Chapter 19

Health

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Social psychologists have had an enduring interest in health. As early as the 1950s, Irving Janis conducted landmark studies with hospital patients to understand how fear affects the understanding of information about surgery and the recovery process (Janis, 1958). Not until the mid- to late 1970s, however, was a field of health psychology formalized. Since that time, social psychologists have consistently made important contributions to this field.

Health psychology is devoted to understanding psychological influences on how people stay healthy, why they become ill, and how they respond when they do get ill. Health psychologists conduct research on these issues and promote interventions to help people stay well or get over illness. The field is guided by the World Health Organization's 1948 holistic definition of health as "a complete state of physical, mental, and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1948). The breadth of this definition indicates that health psychology is concerned with health promotion and illness prevention; the treatment of illness; the etiology and correlates of health, illness, and disability; improvement of the health care system; and formulation of health policy. Thus, there is a broad role for social psychologists to play in these endeavors.

There are at least two important things to note about the WHO's guiding definition of health. The first is the date: this holistic view of health was recognized to be important in 1948, yet health psychologists still encounter outmoded beliefs about health as purely physical in origin. Second is the World Health Organization's specific endorsement of "holism." In recent years, this term has come to be associated with alternative medical practices, such as herbal medicine, acupuncture, and other less traditional interventions (at least for Western societies). However, holism, in fact means the integration of physical, mental, and social perspectives on health and not the endorsement of specific therapeutic techniques. Adopting this holistic perspective, this chapter reviews the current status of health psychology research, especially from the vantage point of social psychology.

Although social psychologists have contributed to virtually every aspect of health psychology, in this chapter, I focus on three areas in which the contributions have been most plentiful and fruitful. These are health behaviors, stress and coping, and social support. The reader should note that the previous edition of *The Handbook of Social Psychology* included a chapter on health behaviors (Salovey, Rothman, & Rodin, 1998) that covered this area in depth. Accordingly, the current coverage avoids substantial overlap with that more detailed contribution, which remains an important review of social psychological contributions to health behaviors and their modification.

Several central themes guide the coverage in this chapter. The first is that social psychologists who study health are not applied social psychologists. Rather, health is an important domain in which social psychological theories can be tested, and the results of investigations in health settings often feed back to suggest modifications to the theories and provide guidance about underlying mechanisms. A second theme is that through our contributions to health, social psychology is integrated into the biological and medical sciences and thus contributes to the integrative science that unites insights from psychology with those of other scientific disciplines. A third theme is that health is an important area in which social psychologists have implemented interventions that make a difference in people's lives. As such, social psychological contributions to health embody Kurt Lewin's famous dictum: "There is nothing so practical as a good theory" (Lewin, 1943, 9. 118).

HEALTH BEHAVIORS

The study of health behaviors is guided by the philosophy of health promotion, namely, the idea that good health is a personal and collective achievement. For the individual, it involves developing good health habits early in life and carrying them through to old age. For the health practitioner, it involves teaching people how to achieve a healthy lifestyle and helping people at risk for a health problem offset or monitor that risk. For the psychologist, health promotion involves research on and the development of interventions to help people practice healthy behaviors and change poor ones. This, in turn, feeds into community and national health policy to help people to develop and maintain healthy lifestyles and to create resources and facilities that aid that process.

At the turn of the 20th century, the major health problems facing the United States were acute infectious disorders such as tuberculosis, influenza, measles, and poliomyelitis, conditions that are not strongly influenced by personal attitudes and behavior. As a result of treatment innovations and changes in public health standards, these health problems have been made more tractable. However, there has been an increase in what have been called the preventable disorders, including cancers, especially lung cancer, cardiovascular disease, alcohol and other substance abuse, and vehicular accidents. The role of behavioral factors in these disorders is clear. It is estimated that nearly half the deaths in the United States are caused by preventable factors, with smoking, obesity, and alcoholism being the top three. Uncovering the psychological technology that will make a dent in these problems is an important national priority.

What are the important health habits that are targets for modification? Sleeping 7 to 8 hours a night, not smoking, consuming a healthy diet, having no more than one or two alcoholic drinks each day, getting regular exercise, being no more than 10% overweight, and practicing sun protection are among the most important health habits for ensuring good health (e.g., Belloc & Breslow, 1972; Taylor, 2009).

Yet health habits are notoriously difficult to modify. Many of them become ingrained early in life and, once learned, are difficult to change. Moreover, habits developed during childhood and adolescence when most people are healthy provide little incentive for change because the cumulative damage that these behaviors may cause will not be apparent for years (Johnson, McCaul, & Klein, 2002). Health habits are typically only modestly related to each other. The person who controls her weight may continue to smoke, and the person who exercises faithfully does not necessarily wear his seatbelt. Different health habits are controlled by different factors, and those factors may change across the life span. For example, most smokers begin to smoke because of contact with a smoking peer group, but long-term smoking may be maintained because it helps reduce feelings of stress.

Accordingly, a debate is taking shape as to whether social engineering solutions to health problems might be more practical and, ultimately, more successful than individual or group interventions developed by social psychologists. For example, to influence obesity levels, one could intervene at the individual or community level to teach people about good eating habits or one could ban trans fats from foods and eliminate vending machines in schools. Similarly, a health intervention could help smokers develop the motivation and skills to stop smoking, or smoking could be heavily taxed and restricted to particular areas. Do social engineering solutions to major health problems obviate the need for social psychological interventions? Absolutely not. The two approaches complement each other. For example, unless people are persuaded of the need for social engineering solutions, the implementation of such solutions can produce resentment and retaliatory political action. Moreover, many health habits cannot be controlled or controlled completely through social engineering. For example, people who consume a high-fat diet may still find the products they want on their supermarket shelves, and smokers who may find their access to smoking areas restricted nonetheless know where they can smoke. Other health habits can be only minimally changed by social engineering solutions. For example, legislation that bans premarital or extramarital sex would likely be quite ineffective, as would legislation requiring the use of condoms. Laws that cannot be enforced have little impact on behavior. Accordingly, social engineering solutions to health problems work hand-in-hand with social psychological interventions to educate, coax, and nudge people into the health habits that will serve them well. Moreover, social psychologists have particular skills that can be used to improve the nature of social engineering interventions at the individual, community, state, or even federal level.

Social psychologists are masters at identifying and modifying situational influences on behavior, and as such, they can identify and make creative use of those circumstances when people may be most motivated to change their health behaviors. For example, the concept of *teachable moment* refers to the fact that certain times are better than others for changing particular health practices. Many teachable moments arise in early childhood when parents teach their children basic safety behaviors, such as using a car seat or a seatbelt. Moreover, because well-baby visits are a fixture of early health care, well-baby care visits provide teachable moments for pediatricians to check on the basics of health habits, accident prevention, and safety in the home. Late

elementary school and junior high school represent teachable moments for smoking and drug abuse, and many social psychological interventions that have been implemented through academic classrooms have made use of these windows of opportunity (e.g., Evans, Powers, Hersey, & Renaud, 2006). Pregnancy represents a teachable moment for several health habits, including stopping smoking and improving diet. When people are newly diagnosed with a chronic disease, such as lung cancer or heart disease, they may be especially motivated to modify their health behaviors as well. On what social psychological technologies have such interventions drawn?

Attitude Change

Principles of attitude change from social psychological research have been useful for designing persuasive communications that address health habits. Some of these involve educating the public about health risks. Educational appeals make the assumption that people will change their health habits if they have correct information. Attitude change research, derived from social learning perspectives and from dual processing perspectives, has provided the following guidelines as to the best ways to persuade people through educational appeals:

- The communicator should be expert, prestigious, trustworthy, likable, and similar to the audience. For example, a health message will be more persuasive if it comes from a respected, credible physician rather than from the proponent of a health fad.
- Communications should be colorful and vivid rather than steeped in statistics and jargon. If possible, they should also use case histories. For example, a vivid account of the health benefits of regular exercise, coupled with a case history of someone who took up bicycling after a heart attack, may be persuasive to someone at risk for heart disease.
- Strong arguments should be presented at the beginning and end of a message, not buried in the middle.
- Messages should be short, clear, and direct.
- Messages should state conclusions explicitly. For example, a communication extolling the virtues of a low-cholesterol diet should explicitly advise the reader to alter his or her diet to lower cholesterol.
- Extreme messages produce more attitude change, but only up to a point. Very extreme messages are discounted. For example, a message that urges people to exercise for at least 3 hours a week will be more effective than one that recommends 3 hours of exercise a day.
- For illness detection behaviors (such as HIV testing or obtaining a mammogram), emphasizing the problems that may occur if it is not undertaken will be most effective. For health promotion behaviors (such as sunscreen use), emphasizing the benefits to be gained may be more effective.
- If the audience is receptive to changing a health habit, then the communication should include only favorable points, but if the audience is not inclined to accept the message, the communication should discuss both sides of the issue. For example, messages to smokers ready to stop should emphasize the health risks of smoking. Smokers who have not yet decided to stop may be more persuaded by a communication that points out its risk while acknowledging and rebutting its pleasurable effects.

Providing information does not ensure that people will perceive that information accurately. When people receive negative information about risks to their health, they sometimes process that information defensively (Millar & Millar, 1996). Instead of making appropriate health behavior changes, the person may come to view the problem as less serious or more common than previously believed, particularly if the person intends to continue the behavior (Gerrard, Gibbons, Benthin, & Hessling, 1996). Smokers, for example, know that they are at a greater risk for lung cancer than are nonsmokers, but they see lung cancer as less likely or problematic and smoking as more common than do nonsmokers.

Fear Appeals

In part because of these problems, attitudinal approaches to changing health habits often use fear appeals. This approach assumes that if people are fearful a particular habit is hurting their health, they will change their behavior to reduce their fear. Common sense suggests that the relationship between fear and behavior change should be direct: The more fearful an individual is, the more likely he or she will be to change the relevant behavior. However, this relationship does not always hold. Persuasive messages that elicit too much fear may actually undermine health behavior change (Becker & Janz, 1987). Moreover, research suggests that fear alone may not be sufficient to change behavior. Sometimes fear can affect intentions to change health habits (for example, Sutton & Eiser, 1984), but it may not produce long-lasting changes in health habits unless it is coupled with recommendations for action or information about the efficacy of the health behavior (Self & Rogers, 1990).

