences on violence as a behavior. It has been argued, however, that these risk factors can be offset by the presence of positive or *protective* factors like an adult who is present and cares about the youth, or

connections to school or other youth who are not involved in violence.[58,59,63-67] This complex and fluid interaction between an individual and risk/protective factors in one or more domains has been described as a "web of influence," and draws from the *ecological* perspective of Brofenbrenner[68] that we have already referred to as a key concept within public health.[69]

Problem Behavior Syndrome, Behavioral Cluster, and Self-Concept Approaches

In these approaches, violent behavior and its influencing factors are understood to be related to a coherent pattern of risk-taking. (This will be discussed more fully in Chapter 12.) Risk for substance abuse, delinquency/violence, early sexual activity, and other behaviors is viewed as a "problem behavior syndrome" of one form or another, where the risk factors and trajectories are similar and/or overlapping.[70–75] Hawkins and Catalano, for example, note that of the 19 risk factors they have identified for adolescent problem behavior, 16 are common for both delinquency and substance abuse, 11 are common for violence and substance abuse, and 9 are common for all three.[76]

The "coherent pattern" may reflect a kind of conflicting or antagonistic relationship between youth involved in violence and the conventional world, that is, the segment of society for which the risk behaviors are viewed as negative or antisocial,[†] a conflict with the values, goals, institutions, and socializing forces of conventional society. Adolescents who, for a wide variety of reasons including the frustration of aspirations due to poverty, school failure, social disorganization in the community or family, or other such factors, are said to have a low commitment to conventional society and do not endorse its values, are more likely to engage in delinquent or violent behavior and substance abuse, and are more likely to have stronger bonds to other youth who are involved in the same behavior patterns.[74,77,78]

> Self-concept can be defined as "the mental image one has of oneself."[9]

Moving beyond the idea of a "problem behavior" syndrome is another approach that seeks to understand a little more about how that antagonistic relationship operates on an individual level. This approach focuses on s*elf-concept*, particularly what an adolescent views as a "possible self" in the world that he or she can envision as relevant to his or her life.[79,80] If a "task of adolescence" is to experiment with and resolve social roles,[81] the possible selves factor is very important. If an adolescent can think of a satisfactory possible self in the "conventional domains" of family, friends, or school, this will help motivate him or her in making a successful transition to adulthood. If not, adolescents may seek alternative ways to define themselves. Delinquency and violence are alternative routes towards positive self-definition and prestige,[81(p114),82,83] particularly if there is a significant peer group that views these kinds of behaviors as valued.[84] Drawing from the theories of Ogbu[85] and Bourdieu[86,87] among others, Oyserman and Packer note that the identity-formation process is connected to specific social contexts as well.[84] So, for example, in high poverty situations where academic success may not be perceived as related significantly to available life-paths, the behavior patterns and meanings associated with academic success may not be valued, whereas others patterns (e.g., those including violence or other risk behaviors) will be.

Socioecological Models

In the spirit of an ecological approach, youth risk behaviors such as violence have also been viewed as related to social position, that is, where involvement in violence and the causes of involvement differ by socioeconomic status of particular groups. For example, it has been argued that drug use/involvement is motivated more powerfully by economic factors for minority youth than for nonminority youth. Research has shown that there is more experimental drug use among adolescents from higher socioeconomic brackets, while youth from lower socioeconomic groups tend to do less experimenting and more selling.[88-90] Clearly, drug trafficking/selling places youth at much higher risk for violence,[91-94] because violence is so often a part of trafficking. W. J. Wilson, in his seminal work on "underclass" communities, described the isolated and uniformly poverty-ridden nature of inner city underclass communities, where economic opportunities are so limited and there is a historical pattern of disconnection from mainstream economic activity, that drug selling and other aspects of the "street economy" become the dominant playing field for achievement and status,[95] and thus have a strong role in the development and perpetuation of norms and attitudes about violence.[96-102] Some of the work in this area describes "codes of the street" that govern violent or potentially violent interactions, with reference to the immediate social context of such codes.

Data on homicide patterns offer strong support for socioecological arguments about youth violence. The steep rise in *juvenile* homicide from the mid-1980s to the mid-1990s was closely tied to two factors: the volatile crack cocaine epidemic, which entailed the recruitment of urban

[†] See Hirschi T. *Causes of Delinquency*. Berkeley: University of California Press; 1969, and other social control theory.

youth into the "business," and the consequent increase in gun use[103-106] and the subsequent incorporation of guns as part of the norm for violent interaction even well after the decline of the crack boom.[101] Thus the codes or culture of the street now include the use of guns as routine. Some research on youth gang violence follows this approach. Spergel, for example, outlined a comprehensive gang intervention model that views the presence of gangs as largely related to a lack of socioeconomic opportunities, social disorganization, poverty, institutional racism, social policy deficiencies, and a lack of or misdirected social controls.[107]

Social-Cognitive Models

Lastly, while focusing on related aspects of violent behavior, social-cognitive models of violence focus on decision making, reasoning, and other cognitive processes surrounding acts of aggression. In this social information processing model of aggression,[108-110] aggressive behavior happens when a youth evaluates social/behavioral "cues" (like a facial grimace or insult), interprets those cues based on what he or she understands them to mean in a particular context, and then chooses a potentially violent response. Aggressive behavior is said to result from difficulties in coding and interpretation of social cues or to a limited repertoire of nonaggressive behavioral responses. Interpretation of cues and selection of responses is, not surprisingly, related to beliefs about aggression. In numerous studies, aggressive behavior in youth has been related to beliefs about the legitimacy of aggression,[111-114] and positive beliefs about aggression have been associated with perceived neighborhood danger.[115] Furthermore, such approaches also intersect with other approaches discussed thus far. For example, several aspects of the environmental context, such as prevalence of violence in the community, utility of violence for achieving desired outcomes, significant others' (e.g., peers) perceptions of violence, and consequences of violence involvement, are viewed as having implications for youth beliefs about aggressive behavior and their involvement in violence.

HIV/AIDS

By the end of 2004, an estimated 34 to 46 million people around the globe were living with HIV/AIDS,[116] with a nearly incomprehensible additional toll in orphaned children, decimated families and workforces, and stigmatization. Well over 20 million people have died from HIV/AIDS, and there are approximately 5 million or more new infections annually,[117] indicating that the pandemic continues to expand. Since the 1980s, when the disease was first identified, the global HIV/AIDS pandemic has become one of the worst global health crises in history. It is an epidemic that affects the well-being of societies, not just with respect to health. These impacts have included a decrease in average life expectancy, significant reduction in household income (because fewer household members work, and medical expenses may be high), decimation of educational system capacity and school attendance, a general decrease in economic production and increase in poverty, and, as previously noted, a generation of children without parents.

HIV/AIDS has also been a crisis filled with ambiguity and controversy, precisely *because* its epidemiology—the way in which it spreads—is so clearly tied to behavior and because even though anti-retroviral drugs (administered in multiple forms, known as highly active anti-retroviral therapy or HAART) can treat the condition, there is still no cure. This places a huge burden on *prevention,* which is largely about behavior.[118] There are essentially three major routes of transmission: sexual transmission (either heterosexual or same-sex), sharing intravenous drug equipment, and mother-to-child (perinatal) transmission; a distant fourth is the use of contaminated blood products via transfusion. All of these routes of transmission are actually behaviors. Most importantly, they are behaviors that, for the most part, are closely intertwined with deeply rooted moral, cultural, and socioeconomic issues, all interacting at the same time. Understandings about sexual behavior, for example, are at the center of the moral-religious systems of virtually every society and culture. Yet sexual behavior is also closely tied to *gender definitions and relationships* across cultures, and it is inescapably tied to issues of poverty and wealth. Therefore, to understand sexual transmission of HIV in a particular place, you will need to look at all of these factors, at a minimum! And this doesn't even touch on HIV risks that people take because they simply don't know that they are taking a risk.

