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Understanding Social Behavior

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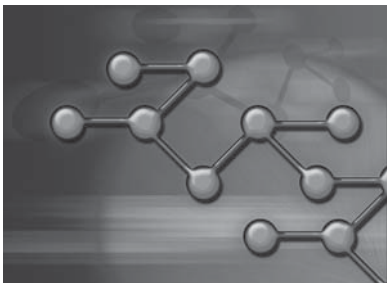
Few people are capable of expressing with equanimity opinions which differ from the prejudices of their social environment. Most people are even incapable of forming such opinions.

—Albert Einstein



The events of September 11, 2001, conjure up many memories and images of what occurred on that fateful day. Most of us can vividly remember where we were and what we were doing when we first heard of the attacks on the World Trade Center and the Pentagon. We can also recall the images of jet airliners slamming into buildings in great orange fireballs, bringing with them destruction and death. We can see in our mind's eye the poor souls who chose to leap to their deaths rather than burn alive in the World Trade Center towers. We can still experience the horror as those two majestic towers collapsed and crumbled into cinders, taking around 2,700 people to their deaths.

On September 11, 2001, we witnessed the worst that human behavior can offer us: 19 young men deliberately flying fuel-laden jetliners into buildings where unsuspecting people were going about their daily lives. However, on that day we also witnessed some of the best that human behavior can offer. Many people—police, firefighters, and civilians—put their lives on the line to save others. One such person was Rick Rescorla, who is credited with saving around 3,000 lives that day. Who was Rick Rescorla, and what did he do that saved so many lives?

Rick Rescorla was the Vice President for Corporate Security for Morgan Stanley Dean Witter and Company. On September 11, he began his day as usual: rising at 4:30 A.M., kissing his wife good-bye, and catching the train to work. He was at his desk on the 44th floor of the south tower of the World Trade Center by 7:30 A.M. He was there when the first jetliner slammed into the north tower. He was instructed to stay put and not leave the south tower. He called his friend, Dan Hill, and told Hill that the "dumb sons of bitches told me not to evacuate." In typical Rescorla style, he ignored those directions, telling Hill, "I'm getting my people … out of here." And get

Key Questions

As you read this chapter, find the answers to the following questions:

1. What is social psychology?
2. How do social psychologists explain social behavior?
3. How does social psychology relate to other disciplines that study social behavior?
4. How do social psychologists approach the problem of explaining social behavior?
5. What is experimental research, and how is it used?
6. What is correlational research?
7. What is the correlation coefficient, and what does it tell you?
8. Where is social psychological research conducted?
9. What is the role of theory in social psychology?

10. What can we learn from social psychological research?

11. What ethical standards must social psychologists follow when conducting research?

his people out he did! Using a megaphone to give instructions, he guided over 2,600 of his employees out of the south tower, following an evacuation plan he had developed.

Once Rescorla had his employees out of the building and made sure they were safe, he went back into the south tower, which by this time had been hit by the second plane, to go after stragglers. Nobody knows how many times he went back in or how many stragglers he saved. Rick Rescorla perished when the south tower collapsed. What we do know is that because of Rick Rescorla's actions, only six Morgan Stanley employees lost their lives that day. Due to his assistance in both the evacuation of the south tower and a building across the street, Rescorla is credited with saving nearly 3,000 people.

Social Psychology and the Understanding of Social Behavior

The events that occurred on September 11 in general, and Rick Rescorla's actions in particular, raise many questions about why things happened the way they did. In the aftermath of 9/11, many questioned the motives of the hijackers (officially and unofficially). It puzzles us when we try to figure out why 19 young men would sacrifice themselves to murder 3,000 total strangers. What internal and social forces can possibly explain such behavior? We also marvel at the behavior of people like Rick Rescorla. Why did he run back into the burning south tower to save people in need? It causes us to question whether we ourselves would have the courage to do such a thing.

Most of us are content with coming up with so-called commonsense explanations for events such as 9/11. For example, we label the hijackers as "evil," or "disturbed," or just plain "nuts." We conclude that Rick Rescorla was a special person imbued with qualities that allowed him to do what he did in the face of death. However, as is often the case, such simple, commonsense explanations do not give us the final answers to our questions. Behavior is simply much too complex to be explained in overly simplistic terms. This is why we turn to science to help us better understand and explain events such as 9/11.

One science that can help us make sense out of the things that happen to us and around us is *psychology*, which is the study of behavior and the motives and cognitions that underlie that behavior. By studying "abnormal psychology," "personality psychology," and other areas of psychology, we can begin to piece together rational explanations for events such as 9/11. One branch of psychology can give us a unique perspective on behavior and perhaps help us best understand events that occur to us and around us: social psychology. **Social psychology** is the scientific study of how individuals think and feel about, interact with, and influence one another, individually and in groups. It is the branch of psychology that studies social behavior—the thinking and behavior of individuals as they relate to other human beings.

social psychology
The scientific study of how individuals think about, interact with, and influence each other.

Social psychology provides tools to help you understand things that happen in your personal life. It can help you make sense of your day-to-day interactions—your friendships, love relationships, interactions at work, and performance at school. It can give you insight, for example, into why your most recent romantic relationship did not succeed, and why you find yourself attracted to one person in your afternoon math class but not to another. It can also help you understand why you may behave aggressively when someone cuts ahead of you in a cafeteria line, or why you get annoyed when someone

sits right next to you in a theater when there are plenty of other empty seats. Social psychology can also help you understand why *other* people act the way they do. For example, social psychology can help us understand the forces that led to the attacks on 9/11 and Rick Rescorla's heroism.

Your life also is touched by events beyond your immediate, day-to-day affairs—events that occur in the community and the nation. Although these events are more distant, you may still feel strongly about them and find a link between them and your personal life. If your friend's father were very sick, for example, you might want to share with him knowledge about a man whose determination kept him alive for six years. Perhaps the story would encourage him to keep on with his life. If a terrorist attack happened in your hometown, you would experience directly the consequences of young men driven to acts of murder by a radical ideology. You probably would hear many people decrying terrorism and talking about ways to deal with such acts.

In one form or another, all the events of 9/11 represent recurring themes in human history. Terrorism dates back hundreds, perhaps thousands of years. As soon as humans began to claim ownership of territory, they began to fight with each other. Humans have always been both aggressive and altruistic toward one another. Human beings have always had to find ways to live with each other. We have always functioned together in groups; had love relationships; tried to persuade others of our point of view; followed or rebelled against authority; and sought ways to resolve conflicts, whether through negotiation or through coercion. We help each other, and we hurt each other. We display prejudice and discrimination; we even have tried to kill entire populations. History is a tapestry of the best and the worst that human beings can do. Social psychology can help us understand these human social events in their infinite variety.