Building on these findings, protection motivation theory (Maddox & Rogers, 1983) maintains that the effect of fear appeals on health behavior change is importantly influenced by whether people are motivated to protect

themselves. Feelings of fear motivate behavior by altering perceptions of vulnerability and severity. An original component of this theory also included the prediction that strong fear motivates behavior only if it is accompanied by feelings of self-efficacy. However, self-efficacy appears to exert effects on behavioral intentions directly, not necessarily in conjunction with fear. Perceived vulnerability appears to affect behavioral intentions directly as well, whereas perceived severity appears to have a lesser impact on behavior. Generally speaking, the predictions of the model have been supported, albeit weakly, and critics have suggested that protection motivation theory may be more useful when moderators are considered along with the primary elements of the theory (Salovey et al., 1998).

Message Framing

Any health message can be phrased in positive or negative terms. For example, a reminder letter to get a flu immunization can emphasize the benefits of being immunized or emphasize the discomfort of the flu itself (McCaul, Johnson, & Rothman, 2002). Which of these methods is more successful? Messages that emphasize potential problems work better for behaviors that have uncertain outcomes, whereas messages that stress benefits may be more persuasive for behaviors with certain outcomes (Apanovitch, McCarthy, & Salovey, 2003). As is the case with fear appeals, recommendations regarding exactly how to take the action increase effectiveness (McCaul et al., 2002).

Which kind of message framing will most affect behavior also depends on people's own motivation. Some people have a promotion or behavioral approach orientation (Gray, 1990) that emphasizes approaching opportunities. People with a behavioral approach orientation respond positively to such statements as "I go out of my way to get things I want." Such people are especially influenced by messages phrased in terms of benefits (e.g., "calcium will keep your bones healthy"). Other people have a prevention or avoidance orientation that emphasizes minimizing risks. They respond positively to such statements as "I worry about making mistakes." They are more influenced by messages that stress the risks of not performing a health behavior (e.g., "a low calcium intake will increase bone loss"). Messages that match a person's behavioral orientation produce more behavior change than those that do not (Mann, Sherman, & Updegraff, 2005).

Most of the preceding points regarding how to change health behaviors have implicitly drawn on either a social learning approach to attitude change or on social cognition research. Expectancy value theories are also useful in the health domain to both explain why people practice the health habits they do and to provide frameworks for changing health behaviors. These theories assume that people adopt a health behavior on the basis of its expected utility; utility is the subjective value attached to each possible outcome associated with the behavior weighted by the perceived likelihood of the outcome. So, for example, if a person is choosing between continuing to smoke and attempting to quit, the expected utility of each alternative would be based on the relative importance attached to the pleasure of smoking versus the importance of health weighted by the likelihood that stopping smoking would actually improve health. According to the theory, a person chooses among possible courses of action by selecting the choice that provides the greatest utility. Usually, this means comparing one's current behavior with some new health behavior.

The theory we consider in this context, the health behavior model, posits utility functions for choosing to practice (or not) a recommended health behavior and generates predictions about what beliefs might be targeted to change behavior. As will become evident, however, subjective expected utility theory does not take account an important aspect of behavior change in the health domain, namely, the perception that one will be able to change the behavior in question (i.e., self-efficacy). This point, as will be seen, is important because such behaviors such as altering diet or stopping smoking are often difficult to change.

Health Belief Model

The earliest attitude theory of why people practice health behaviors was the health belief model (Hochbaum, 1958; Rosenstock, 1966). This model states that whether a person practices a particular health behavior can be understood by knowing two factors: whether the person perceives a personal health threat and whether the person believes that a particular health practice will be effective in reducing that threat. The perception of a personal health threat is itself influenced by at least three factors: general health values, which include concern about health; specific beliefs about personal vulnerability to a particular disorder; and beliefs about the consequences of the disorder, such as whether they are serious. For example, people may change their diet to include low cholesterol foods if they value health, feel threatened by the possibility of heart disease, and perceive that the threat of heart disease is severe (e.g., Brewer et al., 2007).

Whether a person believes that a health measure will reduce a threat has two subcomponents: whether the person thinks a health practice will be effective and whether the cost of undertaking the measure exceeds its benefits. For example, a person urged to change his diet in response to vulnerability to heart disease may believe that dietary change alone would not reduce the risk of a heart attack or

that changing his diet would interfere with his enjoyment of life too much to justify taking the action. Thus, although he may recognize his personal vulnerability to heart disease, if he lacks the belief that dietary change would reduce his risk, he would likely not make any changes in his behavior.

The health belief model explains people's practices of health habits quite well and has been widely used for several decades to understand health behaviors (Taylor, 2009, for a review). The health belief model also predicts some of the circumstances under which people's health behaviors will change. Interventions that highlight perceived vulnerability but simultaneously increase the perception that a particular health behavior will reduce the threat are somewhat successful in changing health behaviors such as smoking and preventive dental care (e.g., Eiser, van der Plight, Raw, & Sutton, 1985; Ronis, 1992).

Criticisms of the health belief model focus on three issues. The first is that the model addresses risk-related beliefs rather than emotional responses to perceived risk; emotional responses may better predict behavior (e.g., Beckjord, Rutten, Arora, Moser, & Hesse, 2008; Lawton, Conner, & Parker, 2007; Weinstein et al., 2007). Second, the health belief model does not provide an analysis of behavior and the situational forces that may undermine behavior change. In important respects, this represents a reflection of the attitude–behavior problem, namely, that attitudes predict behavior best under certain circumstances. Environmental factors that exert tugs on behavior but not necessarily on attitudes are one source of this discrepancy. Behavior is often under the control of specific situational cues or social norms that may supplant attitudes that would otherwise influence behavior. For example, a person who is trying to stop smoking may find that the urge for an after-dinner cigarette undermines his resolve.

A third more general issue concerns the ability to actually perform the health behaviors in question (e.g., Bandura, 1991; Murphy et al., 2001). Self-efficacy refers to the belief that one will be able to perform a specific behavior, and often, sense of self-efficacy is low. If a person does not believe he will be able to stop smoking, for example, then he may be unlikely to try. A theory that links attitudes directly to behavior and that takes account of the need for a sense of behavioral control is the theory of planned behavior.

Theory of Planned Behavior

According to the theory of planned behavior (Ajzen & Madden, 1986), a health behavior is the direct result of a behavioral intention. Behavioral intentions are made up of three components: attitudes toward the specific action, subjective norms regarding the action, and perceived behavioral control. Attitudes toward the action include beliefs about the likely outcomes of the action and evaluations of those outcomes. Subjective norms are what a person believes others think that person should do (normative beliefs) and the motivation to comply with those normative beliefs. Perceived behavioral control occurs when an individual feels able to perform the action and that the action undertaken will have the intended effect; this component of the model is similar to self-efficacy. These factors combine to produce a behavioral intention and, ultimately, behavior change. To take a simple example, smokers who believe that smoking causes serious health outcomes, who believe that other people think they should stop smoking, who are motivated to comply with those normative beliefs, and who believe that they are capable of stopping smoking will be more likely to intend to stop smoking than individuals who do not hold these beliefs. Behavioral intentions then predict behavior.

The theory of planned behavior suggests points of attack in the design of persuasive messages designed to change health behaviors. A first intervention point is to change attitudes toward the specific action, as by providing information about the likely outcomes of behavior change. Subjective norms, that is, what people believe others think they should do, can also be altered through persuasive communications. For example, binge drinking among college students is a serious problem, but most college students think they are in a minority in regarding it as such. The statistics, in fact, suggest the majority of college students are against binge drinking, and so making these subjective norms more salient can motivate students to alter their behavior (Chan, Neighbors, Gilson, Larimer, & Marlatt, 2007). Perceived behavioral control, that is, the person's perceived ability to perform the action and belief that it will have its intended effect, can also be directly addressed through persuasive messages. If people are told, for example, about the numbers of smokers who succeed in stopping on their own and that often it takes several efforts before one is successful, this may help to motivate the would-be ex-smoker to change behavior.

Finally, the theory of planned behavior provides a novel point of intervention at the level of behavioral intentions. Gollwitzer and colleagues (Schweiger Gallo & Gollwitzer, 2007), for example, have found that when people are induced to set a specific day, time, and place to begin a target behavior, they are more likely to do so than if they merely express a desire to change a behavior. This technology can be profitably used to modify health behaviors as well (Sullivan & Rothman, 2008).

Thus, the theory of planned behavior is not only as a strong theoretical model but also acts as a methodological

heuristic for which cognitions and behaviors can be targeted in interventions. The theory of planned behavior has been applied to many health behaviors, including exercise (Baker, Little, & Brownell, 2003), consumption of soft drinks among adolescents (Kassem & Lee, 2004), participation in health screening programs (Sheeran, Conner, & Norman, 2001), and follow-up appointments for abnormal cervical screening results (Orbell & Hagger, 2006).

Attitude–Behavior Relationship

As theories of health behaviors move closer to predicting behavior, the attitude–behavior relation assumes expected importance. Many communications designed to change people's attitudes can evoke defensive or irrational processes that undermine behavior change. People may perceive a threat to be less relevant to themselves than it really is (e.g., Liberman & Chaiken, 1992), they may falsely see themselves as less vulnerable than others with the same risks (Clarke, Lovegrove, Williams, & Macpherson, 2000), or they may perceive themselves as dissimilar to people who have succumbed to a particular health threat, thereby distancing themselves from the threat (Thornton, Gibbons, & Gerrard, 2002). Moreover, continued practice of a risky behavior can itself compromise the assessment of personal risk (Halpern-Felsher et al., 2001). With these multiple abilities to distort the relevance of health threats, even carefully designed messages may be unable to get around biases in information processing.