The patterns by which HIV/AIDS is spread vary from country to country, from society to society, by gender, and by subgroup. Not only that, but these patterns change over time as the epidemic evolves. A few examples:

- In the United States, HIV/AIDS was first identified, and took its earliest toll, among men who had sex with men (MSM). Not long after, it became clear that injecting drug users and their partners were seriously impacted as well, along with other specific high-risk populations (e.g., sex workers, runaway and homeless youth, incarcerated populations). Although the discovery of multiple anti-retroviral therapies in the mid-1990s reduced HIV/AIDS mortality because of increased survival rates, new infections continue. More recently, the epidemic has centered on women

of color (heterosexual transmission) and has returned among MSM.[119,‡]

- In Sub-Saharan Africa, where the pandemic is currently most severe, heterosexual transmission has been, and remains, the primary path of transmission.[120] This is generally due to a number of factors, including patterns of migrant work, traditional gender roles in which men have multiple female partners, and lack of access to prevention and treatment. It is also exacerbated because prolonged ethnic conflict and civil war, like such conflicts everywhere, often involve rape and abuse of women.
- In Southeast Asia, Thailand was an early epicenter of HIV/AIDS, largely due to the sex trade but also because of high rates of injection drug use.[121] Because of an intense, government-led program of condom distribution and prevention, the spread of HIV/AIDS was slowed. However, it then began to increase rapidly in Vietnam, due to injection drug use and the sex trade, and Cambodia (due to the sex trade, heterosexual transmission, and largely associated with a rapid move towards economic development following the cessation of civil war in the 1990s, which involved migrant labor in big cities such as the capital Phnom Penh), as well as in Myanmar (Burma).[120,122,123]
- In Eastern Europe and Russia, the epidemic is more recent, and is primarily associated with injection drug use and its concomitant spread to sexual partners of injecting drug users.[123] However, according to UNAIDS, it is rapidly expanding.[120] Eastern Europe and Central Asia have the fastest growing epidemics in the world, rising from about 30,000 people living with AIDS in 1994 to an estimated 1.3 million in 2003. The economic changes after the early 1990s may have a lot to do with the epidemic in the region, resulting in a dramatic increase in trade—both legal and illegal—and a scramble for ways to make money.
- According to World Bank estimates, well over 5 million people in India are living with AIDS.[125] The behavioral risk factors include unsafe sex, such that 84% of cases result from sexual transmission, with prevalence rates very high among sex workers and related to lack of condom use. Other risk factors include migration and mobility, where a significant number of migrant workers are away from family and community for extended periods of time and likely to have sex with sex workers; men who have sex with men (MSM), for which data, although limited, show that some men having sex with men concurrently have heterosexual partners, becoming a "bridge" population for HIV transmission; injection drug use (IDU)—for example, in the northeastern states of India the HIV/AIDS epidemic is expanding among injection drug users, through sharing of injection equipment; low status of women, contributing to the spread of the epidemic due to unequal relationships and therefore increased vulnerability of women to infection; and stigma against those who are infected,

Gender Roles and HIV Risk Among the Roma (Gypsies)[128]

The Roma (Gypsies), the largest ethnic minority group in Central and Eastern Europe, have cultures that are traditional, often closed, and autonomous of majority populations. Roma communities are characterized by pervasive social health problems, widespread poverty, limited educational opportunities, and discrimination. Although some evidence suggests high levels of HIV sexual risk behavior among Roma, little is known about the cultural and social context in which risk behavior occurs. In this study, in-depth interviews were used to elicit detailed information about types of sexual partnerships and associated sexual risk behaviors, as well as the use and perception of protection, knowledge and beliefs about AIDS and STDs, and sexual communication patterns in a sample of 42 men and women aged 18–52 living in Roma community settlements in Bulgaria and Hungary. Based on the interview data, men appeared to have significantly more latitude with respect to sexual behavior before and during marriage, engaging in unprotected sex with primary and multiple outside partners, with considerably more relationship power and control than women. In contrast, women are expected to maintain virginity before marriage and then sexual exclusivity to their husbands. Condom use is not normative and is mainly perceived as a form of contraception. Although awareness of AIDS was common, it was generally not perceived as a personal threat. Misconceptions about how HIV is transmitted are widespread, and women—in particular—had very little knowledge about STDs, HIV transmission, and protective steps. The study suggested an urgent need for the development of HIV prevention programs culturally sensitive to Roma populations in Eastern Europe, where HIV rates are rapidly rising.

‡ Also see the entire issue of *American Journal of Public Health*, June 2003, volume 93.

resulting in marginalization and higher concentrations of risk.
- In China, the HIV/AIDS epidemic was limited until the mid-1990s, when it began to grow dramatically.[126] This initial growth was focused among injection drug users and people using donated blood. Currently, there is an estimated 650,000 people living with AIDS in China, according to a joint World Health Organization and UNAIDS estimate.[127] Primary risk behaviors involved in the spread of the epidemic include injection drug use, contamination of blood and blood products, commercial sex workers (lack of knowledge about HIV risk and condom use), men who have sex with men, and migrant workers (a risk factor for casual sexual relationships).

Addressing HIV/AIDS-related risk behaviors is clearly complex. For each of the major routes of transmission, there are many behaviors involved, and a great deal of variation across cultures and circumstances. Just to take on sexual transmission as a topic area of research interest, here are only a few of the kinds of behavioral issues you would need to think about:

- What is the range of sexual practices and in what contexts do they occur? Heterosexual? Same-sex? With migrant workers?
- Which are riskiest for HIV transmission, multiple or single partners?
- What types of partners are there and are risk situations different by type of partner?
- Are there situations where sex is forced, or necessary for survival?
- What are the gender rules and relationships that are involved? Can one partner, for example, easily communicate to the other about HIV risk and prevention? Or will this be difficult?

Or, for example, to take on injection drug use and the sharing of needles:

- Who are the users (e.g., young, old, male, female, poor, middle class)?
- Do people inject in a public setting (like a park, alley, or house), with others, or by themselves?
- Is sharing of equipment common or necessary? How is this done (for example, do people actually share needles, or do they share water used for rinsing)?
- Do injection drug users know about HIV risks? Are they able to take precautions, or does addiction override such attempts?
- What are the treatment and prevention options? Are there, for example, needle exchange programs? Drug treatment programs?

BEHAVIORS, THEORIES, AND INTERVENTIONS

The three examples provided in the three previous sections show the complex link among behavior, social and environmental factors, and a health problem. The kinds of theories and frameworks I will discuss in the book are meant to be *tools* that will help guide you through the thick web often associated with health behavior. Trying to figure out what to do is made at least a little easier through the process of *identifying* what you think is going on (in terms of behavior and ecological influences), *choosing appropriate theories or frameworks* that best address what you think is going on, and using them to help you design programs.

Chapter Questions

1. What are some key links between the environment and behavior in terms of the problem of obesity?
2. Would it be fair to say that obesity is a problem resulting just from individual choice in terms of behavior?
3. What kinds of factors may influence youth to engage in violence?
4. What are consistent patterns of behavioral risk for HIV/AIDS around the globe? How do you think these patterns are influenced by the larger social or economic context?
5. Where would you focus your efforts to address behaviors related to obesity? Youth violence? HIV/AIDS?

REFERENCES

1. Flegal K, Carroll M, Ogden C, Johnson C. Prevalence and trends in obesity among U.S. adults 1999–2000. *JAMA.* 2002;288(14):1723–1727.

2. World Health Organization (WHO). Diet, nutrition and the prevention of chronic diseases. Report of a joint WHO/FAO expert consultation. *WHO Technical Report Series* No. 916. Geneva, Switzerland.

3. Mokdad A, Marks J, Stroup D, Gerberding J. Actual causes of death in the United States, 2000. *JAMA.* 2004;291(10):1238–1245.

4. National Heart, Lung and Blood Institute (NHLBI). *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.* NIH Publication No. 98–4083. Rockville, MD: National Institutes of Health.

5. Jeffery RW, Utter J. The changing environment and population obesity in the United States. *Obesity Res.* 2003;11(Suppl):12S–22S.

6. French SA, Story M, Hannan P, et al. Cognitive and demographic correlates of lowfat vending snack choices among adolescents and adults. *J Am Diet Assoc.* 1999;99(4):471–476.

7. Jeffery RW. Community approaches to obesity treatment and prevention: the Minnesota experience. *Prog Obes Res.* 1999;8:837–843.

8. Bandura A. *Social Foundations of Thought and Action: Social Cognitive Theory.* NJ: Prentice-Hall; 1986.

10. Green LW, Kreuter MW. *Health Promotion Planning: An Educational and Ecological Approach.* New York: McGraw Hill; 1999.

11. Stokols D. Establishing and maintaining healthy environments: toward a social ecology of health promotion. *Am Psychol.* 1992;47(1):6–22.

12. Glanz K, Basil M, Maibach E, Goldberg J, Snyder D. Why Americans eat what they do: taste, nutrition, cost, convenience, and weight control concerns as influences on food consumption. *J Am Diet Assoc.* 1998;98:1464–1467.

13. Story M, Neumark-Sztainer D, French SA. Individual and environmental influences on adolescent eating behaviors. *J Am Diet Assoc.* 2002;102(3):S40–S51.