It's important to note, however, that social psychologists do not simply wonder and speculate about social behavior. Instead, they use scientific methods involving carefully designed and executed research studies to help explain complex, uncertain social issues. Social psychology is first and foremost a science. Through theory, research, and thoughtful application of concepts and principles to real-life situations, social psychologists provide insights into everyday events, both past and present, as well as those monumental events that are the stuff of history.

More than any other branch of psychology, social psychology offers a broad perspective on human behavior. Rather than focusing on the personal histories of individuals (as would a personality psychologist), or on how individuals respond to their environment (as would a strict behaviorist), it looks at how people interact with and relate to each other *in social contexts*. It is within these social contexts that a wide range of behaviors and events fall.

A Model for Understanding Social Behavior

Social psychologists are interested in the forces that operate on individuals and cause them to engage in specific examples of social behavior. But social behavior is typically complex and has many contributing causes. Consequently, explaining social behavior is a difficult task. To simplify this task, we can assign the multiple causes of social behavior to one of two broad categories: the situation and the individual. According to a formula first proposed by Kurt Lewin (1936), one of the important early figures in social psychology, social behavior is a function of the interaction of the situation and the individual's characteristics, or

$$\text{Behavior} = f(\text{social situation} \times \text{individual characteristics})$$

Lewin's model of social behavior was inspired by his observation that the individual's perception of a situation is influenced by the tasks he or she has to accomplish. Lewin was a soldier in the German army during World War I. He noticed that as he came nearer to the battlefield, his view of the world changed. Where he once might have seen beautiful flowers and beckoning forests, he now saw boulders to hide behind and gullies from which he could ambush the enemy. Lewin came to believe that a person's perception of the world is influenced by what he or she has to do in that situation. He termed the combination of individual needs and situational factors the *psychological field* in which the individual lives (Pratkanis & Aronson, 1992).

According to this view, individuals with different needs and tasks would come to see the same event in dissimilar ways (Pratkanis & Aronson, 1992). Although Lewin looked at the individual's needs and tasks, he emphasized the importance of social context in producing the forces that control the individual's actions. Lewin was aware that we often fail to take situational factors into account when we try to explain why people behave as they do (Ross & Nisbett, 1991). For example, there were undoubtedly other young men with similar backgrounds to the 19 hijackers. However, their differing needs and interpretations of the social situation did not manifest itself in an overt act of mass killing. There were probably many bystanders on 9/11 who heard people in the burning towers calling from help. Yet, those cries did not resonate in them the same way they resonated in Rick Rescorla.

Thus far we have seen that the situation and individual characteristics are central to the understanding of social behavior in a general way. How do social psychologists define *situation* and *individual characteristics*? Let's take a closer look.

The Social Situation

The *social situation* comprises all influences on behavior that are external to the individual. A situational factor might be any aspect of the physical and/or social environment (the presence of other people, real or imagined) that influences behavior. Different individuals will react differently to the social situation.

Sometimes the situation works on us in subtle ways. We may modify our behavior even if there is no pressure on us to do so. We may imagine or believe that we are expected to act a certain way in a certain situation, and those beliefs can be as powerful as the situation itself. For example, let's say that you are in a restaurant with a group of friends. You are trying to decide what to order. You are leaning toward the sautéed buffalo, but the stewed rabbit sounds good too. When the waiter comes to the table, you order last, intending to try the buffalo. However, each of your friends orders the rabbit. When your turn comes, you also order the rabbit. You modified your behavior based on your friends' actions, because you didn't want to appear different. You felt and responded to social pressure of your own making!

Situational or social determinants of behavior exist on several levels simultaneously. Sometimes the social environment leads to temporary changes in behavior, as was the case in the restaurant. Ordering the rabbit may be specific to that one situation; you may never order rabbit again. In other cases, the social environment is a more pervasive influence and may lead to relatively permanent, enduring patterns of behaviors. The culture within which a person lives exerts a long-lasting influence over a wide range of behaviors. Culture influences the foods we like, how we relate to members of the other sex, the amount of personal space we require (the area immediately surrounding us that we claim and defend), what we plan and expect to accomplish in life, and a host of other behaviors. It may also influence one's decision concerning flying airliners into inhabited buildings.

Individual Characteristics

Individual characteristics include sex, age, race or ethnicity, personality characteristics, attitudes, self-concept, ways of thinking, and so on. In short, individual characteristics consist of anything internal to the person that might influence behavior. Physical traits are individual characteristics that are relatively enduring and for the most part known to others. Personality characteristics also tend to be enduring, but they are not necessarily obvious to others. Personality is an area of growing interest in social psychology today (Larsen & Ketelaar, 1991). Other internal characteristics, such as attitudes, opinions, self-concept, and so on, can change over time. People often have some choice about how much of these areas of themselves they reveal to others.

Let's consider Rick Rescorla again. What of the other people on the scene who did not respond to others' cries for help? These individuals were subjected to the same situational pressures as was Rick Rescorla. However, they did not act in an altruistic way. Did some combination of personal traits (e.g., desire for self-preservation) and attitudes (e.g., it is the job of police and firefighters to save victims) mix with the situation (e.g., flames roaring inside the building) to produce this different behavior? Since the situation was similar for others on 9/11, we look to individual characteristics such as personality traits to understand why some acted in violent ways and others did not.

Another important individual characteristic that is somewhat different from personality characteristics is the particular way each individual perceives and thinks about his or her social world. **Social cognition** refers to a general process we use to make sense out of social events, which may or may not include other people. For example, seeing the events on 9/11 on the news, you probably began to interpret those events, attempting to determine a reason for the hijackers' behavior. Eventually, you probably began to make inferences about the motives of the individuals involved and to form impressions of them. Social psychologists call this process **social perception**. For example, thinking about Rick Rescorla, who gave his life to save others, may lead you to an inference that he was a highly empathic, caring person and was not simply doing his job as a Vice President for Security. Once you infer these characteristics and form an impression that he was a caring, compassionate person, you then settle on these internal characteristics as the primary motivation for his behavior.

social cognition
The general process we use to make sense out of social events, which may or may not include other people.

social perception
The social processes by which we come to comprehend the behavior, the words and actions, of other people.

Social cognition and social perception are central to our interpretation of situations. When we are exposed to a particular situation, how we respond depends on how we interpret that situation. Social cognition gives direction to our interpretation. The decisions we make based on our perception and cognition will influence our response. Every individual has a slightly different view of the world, because everyone has unique personal traits and a unique history of life experiences. This is because each of us actively constructs our own view of our social world, based on interpretations of social information.

Expanding Lewin's Model

Lewin's model tells us that both the social situation (physical setting, the presence of other people, real or imagined) and individual characteristics (physical traits, personality traits, attitudes and habitual ways of thinking, perceptual and cognitive processes, needs and tasks) influence social behavior. Lewin's model, however, does not specify how situational factors and individual characteristics fit together into a broad, general model of social behavior. We need to expand on Lewin's original model to gain a better understanding of the forces that shape social behavior. An expansion of Lewin's original model is shown in Figure 1.1.