Mass Media Messages

Messages in the mass media have been both blamed for poor health habits and credited with helping to change bad ones. On the negative side, when people are confronted with images in the media of people exhibiting poor health behaviors, such as smoking or restricted eating, it can affect their behavior (Anschutz, Van Strien, & Engels, 2008). Yet theories and methods of attitude change can also be used to design mass media messages. The goal of health promotion is to reach as many people as possible and consequently, the mass media can achieve this goal. Evaluations of the effectiveness of mass media appeals, however, suggest some qualifications regarding their success (e.g., Lau, Kane, Berry, Ware, & Roy, 1980). The mass media appear to be most effective in alerting people to health risks that they might otherwise not know about. For example, mass media attention to the Surgeon General's report on the health risks of smoking alerted millions of people to the problem faster than would otherwise have occurred (U.S. Public Health Service, 1982). The media helped spread the safe sex message after sexual practices were implicated in HIV infection. However, whether such messages actually change behavior has been in doubt. The reduction in smoking following the Surgeon General's announcement was not especially impressive. Presenting a consistent media message over time, however, can have a cumulative effect in changing opinions and values associated with health practices. For example, although initially many people counterargued the antismoking messages that the media put forth, the climate of public opinion shifted over time to the side of the nonsmoker (Lichtenstein & Cohen, 1990).

Whether mass media messages alone and, by implication, persuasive communications alone can actually change behavior without behavior change technology, such as cognitive–behavioral interventions, is unclear. Although cognitive–behavioral interventions are one of the most effective ways of attacking health behaviors (see Taylor, 2009, for a review), the effectiveness of mass media messages may have been underestimated. For example, following the initial release of the Surgeon General's report in 1982, many millions of people quit smoking on their own in the years that followed. It often takes several efforts before a person is successful in stopping smoking (Lichtenstein & Cohen, 1990). As such, the mass media may have motivated quitting efforts that eventually were successful. The fact that so many people alter their health habits successfully on their own without medical or psychological interventions implicitly suggests that the cumulative effects of mass media educational interventions may have been underestimated (McBride et al., 2001). Whether currently obese or overweight people will be able to lose weight on their own will provide another interesting test of this point.

Even soap operas have been used in some countries to get people to change their health habits (Williams, 2001), and this venue can be more successful in producing behavior change than lectures or pamphlets, especially in developing countries. When people listen to the radio or watch the stars of their favorite TV dramas practice good health habits, they are more inclined to do the same. For example, with problems such as teen pregnancy and AIDS, dramatic portrayals show some success in changing behavior (Vaughan, Rogers, Singhal, & Swalehe, 2000).

An additional benefit of attitude change campaigns through the mass media is that they may foster a receptive climate for social engineering responses to health problems. For example, without public service announcements addressing the dangers of secondhand smoke or safety restraints for infants, many state legislatures might have left the passive smoking and infant car seat issues unaddressed.

A promising but as yet underutilized tool for modifying health habits is the Internet. The Internet provides low-cost access to health messages for millions of people who can benefit from the information, suggestions, and techniques

for behavior change offered on websites. The Internet also allows researchers to recruit large numbers of participants for studies at relatively low cost, thus enabling data collection efforts as well (e.g., Lenert & Skoczen, 2002).

In summary, social psychologists have been heavily involved in the development and testing of models of health behavior change, with considerable success. These models are widely used to develop persuasive communications to motivate people to change their health habits. In addition, social psychological research has provided inputs to understanding the attitude–behavior discrepancy that can characterize health behaviors. Clearly social psychological approaches to health behavior change will not be sufficient in their own right. For example, social engineering solutions that address unhealthy behaviors by simply outlawing or controlling their practice have the potential to achieve mass behavior change. Without social psychological research, though, understanding the particular times and ways in which people will adhere to health behavior change or comply with social engineering solutions would be incomplete.

STRESS AND ITS MANAGEMENT

Stress and how people manage it is one of the central topics of health psychology, and social psychologists have made substantial contributions to this research area. Stress is a negative emotional experience accompanied by predictable biochemical, cognitive, and behavioral changes that are directed either toward altering the stressful event or accommodating to its effects (Baum, 1990). The study of stress and how people deal with it is important for several reasons. First, many people experience their lives as stressful, and so the problem is widespread. Second, stress compromises health. Chronic stress leads to predictable changes in biological regulatory systems—in particular, the sympathetic nervous system and the hypothalamic-pituitary-adrenocortical axis (McEwen, 2008; see Figure 19.1).

When a person encounters an event that is perceived as harmful or threatening, a set of biobehavioral reactions is initiated. Information from the cortex is transmitted to the hypothalamus, which initiates sympathetic nervous system arousal, or the "fight-or-flight" response first described by Walter Cannon (1932). Sympathetic arousal stimulates the medulla of the adrenal glands, which in turn secrete the catecholamines epinephrine (EP) and norepinephrine (NE). This sympathetic arousal in turn leads to increases in blood pressure, heart rate, sweating, and constriction of peripheral blood vessels, among other changes. The result is the cranked up feeling that people usually experience in response to stress. In addition, the hypothalamic-pituitary-adrenal (HPA) axis is also activated. The hypothalamus releases corticotrophin-releasing factor (CRF), which stimulates the pituitary gland to secrete adrenocorticotropic
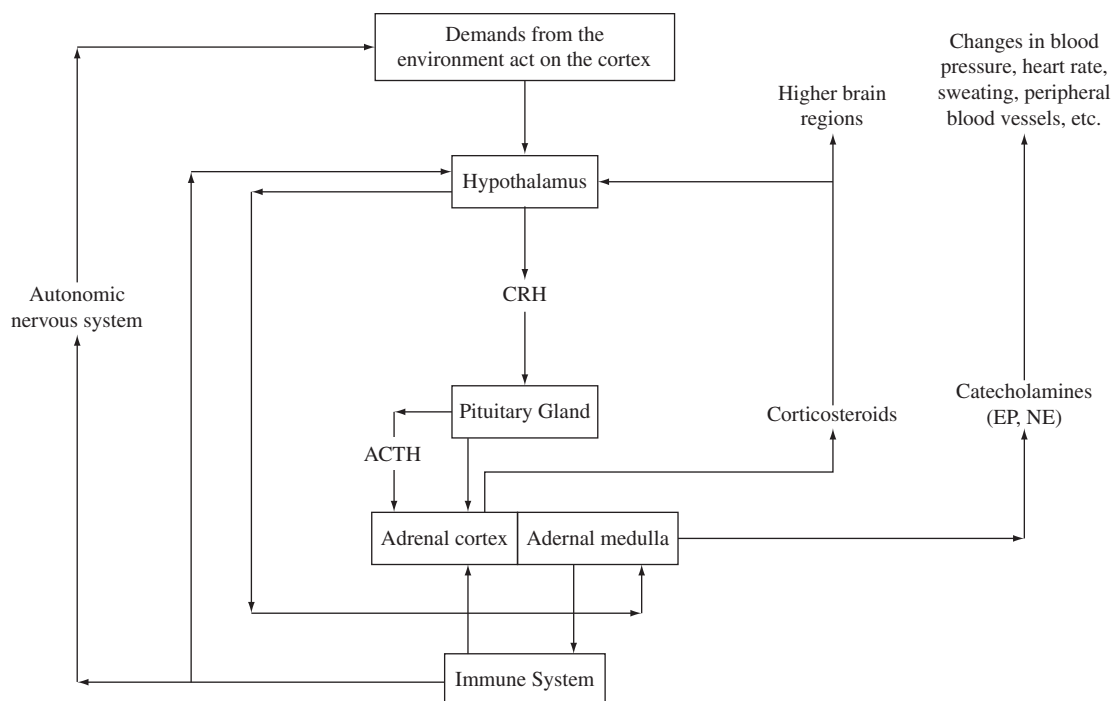

Figure 19.1   The body's stress systems. ACTH = adrenocorticotropic hormone; CRH = corticotrophin-releasing hormone; EP = epinephrine; NE = norepinephrine.

hormone (ACTH), which in turn stimulates the adrenal cortex to release glucocorticoids. Of these, cortisol is especially significant, because it helps conserve stores of carbohydrates and helps reduce inflammation in the case of an injury. It also helps the body return to its steady state following stress.

Engagement of these two stress systems on the short term mobilizes an organism for action, and, thus, these systems are critical for meeting stressful or threatening circumstances. In human prehistory, when these systems evolved, many threats (e.g., attack by a predator, attack by a conspecific, flood or other natural disaster) required instantaneous action, and so biological systems that respond quickly and strongly would have been selected for through the process of natural selection. However, at present, most of the stressors that people encounter are not threats of this nature but are rather grinding, chronic problems such as work stress, commuting, and chronic unpleasant relationships, but these threats, nonetheless, engage these same biological stress regulatory systems. So protective on the short term, the chronic or recurring engagement of these systems is destructive on the long term. The stress systems may lose their resilience or elasticity and, over time, lay the groundwork for a broad array of chronic illnesses (McEwen, 1998). Accordingly, understanding what experiences are stressful and what individual differences and group processes help people manage stress better is a high-priority topic in health psychology.

Initially, researchers focused on stressful events themselves, called stressors. Such events include noise, crowding, a bad relationship, or a round of job interviews, for example. However, in the best tradition of Emmanuel Kant and Kurt Lewin, researchers soon came to realize that stress is not inherent in events themselves; it depends heavily on how it is appraised and interpreted. Events are perceived as more stressful when personal resources are perceived to be insufficient to meet the demands of the environment. Stress, then, is determined by person–environment fit (Lazarus & Folkman, 1984).

Early research on stress focused on the fight-or-flight response, a perspective that initially grew out of animal research addressing aggression and fleeing in response to stressful events. Walter Cannon (1932) imported this perspective to human behavior. That is, in response to stress a person may fight or mount aggressive or assertive responses to stress, or flee, which in humans, is often manifested as social withdrawal or withdrawal through substance use. Even such behaviors as television watching may be interpreted as "flight." Social psychologists, however, have noted that social responses to stress are the most common ways in which human beings deal with it. This has given rise to a focus on affiliative responses to stress.

Specifically, Taylor and colleagues (2000) suggested that in addition to behavioral manifestations of fight or flight, people "tend and befriend." Tending involves nurturant activities that protect offspring and that promote safety and reduce distress. Befriending is the creation and maintenance of social networks that aid in this process. We return to this issue in the section on social support.

Perceptions of Stress

Social cognition approaches to stress have led to several important insights. Because the construal of events so heavily influences the experience of stress, psychologists often look at both the objective and the subjective experience of stress to predict mental and physical health outcomes. For example, Cohen, Tyrrell, and Smith (1993) asked community residents to indicate whether specific events had occurred in their lives that are consensually judged to be stressful and also to complete a measure of perceived stress. They then exposed these participants to a common cold virus and found that both objectively assessed stressful life events and perceived stress both predicted whether people developed a cold. Studies such as these indicate clearly that the perception of stress is important to the psychological and physical fallout that results.