14. Weinberg Z. No place to shop: food access lacking in the inner city. *Race, Poverty Environ.* 2000;7(2):22–24.

15. Morland K, Wing S, Diez Roux A, Poole C. Neighborhood characteristics associated with the location of food stores and food service places. *Am J Prev Health.* ;22(1):23–29.

16. Counihan C, Van Esterik P, eds. *Food and Culture: A Reader.* London: Routledge; 1997.

17. Messer E. Anthropological perspectives on diet. *Ann Rev Anthropol.* 1984;13:205–249.

18. Pollock N. *These Roots Remain: Food Habits in Islands of the Central and Eastern Pacific Since Western Contact.* Honolulu, HI: University of Hawaii Press; 1992.

19. Weismantel M. *Food, Gender, and Poverty in the Ecuadorian Andes.* Prospect Heights, IL: Waveland Press; 1988.

21. Douglas M. Deciphering a meal. In: Counihan C, Van Esterik P, eds. *Food and Culture: A Reader.* London: Routledge; 1997:36–54.

22. Bindon J. Taro or rice, plantation or market: dietary choice in American Samoa. *Food Foodways.* 1988;3:59–78.

23. Flinn J. Tradition in the face of change: food choices among Pulapese in Truk State. *Food Foodways.* 1988;3:19–39.

24. Kahn M. Men are taro (they cannot be rice): political aspects of food choices in Wamira, Papua New Guinea. *Food Foodways.* 1988;3:41–57.

25. Manderson L, ed. *Shared Wealth and Symbol: Food, Culture, and Society in Oceania and Southeast Asia.* Cambridge, England: Cambridge University Press; 1986.

26. Kahn M. *Always Hungry, Never Greedy: Food and the Expression of Gender in a Melanesian Society.* Cambridge, England: Cambridge University Press; 1986.

27. Nichter M. Modes of food classification and the diet-health contingency: a South Indian case study. In: Khare R, Rao MSA, eds. *Food, Society and Culture: Aspects in South Asian Food Systems.* Durham, NC: Carolina Academic Press; 1986:185–221.

28. Young M. *Fighting with Food: Leadership, Values, and Social Control in a Massim Society.* Cambridge, England: Cambridge University Press; 1971.

29. Messer E. Methods for determinants of food intake. In: Pelto G, Pelto P, Messer E, eds. *Research Methods in Nutritional Anthropology.* Tokyo: United Nations University; 1989.

30. Brown P, Konner M. An anthropological perspective on obesity. *Ann N Y Acad Sci.* 1987;499:29–46.

31. Cassidy C. The good body: when big is better. *Med Anthropol.* 1991;13:181–213.

32. deGarine I, Pollock N, eds. *Social Aspects of Obesity.* Luxembourg: Gordon and Breach; 1995.

33. Nichter M, Nichter M. Hype and weight. *Med Anthropol.* 1991;13:249–284.

34. Ritenbaugh C. Obesity as a culture-bound syndrome. *Culture Med Psychiatry.* 1982;6:347–361.

35. Sobo E. The sweetness of fat: health, procreation, and sociability in rural Jamaica. In: Counihan C, Van Esterik P, eds. *Food and Culture: A Reader.* New York: Routledge; 1997:256–271.

36. Cohn S. Being told what to eat: conversations in a diabetes day centre. In Caplan P, ed. *Food, Health, and Identity.* London: Routledge; 1999:193–212.

37. Massara E. Que gordita. In Counihan C, Van Esterik P, eds. *Food and Culture: A Reader.* New York: Routledge; 1997:251–255.

38. Amos A, Gray D, Currie C, Elton R. Healthy or druggy? Self image, ideal image, and smoking behavior among young people. *Soc Sci Med.* 1997;45(6):847–858.

39. Douglas M, Wildavsky A. *Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers.* Berkeley, CA: University of California Press; 1982.

40. Nations M. Epidemiological research on infectious disease: quantitative rigor or rigormortis? Insights from ethnomedicine. In: Janes C, Stall R, Gifford S, eds. *Anthropology and Epidemiology: Interdisciplinary Approaches to the Study of Health and Disease.* Dordrecht: Routledge and Kegan Paul; 1986:97–123.

41. Rose G. *The Strategy of Preventive Medicine.* Oxford, England: Oxford University Press; 1992.

42. Bourgois P, Lettiere M, Quesada J. Social misery and the sanctions of substance abuse: confronting HIV risk among homeless heroin addicts in San Francisco. *Soc Prob.* 1997;44(2):155–174.

43. O'Nell TD, Mitchell CM. Alcohol use among American Indian adolescents: the role of culture in pathological drinking. *Soc Sci Med.* 1996;42:565–678.

44. Wikipedia, http://en.wikipedia.org/wiki/Built_environment.

45. Saelens BE, Sallis JF, Black J, Chen D. (2003). Neighborhood-based differences in physical activity: An environment scale evaluation. American Journal of Public Health, 93, 1552–1558.

46. Centers for Disease Control. 2005. *The Guide to Community Preventive Services: What Works to Promote Health.* Oxford: Oxford University Press.

47. Colditz GA, Samplin-Salgado M, Ryan CT, Dart H, Fisher L, Tokuda A, Rockhill B. "Harvard Report on Cancer Prevention, Volume 5: Fulfilling the potential for cancer prevention: policy approaches." *Cancer Causes Control,* 13:199–212 (2002).

48. Andersen RE, Wadden TA, Bartlett SJ, Zemel BS, Verde TJ, Franckowiak SC. Effects of lifestyle activity vs structured aerobic exercise in obese women: a randomized trial. *JAMA* 281:335–340, 1999.

49. Vuori IM, Oja P, Paronen O. (1994). Physically active commuting to work—testing its potential for exercise promotion. Medicine and Science in Sports and Exercise, 26, 844–850.

50. Brownson RC, Housmann RA, Brown DR, et al. (2000). Promoting physical activity in rural communities. Walking trail access, use and effects. American Journal of Preventive Medicine 18:235–41.

51. Anderson RN, Smith BL. Deaths: leading causes for 2001. *Nat Vital Stat Rep.* 2003;52(9):1–86.

52. Centers for Disease Control and Prevention (CDC). May 24, 2004. Web-based injury statistics query and reporting system (WISQARS). Available at: www.cdc.gov/ncipc/wisqars. Accessed

53. Foshee VA, Linder GF, Bauman KE, et al. The safe dates project: theoretical basis, evaluation design, and selected baseline findings. *Am J Prev Med* 1996;12(5 Suppl):39–47.

54. U.S. Department of Health and Human Services. *Youth Violence: A Report of the Surgeon General.* Rockville, Md.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, and National Institutes of Health, National Institute of Mental Health; 2001.

55. Huizinga D, Loeber R, Thornberry TP. *Recent Findings from the Program of Research on Causes and Correlates of Delinquency.* (U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention, NCJ 159042). Washington, DC: U.S. Government Printing Office; 1995.

56. Thornberry TP, Huizinga D, Loeber R. The prevention of serious delinquency and violence: implications from the program of research on causes and correlates of delinquency. In Howell JC, Krisberg B, Hawkins JD, Wilson J, eds. *Sourcebook on Serious, Violent and Chronic Juvenile Offenders* Thousand Oaks, CA: Sage; 1995:213–237.

57. Elliott DS. Serious violent offenders: onset, developmental course, and termination. The American Society of Criminology 1993 Presidential Address. *Criminol.* 1994;32:1–21.

58. Catalano RF, Hawkins JD. *Risk Focused Prevention: Using the Social Development Strategy.* Seattle, WA: Developmental Research and Programs; 1995.

59. Hawkins JD, Catalano RF, Miller JY. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: implications for substance abuse prevention. *Psychol Bull.* 1992;112:64–105.

60. Bell CC, Jenkins EJ. Community violence and children on Chicago's Southside. *Psychiatry.* 1993;56:46–54.

61. Dryfoos JG. *Adolescents at Risk: Prevalence and Prevention.* New York: Oxford University Press; 1990.

62. Tolan P, Guerra N. What works in reducing adolescent violence: an empirical review of the field. In: *Report to The Center for the Study and Prevention of Violence.* Chicago: University of Illinois at Chicago; 1994.

63. Garmezy N. Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *Am Behav Sci.* 1991;34(4):416–430.

64. Pransky J. *Prevention: The Critical Need.* Springfield, MO: Burrell Foundation and Paradigm Press; 1991.

65. Benson P, Galbraith J, Espeland P. *What Kids Need to Succeed.* Search Institute and Free Spirit Publishing; 1994.

66. Search Institute. 1998. Developmental assets: an investment in youth. Available at: http://www.search-institute.org/assets/index.htm. Accessed January 4, 1999.