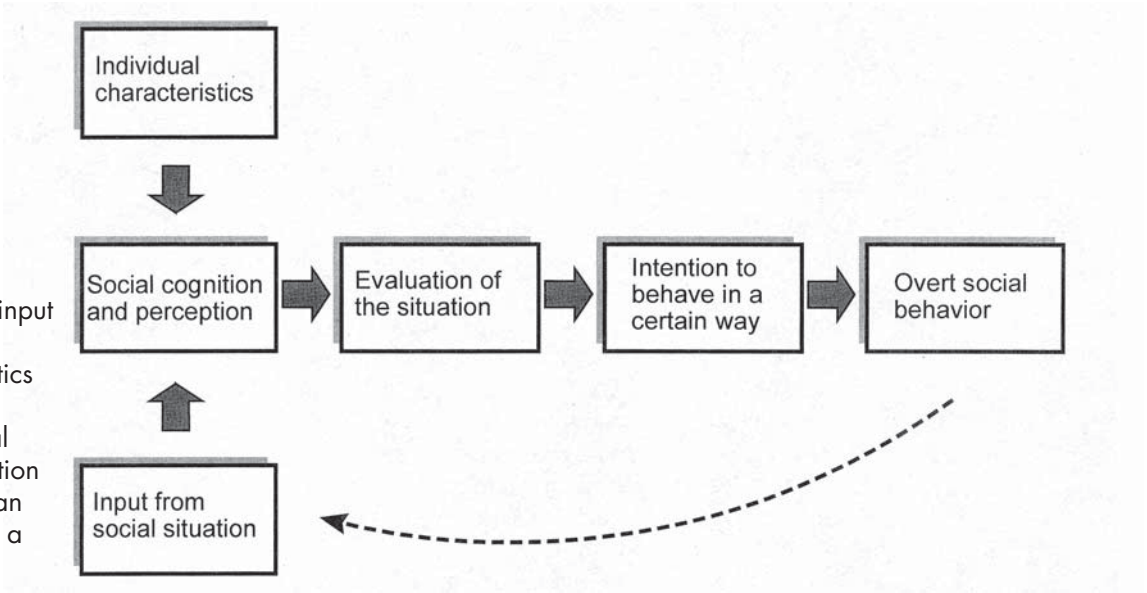


Figure 1.1 An expanded model of social behavior. How we act in a given situation depends on input from the situation and individual characteristics that are mediated by the processes of social cognition and perception and the formation of an intention to behave in a certain way.

As shown in this model, input from the social situation and individual characteristics do not directly influence social behavior. Instead, they both contribute to how we process information via mechanisms of social cognition and social perception. How that information is processed yields a particular evaluation of the situation. For example, in the wake of 9/11, controversy swirls around how the site of the World Trade Center should be used. Some want to redevelop the area, building a new office tower to replace the fallen towers. Others see the site as hallowed ground and maintain that the site should be used mainly for a memorial to those who were killed or injured. Even those who want a memorial constructed cannot agree on what form that memorial should take. A person (individual characteristics) who opposes redeveloping the World Trade Center site commercially may interpret the situation (social cognition) in a way that suggests that it is sacrilegious to the dead and injured to build a new office tower. Another person might focus on the economy of the area when supporting the construction of a new office tower.

According to Figure 1.1, our evaluation of the social situation does not translate immediately into overt social behavior. Instead, based on our evaluation of the situation, we form a behavioral intention. For example, one family of a 9/11 victim may decide to sue the owners of the World Trade Center, blaming inadequate safety measures in the buildings for the loss of their loved one. Another family might form an intention to direct their energies into raising money to help the children who lost parents on 9/11. In these cases, the same event yields different intentions. Thus, a behavioral intention is the immediate, proximate cause for social behavior.

It is important to realize that just because we form a behavioral intention does not mean we will act on that intention. For example, a person can form the intention of filing a lawsuit but never follow through, thinking that perhaps more harm than good would be done.

This view of social behavior implies that it is a dynamic process. Our monitoring of the social situation does not end with an evaluation of the situation, or the formation of an intention, or social behavior. Instead, we are constantly monitoring the social

situation (our own behavior and that of others) and may modify our assessment of it on a moment-to-moment basis. Thus, we fine-tune our behavioral intentions up to the point that we engage in social behavior. So, even though the various processes underlying social behavior are presented in Figure 1.1 in a sequence of discrete boxes, they are really quite fluid and involve constant updating of our evaluation of the situation.

One final aspect of this model needs to be addressed. Notice that in Figure 1.1 there is a dotted arrow going from social behavior to the social situation. In any social situation in which we are directly involved, our own behavior influences the social environment and probably will cause changes in the behavior of others. For example, imagine that you are talking to someone you have just met. Based on the first thing she says, you determine that she is not very friendly. Consequently, you become defensive (you fold your arms, lean away from her) and respond to her in a cold way. She picks up on your behavior and becomes colder herself. This cycle continues until one of you breaks off the conversation. How might this situation have played out if you had interpreted her initial behaviors as nervousness and responded to her in a positive way? You may have made a new friend. Thus, your own interpretations and behaviors had a profound effect on the situation.

Social Psychology and Related Fields

We have seen that social psychology is a field of study that seeks to understand and explain social behavior—how individuals think and act in relation to other people. Yet many other disciplines are also concerned with the thoughts and actions of human beings, both individually and in groups. In what ways does social psychology differ from its two parent disciplines, sociology and psychology? And how is it similar to and different from other fields of study, such as biology, anthropology, and history?

To see how these fields differ in their approaches, let's consider a single question: Why do groups of people, including nations, display hostility toward one another? Although social psychologists are interested in this social problem, they have no unique claim to it (nor to others). Biologists, psychologists, anthropologists, sociologists, historians, and others all have explanations for the never-ending cycle of human violence. Let's consider first those fields that look for the causes of violent behavior within the individual and then move on to fields that focus increasingly on factors in the environment.

Many biologists say the answer to the puzzle of human violence resides not in our social situations, organizations, or personalities but rather in our genetic structure. For example, scientists have identified a tiny genetic defect that appears to predispose some men toward violence. Scientists studied a large Dutch family with a history of violent and erratic behavior among many, although not all, of the males. They found that those males who were prone to violence had an enzyme deficiency due to a mutation of a gene carried by the X chromosome (Brunner, Nelon, Breakefield, Ropers, & van Oost, 1993). Because men have only one X chromosome, they were the only ones who manifested the defect. Women may be carriers of the deficiency, but they are protected from expressing it by their second X chromosome with its backup copy of the gene. Geneticists do not argue that genetic defects are the sole cause of violence, but they do say that these factors play a definite role in determining who is violent.