Because events are not always inherently stressful, people respond to cues that make them more likely to appraise events as stressful. What are those cues? People are more vulnerable to stress when the events occur in central life domains than in peripheral ones. Work and relationship stressors, for example, are typically important ones. Events are also more likely to be perceived as stressful if they are negative, uncontrollable, ambiguous, and overwhelming. Although any event that produces change in one's life activities can be perceived as stressful, negative experiences, such as coping with a death in the family or getting divorced, produce more psychological distress and physical symptoms then do positive ones (see Taylor, 2009, for a review).

Uncontrollable or unpredictable events are more stressful than controllable or predictable ones. When people feel that they can predict, modify, or terminate an aversive event, or at least feel that they have access to someone who can, they experience it as less stressful (Thompson, 1981). Ambiguous events are typically perceived to be more stressful than clear-cut ones because in the former case, energy must be devoted to understanding the stressor rather than finding solutions to it. The ability to take confrontative action or at least adjust emotionally to a well-defined stressor usually produces less distress, better coping, and lower biochemical responses to stress. Finally, overloaded people are more stressed than people with fewer tasks to perform.

In the work literature, job overload, or the perception that one must do too much in too short a period of time, is a chief cause of job dissatisfaction (e.g., Pearson, 2008), and it contributes to adverse health outcomes as well (Steptoe, Siegrist, Kirschbaum, & Marmot, 2004).

Stressors need not be present for people to experience stress. The anticipation of stress can be at least as threatening as its occurrence (Wirtz et al., 2006), and aftereffects of stress often last indefinitely. For example, in one study, medical students wore blood pressure monitors on an unstressful lecture day, the day before an important exam, and during the exam itself. Although the lecture day was characterized by stable patterns of cardiovascular activity, cardiovascular activity on the preexamination day when the students were worried about the exam was as high as that seen during the examination itself (Sausen, Lovallo, Pincomb, & Wilson, 1992).

Although the anticipation of stress and its aftereffects can be inherently stressful, people also are resilient. They have the ability to adapt psychologically to moderate or predictable stressors. With the exception of vulnerable people, such as children, the elderly, and people already under intense stress, most people are able to incorporate some stress into their lives (Wirtz et al., 2006). What makes people resilient?

An early insight from social psychology (Linville, 1987) maintained that when people are invested in multiple aspects of their lives, as opposed to focusing their personal rewards primarily on one life domain, they may be buffered against setbacks in other areas. Research on occupational stress has provided substantial support for this hypothesis. Married, working women have been heavily studied because of the potential for role conflict among the worker, wife, and mother roles and for potential role overload due to the sheer number of activities those roles encompass. Initially, psychologists anticipated that working, married women with responsibilities for child care would be overwhelmed and, consequently, be one of the most stressed groups among working adults. Surprisingly, there appear to be positive effects of combining home and work responsibilities. On the one hand, juggling heavy responsibilities at both work and home can undermine the enjoyment of both sets of tasks, but combining motherhood with employment can be beneficial for women's well-being, improving self-esteem, self-efficacy, and life satisfaction (Verbrugge, 1983). These findings occur primarily for women who have enough help in the home. Combining employment and marriage may be protective for men as well, with respect to both health and mental health (Burton, 1998).

This research on multiple roles is converging on the idea that stress is lower when one has sources of meaning in one's life. The protective effects of employment, marriage, and parenting on psychological distress and health attest to the salutary effects of meaningful social roles (Burton, 1998). We return to this issue.

Coping With Stress

People manage to tolerate stress in their lives primarily because they develop effective ways of coping. Coping is defined as the thoughts and behaviors that people use to manage the internal and external demands of situations that are appraised as stressful (Taylor & Stanton, 2007). Because stress is so heavily dependent on appraisals, social psychologists have studied individual differences in how a potentially stressful event is appraised and how people will cope with that event as a result.

First, we consider people who do not handle stress well. Certain people are predisposed by their personalities to experience stressful events as especially stressful, which in turn affects their psychological distress, social relationships, physical symptoms, and rates of illness. This research has focused especially on negative affectivity, a pervasive negative mood marked by anxiety, depression, and hostility. Closely related to neuroticism, negative affectivity predicts both psychological distress and stronger biological stress responses, which may provide a biopsychosocial pathway linking negative affectivity to adverse health events (e.g., Polk, Cohen, Doyle, Skoner, & Kirschbaum, 2005).

In some social psychological research, negativity is treated as a nuisance variable, in that people who report high levels of negative affectivity also report high levels of distressing physical symptoms (Watson & Pennebaker, 1989); in many cases, there is no evidence of an underlying physical disorder (see, for example, Cohen, Doyle, Turner, Alper, & Skoner, 2003). Although negative affectivity no doubt inflates people's perception of stress and contributes to self-reports of physical symptoms and psychological distress, chronic negative affect also directly affects the likelihood of physical health disorders (e.g., Charles, Gatz, Kato, & Pedersen, 2008). For example, depression is a well-documented contributor to a risk for coronary artery events and for a repeat event following an initial one (Bleil, Gianaros, Jennings, Flory, & Manuck, 2008; Musselman & Nemeroff, 2000). As such, chronic negative affect needs to be considered as not only a potential nuisance variable that conflates reports of symptoms, but also as a psychobiological pathway to disease.

Coping Resources

Just as negative affect and neuroticism adversely affect health, positive mental states and psychosocial resources are associated with better mental and physical health

(Cohen & Pressman, 2006; Ironson & Hayward, 2008). Social psychologists have been actively involved in identifying the specific psychosocial resources that people bring to stressful events to help them cope more effectively. One such resource is optimism (Scheier, Carver, & Bridges, 1994). People who are high in dispositional optimism cope more effectively with stress and reduce their risk for illness and improve their chances for recovery (e.g., Ironson & Hayward, 2008; Segerstrom, 2006). An important reason why optimism is a valuable resource is because it leads people to take more active coping measures (Nes & Segerstrom, 2006). For example, optimists cope more effectively with the stress of college because they are more likely to seek out social support and to reinterpret positively the stressful circumstances they encounter (Brissette, Scheier, & Carver, 2002).

When people have a dispositional sense of psychological control, namely, that they can determine their own behavior, influence the environment, and bring about desired outcomes, they cope more successfully. Perceived control is related to self-efficacy, which is the more narrow perception that one can take the necessary actions to obtain a specific outcome in a specific situation (Bandura, 1977). Both types of beliefs (control, self-efficacy) help people cope with a wide variety of stressful events (e.g., Schwerdtfeger, Konermann, & Schönhofen, 2008; Wrosch, Schulz, Miller, Lupien, & Dunne, 2007).

A sense of control is especially important for vulnerable populations such as medical patients, children, and the elderly who are at risk for health problems (Wrosch et al., 2007). Initially spawned by social psychologist Irving Janis's work with medical patients, the principle of psychological control is so powerful that it is now used extensively in medical interventions to help people cope with surgery and other noxious medical procedures. As noted earlier, it is also used in interventions to promote good health habits. Certainly there are qualifications to the idea that psychological control is always beneficial (e.g., Thompson, Cheek, & Graham, 1988). For example, control may be aversive if it gives people more responsibility than they want or feel able to assume (e.g., Chipperfield & Perry, 2006), but on the whole, it is a beneficial resource (e.g., P. Smith, Frank, Bondy, & Mustard, 2008).

However, limitations on attention can themselves lead to loss of control. When attentional resources are limited, people focus on the most salient cues in the environment and neglect less salient stimuli. The resulting "attentional myopia" can lead to a loss of control over behavior if the cues that are salient promote a behavior that violates personal standards or intentions (Mann & Ward, 2007). Thus, for example, with attentional load, self-control over eating may erode, and a person may end up eating much more than

would otherwise be the case. However, if the salient cues in the environment suggest self-control, for example, cues suggesting the importance of a healthy diet, then limitations on attention may actually lead to more self-control rather than less self-control. The attentional myopia model has been examined with respect to eating and smoking, among other health behaviors, and, as such, implicates stress and attentional processes in the ability to exert self-control over health behaviors (Mann & Ward, 2007).

Research on the self has been an especially valuable source of insights and interventions for understanding successful coping. Self-esteem can act as a resource to help people appraise stressful events as less so. For example, in one study of students facing exams, those with high self-esteem were less likely to be anxious (Shimizu & Pelham, 2004). These appraisal effects of self-esteem appear to be most protective at low to moderate effects of stress; at higher levels of stress, the events themselves can overwhelm the beneficial contribution of self-esteem (e.g., Whisman & Kwon, 1993). Self-esteem appears to affect health at least in part by affecting the quality of social ties (Stinson et al., 2008).

Interventions to enhance a sense of self improve responses to stressful events. Drawing on Steele's (1988) self-affirmation theory, for example, Creswell and associates (Creswell, Welch, Taylor, Sherman, Gruenewald, & Mann, 2005) assigned some people to focus on and write about their most important value, whereas others wrote about a less important value. All participants then went through laboratory stress tasks including mental arithmetic and delivering a speech to an unresponsive audience. People who had affirmed an important personal value showed lower biological responses to stress and, among those with high self-esteem, experienced less psychological distress as well.

Related to self-esteem is a cluster of personal qualities that has been called ego strength, characterized by dependability, emotional stability, trust, and lack of impulsivity (e.g., Terracciano, Löckenhoff, Zonderman, Ferrucci, & Costa, 2008). This cluster also has health benefits. For example, in a longitudinal investigation, Friedman and colleagues (1995) studied children who had first been interviewed in 1947. Some had impulsive and undercontrolled personalities, whereas others showed signs of ego strength. Those high in ego strength as children lived longer as adults. One reason is that those high in ego strength were less likely to practice bad health habits, including smoking and excessive alcohol consumption. Related to these findings, conscientiousness also affects health and longevity. In a meta-analysis of 20 studies, Kern and Friedman (2008) found that conscientiousness was strongly related to health across the life span.

Conscientious people may be more successful in avoiding situations that could harm them or may more reliably practice good health habits (Hampson, Goldberg, Vogt, & Dubanoski, 2006).