67. Benard B. *Fostering Resiliency in Kids: Protective Factors in the Family, School, and Community.* Unpublished paper; 1991.

68. Brofenbrenner U. 1979. *The Ecology of Human Development.* Cambridge, MA: Harvard University Press.

69. Green LW, Kreuter MW (Eds). 1999. *Health Promotion Planning: An Educational and Environmental Approach.* Third Edition. Mountain View, CA: Mayfield Publishing Co.

70. Jessor R, Jessor SL. *Problem Behavior and Psychosocial Development: A Longitudinal Study of Youth.* New York: Academic Press; 1977.

71. Jessor R, Donovan J, Costa FM. *Beyond Adolescence: Problem Behavior and Young Adult Development.* New York: Cambridge University Press; 1991.

70. Donovan JE, Jessor R. The structure of problem behavior in adolescence and young adulthood. *J Consult Clin Psychol.* 1985;53:890–904.

72. Donovan JE, Jessor R, Costa FM. Syndrome of problem behavior in adolescence: a replication. *J Consult Clin Psychol.* 1988;56(5):762–765.

73. Elliott DS, Huizinga D, Menard S. *Multiple Problem Youth: Delinquency, Substance Use, and Mental Health Problems.* New York: Springer-Verlag; 1989.

74. Oetting ER, Beauvais F. Peer cluster theory, socialization characteristics and adolescent drug use: a path analysis. *J Counsel Psychol.* 1987;34(2):205–220.

76. Elliott DS, Huizinga D, Ageton S. *Explaining Delinquency and Drug Abuse.* Beverly Hills, CA: Sage; 1985.

77. Hawkins JD, Weis JG. The social development model: an integrated approach to delinquency prevention. *J Primary Prev.* 1985;6:73–97.

78. Markus H, Wurf E. The dynamic self-concept: a social-psychological perspective. *Ann Rev Psychol.* 1987;38:299–337.

79. Oyserman D, Markus H. Possible selves and delinquency. *J Personality Soc Psychol.* 1990;59(1):112–125.

81. Hirschi T. *Causes of Delinquency.* Berkeley, CA: University of California Press; 1969.

82. Sutherland EH, Cressey DR. *Criminology,* 10th ed. Philadelphia: Lippincott; 1978.

83. Oyserman D, Packer MJ. Social cognition and self-concept: a socially contextualized model of identity. In: Nye JL, Brower AM, eds. *What's Social About Social Cognition? Research on Socially Shared Cognition in Small Groups.* Thousand Oaks, CA: Sage; 1996.

84. Ogbu JU. Minority coping responses and school experience. *J Psychohistory.* 1991;18:433–456.

86. Bourdieu P. 1990. The Logic of Practice. (Trans. R. Nice.) Cambridge, England: Polity (originally published 1980).

87. Bourdieu P. 1977. *Outline of a Theory of Practice.* Cambridge: Cambridge University Press.

88. Baumrind D. Familial antecedents of adolescent drug use: a developmental perspective. In: Jones CL, Battjes RJ, eds. *Etiology of Drug Abuse: Implications for Prevention.* Rockville, MD: National Institute on Drug Abuse; 1985:13–44.

89. Kaplan HB, Martin SS, Johnson RJ, Robbins C. Escalation of marijuana use: application of a general theory of deviant behavior. *J Health Soc Behav.* 1986;27:44–61.

90. Simcha-Fagan O, Gersten JC, Langer TS. Early precursors and concurrent correlates of patterns of illicit drug use in adolescents. *J Drug Issues.* 1986;16:7–28.

91. Herrenkhol TL, Maguin E, Hill KG, Hawkins JD, Abbott RD, Catalano RF. 2000. "Developmental Risk Factors for Youth Violence." *Journal of Adolescent Health* 26:176–186.

92. Blumstein A. 1995. "Youth Violence, Guns and the Illicit-Drug Industry." *Journal of Criminal Law and Criminology* 86:10–36.

93. Spunt BJ, Goldstein PJ, Bellucci PA, Miller T. Race/ethnicity and gender differences in the drugs-violence relationship. *J Psychoactive Drugs.* 1990;22(3):291–303.

94. Goldstein P. The drugs/violence nexus: a tripartite conceptual framework. *J Drug Issues.* 1985;493–506.

95. Wilson WJ. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy.* Chicago: University of Chicago Press; 1987.

96. Bourgois P. *In Search of Respect: Selling Crack in El Barrio.* Cambridge, England: Cambridge University Press; 1996.

97. Bourgois P. In search of Horatio Alger: culture and ideology in the crack economy. *Contemp Drug Prob.* 1989;16(4):619–650.

98. Anderson E. The story of John Turner. In: Harrell AV, Peterson GE, eds. *Drugs, Crime and Social Isolation.* Washington, DC: Urban Institute Press; 1992.

99. Anderson E. *Streetwise: Race, Class and Change in an Urban Community.* Chicago: University of Chicago Press; 1990.

100. Fagan J. Drug selling and licit income in distressed neighborhoods: the economic lives of street-level drug users and dealers. In: Harrell AV, Peterson GE, eds. *Drugs, Crime and Social Isolation.* Washington, DC: Urban Institute Press; 1992.

101. Fagan J, Wilkinson DL. 1998. "Guns, Youth Violence and Social Identity in Inner Cities." In M. Tonry and M. H. Moore (eds), *Youth Violence.* Chicago: University of Chicago Press.

102. Edberg M. AIDS risk behavior among runaway youth in the Washington, DC-Baltimore area. In: *Report of Multi-Site Runaway Risk Behavior Study.* Rockville, MD: National Institute on Drug Abuse; 1992.

103. Cook PJ, Laub JH. August 2001. *After the Epidemic: Recent Trends in Youth Violence in the United States.* Working Paper SAN01–22, Terry Sanford Institute of Public Policy. Durham, NC: Duke University.

104. Blumstein A. 1995. "Youth Violence, Guns and the Illicit-Drug Industry." *Journal of Criminal Law and Criminology* 86:10–36.

105. Blumstein A. 2001. "Why is Crime Falling?—Or Is It?" *Perspectives on Crime and Justice Lecture Series.* Washington, DC: National Institute of Justice.

106. Blumstein A, Wallman J (Eds.). 2000. *The Crime Drop in America.* New York: Cambridge University Press.

107. Spiegel I. 1995. *The Youth Gang Problem: A Community Approach.* New York: Oxford University Press.

108. Crick NR, Dodge KA. A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychol Bull.* 1994;115:74–101.

109. Crick NR, Dodge KA. Social information processing mechanisms in reactive and proactive aggression. *Child Dev.* 1996;67:993–1002.

110. Cole J, Dodge KA. (1998). Aggression and antisocial behavior. In W. Damon (Editor in Chief) and N. Eisenberg (Vol. Ed.), Handbook of child psychology, 5th edition. Volume 3. Social, emotional, and personality development. NY: John Wiley & Sons.

111. Huesmann LR, Guerra NG. Children's normative beliefs about aggression and aggressive behavior. *J Personality Soc Psychol.* 1997;72:408–419.

112. Farrington DP. The psychosocial milieu of the offender. In: Gunn J, Taylor PJ, eds. *Forensic Psychiatry: Clinical, Legal and Ethical Issues.* Oxford: Butterworth-Heinemann; 1995:252–285.

113. Lochman JE, Dodge KA. Social-cognitive processes of severely violent, moderately aggressive and non-aggressive boys. *J Consult Clin Psychol.* 1994;62:366–374.

114. Slaby RG, Guerra NG. Cognitive mediators of aggression in adolescent offenders: 1. Assessment. *Dev Psychol.* 1988;24:580–588.

115. Colder CR, Mott J, Levy S. 2000. "The Relation of Perceived Neighborhood Danger to Childhood Aggression." *American Journal of Community Psychology* 28(1):83–103.

116. UNAIDS. *2004 Report on the Global AIDS Epidemic.* Geneva, Switzerland: UNAIDS; 2004.

117. Piot P, Bartos M, Ghys PD, Walker N, Schwartlander B. The global impact of HIV/AIDS. *Nature.* 2001;410:968–973.

118. Auerbach JD, Wypijewska C, Brodie HKH. *AIDS and Behavior: An Integrated Approach.* Washington, DC: National Academy Press; 1994.

119. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report, 2003,* Vol. 15. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2004.

120. UNAIDS. *2006 Report on the Global AIDS Epidemic.* Geneva, Switzerland: UNAIDS; 2006.

121. Beyrer C, Jittiwootikarn J, Teokul W, et al. Drug use, increasing incarceration rates, and prison-associated HIV risks in Thailand. *AIDS Behav.* 2003;7(2):153; citing Ministry of Public Health, Thailand, *HIV/AIDS Sentinel Surveillance Report.* Bangkok; 2000.