Another biologically oriented view of this question comes from developmental psychologists (who study the development of human beings across the lifespan). They suggest that human beings may have an innate fear of strangers. They point out that at about 4 or

5 months, infants begin to react with fear to novel or unusual stimuli, such as the faces of strangers (Hebb & Thompson, 1968). Between 6 and 18 months, infants may experience intense *stranger anxiety*. These psychologists, as well as some biologists, argue that fear of strangers may be part of our genetic heritage. Early humans who possessed this trait may have been more likely to survive than those who didn't, and they passed the trait down to us. On a group or societal level, this innate mistrust of strangers might be elaborated into hostility, aggression, or even warfare. Other psychologists, however, are not convinced that fear of the novel is inborn (Hebb & Thompson, 1968).

Along similar lines, anthropologists (who study the physical and cultural development of the human species) have documented that some tribal societies view strangers with suspicion and may even attempt to kill them. Some anthropologists argue that hostility to strangers may have benefited early human groups by helping them unite against threats from the outside.

Other scientists emphasize the psychological makeup of individuals as a way of explaining behavior. Personality psychologists suggest that aggressiveness (or any other behavioral trait) is a characteristic of the individual. The person carries the trait from situation to situation, expressing it in any number of different circumstances (Derlega, Winstead, & Jones, 1991). Personality psychologists would argue that some internal characteristic drove Rick Rescorla to behave altruistically on September 11, just as some other personality traits affected the behavior of the hijackers.

One researcher studied the aggressive behavior of adolescent boys in Sweden over 3 years (Olweus, 1984). He found that boys who were aggressive (started fights, were bullies) in the sixth grade were also physically aggressive in the ninth grade. Personality researchers take this as evidence that individual factors are an important determinant of aggression. Over the course of the 3 years, the boys had different teachers, were in different buildings, and had a variety of classmates. Yet their behavior remained consistently aggressive, despite the change in their social situation (Derlega et al., 1991).

Social psychologists study the individual in the social situation. They are concerned with determining what characteristics of a situation increase or decrease the potential for violence. In looking at the question of hostility between groups, social psychologists focus on the forces both in individuals and in situations that lead to this outcome.

Whereas psychology (including social psychology) focuses on the role of the individual, other fields look for causes of behavior in more impersonal and general causes outside the individual. For example, sociologists are concerned primarily, although not exclusively, with larger groups and systems in society. A sociologist interested in violence might study the development of gangs. Interviews with gang members, observation of gang activity, or even participation in a gang as a participant, if possible, would be potential methods of study.

Although sociology and social psychology are related, there are important differences between them. The sociologist asks what it is about the structure of society that promotes violence; the social psychologist, in contrast, looks at the individual's particular social situation as the potential cause of violence. The social psychologist is interested primarily in the behavior of individuals or of small groups, such as a jury. Sociology may be empirical in the sense that it attempts to gather quantitative information. A sociologist might compare rates of violent behavior in two societies and then try to determine how those societies differ. Social psychology is much more an experimental, laboratory-based science.

Historians take an even broader view of intergroup hostility than sociologists. They are primarily concerned with the interplay of large forces such as economic, political, and technological trends. Historians have shown, for example, that one nation can express

power against other nations only if it has sufficient economic resources to sustain armed forces and if it has developed an adequate technological base to support them (Kennedy, 1987; O'Connell, 1989). One historian documented the importance of a single technological advance—the invention of stirrups—in accelerating violence between groups in the early Middle Ages (McNeill, 1982). Before stirrups were invented, knights on horseback were not very effective fighters. But once they were able to steady themselves in the saddle, they became capable of delivering a powerful blow with a lance at full gallop. The use of stirrups quickly spread throughout Europe and led to the rise of cavalry as an instrument of military power.

History and sociology focus on how social forces and social organization influence human behavior. These fields tend to take a *top-down perspective*; the major unit of analysis is the group or the institution, whether a nation, a corporation, or a neighborhood organization. Psychology, with its emphasis on individual behavior and the individual's point of view, offers a *bottom-up perspective*. Social psychology offers a distinct perspective on social behavior. Social psychologists look at how social forces affect the individual's thinking and behavior. Although the field takes a bottom-up perspective, focusing on the individual as the unit of analysis, behavior is always examined in social situations. Social psychology, therefore, tries to take into account individual factors, such as personality, as well as social and historical forces that have shaped human behavior.

As indicated earlier, social psychology is a science. The use of scientific methods is the primary contribution of social psychology to the understanding of complex, uncertain social behaviors such as intergroup hostility.

Research in Social Psychology

In January 1992, a celebrity basketball game was held in New York City. There was open seating at a college basketball arena that held slightly more than 4,000 people. Therefore, the first people in the arena would get the best seats. As the crowd outside the arena grew into the thousands, anticipation built. People began pushing and shoving to get closer to the doors. As the crowd pressed forward toward the arena, the situation got out of control, and in the crush that followed, nine people were killed.

Even if you only read about this in the newspaper, you probably would wonder how it could happen and try to come up with an explanation. You might ask yourself, Could it be that there were thousands of highly aggressive, mean-spirited individuals waiting to see the game? That would be hard to believe. Well, then, could the fact that the event occurred in New York City explain it? This also seems unlikely, because similar things have happened in smaller cities with more benign reputations, such as Cincinnati, Ohio. Or could it be that the presence of celebrities, the limited number of good seats, and the excitement of the event somehow influenced the crowd's behavior, causing them to act in ways they wouldn't act as individuals? This seems more likely, but is it true?

When we devise explanations for events like these, based on our prior knowledge and experiences, our attitudes and biases, and the limited information the newspaper provides, we don't know if they are accurate or not. Such commonsense explanations—simplistic explanations for social behavior that are based on what we believe to be true of the world (Bordens & Abbott, 2005)—serve us well in our day-to-day lives, providing easy ways to explain complex events. People would be hopelessly bogged down in trying

to understand events if they didn't devise these explanations and move on to the next concern in their lives. Unfortunately, commonsense explanations are usually inadequate; that is, there is no evidence or proof that they pinpoint the real causes of events.

The aim of social psychology is to provide valid, reliable explanations for events such as the one in New York City. Rather than relying on conjecture, rumor, and simplistic reasoning, social psychologists approach the problem of explaining complex social behavior in a systematic, scientific way. They develop explanations for phenomena by applying the **scientific method**, which typically involves the four steps shown in Figure 1.2. First, you identify a phenomenon to study. This can come from observation of everyday behavior, reading research literature, or your own previous research. Next, a testable research **hypothesis** must be formed. A hypothesis is a tentative statement about the relationship between variables. The third step is to design a research study to test your hypothesis. Finally, the study is actually carried out and the data analyzed. Only after applying this method to a problem and conducting careful research will a social psychologist be satisfied with an explanation.

scientific method A method of developing scientific explanations involving four steps: identifying a phenomenon to study, developing a testable research hypothesis, designing a research study, and carrying out the research study.

hypothesis A tentative and testable statement about the relationship between variables.