In short, a broad array of individual differences that include both protective and vulnerability factors have been studied by personality and social psychologists and yielded the conclusion that, just as some people appear to have an illness-prone personality marked by neuroticism and negative affect, others possess a health-prone personality characterized by optimism, a sense of control, conscientiousness, self-esteem, and resilience.

Approach and Avoidance Coping

Social psychologists have also studied broad proclivities for managing stressful events. For example, some people cope with threatening events by using an avoidant or minimizing coping style, whereas others are more likely to use an approach-oriented style that is confrontative or at least vigilant, by gathering information or taking direct action. Reflecting a core motivational construct (e.g., Davison, Pennebaker, & Dickerson, 2000), the approach–avoidance continuum maps onto broader theories of biobehavioral functioning, including Gray's (1990) behavioral approach and inhibition orientations, referred to earlier. Examples of active and approach-oriented coping are problem solving, seeking social support, and creating outlets for emotional expression. Coping through avoidance includes both cognitive (distraction) and behavioral (substance abuse) methods. Some approaches, such as spiritual coping, can serve either approach-oriented or avoidance goals. Although neither style is always more effective in managing stress, approach-related coping is more successful when one can focus on the information in the situation and if there are specific actions that can ameliorate the stressor (Taylor & Stanton, 2007).

Why are approach-related coping methods generally more successful than avoidant ones? People who cope with threatening events through approach-related methods engage in the cognitive and emotional efforts needed to manage long-term threats. Although they may pay a price in anxiety and biological reactivity in the short term (e.g., T. W. Smith, Ruiz, & Uchino, 2000), in the long term, they may successfully modify the stressor and change their reactions to it as well. For example, people who coped with the September 11 attacks through avoidant coping strategies fared worse psychologically over the long term compared with those who coped with their distress through more active coping (Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). Disengaging from coping efforts, then, can predict psychological difficulties over time.

Problem-Focused and Emotion-Focused Coping

Another useful distinction in the science of coping is between problem-focused coping, which involves attempts to do something active or constructive about the stressful event, and emotion-focused coping, which involves a focus on or effort to regulate emotions experienced in response to the stressful event (Lazarus & Folkman, 1984). Typically, people use both problem-focused and emotion-focused coping to deal with stressful events.

Emotion-focused coping, however, includes coping of two kinds. Ruminating over a stressful event, that is, having negative, recurring thoughts, is generally maladaptive for both psychological and physical health (e.g., Thomsen et al., 2004). However, emotional-approach coping, which involves clarifying, focusing on, and working through the emotions experienced in conjunction with a stressor (Stanton, Danoff-Burg, Cameron, & Ellis, 1994), has benefits for a broad array of stressful situations.

Resilience

Increasingly, social psychologists have turned their attention to the origins and effects of resilience. Positive life events, positive emotions, and opportunities for rest, relaxation, and renewal can help people cope more effectively with life stressors or prevent stressful events from taking a toll on health (e.g., Ong, Bergeman, Bisconti, & Wallace, 2006; Ryff & Singer, 2000). Psychological well-being reliably affects long-term survival in both healthy people and people with health disorders (Chida & Steptoe, 2008). Even an action as simple as taking a vacation is beneficial for middle-aged men at risk for heart disease (Gump & Matthews, 2000) and perhaps for other groups as well.

Resilience is also a reliable individual difference. Some people recover from stressful events quickly, whereas others do not. Psychological resilience is characterized by the ability to bounce back from negative emotional experiences by adapting flexibly to the changing demands of the environment. Research on emotions, such as Fredrickson's theory that positive emotions allow people to "broaden and build" their coping resources (Tugade & Fredrickson, 2004), has provided an important theoretical and empirical base for both understanding people's reactions to stressful events and creating interventions to improve coping (e.g., Fredrickson, Tugade, Waugh, & Larkin, 2003). Being able to experience positive emotions in the context of otherwise intensely stressful events is one of the coping methods on which resilient people typically draw. For example, being able to experience positive events such as gratitude or love following the September 11 attacks enabled many people to cope with these distressing events and to

experience posttraumatic growth (Tugade & Fredrickson, 2004). Resilience can be characterized by posttraumatic growth: people report many ways in which they have actually benefitted from traumatic events, such as reordering their priorities, more fully appreciating what they have, and valuing personal relationships more (Low, Bower, Kwan, & Seldon, 2008; Taylor, 1983).

Emotional Disclosure

Considerable social psychological research has examined the mental and physical health benefits of emotional disclosure, especially in the context of traumatic or stressful events. Fairly consistently, this research finds beneficial effects on health (Pennebaker & Chung, 2007). The benefits of disclosure stem in part from the research just discussed, which reveals the benefits of emotion-focused coping.

For years, researchers suspected that when people undergo traumatic events and cannot or do not communicate about them, those events may fester inside them, producing obsessive thoughts and physiological reactivity. Indeed, the more people are forced to inhibit thoughts, emotions, and behaviors, the more their underlying physiological activity increases (Pennebaker, 1997). Consequently, the ability to confide in others or to consciously confront one's feelings may eliminate the need to obsess about and inhibit the trauma and reduce concomitant physiological reactivity.

In an initial investigation of this intriguing hypothesis, Pennebaker and Beall (1986) had 46 undergraduates write about either the most traumatic and stressful event in their lives or about trivial topics. Although writing about traumas was more upsetting immediately after the essays were completed than writing about trivial topics, the students were less likely to visit the student health center for illness for the following 6 months. Subsequent research found that when people talked about traumatic events, their skin conductance, heart rate, and blood pressure all decreased (Pennebaker, Hughes, & O'Heeron, 1987). Research has also uncovered beneficial long-term effects of emotional disclosure on immune functioning (e.g., Petrie, Booth, Pennebaker, Davison, & Thomas, 1995).

Drawing on this method, interventions have employed written or oral exercises designed to encourage emotional expression. Such interventions have lead to improved health among AIDS patients (e.g., Petrie, Fontanilla, Thomas, Booth, & Pennebaker, 2004), breast cancer patients (Stanton et al., 2002), and asthma and rheumatoid arthritis patients, among other conditions (Norman, Lumley, Dooley, & Diamond, 2004). Even writing about emotional topics via e-mail can improve health (Sheese, Brown, & Graziano, 2004). Writing interventions have also been used to help people cope with debilitating treatments such as postoperative recovery (Solano, Donati, Pecci, Persichetti, & Colaci, 2004).

Examining the process of emotional disclosure in health settings has been helpful for understanding the underlying mechanisms whereby these effects occur, and as a result, has enriched the theory that gave rise to these studies. There are cognitive benefits associated with talking about or writing about a traumatic, event such as organizing one's thoughts and being able to find meaning in the experience (Lepore, Ragan, & Jones, 2000). Talking or writing about traumatic or stressful events provides an opportunity for emotional-approach coping (Lepore & Smyth, 2002) and for affirming personal values (Creswell et al., 2007). Talking with others allows one to gain information or insight about a stressful event or about effective coping. It may also elicit emotional support from others.

Coping With Chronic Illness

Social psychologists have also studied how people cope with, adjust to, and manage the threats associated with chronic illness, and these insights have enriched social psychological theories. Clinical health psychologists studying coping with chronic illness tend to focus on the problems people experience and on psychological distress. By contrast, social psychologists have focused on responses to chronic illness that help restore or maintain psychological functioning. As the next section shows, attribution theory and social cognition provide valuable frameworks for addressing these issues.

Beliefs About the Cause of an Illness

People with chronic illnesses often develop theories about the origins of the illness (e.g., Costanzo, Lutgendorf, Bradley, Rose, & Anderson, 2005). These theories include stress, physical injury, disease-causing bacteria, and God's will. Of potentially greater significance is where patients ultimately place the blame or responsibility for their illness: Do they blame themselves, another person, the environment, or a quirk of fate?

Self-blame for chronic illness is widespread. Patients frequently believe they brought on their illnesses through their own actions. Sometimes, these perceptions are to some extent correct. Poor health habits, such as smoking, improper diet, or lack of exercise, contribute to heart disease, stroke, or cancer. But in many cases, a patient's self-blame is ill placed, as when a disease is caused primarily by a genetically based defect. What are the consequences of self-blame? Unfortunately, there is no definitive answer to this question. Some researchers have found that self-blame can lead to guilt, self-recrimination, or depression (e.g., Bennett, Compas, Beckjord, & Glinder, 2005). However,

perceiving the cause of one's illness as self-generated may also represent an effort to assume control over the disorder; such feelings can be adaptive for coming to terms with the disorder. It may be that self-blame is adaptive under certain conditions but not others (Taylor, 2009).

Research uniformly suggests that blaming another person for one's disorder is maladaptive (Affleck, Tennen, Pfeiffer, & Fifield, 1987; Taylor, Lichtman, & Wood, 1984). For example, some patients believe that their disorder was brought about by stress caused by family members, ex-spouses, or colleagues at work. Blame of this other person or persons may be tied to unresolved hostility, which can interfere with adjustment to the disease. By contrast, forgiveness is tied to fewer health complaints (Lawler et al., 2005).

Beliefs About the Controllability of the Illness

Patients develop a number of control-related beliefs with respect to chronic illness. They may believe, as do many cancer patients, that they can prevent a recurrence of the disease through good health habits or even sheer force of will. They may believe that by complying with treatments and physicians' recommendations, they achieve vicarious control over their illness (e.g., Helgeson, 1992). They may believe that they personally have direct control over the illness through self-administration of a treatment regimen. These control-related beliefs may or may not be accurate. For example, if patients do maintain a treatment regimen, they can exercise real control over the possibility of recurrence or exacerbation of their illness. On the other hand, the belief that one's illness can be controlled through a positive attitude may or may not be correct.