122. UNAIDS Joint United Nations Programme on HIV/AIDS. *AIDS Epidemic Update: December 2003.* Geneva, Switzerland: UNAIDS; 2003.

123. Dehne KL, Pokrovskiy V, Kobyshcha Y, Scwartlander B. Update on the epidemics of AIDS and other sexually transmitted infections in the newly independent states of the former Soviet Union. *AIDS.* 2000;14(Suppl): S75–S84.

124. UNAIDS/WHO. *Epidemiological Fact Sheets on HIV/AIDS and Sexually Transmitted Infections, 2004 Update.* Geneva, Switzerland: UNAIDS; 2004.

125. World Bank, www.worldbank.org.

126. Chinese Bureau of Hygiene and Tropical Diseases. *AIDS Newsletter.* Beijing: Chinese Bureau of Hygiene and Tropical Diseases; 1996.

127. Chinese Ministry of Health, UNAIDS, and WHO. *2005 Update on the HIV Epidemic and Response in China.* Beijing: Chinese Ministry of Health; 2006.

128. Kelly JA, Amirkhanian YA, Kabakchieva E, et al. Gender roles and HIV sexual risk vulnerability of Roma (gypsies) men and women in Bulgaria and Hungary: an ethnographic study. *AIDS Care.* 2004;16(2):231–245.

SECTION II

On the Roots of Behavior—A Multidisciplinary Survey

CHAPTER 3

Social/Behavioral Theory and Its Roots

Learning Objectives

By the end of this chapter, the reader will be able to:

- Understand what is meant by the term "theory" in relation to explanations of behavior
- Understand some of the assumptions underlying theory as it is used in a scientific context, and the history behind those assumptions
- Describe key influences on behavioral theory from psychology, social psychology, sociology, cultural anthropology, and the study of ecology/biological systems

"We vivisect the nightingale
To probe the secret of his note"

—T.B. ALDRICH (1836–1907), AMERICAN WRITER

"No theory is good except on condition that one uses it to go beyond."

—ANDRE GIDE (1869–1951)

"It is difficult, if not impossible, for most people to think otherwise than in the fashion of their own period."

—GEORGE BERNARD SHAW (1856–1950)

THINKING ABOUT THEORY

You've heard this discussion before, perhaps in a science class or a philosophy class. Still, before we proceed to talk about theory we need to make sure we are proceeding with the same understandings about what it is we are talking about.

First of all, the idea of theory is most associated with its use in the context of the *scientific method*. Let's examine that, because its association with science gives the term a specific kind of meaning. Here, for example, is one definition of theory, specifically oriented to the way in which theory is put into practice in social science:

> [Theory is …] A set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting phenomena."[1]

The philosopher of science Karl Popper framed theory in the manner most commonly used today in scientific inquiry.[2] For Popper, a theory is a proposed explanatory solution to a problem. Most important, though, a theory's validity is not determined by proving the theory true, because that is easy to do (i.e., it is easy to come up with cases that confirm a theory). The true test is in *falsifying* a theory. Therefore, theory is an explanatory proposition that can be tested, and tested by falsification. If over time it is not falsified—assuming that it is tested in situations relevant to what the theory claims—then it remains part of the ongoing body of scientific knowledge. If it is falsified, then it can be either reworked or discarded. Either way, science is advanced.

Before going any further, however, let's take a look at what theory is in a more basic sense. Definitions of theory, boiled down to their essence, refer to a kind of *story* (I will use the broader term *account*). So, we can think of theory as

an account that is said to explain something, and to posit connections between phenomena. For example:

"It is theorized that apples, and other physical objects, fall from trees because of a force called gravity which exerts that effect."

"It is theorized that certain substances, called carcinogens, cause cells in the human body to mutate and grow abnormally, out of control (in other words they are cancerous)."

From theories, you can derive more specific applications such as hypotheses, principles, and constructs. We are going to spend a little more time on these applications later in this chapter. But first let's focus on the general idea of theory as a story or account. It could be said that a key characteristic of modern humans from prehistoric times has been the creation of tales, myths, and stories that, for example, describe an entire cosmological system, explain the creation of society, explain how men and women came to be what they are, and so on. These are all theories in the broad sense, for they present a coherent account from which more specific judgments and conclusions can be drawn. So, if a theory says that men were created from fire and women from water, one could hypothesize, for example, that:

- Men are highly emotional and prone to conflict (fire), while women are better at solving or stopping conflicts (water on fire).
- Men are destructive, while women nourish.
- Men provide what is necessary to survive in adverse conditions (fire, warmth), while women provide the sustenance (water) necessary all the time.

Michel Foucault (1926-1984):

Basically, Foucault argued, in his many writings, that: 1) discourse—which refers to a broader category of the various modes of expression, including language, and how they are actually used—is the product of a historical period and its dominant social-economic institutions; and that 2) the discourse of a particular historical period incorporates a kind of system of rules for how to think about the world (what is true and false, normal or not normal, and so on). In the Modernist era of the Industrial Revolution and science, for example, the type of discourse associated with science *predisposes* us to think in terms of truth or falsity based on rational or empirical criteria.

Now we might hear this theory of the origin of men and women, and the various derivative hypotheses, and pass them off as mere "folk tales." But why? By what standards would we make such a judgment? We would say, most likely, that there is no proof for such things, and that they contradict known facts about the origins of gender.

Who is right?

The problem here is that evaluating the validity of a theory or specific proposition is, of necessity, based on some set of standards or rules by which to make such a judgment. In this sense, theories can be seen as "language games" like those described by philosopher Ludwig Wittgenstein,[3] or a type of statement that is part of the tautological *discourse* of science described by recent French philosopher Michel Foucault.[4-7]

They are propositions that have meaning, validity, and truth (or falsity) within a specific context, such as a historical context, a social context, or a cultural context. Within their contexts, they are commonly held to be meaningful. Thus, to understand why a particular theory is meaningful, or to evaluate its validity, you need to understand the contextual ground rules, so to speak. Understanding those ground rules is one of the most important tools you can have in making a good assessment of theories about human behavior and in deciding when and where those theories will be useful to you in a practical sense.

What, then, is the context in which we use theory? What are the ground rules?

THE CONTEXT OF THEORY IN THE WESTERN TRADITION

Let's start right out by stating that the term *theory* as it is commonly used derives its meaning from a context of Western philosophy and science—that is, the tradition originating with the Greek philosophers and carried through in various forms, largely in Europe and North America. To say so is not to privilege this understanding of theory, but simply to understand where it comes from so that its use can be *situated*—that is, placed in a social and historical context. Now of course, over the years this tradition has been influenced, amplified, and paralleled by currents of thought from outside its Euro-American mainstream, for example, by Islamic scholars Avicenna (ibn-Sina) and Averroes (ibn-Roshd), and Chinese philosophers Confucius (Figure 3-1), Chuang Tzu, and others. But for the most part, we are going to be talking about the concept of theory as a Western philosophical product.

> Confucius's teachings are thought to have laid the groundwork for the "ideal man" including how man (and woman) should live and interact with

others, and how man (and woman) should participate in society. *Source:* http://plato.stanford.edu/entries/confucius/

What does "the Western tradition" mean? Again, let's boil it down. Here are several key elements of the tradition that are relevant to understanding our use of theory.

Order and Regularity

It would be silly to suggest that the idea of *order* is unique to Western thought. All cultures have at their root ideas about the "natural order of things." This is truly a fundamental human characteristic. And some of the most important non-Western philosophies and systems of society, including Confucianism, Taoism, and Navajo cosmology, include highly elaborated concepts of natural order.

However, in Western society the idea of order took a specific turn that fed directly into the development of science. The progressive discovery of an assumed order underlying nature, combined with the *practical application of that knowledge to human ends*, has been the focus of Western philosophy and science at least since the early Greeks. Somewhere around the 4th century BCE, Democritus began to conceptualize the world as being composed of what he called "atoms," discrete bits of matter that have size, shape, and solidity. Aristotle, in a series of astounding works, analyzed the logic of language, and, among other intellectual feats, explicated a scheme for categorizing and understanding natural phenomena based on concepts of matter and form, motion, space, and time.[8] In contrast to other seminal Greek philosophers such as Plato, however, Aristotle emphasized ordering (classification) systems that would have *practical* application. Other early Greeks were involved in the search for order as well, including a number of mathematicians such as Pythagoras and Euclid.