Throughout this book, we refer to and describe research that social psychologists have conducted to test their ideas, to gain information about events, and to discover the causes of social behavior. We turn now to some of the basic principles of research, including the major research methods, the role of theory in research, the settings for social psychological research, and the importance of ethical conduct in research involving human participants.

The principal aim of the science of social psychology is to uncover scientific explanations for social behavior. A scientific explanation is an interpretation of the causes of social behavior that is based on objective observation and logic and is subject to empirical testing (Bordens & Abbott, 2005). To this end, social psychologists use a wide variety of techniques to study social behavior. Generally, they favor two research strategies in their quest for scientific knowledge: **experimental research** and **correlational research**. Let's consider the characteristics of each of these methods, along with their advantages and disadvantages.

experimental research Research involving manipulating a variable suspected of influencing behavior to see how that change affects behavior; results show causal relationships among variables.

correlational research Research that measures two or more dependent variables and looks for a relationship between them; causal relationships among variables cannot be established.

Experimental Research

One goal of research in social psychology is to understand the causes of social behavior. The researcher usually has an idea he or she wants to test about how a particular factor affects an event or a behavior—that is, whether a particular factor *causes* a particular behavior. To establish a causal relationship between factors, researchers have to use the research method known as the experiment. Because experimental research is the only kind of study that can establish causality, it is the method most social psychologists prefer. An experiment has three essential features: manipulating a variable, ensuring that groups comprising the experiment are equivalent at the beginning of the experiment, and exercising control over extraneous variables.

Manipulating Variables

In an experiment, a researcher manipulates, or changes the value or nature of, a variable. For example, Sturmer, Snyder, and Omoto (2005) conducted an experiment to determine if individuals would be more likely to help a member of their own group (in-group) compared to a member of another group (out-group). Heterosexual students were randomly assigned to one of two conditions. In the first condition, participants were led to believe that they were communicating with a male heterosexual student (in-

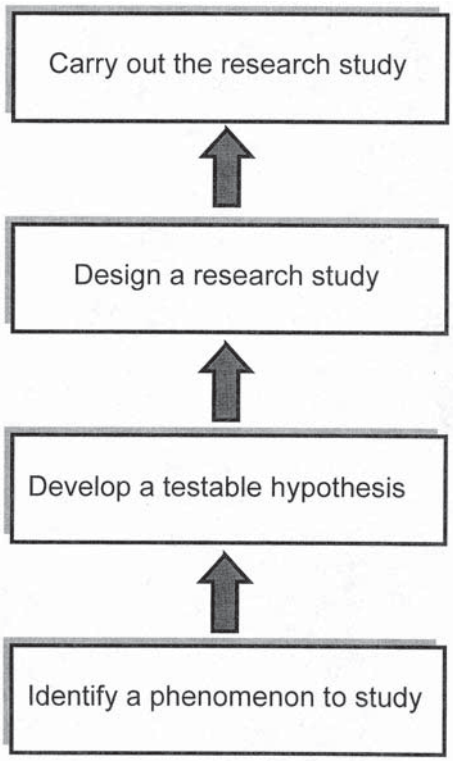


Figure 1.2 The scientific method used in social psychology begins with the identification of a problem to study and then moves to the formation of testable hypotheses. Next, a research study is designed and carried out.

group condition) who indicated that he just found out that his new female dating partner had contracted hepatitis. In the second condition, participants were led to believe that they were communicating with a male homosexual student (out-group condition) who indicated that he just found out his new male dating partner had contracted hepatitis. The results showed that empathy was a significant predictor of intentions to help in the in-group condition, but not in the out-group condition.

In this experiment, Sturmer et al. (2005) manipulated the type of information given to participants (communicating with either an in-group or out-group member). This variable that the researcher manipulates is called the **independent variable**. The researcher wants to determine whether changes in the value of the independent variable cause changes in the participant's behavior. To this end, the researcher obtains some measure of behavior. For example, Sturmer et al. measured the participants' willingness to help the other student. This second variable is called the **dependent variable**: It is the measure the researcher assesses to determine the influence of the independent variable on the participant's behavior. The essence of experimental research is to manipulate an independent variable (or two or even more independent variables) and look for related changes in the value of the dependent variable.

independent variable The variable that the researcher manipulates in an experiment.

dependent variable The measure the researcher assesses to determine the influence of the independent variable on the participants' behavior.

The Equivalence of Groups

The second essential characteristic of an experiment is that there are at least two groups involved who are comparable at the outset of the experiment. In the simplest type of experiment, one group of participants receives a treatment (for example, they are told

there is open seating). The participants who receive the experimental treatment comprise the **experimental group**. To know for sure that an experimental treatment (the independent variable) is causing a particular effect, you have to compare the behavior of participants in the experimental group with the behavior of participants who do not receive the treatment (they are told nothing about seating arrangements). The participants who do *not* receive the experimental treatment comprise the **control group**. A simple example of this strategy is an experiment testing the effects of a drug on behavior. Participants in the experimental group would receive a dose of an active drug (e.g., norepinephrine), whereas participants in the control group would not receive the drug. The researcher then compares the behavior of the participants in the experimental and control groups. In essence, the control group provides a baseline of behavior in the absence of the treatment against which the behavior of the treated participants is compared.

experimental group A group comprising participants who receive the experimental treatment in an experiment.

control group A group in an experiment comprising participants who do not receive the experimental treatment.

In the real world of research, the distinction between the experimental and control groups may not be this obvious. For example, in the Sturmer et al. (2005) experiment on in-group versus out-group helping, there is no true control group in the true sense of the concept. Instead, participants in both groups received a "treatment" (i.e., in-group or out-group information). Most experiments you will encounter will follow this model.

In order to establish a clear cause-and-effect relationship between the independent and dependent variables in an experiment, the participants in the groups must have the same characteristics at the outset of the experiment. For example, in the experiment on norepinephrine and aggression, you would not want to assign individuals with bad tempers to the 15-mg group. If you did this and found that 15 mg produces the highest levels of aggression, one could argue that the heightened aggression was due to the fact that all the participants in that group were hotheads.

The best way to ensure that two or more groups will be comparable at the outset of an experiment is **random assignment** of individuals to groups, which means that each participant has an equal chance of being assigned to the experimental or control group. Researchers can then be fairly certain that participants with similar characteristics or backgrounds are distributed among the groups. If the two or more groups in an experiment are comparable at the outset, the experiment is said to have *internal validity*, and it can legitimately demonstrate a causal relationship.

random assignment A method of assigning participants to groups in an experiment that involves each participant's having an equal chance of being in the experimental or control group.