Beliefs in control (or a sense of self-efficacy) with respect to the disease and its treatment are generally but not always adaptive. For example, cancer patients who believe that they have control over their illness are better adjusted than are patients without such beliefs (Thompson, Nanni, & Levine, 1994). A sense of control or self-efficacy improves adjustment among people with a variety of chronic health problems, such as sickle-cell disease (Edwards, Telfair, Cecil, & Lenoci, 2001), chronic obstructive pulmonary disease (Kohler, Fish, & Greene, 2002), AIDS (Taylor, Helgeson, Reed, & Skokan, 1991), ovarian cancer (Norton et al., 2005), and patients recovering from angioplasty (Helgeson & Fritz, 1999). Children also benefit from perceived control. Griffin and Chen (2006), for example, found that high perceived control was associated with better asthma control. Even for patients who are physically or psychosocially badly off, perceptions of control facilitate psychological adjustment (McQuillen, Licht, & Licht, 2003). Perceived control or self-efficacy may even help to prolong life. A study of patients with chronic obstructive pulmonary disease found that those with high self-efficacy expectations lived longer than those without such expectations (Kaplan, Ries, Prewitt, & Eakin, 1994).

Not all studies find that feelings of control are adaptive in adjusting to chronic conditions. When real control is low, efforts to induce it or exert it may be unsuccessful and backfire (Burish et al., 1984; Tennen, Affleck, Urrows, Higgins, & Mendola, 1992; Toshima, Kaplan, & Ries, 1992). When perceived control is dramatically disconfirmed, as with a cancer recurrence, worse adjustment may result. For example, Tomich and Helgeson (2006) found that initial perceptions of personal control over breast cancer were associated with women's reports of worse mental and physical functioning 5 years later if they had sustained a recurrence. On the whole, however, control appears to be helpful for coping with many aspects of chronic illness.

Positive Changes in Response to Chronic Illness

As noted, clinical health psychology research has focused disproportionately on the negative emotions and experiences that are produced by chronic illness. However, many people experience positive emotions or beliefs (Cordova, Cunningham, Carlson & Andrykowski, 2001; McFarland & Alvaro, 2000; Ryff & Singer, 1996; Scheier, Weintraub, & Carver, 1986), including personal growth or a sense of meaning in life (Taylor, 1983). These reactions may occur because chronically ill people perceive that they have narrowly escaped death or because they have reordered their priorities in a more satisfying way.

Studies with a broad array of chronically ill populations have found that many, sometimes most, chronically ill patients find at least some beneficial changes in their lives, including an increased ability to appreciate each day and the inspiration to do things now rather than postponing them (R. L. Collins, Taylor, & Skokan, 1990; Ostir, Berges, Ottenbacher, Clow, & Ottenbacher, 2008; Mohr et al., 1999). People report that they are putting more effort into their relationships and believe they have acquired more awareness of others' feelings and more empathy and compassion for others. They report feeling stronger and more self-assured as well. Benefit finding and positive emotions correlates not only with psychological adjustment but also with better social functioning and health (Aspinwall & MacNamara, 2005; Danoff-Burg & Revenson, 2005; Low, Stanton, & Danoff-Burg, 2006). Two studies compared the quality of life experienced by cancer patients with a normal sample free of chronic disease, and both studies found the quality of life experienced by the cancer sample to be higher than that of the non-ill sample (Danoff, Kramer, Irwin, & Gottlieb, 1983; Tempelaar et al., 1989).

Helgeson, Reynolds, and Tomich (2006) completed a meta-analysis of the benefit-finding literature and found

that, for the most part, perceived growth is related to positive emotional functioning and low risk of depression. The ability to reappraise one's situation positively is related to a more positive mood (Pakenham, 2005) and to post-traumatic growth in women with breast cancer (Manne et al., 2004; Sears, Stanton, & Danoff-Burg, 2003), especially among women with more advanced disease. Finding meaning in a chronic illness and coping through religion can also improve adjustment to chronic illness (Calhoun, Cann, Tedeschi, & McMillan, 2000; Helgeson, 2003; Schanowitz & Nicassio, 2006). Perceptions of growth are related to lower anxiety, reduced distress, better quality of life, and a more positive subjective rating of physical health.

Some investigators have used the theory of cognitive adaptation to examine patients' reactions to chronic illness. The theory of cognitive adaptation (Taylor, 1983) maintains that following a severe threat to the self, such as a chronic illness diagnosis, people are able to restore their psychological functioning by shoring up their self-esteem, their sense of mastery over the events around them, optimism about the future, and the experience of meaning in the event or in their lives more generally. In a test of this theory, Moore, Norman, Harris, and Makris (2007) recruited patients with venous thrombosis, had them complete measures of these variables, and related them to outcome variables of anxiety, depression, thrombosis-related worries, and quality of life. Mastery, self-esteem, and optimism were significantly associated with good adjustment, as the theory predicts. Similarly, using this theoretical framework, Helgeson (2003) found that a positive sense of self, optimism, and personal control were associated prospectively with good adjustment to coronary heart disease and a reduced likelihood of a repeat cardiac event over a 4-year follow-up, controlling for initial adjustment (see also Helgeson & Fritz, 1999).

There is, however, some contradictory evidence regarding perceived control and recurrence. Because personal growth also arises in the context of coping with an extremely stressful event, perceived growth can be tied to more intrusive thoughts about the event. This seemingly paradoxical relationship between experiencing intrusive thoughts and the perception of personal growth may be signs that people are working through the implications of the event for their lives. In the process of conducting this cognitive and affective work, personal growth may result, but intrusive thoughts may be inevitable as well. For example, Moore and colleagues (2007) found that finding meaning in the illness experience was associated with elevated distress, perhaps indicative of enduring concern about the disorder (see also Tomich & Helgeson, 2004). This pattern indicates that perceived growth is not merely the result of a halo effect induced by successful coping with a stressor

but neither is perceived growth a definitive pathway to good psychological functioning.

As these findings suggest, the time that has elapsed since a trauma may be an important moderator predicting the relation of personal growth to psychological adjustment (Tedeschi & Calhoun, 1996). Personal growth cannot occur immediately following an event, and in the early stages of adjusting, benefit finding is likely to co-occur with psychological distress. Over time, however, distress may recede, whereas personal growth may be maintained or enhanced (Helgeson et al., 2006). From the standpoint of basic research, the findings suggest the importance of different coping strategies for different phases of adaptation to disorders, indicating the fact that the search for meaning may be more beneficial at some times than at others. In terms of applications, the findings suggest that interventions to help people restore their sense of self-esteem, optimism, and mastery about the future may be useful.[1]

In the realm of psychosocial resources and coping, one resource in particular stands out, and that is social support. Because social psychologists have made extensive contributions to this literature, I cover it in detail here.

SOCIAL SUPPORT

A topic central to social psychologists' health-related research is social support. Social support is the perception or experience that one is loved and cared for by others, esteemed and valued, and part of a social network of mutual assistance and obligations (Wills, 1991). Social support may come from a partner, relative, friends, coworkers, social and community ties, or even a devoted pet (dogs are the best; Allen, 2003). The benefits of social support are thought to have evolved from human beings' most significant adaptation to threat, namely, group living. Whereas other animals are armed with sharp teeth or claws and defensive resources such as thick skin or speed, primates depend critically on group living for survival.

Taxonomies of social support have suggested several specific beneficial forms. *Informational support* occurs when one person helps another person to understand stressful conditions better and to select what resources

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[1]Of interest is the fact that benefit finding is related to reduced distress especially for health stressors, relative to other stressors involving personal trauma. However, studies of personal growth and health disproportionately use cross-sectional as opposed to longitudinal data and show a modest gender skew in the direction of more female participants, and so the contribution of these issues to the conclusions in the literature is difficult to assess.

and coping strategies may be needed to deal with these conditions. *Instrumental support* involves the provision of tangible assistance such as services, financial support, and other forms of specific aid or goods. *Emotional support* involves providing warmth or nurturance to another person and reassuring the person that he or she is a valuable individual for whom others care. Critical to the definition of social support, however, is the fact that the perception that these resources are available, should they be needed, is beneficial, and not only the actual experience of social support. Indeed, as will be evident later in this section, sometimes the actual use of social support resources has hidden costs.

Social support is typically measured either in terms of structural social support or functional support (Thoits, 1995). Structural support is the number of social relationships a person has and the interconnectedness among those relationships, an assessment also known as social integration. Functional support is assessed in terms of the specific functions (informational, instrumental, and emotional) that a specific member of one's network may serve for a person.

An early debate in the social support literature questioned whether social support is generally beneficial to mental and physical health during nonstressful as well as stressful times (the direct effects hypothesis) or whether the health and mental health benefits of social support are evident chiefly during in periods of high stress (the buffering hypothesis; Cohen & Wills, 1985). Both effects appear to hold. When social support is assessed through measures of social integration, direct effects of support on mental and physical health are typically found (Thoits, 1995), but not buffering effects, whereas the perception that emotional support is available is tied to both direct and buffering effects (e.g., Wethington & Kessler, 1986).

Benefits of Social Support

Hundreds of studies attest to the fact that social support consistently reduces psychological distress during times of stress, such as depression and anxiety. It also promotes psychological adjustment to chronically stressful conditions, such as acute or chronic illness (Taylor, 2007). Social support contributes directly to physical health and survival as well (e.g., Weihs, Enright, & Simmens, 2008). A classic study by Berkman and Syme (1979) followed nearly 7,000 California residents over a 9-year period and assessed their social contacts and death rates. People who lacked social and community ties had a higher death rate from all causes than those who cultivated or maintained their social relationships. On average, having social contacts predicted an increased 2.5 years of life. The converse is also true. Social

isolation is a significant risk for morbidity and mortality with effect sizes on par with or exceeding those of smoking, blood pressure, lipids, obesity, and physical activity (House, Landis, & Umberson, 1988).

By what biological routes does social support affect health outcomes? Much research has focused on stress pathways. As noted, although sympathetic and HPA axis responses to stress have short-term protective effects, over time they have adverse long-term implications for health, including an elevated risk for many chronic diseases (McEwen, 2008; Saxbe, Repetti, & Nishina, 2008). Stress also affects the risk for adverse health outcomes by altering immune functioning in ways that leave a person vulnerable to opportunistic diseases and infections or by diminishing immune system sensitivity to cortisol, which would normally terminate stress-induced inflammation; these twin effects account for the fact that stress may both increase the risk for infectious disorders (immunosuppression) and also exacerbate or confer risk for diseases in which the central feature is excessive inflammation, such as allergies, autoimmune disease, rheumatoid disorders, and cardiovascular disorders (Miller, Cohen, & Ritchey, 2002). All of the bodily systems' functioning is interrelated. To the extent that social support can keep sympathetic nervous system and HPA axis responses to stress low, it may have beneficial effects on other systems, such as immune functioning, as well and thus affect health in a positive direction.