In the Middle Ages, roughly the period from the fall of the Roman Empire in the 5th century ACE to the 15th century ACE, inquiry into the order of nature was treated as synonymous with understanding divine order. This is not surprising, because a key characteristic of the Middle Ages was a monopoly of knowledge and scholarship by the church. Thus, Thomas Aquinas (in *Summa Theologica*, transcribed in the 13th century) argues for the coexistence of philosophy, created by human reason, and theology, revealed knowledge that exceeds human reason and must be accepted on faith. His proof of the existence of God, for example, includes the argument that the order inherent in the natural world presupposes a being that created the order.

The explosion of scientific discovery in the period known as the Enlightenment (in general, the 17th–18th centuries) represented a fundamental break from church control over knowledge and theory. This came about for a number of reasons: the invention of the printing press in the 15th century and the resulting spread of literacy; exploration of new lands bringing evidence of human and geographic diversity; discoveries in astronomy that revealed other planets and suggested that the earth was not the center of the universe (e.g., Galileo); the rise of natural philosophers like Locke, Voltaire, Rousseau, and others; and new directions in art during the Renaissance. During the Enlightenment, the locus of explanation for natural phenomena shifted from the divine to the secular—to what was viewed as the primacy of reason and worldly evidence. Importantly, the rise in secular and rationalistic explanations also coincided with the beginnings of the Industrial Revolution, and the shift in power from the church and monarchy to those who exploited science and technology for the production of goods.

Yet the focus on order and regularity remained; the universe could be viewed through the metaphor of a mechanical clock whose gears clicked and turned inexorably, in autono-

FIGURE 3-1 Confucius (551–479 BCE)

Source: Picture downloaded from: http://en.wikipedia.org/wiki/Confucius

mous, infinite repetition. Scientific inquiry abounded with the discovery of new laws; Newton and the law of gravity is a classic example. As scientific discovery grew, domains of inquiry that were once unified as natural philosophy or natural science began to diverge into discrete "fields"—biology, physics, astronomy, and later sociology, anthropology, and psychology. The latter three fields, focusing more on the study of human beings and society, sought to (and still do) develop as sciences in the same way as the physical sciences. Foreshadowed by Francis Bacon and later Voltaire, Auguste Comte and others in the 19th century pushed for a science of humanity that would discover and use laws of human behavior—order and regularity—for the development of society. This general view was called *positivism*.

> *Positivism:* The philosophical tradition asserting that knowledge is based on natural phenomena and their properties and relations as verified by the empirical sciences.

Not all scientists or thinkers agreed with this trend, and in a debate that continues to resonate today, the human sciences were and remain split by controversies about whether they should conceptualize themselves in the same way as the physical sciences, or as something different in important ways (see the work of Schiller, Dilthey, Husserl, as well more recent postmodern thinkers such as Foucault and others). In any case, *the idea of theory today is inseparable from the idea of order.*

Predictability

In a sense, predictability is the child of order and regularity, for if nature is ordered, and we discover the details and rules of this order, then we can, theoretically, *predict* what will happen. By now, this idea is so ingrained in our common sense knowledge that few people actually stop to think that it is itself an idea. But every night, when we listen to the weather report, we have an expectation that someone is using science to make accurate (more or less) *predictions* about the weather tomorrow or over the next week. When we go to the doctor and get a prescription, we assume that the doctor has diagnosed the trouble and, based on science, is predicting that a 10-day course of the prescribed medication will alleviate or cure the problem.

It was Auguste Comte (1798–1857) who really institutionalized this as a goal for the social or human sciences. He argued that human beings had gone through three stages of thought on the road to modern science: the theological, attributing events and phenomena to the supernatural; the metaphysical, attributing phenomena to fundamental energies or ideas; and the positive, where phenomena are explained by observation, hypothesis, and experimentation.[9] In Comte's view, the orderly application of a positivistic approach would eventually lead to an ability to predict and thus shape society.

Empirical Data

Here is where we have to bring in an important word—*epistemology*. Basically, epistemology refers to ideas about how we know what we know. For example: Do we know something to be true because we see it and can touch it? Do we know something is true because the thought exists in our mind? Do we know it is true because somewhere in a sacred text it is said to be true? These three questions actually represent three major trends in thought about how we know what we know—the first corresponds to *empiricism*, the second corresponds to *rationalism*, and the third corresponds to a *theologic* or *deist* orientation.

The scientific tradition in which the concept of theory developed is rooted in the *empiricist* tradition of John Locke and David Hume, both British empiricists. The epistemology underlying empiricism is encapsulated by the idea that *what we know comes to us from our senses.* We perceive an objective reality that is "out there" to be perceived, and our ideas about existence stem from those perceptions. This is in contrast to the *rationalist* tradition (from Descartes) in which *reality is based in our mind (not an objective world "out there")*, or the *phenomenological* tradition (e.g., William Dilthey, Edmund Husserl), which argues that because it is individuals who do the perceiving, and individual perception is necessarily influenced by both biology and one's own life experiences, culture, and history, that perception is never objective, but subjective; therefore, what we know of reality can never extend beyond our experience of it. Reality is then not objective, but an *experienced* reality.

Science in the empiricist tradition has thus relied on the collection of observable, tangible data as evidence for statements about reality. In keeping with the ideas of order and predictability, then, a theory in this tradition is supposed to say something about the *observable, tangible* relationships between phenomena—relationships that are evidence-based. In later chapters, we will see how this "standard of evidence" is embedded in almost all the theoretical approaches we will study, and we will also ask if that is always enough.

Progress and Perfectability

Progress in some form or another is part of many cultural traditions of thought. In Buddhist or Hindu cultures, for example, progress entails the recycling of one's soul, one's

karma, through reincarnation, until the soul reaches a state of enlightenment or nirvana. In Western culture, the idea of progress has some roots that sound very similar. In Plato's seminal philosophical work, the *Republic*, there is the famous allegory of the cave, in which the path to true knowledge is represented by a journey from the depths of a cave where all is shadow and image (not the "real thing"), to the final stage of emergence out into the light, where it is possible to see the true essence (the "Form") of things.

Francis Bacon, philosopher, one-time Lord Chancellor in England, and grand intellectual reformer of the late 16th and early 17th centuries, proposed (in several treatises on the advancement of learning) to replace the entire existing intellectual framework, which consisted of unchallenged superstition, philosophy, and style over substance, with a new paradigm emphasizing empiricism, progress, and the practical use of knowledge.[10-12]

Almost every major scientific and social thinker from the Enlightenment onward has incorporated the assumption of progress as an essential part of their theories. You can certainly say this about, for example, Charles Darwin and evolutionary theory; Herbert Spencer and Social Darwinism; G.W. Friedrich Hegel and the historical progression of spirit; social theorists Karl Marx, Max Weber, and Emile Durkheim and their respective ideas about the stages through which societies evolve; and psychologists such as Sigmund Freud and Erik Erikson and the stages of psychological development. For all these thinkers, time does not stand still.

In short, the assumption of progress is an integral part of our way of thinking. For the endeavor we call science, and the meaning of theory, it is impossible to separate progress out. "Doing science" by definition involves a continuous accumulation of knowledge, leading towards a more and more expansive understanding of our world. Proposing and testing theory is an essential part of this process, where theory is the "tactic" used to generate scientific investigation, and to build knowledge.

From this description, can you see how theory, in this context, incorporates concepts of order, predictability, empirical data, and progress?

ANTECEDENTS

Let's now review a range of more specific theoretical antecedents to current behavioral theory as it is employed in public health. The primary fields from which public health behavioral theory have been derived are psychology and social psychology, so we will begin with these, then proceed briefly to several other fields, including ecology, sociology, anthropology, and others that have made important contributions.

A Sample of Thinkers in the Western Tradition

- *Plato and Aristotle:* Classical Greek philosophers, focusing on wide-ranging themes from ethics to the nature of social organization, the composition of matter, the classification of knowledge, and much more.
- *Rene Descartes:* French philosopher and progenitor of the *rationalist* tradition.
- *John Locke and David Hume:* English philosophers and representatives of the *empiricist* tradition.
- *Auguste Comte:* Originator of the idea of a "science of society."
- *Edmund Husserl and William Dilthey:* Proponents of the tradition of *phenomenology*.
- *Charles Darwin:* Key founder (with others) of evolutionary theory and natural selection.
- *Emile Durkheim (sociology), Franz Boas (anthropology), Sigmund Freud (psychology):* Influential social theorists of the early 20th century.
- *Karl Popper:* Philosopher of science and champion of the scientific method.
- *Michel Foucault:* French philosopher of the mid-20th century who elucidated the connections among language, power, and thought.