Researchers are also concerned about another kind of validity, known as *external validity*, or generality. When researchers study how experimental treatments affect groups of participants, they want to be able to generalize their results to larger populations. To do so, they have to be reasonably sure that the participants in their experiments are representative (typical) of the population to which they wish to generalize their results. For example, if the participants of a study were all male science majors at a small religious college, the researchers could not legitimately generalize the results to females or mixed populations, to younger or older people, or to music majors. If the researchers have gotten a representative sample of their population of interest, then they can legitimately generalize the results to that population, and the study is said to have external validity.

Controlling Extraneous Variables

The goal of any experiment is to show a clear, unambiguous causal relationship between the independent and dependent variables. In order to show such a relationship, the researcher must ensure that no other variables influence the value of the dependent variable. The researcher must tightly control any **extraneous variable** that might influence the value of the dependent variable. An extraneous variable is any variable not con-

extraneous variable Any variable not controlled by the researcher that could affect the results of a study.

trolled by the researcher that could affect the results. For example, if the temperature in the room where an experiment is run fluctuates widely, it could influence participants' behavior. When it is hot, participants may get irritable and impatient. When it is cold, participants may become sluggish and uninterested in the task at hand.

As just described, extraneous variables affect the outcome of an experiment by adding a random influence on behavior. In short, extraneous variables make it more difficult to establish a causal connection between your independent and dependent variable. In some cases, an extraneous variable can exert a systematic effect on the outcome of an experiment. This happens when the extraneous variable varies systematically with the independent variable. The result is that a **confounding variable** exists in the experiment. For example, let's say you are running an experiment on the relationship between frustration and aggression. Participants in the experimental group perform a puzzle for which there is no solution (frustration group), whereas participants in the control group do a puzzle that is solvable (no frustration group). As it happens, on the days when you run the experimental group, the room you are using is hot and humid, whereas on the days when you run the control group, the temperature and humidity are normal. Let's say you find that participants in the experimental group show higher levels of aggression than those in the control group. You want to attribute the difference in aggression between your two groups to the frustration levels. However, it may be that the higher levels of aggression recorded in the experimental group are due to the high temperature and humidity and not the frustrating task.

confounding variable
An extraneous variable in an experiment that varies systematically with the independent variable, making it difficult or impossible to establish a causal connection between the independent and dependent variables.

In the real world of research, confounding is seldom as obvious and blatant as in our example. More often, confounding results because a researcher is careless when designing an experiment. Confounding variables often creep into experiments because independent variables are not clearly defined or executed. The presence of confounding variables in an experiment renders the results useless. The confounding variable provides an *alternative explanation* for any results that emerge. Because of this, a clear causal connection between the independent and dependent variables cannot be established. Consequently, it is essential that a researcher identify potential sources of confounding and take steps to avoid them. The time to do this is during the design phase of an experiment. Careful attention to detail when designing an experiment can go a long way toward achieving an experiment that is free from confounding variables.

Factorial Experiments

An important aspect of real-world research is that experiments are usually more complex than the simple experimental group/control group design we discussed previously. In fact, a vast majority of research in social psychology has two or more independent variables. These are called **factorial experiments**.

factorial experiment
An experimental design in which two or more independent variables are manipulated, allowing for the establishment of a causal connection between the independent and dependent variables.

As an example of a simple factorial experiment, consider one conducted by Patricia Oswald (2002) that investigated the effects of two independent variables on willingness to help. Oswald had participants watch a videotape of a person presented as an older adult (Michelle), who was discussing some of her thoughts and emotions about returning to college. The first independent variable was whether participants were instructed to focus on Michelle's thoughts (cognitions) or emotions (affect) while watching her on the videotape. The second independent variable was the type of affect (positive or negative) and cognitions (positive or negative) Michelle displayed on the videotape. Participants filled out several measures after watching the videotape, including how much time they would be willing to devote to helping the student shown on the tape. Before we get to Oswald's results, let's analyze the benefits of doing a factorial experiment.

The principal benefit of doing a factorial experiment as compared to separate one-factor (i.e., one independent variable each) experiments is that you obtain more information from the factorial experiment. For example, we can determine the independent effect of each independent variable on the dependent variable. In Oswald's experiment we determine the effect of participant focus (the focus on either Michelle's affect or cognition) on willingness to help. This is called a *main effect* of one independent variable on the dependent variable. We could also determine, independently, the main effect of the second independent variable (positive or negative cognition or affect) on the dependent variable.

interaction When the effect of one independent variable in a factorial experiment changes over levels of a second, indicating a complex relationship between independent variables.

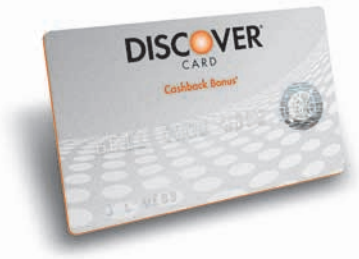
The main advantage of the factorial experiment lies in the third piece of information you can determine: the interaction between independent variables. An **interaction** exists if the effect of one independent variable (e.g., focus of attention) changes over levels of a second (e.g., type of affect displayed). The presence of an interaction indicates a complex relationship between independent variables. In other words, an interaction shows that there is no simple effect of either independent variable on the dependent variable. For this reason, most social psychological experiments are designed to discover interactions between independent variables.

Let's go back to Oswald's experiment to see what she found. First, Oswald found a statistically significant main effect of focus of attention on willingness to help. Participants who focused on Michelle's affect volunteered more time than those who focused on Michelle's cognitions. If this were all that Oswald found, we would be content with the conclusion that focus of attention determines helping. However, Oswald also found a statistically significant interaction between focus of attention and the type of affect (positive or negative) Michelle displayed. This interaction is shown in Figure 1.3. As you can see, focus of attention had a significant effect when Michelle displayed positive emotion, but not when she displayed negative emotion. In the light of this interaction, would you still be confident in the broad conclusion that focus of attention affects helping? Probably not, because whether focus of attention affects helping *depends* upon the type of emotion displayed.

Evaluating Experiments

Most of the research studies described in this book are experimental studies. When evaluating these experiments, ask yourself these questions:

- What was the independent variable, and how was it manipulated?
- What were the experimental and control groups?
- What was the dependent variable?
- What methods were employed to test the hypothesis, and were the methods sound?
- Were there any confounding variables that could provide an alternative explanation for the results?
- What was found? That is, what changes in the dependent variable were observed as a function of manipulation of the independent variable?
- What was the nature of the sample used? Was the sample representative of the general population, or was it limited with respect to demographics, such as age, gender, culture, or some other set of characteristics?