There may be other biological systems that underlie the benefits of social support. Oxytocin and the opioid system (the body's natural pain reduction system) may be implicated in the neuroendocrine and physiological benefits of social support. For example, oxytocin is known to be released in response to social contact, and it has been tied to reduced sympathetic nervous system and HPA axis responses to stress (Taylor et al., 2000).

The benefits of social support are experienced, in part, because it helps people to stave off illness altogether. For example, Cohen and associates intentionally infected healthy community volunteers with a cold or flu virus by swabbing the inside of their nasal passages with virus-soaked cotton swabs. They found that people experiencing high stress were more likely to develop infections than those under less stress, but people with more social ties were less likely to become ill following exposure to the virus; if they did, they were able to recover more quickly than people with fewer social ties (Cohen, Doyle, Skoner, Rabin, & Gwaltney, 1997). Overall, however, the effect of social support on the likelihood of succumbing to illness is a modest effect; this modest size may be due to the fact that social contacts contribute to illness through contagion or the creation of stress but also promote health through social support, effects that at least partially offset

each other (Taylor, 2009). Social support also contributes to health outcomes by helping people to recover more quickly from disorders they already have (e.g., Cohen et al. 1997).

Qualifications

Not all research shows beneficial effects of social support. During stressful conditions, sometimes the presence of a friend or stranger actually increases distress and biological responses to stress (Kiecolt-Glaser & Newton, 2001). For example, whereas the presence of one's partner appears to reduce stress-related physiological and neuroendocrine reactivity for men, the presence of one's male partner often enhances reactivity for women (Kiecolt-Glaser & Newton, 2001). The presence of a friend or partner may increase evaluation apprehension, and so this apprehension may also undermine the experience of support (Lepore, 1998).

A *New Yorker* cartoon pictures one woman enthusiastically telling another that what she likes best about their friendship is that they never have to see each other or talk. The kernel of truth captured by this cartoon suggests that, in fact, many relationships are better for the having of them than for the using of them. Actually making use of one's social support can have costs. For example, Bolger, Zuckerman, and Kessler (2000) documented the benefits of "invisible support" and the costs of actually utilized support. In their studies, couples completed daily diaries regarding the stressors they experienced, how distressed they were in response to them, and whether they had provided or received social support from a partner. Supportive acts that were reported by the support recipient did not promote adjustment, and rather, exacerbated distress. However, supportive acts provided by the support provider but unrecognized by the recipient did provide stress-reducing benefits. Thus, the most effective support can be "invisible" to the recipient, that is, it occurs without the recipient's awareness (see also Gleason, Iida, Shrout, & Bolger, 2008).

Overt recognition of others' social support may undermine adjustment for several reasons. It may, for example, create a sense of obligation in the support recipient and lead to a feeling that the help will need to be reciprocated. It may undermine self-esteem by leading people to feel that they are perceived as unable to handle their difficulties on their own. It may produce distress because a person feels that he or she has burdened the social network. In any case, at least under some circumstances, the benefits of social support come about because people in one's social network quietly make one's life easier and because, on some level, people carry their social support networks around in their heads to buffer them against stress without having to recruit their networks actively. These findings should not lead to the conclusion that social support is only effective when it is invisible or perceived and not when it is utilized. Although there are conditions in which needing, asking for, and getting social support entail costs, there are also circumstances when receiving support from others is calming, reassuring, and helpful. For example, sometimes talking through a problem with a friend leads to clarity or specific information that points to solutions. An important issue for future research, then, is to identify those circumstances when explicit exchanges of support do more harm than good and when they do more good than harm.

Considerable research has explored the characteristics of socially supportive networks. Having a confidant such as a spouse or partner may be the most effective social support (Collins & Feeney, 2000), especially for men (e.g., Broadwell & Light, 1999). Accordingly, married people report higher perceived support than unmarried people do (Thoits, 1995). There are benefits to having at least one close friend as well, but having a dozen or more close friends may add relatively little to the benefits of social support for psychological health. Indeed, one of the risks of social support networks is that dense networks that are highly interactive can create stress, and intrusive social support from one's family and friends may exacerbate the impact of other stressors (Shumaker & Hill, 1991). As George Burns said "happiness is having a large, loving, caring, close knit family in another city."

Sometimes, support providers give poor advice, fail to provide tangible assistance, or provide inappropriate or too little emotional support thereby reducing or eliminating the effectiveness of the effort (Bolger, Foster, Vinokur, & Ng, 1996; Burg & Seeman, 1994). Efforts to provide social support may be perceived as efforts to control or as interference by the support recipient.

Effective social support may also depend on a balance between the needs of the recipient and the type of support provided by the provider, termed the *matching hypothesis* (Cohen & McKay, 1984; Cohen & Wills, 1985; Thoits, 1995). For example, different forms of support may be especially beneficial from different members of one's social support network. Emotional support is most helpful from intimate others but resented when casual friends at-tempt to provide it. Advice may be valued when it comes from experts but may be regarded as inappropriate from friends or family with questionable expertise (Dakof & Taylor, 1990). A review of the cancer literature (Helgeson & Cohen, 1996) found that emotional support was most desired by patients and had beneficial effects on adjustment when provided by family and friends, whereas support groups that provided education were regarded

especially positively. Efforts to satisfy emotional needs by relative strangers in a support group context do not always produce benefits.

Other boundary conditions include the fact that when one is under stress, often others in one's network are under stress as well, potentially undermining the ability of everyone in the network to provide support to each other and creating distress contagion instead. The effectiveness of social support in reducing distress caused by stressful circumstances may also be limited at especially high levels of stress. For example, the perception of social support as available is positively correlated with socioeconomic status (SES; Taylor & Seeman, 2000), potentially reflecting the fact that in low-SES networks, everyone may be under intense stress.

Social contact is not an unmitigated benefit. When social interactions are negative instead of positive, they more adversely affect well-being than positive interactions beneficially affect well-being (e.g., Newsom, Mahan, Rook, & Krause, 2008; Rook, 1984). For example, Schuster, Kessler, and Aseltine (1990) found that negative interactions with a spouse or close friends increased depression more than positive social interactions reduced it.

Origins of Social Support

Is social support largely outside in the social environment or inside the person in the form of abilities to extract support from the environment or construe support as available? Twin research has suggested a moderately high degree of heritability in the ability to construe social support as available or to experience one's network as supportive (Kessler, Kendler, Heath, Neale, & Eaves, 1992). Thus, heritable factors may play a role in some of the benefits of social support. Some of these benefits may stem from genetically based social competence. Some people are simply more effective than others in extracting social support from others (e.g., Cohen, Sherrod, & Clark, 1986). Being socially competent appears to be especially important for extracting emotional support (Dunkel-Schetter, Folkman, & Lazarus, 1987).

Social support also has origins in the early family environment. A supportive early environment lays the groundwork for the development of social competencies and the corresponding ability to enlist and provide social support or construe social support as available (Repetti, Taylor, & Seeman, 2002). Some of the evidence for the importance of early nurturance comes from animal studies, showing that maternal nurturance is critical both to the development of social skills and to the development of biological stress regulatory systems (e.g., Francis, Diorio, Liu, & Meaney, 1999; Liu et al., 1997). Research with orphaned or abandoned children confirms that without the affectionate attention of caregivers, infants may fail to thrive, and many die. Social skills also show impairments among survivors of early life abandonment (Carlson & Earls, 1997).

Families characterized by unsupportive social relationships have damaging outcomes for the mental, physical, and social health of their offspring not only in childhood but across the life span (Repetti, Taylor, & Saxbe, 2007). The chronic stress of an early, unsupportive environment leads to higher or longer activation of biological stress systems, provoking adverse changes in how these stress systems operate (e.g., Repetti et al., 2007; Taylor, Lehman, Kiefe, & Seeman, 2006). Thus, to the extent that people grow up in nonnurturant families characterized by stress, conflict, a cold and nonnurturing environment, or neglect, they may fail to experience the kinds of social interactions that help them lay the groundwork for social skills that serve them well across the life span. Do particularly nurturant parents have particularly socially skilled offspring by virtue of shared genetic heritage, or does nurturance itself play a role in the acquisition of social skills? Although this is a difficult question to test definitively in humans, animal studies strongly suggest that both mechanisms are involved (e.g., Francis et al., 1999; Suomi, 1991).

Gender and Social Support

Consistent with the tend-and-befriend model described earlier, meta-analyses indicate that women are significantly more likely than men to seek and use social support to deal with a broad array of stressors (Tamres, Janicki, & Helgeson, 2002). Although men typically have larger social networks than women do, this may be an artifact of men's historically greater involvement in employment and in community and political organizations. Women are consistently more invested in their relationships, and their relationships with others are more intimate across the life span (Belle, 1987). Women are more involved in both the giving and receiving of social support than men are (Thoits, 1995), and women are more likely to mobilize social support especially from other women in times of stress (Taylor et al., 2000). Women disproportionately provide social support. For example, more than 80% of care provided to disabled or ill spouses, parents, and children is provided by wives, mothers, and daughters (Moen, Robison, & Fields, 1994). There are gender differences in giving social support in both stressful and nonstressful circumstances. These differences may translate directly into health benefits. For example, although marriage benefits both men and women, it benefits men's health more, possibly because they are getting a better caliber of social support (e.g., Chesney & Darbes, 1998; Kiecolt-Glaser & Newton, 2001).

Taylor and colleagues (2000) suggested that gender differences in the seeking and giving of social support may reflect a robust and biologically based difference in how men and women cope with stress. They suggested that whereas the behaviors of fight-or-flight, namely, aggression or withdrawal in response to stress, may especially characterize men's responses to stress, tend-and-befriend may better characterize women's response to stress. There appear to be reliable biological underpinnings of these effects, namely, oxytocin and opioid functioning (see Taylor et al., 2000, for a review). Oxytocin is moderated by estrogen, consistent with the viewpoint that tend-and-befriend may better characterize women's responses to stress than men's.