Psychology/Social Psychology

As in any discipline today, there are numerous subfields and subdisciplines. This is also true for psychology, but certain subfields have had the most impact on behavioral theory in public health. *Freudian psychology*, for example, has not left much of a mark in this respect. But *behavioral, cognitive, ecological*, and *humanistic* psychological theory have all made significant contributions, as has *social psychology*.

Behaviorist Psychology

This is an early school of psychology dating from the late 19th century in which behavior is said to be learned or conditioned through the action of stimulus-response mechanisms. Little importance is placed on the thinking process itself, or such things as emotion, because human beings are treated as organisms and the most important process is considered to be the impact of an environment on what were viewed as the brain's *reflexive* responses. Internal mental processes are thus treated as a kind of "black box," where a stimulus is applied and a behavior results. The first behaviorists were Russian,

including the seminal researcher Ivan Pavlov (1849–1936). Pavlov designed an experiment using an approach that has come to be called *classical conditioning*. He rang a bell at the same time that he placed meat powder on a dog's tongue (which caused the dog to salivate). After repeating this a number of times, he tried ringing the bell alone, with no meat powder. The dog salivated anyway, demonstrating the effect of the *conditioned stimulus* of the bell, which had become associated with the meat powder. In the United States, Edward Thorndike and John Watson were well-known early behaviorists.

B.F. Skinner (1904–1990) transformed classical conditioning into its modern version, called *operant conditioning*.[13] Still based on the same basic assumptions about the reflexive responses between the human mind and its environment, this form of conditioning involves a number of steps and processes: A specific behavior is conditioned through the application of positive and negative reinforcements associated with the behavior. Reinforcements, however, can be provided at various intervals or *schedules* that have different effects in terms of maintaining the behavior, and a behavior can be learned through *shaping*—by reinforcing approximations of the behavior that keep getting closer and closer to the actual behavior. Behaviors can also be *deconditioned*. The approach as a whole is referred to as *behavior modification*.

Behaviorist approaches are currently used as therapy in smoking cessation and other addiction treatments. Importantly, for our purposes, the basic assumptions about learning behavior through positive and negative reinforcement appear in a number of health behavior theories.

Cognitive Psychology

As its name suggests, cognitive psychology focuses on the thinking process itself as the source of behavior. So, in contrast to behaviorism which views internal mental processes as insignificant, the inside of the black box is of interest this time. The thinking process as addressed in cognitive psychology includes perception, memory, decision making, interpretation, reasoning, and judgment, among other faculties.

According to Jean Piaget, one of the most influential thinkers in this school, there are two key ways in which we process information: *assimilation*, fitting new information into existing categories of knowledge, and *accommodation*, changing/adapting existing beliefs to incorporate new information.[14-17] Piaget is also famous for his theory on the stages of cognitive development: sensorimotor, preoperational, concrete operational, and formal operational.

Cognitive psychology is an important part of such behavioral theories as the Health Belief Model, Theory of Planned Behavior, and Social-Cognitive Theory (among others), all of which assume that internal processes, to one degree or another, determine behavior. This includes calculations of risk and benefit, expectations related to outcome, and so on.

Humanistic Psychology

In part a reaction to what some perceived as the mechanistic and determinist character of behaviorism, cognitive psychology, and Freudian psychology, the development of humanistic psychology drew on a philosophical tradition that emphasizes individual *agency*, the capacity of people to make choices and determine their future. The basic belief or assumption underlying humanistic psychology is that human beings ultimately desire to grow and attain their potential. However, as Abraham Maslow articulated in his famous *hierarchy of needs*,[18] before people can pursue this kind of higher-level growth, they must first be able to satisfy a set of needs, from basic physiological to emotional and social.

Although the ties between this approach and a specific public health theory are not always direct, it is clearly a general influence on the "philosophy" of public health, commonly expressed in definitions of public health or health promotion as the goal of improving *quality of life* for the general public, or goals related to the promotion of *healthy lifestyles* and *healthy choices*. Thus health promotion, in part, involves the promotion of conditions, including the satisfaction of basic needs such as housing, employment, and access to health care, which allow people to live healthier (higher quality) lives.

Social Psychology

Although the discipline of psychology as a whole is concerned with the mental processes and behaviors of individuals, the branch known as social psychology is concerned about how individuals (and their mental processes) interact with their social surroundings—groups, relationships, and other social units. This may include inquiries regarding issues of group dynamics, authority and legitimacy, emotion and its expression, aggression, self and identity, motivation, gender, group prejudices (the process of "othering"), norms, attitudes, and other related topics. Health behavior, as we saw in the first chapter, is often complex and motivated by social factors, so the subject matter of social psychology is clearly related to a number of behavioral theories and approaches in public health.

Like everything else we have been discussing, we can't possibly cover the whole of social psychology, so we will have to pick out a few individuals or approaches for illustrative purposes. One important issue is the nature of social influ-

ence on individual behavior; for example, the famous experiments on authority and obedience conducted by psychologist Stanley Milgram[19,20] in which he tested the willingness of individuals to administer a harmful electric shock to other individuals if instructed to do so by persons who were presented as "authorities." The results of this study were widely publicized and raised considerable questions about people's willingness to set aside their own moral judgments in order to obey or conform to authority. Other studies have looked at the effect of belonging to groups on conformity of behavior and thought. Irving Janis,[21,22] for example, investigated the phenomenon of "groupthink" in government decision making; Crandall[23] investigated the same phenomenon in terms of its effect on eating disorders within a sorority.

Another area of focus has to do with attitudes and behavior. Attitudes are complex connections of belief, identity, and social relations. Social psychologists have been interested for a considerable period of time in the relationships between attitudes and behavior and the consistency of attitudes. Two early positions included the idea that when behaviors contradict attitudes (*dissonance*), people tend to rationalize or adjust their attitudes in order to address the dissonance between attitudes and behavior.[24] Another view held that people infer their attitudes over time from experiences about how they behave in similar situations.[25] Very much related to specific health behavior theories we will be discussing in later chapters, psychologists Martin Fishbein and Icek Ajzen proposed *intentions* as an intermediate factor between attitudes and behavior, where attitudes are one of several factors (including perceived norms/opinions of significant others) that act on intentions.[26,27]

Social Sciences: Sociology, Cultural Anthropology

Sociology and anthropology have some similarities in that both fields focus on the social, societal, or cultural aspects of behavior in contrast to the more individual focus of psychology. Neither are clinical disciplines; thus, research and theory rely on different methods and approaches than are found in psychology, but from there they differ. Sociology has generally focused more on domestic social phenomena, whereas cultural anthropology has addressed both global and domestic themes, often in a comparative manner. Sociologists are more interested in social groups, social hierarchies, social structures, and the nature of social interaction. Cultural anthropologists are interested more in the role of culture in human behavior, in the ways in which life patterns are organized, in systems of knowledge and belief, and in the language, symbols, and other ways we "represent" life and its meaning.

Influences from sociology on public health include:

- *The influence and role of social structure and class on the paths available to individuals:* Karl Marx, Friedrich Engels, Max Weber, and many others have written about the ways in which societies are divided by class; more recently, theorists like Pierre Bourdieu[28] have looked at the way in which class/social position becomes part of one's practical understanding about what to expect in terms of day-to-day life (including health). This has also played a role in concepts about social *ecologies* and their role in health.
- *The influence of the group on behavior:* Group *norms* and conformity. There is overlap here with social psychology; however, these issues are very important to later developments in health behavior theory. Emile Durkheim,[29] among others, had a tremendous early influence on the discussion of social conformity.
- *Social capital:* The social networks and resources one has, and how these influence access to education, jobs, health care, and other social benefits.[30-32]
- *Social organization:* Durkheim,[29] Weber,[33,34] and others contributed significantly to theory and analysis of the ways in which society is structured, the ways in which labor is divided, and the nature of and motivation for social action.

Anthropology has, since early in the history of the discipline, addressed issues related to public health.* In the early 20th century, Franz Boas laid the groundwork in his fight to counter racist stereotypes and to help the public understand varieties of cultural patterns on their own terms. Margaret Mead, perhaps the most public of anthropologists, utilized her research on childrearing, adolescence, and gender issues to influence the debate here in the United States about how to understand and work with adolescents (among other issues).

A number of anthropologists in the mid-20th century, including Ruth Benedict, Margaret Mead, Abram Kardiner, Cora DuBois, John and Beatrice Whiting, Irving Hallowell, and Anthony F.C. Wallace, focused their work on the connections between culture and personality, and its expression as behavior. This line of inquiry continued with cognitive and psychological anthropologists such as Ward Goodenough, Roy D'Andrade, Melford Spiro, Claudia Strauss, Dorothy

* Anthropology as a whole encompasses four subfields: sociocultural anthropology, archaeology, physical (biological) anthropology, and anthropological linguistics. Cultural anthropology and physical anthropology have had the most interaction with issues of public health.