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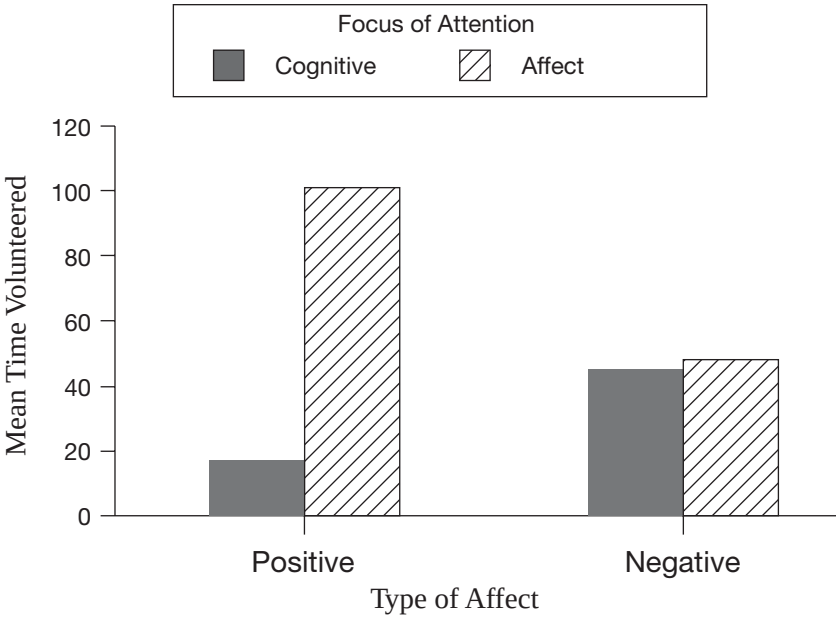

Figure 1.3
The interaction between type of affect and focus of attention.

Based on data from Oswald (2002).

Correlational Research

Although most research in social psychology is experimental, some research is *correlational*. In correlational research, researchers do not manipulate an independent variable. Instead, they measure two or more dependent variables and look for a relationship between them. If changes in one variable are associated with changes in another, the two variables are said to be correlated. When the values of two variables change in the same direction, increasing or decreasing in value, there is a positive correlation between them. For example, if you find that crime increases along with increases in temperature, a positive correlation exists. When the values change in opposite directions, one increasing and the other decreasing, there is a negative correlation between the variables. For example, if you find that less help is given as the number of bystanders to an emergency increases, a negative correlation exists. When one variable does not change systematically with the other, they are uncorrelated.

Even if correlations are found, however, a causal relationship cannot be inferred. For example, height and weight are correlated with each other—the greater one is, the greater the other tends to be—but increases in one do not cause increases in the other. Changes in both are caused by other factors, such as growth hormone and diet. Correlational research indicates whether changes in one variable are related to changes in another, but it does not indicate *why* the changes are related. Cause and effect can be demonstrated only by experiments.

In correlational studies, researchers are interested in both the direction of the relationship between the variables (whether it is positive or negative) and the degree, or strength, of the relationship. They measure these two factors with a special statistical test known as the **correlation coefficient** (symbolized as *r*). The size of the correlation coefficient, which can range from –1 through 0 to +1, shows the degree of the relationship. A value of *r* that approaches –1 to +1 indicates a stronger relationship than a value closer to 0.

correlation coefficient
A statistical technique used to determine the direction and strength of a relationship between two variables.

In Figure 1.4, the five graphs illustrate correlations of varying strengths and directions. Figure 1.4A shows a 0 correlation: Points are scattered at random within the graph. Figures 1.4B and 1.4C show positive correlations of different strengths. As the correlation gets stronger, the points start to line up with each other (Figure 1.4B). A **positive correlation** exists when the values of two variables increase or decrease in the same direction. In a perfect positive correlation ($r = +1$), all the points line up along a straight line (Figure 1.4C). Notice that in a positive correlation, the points line up along a line that slopes in an upward direction, beginning at the lower left of the graph and ending at the upper right.

positive correlation
The direction of a correlation in which the values of two variables increase or decrease in the same direction.

In a negative correlation (shown in Figures 1.4D and 1.4E), the same rules concerning strength apply that held for the positive correlation. However, in a **negative correlation**, as the value of one variable *increases* the value of a second *decreases*. Figure 1.4E shows a perfect negative correlation (–1).

negative correlation
The direction of a correlation in which the value of one variable increases whereas the value of a second decreases.

An excellent example of a correlational study is one conducted by Del Barrio, Aluja, and Garcia (2004). Del Barrio et al. investigated the relationship between personality characteristics and an individual's capacity to feel empathy for someone in need. Del Barrio et al. administered a measure of empathy and personality inventory measuring the "Big Five" personality dimensions (energy, friendliness, conscientiousness, emotional stability, and openness) to Spanish adolescents. Del Barrio et al. found that "friendliness" correlated most strongly with empathy for both boys and girls. High scores on the "friendliness" dimension related to higher empathy scores. They also found that "energy," "conscientiousness," and "openness" all positively correlated with empathy for girls and boys, although not as strongly as "friendliness." "Emotional stability" did not significantly correlate with empathy.

Based on this brief summary, you can see that six variables were measured: five personality dimensions and empathy. However, notice that Del Barrio and her colleagues did not manipulate any of the variables. Therefore, there were no independent variables.

Although correlational research does not demonstrate causal relationships, it does play an important role in science. Correlational research is used in situations where it is not possible to manipulate variables. Any study of individual characteristics (age, sex, race, and so on) is correlational. After all, you cannot manipulate someone's age or sex. Correlational research is also used when it would be unethical to manipulate variables. For example, if you were interested in how alcohol consumption affects the human fetus, it would not be ethical to expose pregnant women to various dosages of alcohol and see what happens. Instead, you could measure alcohol consumption and the rate of birth defects and look for a correlation between those two variables. Finally, correlational research is useful when you want to study variables as they occur naturally in the real world.

Settings for Social Psychological Research

Social psychological research is done in one of two settings: the laboratory or the field. Laboratory research is conducted in a controlled environment created by the researcher; participants come into this artificial environment to participate in the research. Field research is conducted in the participant's natural environment; the researcher goes to the participant, in effect taking the study on the road. Observations are made in the participant's natural environment; sometimes, independent variables are even manipulated in this environment.