Culture and Social Support

At one time, the benefits of social support were thought to be universal and experienced in roughly the same ways in all cultures. However, there turn out to be cultural differences that moderate how social support is perceived and received (Kim, Sherman, & Taylor, 2008). These cultural differences in social support may be based in cultural differences in the experience of relationships more generally. Western cultures, which have been characterized as "independent," assume that a person possesses a set of self-defining attributes and takes actions that are oriented around the expression of personal opinions and the achievement of personal goals (Markus & Kitayama, 1991). Perceptions of relationships are influenced by this cultural conception. Specifically, relationships are based on the assumption that they are freely chosen, but with relatively few obligations. A person is encouraged to signal personal needs and actively draw on social relationships for meeting them (Kim, Sherman, Ko, & Taylor, 2006; Taylor, Welch, Kim, & Sherman, 2007).

By contrast, the "interdependent" view of the self that is prevalent in collectivist Asian cultures holds that the self is primarily a relational entity interdependent with others (Markus & Kitayama, 1991). Thus, social relationships, norms, and group solidarity are more fundamental to social behavior than are the individual's needs. Relationships are based on the assumption that they are less voluntary and more given, with a sense of mutual obligation. In this context, an individual is expected to avoid bringing personal problems to the attention of others to enlist their help because such an act can undermine the harmony of the social group or make inappropriate demands on it (Kim et al., 2006).

Thus, to the extent that social support is a resource, those with an independent sense of self may seek the explicit help of family and friends to help themselves cope more successfully with stress. In contrast, those with an interdependent sense of self, especially in Asian contexts, may view the explicit seeking of social support as undermining social harmony or making inappropriate demands on the group, leading people to avoid taxing the system and keep their problems to themselves (Taylor et al., 2004).

However, the apparent universality of the benefits of social support, coupled with the fact that interdependent cultures view relationships as intrinsic to individual identity and to social functioning, suggest that social support may simply be experienced differently in interdependent versus independent cultures. Explicit social support, namely, people's specific recruitment of their social networks to help manage specific stressful events, may characterize Westerners' use of social support, whereas implicit social support, or benefiting from the awareness or company of close others without seeking, receiving, or expecting explicit support, may characterize Asians' concept of social support and the conditions under which they are benefited by social support. In an experimental study in which explicit support (seeking help) or implicit support (reflecting on valued relationships) was manipulated, Asians were found to be harmed by explicit but benefited by implicit support, whereas the reverse was true of Westerners, thereby supporting this cultural difference (Taylor et al., 2007).

Providing Social Support

Conceptualizations of social support have been guided by the implicit assumption that social support is beneficial for the recipient but costly for the provider. This viewpoint has been shaped by evolutionary perspectives on altruism that question why people help others if it puts their survival at risk (Trivers, 1971). Certainly, studies of demanding social support provision, such as long-term, arduous caregiving, suggest that providing support can be extremely costly in both psychological functioning and health risks (e.g., Kiecolt-Glaser, Glaser, Gravenstein, Malarkey, & Sheridan, 1996; Schulz & Beach, 2000).

However, giving support to others need not be inherently costly and may actually be beneficial for psychological and biological functioning. Helping others can reduce psychological distress (e.g., Brown, Brown, House, & Smith, 2008) and contribute to good health (Luoh & Herzog, 2002), including reducing risk of mortality (Brown, Nesse, Vinokur, & Smith, 2003). Although the exact mechanisms underlying the benefits of providing support to others are not fully known, they may be mediated by some of the same pathways by which social support is beneficial, namely, by reducing sympathetic and HPA arousal and enhancing a sense of relaxation and calm.

Interventions to Enhance Social Support

Given the vast evidence relating social support to beneficial mental and physical health outcomes, psychologists need

to find ways to enhance the availability of this resource. For example, social psychologists have been actively involved in planning and implementing interventions in business settings to enhance opportunities for increasing social support among co-workers and between co-workers and their supervisors (Buunk, Doosje, Jans, & Hopstaken, 1993). Social psychologists have evaluated both spontaneous and institutionally implemented support groups and self-help groups that help people deal with specific stressors, such as chronic diseases, caregiving, or parenting a child with a psychological or physical disorder (e.g., Helgeson & Cohen, 1996).

Self-help groups may especially benefit people with disorders that are stigmatizing, such as AIDS, alcoholism, certain cancers, and epilepsy (e.g., Davison, Pennebaker, & Dickerson, 2000). As noted earlier, educational support groups are more effective in meeting patient needs than those aimed at providing emotional support (Helgeson & Cohen, 1996). When contact with similar others is not readily available, self-help groups may help people get badly needed information and the comfort of knowing there are others like themselves. However, face-to-face support groups are not a panacea for distress related to health problems, and increasingly, research has demonstrated their drawbacks. For example, face-to-face groups can be logistically complicated to attend or marred by the presence of annoying group members.

Formal and informal Internet support groups avoid these problems (Davison et al., 2000). They are logistically easier to access, they are inexpensive (if one has a computer and an Internet connection), they provide opportunities to come and go at will and to join at times of personal need, and they may be a more acceptable mode of help-seeking, especially for men, than traditional support groups have been. The wealth of information that is now available on the Internet also means that answers to many specific questions can be answered without long-term participation in a group.

Across the life span, nurturant and supportive contacts with others, a sense of belonging or mattering, and participation in social activities have been tied to a broad array of mental and physical health benefits. The social environment is instrumental not only in helping people develop supportive ties and construe support as available, but also in helping them combat stress more generally.

SUMMARY

Social psychological contributions to health have been plentiful and exciting, employing diverse methodologies to address a broad array of issues. Although this article has covered only a few primary topics—namely, health behaviors, stress, coping, and social support—even this brief overview reveals how extensively and usefully social psychological perspectives have been employed.

As noted at the outset of this chapter, social psychologists who study health are not applied social psychologists. Health has provided a fruitful domain for exploring and testing social psychological theories and hypotheses. For example, examining social psychological theories of attitudes and attitude change in the health behavior domain has both yielded insights for understanding health behaviors as well as shed light on the shortcomings of attitude change technology. In particular, the research legacy has illustrated how feelings of self-efficacy and behavioral control, specific commitments to a course of action, and clear guidelines for what health-related actions to take all help bridge the gap between attitudes and behavior. The health domain has also importantly illustrated the fact that attitude change may not lead to behavior change immediately or all at once but may rather put into effect a set of processes that over time will yield behavior change. This insight regarding the long-term behavioral effects of changes in the climate of opinion would not have emerged without insights from the health domain.

The second area reviewed—namely, the field of stress—illustrates the enormous importance of appraisal processes in experiences that not only influence psychological functioning on a day-to-day basis but have long-term implications for health (e.g., Blascovich, 2008). Stress has objective dimensions, but it is also heavily rooted in appraisals that lead one person to perceive an event as stressful and another to see it as challenging. Social psychological theory and research has helped to resolve more than one paradox in this field. For example, people who have multiple important activities in their lives, such as work, marriage, and family, are actually shielded against much of the stress that multiple roles might confer. The literature from personality and social psychology on coping processes has helped to define a health-prone personality and a disease-prone personality. Much of this work links with broader theories of behavior and self-regulation such as the behavioral inhibition–behavioral approach theory developed by Gray, Steele's self-affirmation theory, Taylor's theory of cognitive adaptation, and others.

Whereas clinical health psychologists have focused heavily on the problems that health issues create, social psychologists have focused heavily on the paradoxical, often surprising, beneficial ways in which adverse health experiences can confer benefits. The topics of resilience, emotional disclosure, beliefs in control, personal growth, and meaning all represent current issues in the study of coping that social psychologists have pursued. Moreover,

social psychologists have been chiefly responsible for reorienting research on quality of life away from a focus on mortality and physical functioning to psychosocial dimensions of quality of life. The abilities to pursue meaningful activities, maintain important social relationships, and feel that one's life provides sources of satisfaction and joy have now found their way into the assessment of quality of life. This is an area in which social psychological input will be especially valuable to future research. Understanding the origins of resilience, its manifestations, and the biological, psychological, and social pathways by which it improves mental and physical adjustment to stressful events are important priorities for the future.

Finally, drawing on expertise in social relationships, social psychologists have made some of the seminal and most important contributions to the study of affiliation in response to stress and social support. Even the study of gender differences and cultural aspects of social support, which might seem to limit any ability to draw universal generalizations, has enriched and broadened the field and led to the conclusion that social relationships are among human beings' most valuable health-related resources. Thus, social psychology has allowed scientists to uncover knowledge about health that may otherwise have been unavailable while enriching the field of social psychology by drawing on insights from a significant life venue, namely, health.

Of note, the health research conducted by many social psychologists has drawn some of us directly into the medical field. It has prompted numerous social psychologists to learn more biology than we would otherwise know and led us to become comfortable with biological measurements and assays that otherwise would not have become a part of social psychological work. As noted in the introduction, the new tools and skills that social psychologists have had to learn to do health research also foster integrative science more broadly. Social psychologists are making contributions to the broad mission of science as never before, raising the possibility that many issues that once seemed intractable, such as how genes and the environment influence health or what the biological routes are by which psychological and social factors affect health outcomes, are now well within view. These topics, too, represent important and exciting directions for social psychology's future in health psychology.

Finally, it is virtually inevitable that social psychologists studying these fascinating issues would find themselves developing interventions to improve health. For example, one cannot study health behaviors without wanting to change them in a healthy direction. It is difficult to study stress processes without wanting to ameliorate stress. It is hard to acknowledge the important role of social

support in adjusting to trying life circumstances without wanting to make a difference in the socially supportive opportunities that can be made available to people who need them. As a result, social psychologists have become increasingly involved in interventions that make a difference in people's lives.

So why would a social psychologist want to do health research? First, health psychology presents the opportunity to test basic theory in an important, often cutting-edge life domain. For example, if message framing is explored with respect to safe-sex interventions, then the results speak not only to prospect theory but also to the practical problem of getting young adults to change their sexual practices. Second, the health arena presents an opportunity to test basic social psychological theory in an area that brings psychology and biology together. Thus, your work has an opportunity to foster integrative science. For example, Blascovich (2008) explores the consequences of events people perceive to be challenging versus threatening, and his work clarifies not only appraisal processes but also biological patterns of responding to stress that are prognostic for illness. Perhaps most important, social psychologists who make contributions to the field of health know that they are doing good. This kind of research makes one realize that the field of social psychology has enormous value and that it is endlessly gratifying to be a part of it.

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