Holland, and Naomi Quinn, who have looked, for example, at *cultural models* people refer to in patterning their behavior. Other directions in anthropology, for example the *materialist* tradition exemplified by the work of Marvin Harris, have focused more on the relationship between human behavior and systems of production.

Influences of cultural anthropology on public health theory and practice include:

- *The holistic approach to health (and other) behavior reflected in what is known as the ecological model:*[35] This refers to the idea that human behavior can never properly be understood outside of the social, cultural, and situational context in which it occurs, as we saw in our introductory chapter.
- *The idea of cultural competency* or *culturally appropriate (health) programs and care:* Health, concepts of what is healthy or not healthy, classifications of disease and/or illness and the causes of diseases and illnesses, what kinds of treatments are appropriate and who are the health providers, and how to interact with someone who is ill are heavily influenced by culture. Given the diversity of patient populations, understanding what kinds of health beliefs and practices a patient brings and how to interact with diverse populations is a very important part of the development of health promotion and treatment programs.
- *The relationship of specific cultural settings and practices to health problems:* Anthropologists like Merrill Singer[36] and Paul Farmer[37,38] have been deeply involved in research underscoring the link between conditions of poverty and oppression and the spread of HIV/AIDS. Mark Nichter is well known for his work on culture and adolescent smoking,[39] among other issues. Arthur Kleinman has been a pioneer in exploring and presenting the sociocultural nature of disease and illness, and how these are experienced and treated across cultures.[40]

Ecology and Biological Systems

In a different vein, the fields of ecology and human ecology have influenced the way in which health behavior is currently conceptualized as an outcome of a complex system of influences from several domains (e.g., policy and regulation, sociocultural factors, the physical environment, and individual factors). This is known as the *ecological model*,[35,41,42] and it is the prevalent general framework in public health for understanding health behavior. (Remember? We referred to it in Chapter 1.)

Ecology is the study, within the general field of biology, of the ways in which living organisms function within systems. The food chain is an obvious example: Many different organisms depend on other organisms and a specific physical environment for their existence. When there is a disruption in the system, say, if one organism becomes extinct or a crucial body of water dries up, the entire system and its organisms are affected. Human ecology applies the same focus to the ways in which humans function as a part of a biophysical and social environment. In other words, human existence cannot be conceptualized as separate from the environment in which we live. From both fields, the general principle is the same: *Life, and the behavior of living organisms, exists within interdependent systems.*

The idea of ecology should help you tie together all the kinds of theories and approaches we will cover in this book, in the sense that each theory is useful in describing or understanding a piece of the puzzle. Yet it is the way that the pieces work together that is the key.

Chapter Questions

1. Define *theory*. Why is a theory like a story?
2. The term *theory* as we know it takes its meaning from a Western tradition of philosophy and science that has four main tenets. What are they?
3. What are the "schools of thought" in psychology that contributed to modern behavioral theory?
4. What are some contributions from the social sciences—sociology and anthropology—on modern behavioral theory?
5. Why, as public health practitioners, is it important for us to understand the concepts of social psychology? Anthropology?
6. How has the study of natural systems contributed an important concept to modern behavioral theory in public health?
7. Why is it important to develop health promotion programs within the context of an ecological model?

REFERENCES

1. Kerlinger, FN. (1986). *Foundations of behavioral research* (3rd ed.). New York: Holt, Rinehart and Winston.
2. Popper K. *Conjectures and Refutations.* London: Routledge and Kegan Paul; 1963.
3. Wittgenstein L. *Philosophical Investigations.* New York: Macmillan; 1965.
4. Foucault M. *The Archaeology of Knowledge.* Sheridan Smith AM, trans. New York: Harper Colophon; 1972.
5. Foucault M. *The Birth of the Clinic: An Archaeology of Medical Perception.* Sheridan Smith AM, trans. New York: Vintage/Random House; 1976.
6. Foucault M. *Discipline and Punish: The Birth of the Prison.* Sheridan A, trans. New York: Vintage/Random House; 1979.
7. Foucault M. *Power/Knowledge: Selected Interviews & Other Writings, 1972–1977.* Gordon C, ed. Gordon C, Marshall L, Mepham L, Soper K, trans. New York: Pantheon Books; 1980.
8. Aristotle. *The Complete Works of Aristotle: The Revised Oxford Translation.* Barnes J, ed. Princeton University Press; 1984.
9. *The Columbia Encyclopedia,* 6th ed. Comte, Auguste. New York: Columbia University Press; 2001.
10. Gaukroger S. *Francis Bacon and the Transformation of Early-Modern Philosophy.* New York: Cambridge University Press; 2001.
11. Vickers B. ed. *Francis Bacon.* New York: Oxford University Press; 1996.
12. Whitney C. *Francis Bacon and Modernity.* New Haven, CT: Yale University Press; 1986.
13. Skinner BF. *Walden II.* New York: Macmillan; 1948.
14. Piaget J. *The Child's Conception of the World.* New York: Harcourt, Brace Jovanovich; 1929.
15. Piaget J. *The Moral Judgment of the Child.* New York: Harcourt, Brace Jovanovich; 1932.
16. Piaget J. *The Mechanisms of Perception.* London: Rutledge & Kegan Paul; 1969.
17. Piaget J. *The Science of Education and the Psychology of the Child.* New York: Grossman; 1970.
18. Maslow A. *Motivation and Personality,* 3rd ed. New York: Harper; 1987.
19. Milgram S. Behavioral study of obedience. *J Abnorm Soc Psychol.* 1963;67:371–378.
20. Milgram S. *Obedience to Authority.* New York: Harper & Row; 1974.
21. Janis IL. *Victims of Groupthink.* Boston, MA: Houghton Mifflin; 1972.
22. Janis IL. *Groupthink: Psychological Studies of Policy Decisions and Fiascoes,* 2nd ed. Boston, MA: Houghton Mifflin; 1982.
23. Crandall CS. Social contagion and binge eating. *J Pers Soc Psychol.* 1988;55:588–598.
24. Festinger L, Carlsmith JM. Cognitive consequences of food compliance. *J Abnorm Soc Psychol.* 1959;58:203–210.
25. Bem D. An experimental analysis of self-persuasion. *J Exp Soc Psychol.* 1965;1:199–218.
26. Fishbein M, Azjen I. Attitudes towards objects as a predictor of single and multiple behavioral criteria. *Psychol Rev.* 1974;81:59–74.
27. Fishbein M, Azjen I. *Belief, Attitude, Intention, Behavior: An Introduction to Theory and Research.* Reading, MA: Addison Wesley; 1975.
28. Bourdieu P. *Outline of a Theory of Practice.* Cambridge: Cambridge University Press; 1977.
29. Durkheim E. *The Division of Labor in Society.* New York: Free Press; 1893/1997.
30. Bourdieu P. The forms of capital. In: Richardson J, ed., *Handbook of Theory and Research for the Sociology of Education.* New York: Macmillan; 1986:
31. Coleman JS. Social capital in the creation of human capital. *Am J Sociol.* 1988;94(Suppl):S95–S120.
32. Putnam R. *Bowling Alone: The Collapse and Revival of American Community.* New York: Simon and Schuster; 2000.
33. Weber M. *Economy and Society.* Roth G, Wittich C, trans/eds. New York: Bedminster Press; 1968.
34. Weber M. *Essays in Sociology.* Gerth HH, Mills CW, eds. New York: Oxford University Press; 1958.
35. Green LW, Kreuter MW, eds. *Health Promotion Planning: An Educational and Environmental Approach,* 3rd ed. Mountain View, CA: Mayfield; 1999.
36. Singer M. AIDS and the health crisis of the urban poor: The perspective of critical medical anthropology. *Soc Sci Med.* 1994;39(7):931–948.
37. Farmer P. *Infections and Inequalities.* Berkeley: University of California Press; 1998.
38. Farmer P. *Pathologies of Power.* Berkeley: University of California Press; 2003.
39. Nichter M. Smoking: what's culture got to do with it? *Addiction.* 2003;98(Suppl 1):139–145.
40. Kleinman A. *Patients and Healers in the Context of Culture: An Exploration of the Borderland Between Anthropology, Medicine and Psychiatry.* Berkeley: University of California Press; 1981.
41. Bronfenbrenner U. *The Ecology of Human Development.* Cambridge, Mass.: Harvard University Press; 1979.
42. Lewin K. In: Cartwright D, ed. *Field Theory in Social Science: Selected Theoretical Papers.* New York: Harper & Row; 1951.