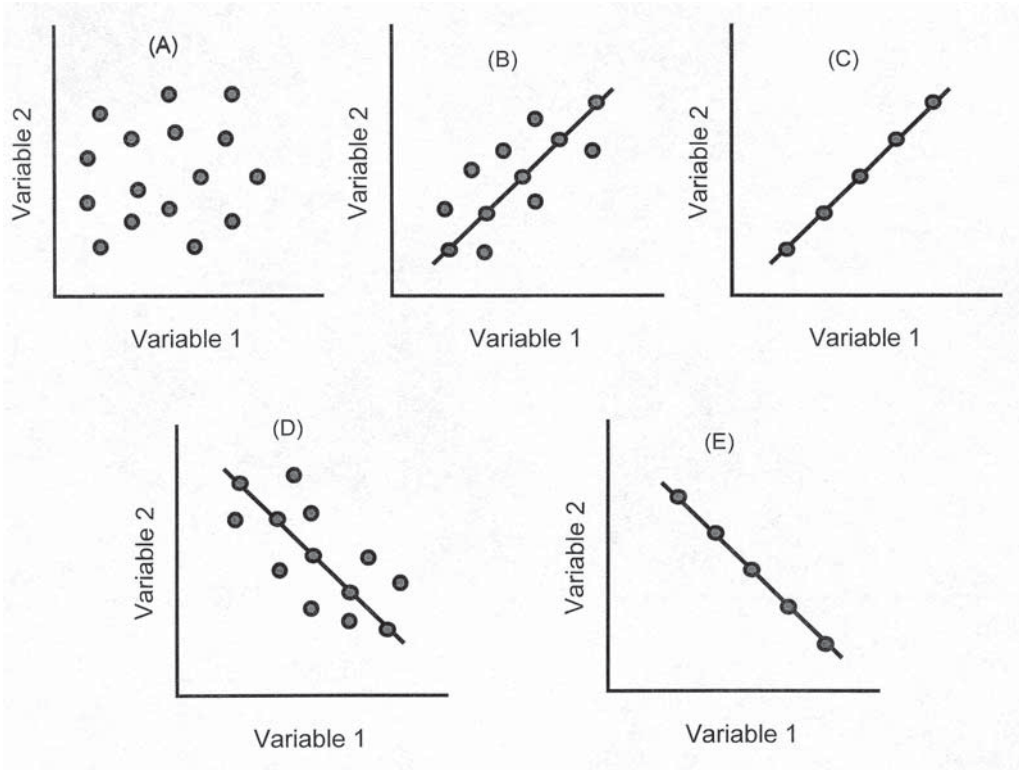

Figure 1.4 Scatterplots showing correlations of different directions and strength: (a) correlation of 0 indicated by dots randomly arrayed; (b) strong positive correlation; (c) perfect positive correlation (+1) indicated by the dots lined up perfectly, sloping from bottom left to upper right; (d) strong negative correlation; (e) perfect negative correlation indicated by the dots lined up perfectly, sloping from upper left to lower right.

Laboratory Research

Most research in social psychology is conducted in the laboratory. This allows the researcher to exercise tight control over extraneous (unwanted) variables that might affect results. For example, the researcher can maintain constant lighting, temperature, humidity, and noise level within a laboratory environment. This tight control over the environment and over extraneous variables allows the researcher to be reasonably confident that the experiment has *internal validity*—that is, that any variation observed in the dependent variable was caused by manipulation of the independent variable. However, that tight control also has a cost: The researcher loses some ability to apply the results beyond the tightly controlled laboratory setting (*external validity*). Research conducted in highly controlled laboratories may not generalize very well to real-life social behavior, or even to other laboratory studies.

Field Research

Field research comes in three varieties: the field study, the field survey, and the field experiment. In a **field study**, the researcher makes unobtrusive observations of the participants without making direct contact or interfering in any way. The researcher simply watches from afar. In its pure form, the participants should be unaware that they are being observed, because the very act of being observed tends to change the participants' behavior. The researcher avoids contaminating the research situation by introducing any changes in the participants' natural environment.

Jane Goodall's original research on chimpanzee behavior was a field study. Goodall investigated social behavior among chimpanzees by observing groups of chimps from a distance, initially not interacting with them. However, as Goodall became more

field study A descriptive research strategy in which the researcher makes unobtrusive observations of the participants without making direct contact or interfering in any way.

accepted by the chimps, she began to interact with them, even to the point of feeding them. Can we be sure that Goodall's later observations are characteristic of chimp behavior in the wild? Probably not, because she altered the chimps' environment by interacting with them.

field survey A descriptive research strategy in which the researcher directly approaches participants and asks them questions.

In the **field survey**, the researcher directly approaches participants and asks them questions. For example, he or she might stop people in a shopping mall and collect information on which make of car they plan to buy next. The ubiquitous political polls we see all the time, especially during election years, are examples of field surveys.

Field studies and surveys allow us to describe and catalogue behavior. Political polls, for example, may help us discover which candidate is in the lead, whether a proposition is likely to pass, or how voters feel about important campaign issues. However, they cannot tell us what causes the differences observed among voters, because we would need to conduct an experiment to study causes. Fortunately, we can conduct experiments in the field.

field experiment A research setting in which the researcher manipulates one or more independent variables and measures behavior in the participant's natural environment.

The field experiment is probably the most noteworthy and useful field technique for social psychologists. In a **field experiment**, the researcher manipulates independent variables and collects measure of the dependent variables (the participant's behavior). In this sense, a field experiment is like a laboratory experiment. The main difference is that in the field experiment, the researcher manipulates independent variables under naturally occurring conditions. The principal advantage of the field experiment is that it has greater external validity—that is, the results can be generalized beyond the study more legitimately than can the results of a laboratory experiment.

As an example, let's say you are interested in seeing whether the race of a person needing help influences potential helpers. You might consider a field experiment in which you have someone, a confederate of yours (a *confederate* is someone working for the experimenter), pretend to faint on a subway train. In the experiment, you use two different confederates, one a black male, the other a white male. The two are as alike as they can be (in age, dress, and so on) except, of course, for skin color. You then observe how many people help each man and how quickly they do so. Such an experiment would be very realistic and would have a high degree of external validity. Consequently, the results would have broad generality.

A disadvantage of the field experiment is that the researcher cannot control extraneous variables as effectively as in the laboratory. Thus, internal validity may be compromised. In the subway experiment, for example, you have no control over who the participants are or which experimental condition (white or black confederate) they will walk into. Consequently, the internal validity of your experiment—the legitimacy of the causal relationship you discover—may suffer. The experiment also poses some ethical problems, one of which is that the people who purchased a ride on the subway did not voluntarily agree to participate in an experiment. We discuss the ethics of research in a later section of this chapter.

The Role of Theory in Social Psychological Research

theory A set of interrelated propositions concerning the causes for a social behavior that helps organize research results, make predictions about the influence of certain variables, and give direction to future social research.

On many occasions throughout this book, we refer to social psychological theories. A **theory** is a set of interrelated statements or propositions about the causes of a particular phenomenon. Theories help social psychologists organize research results, make predictions about how certain variables influence social behavior, and give direction to future research. In these ways, social psychological theories play an important role in helping us understand complex social behaviors.

There are a few important points to keep in mind as you read about these theories. First, a theory is not the final word on the causes of a social behavior. Theories are developed, revised, and sometimes abandoned according to how well they fit with research results. Rather than tell us how things are in an absolute sense, theories help us understand social behavior by providing a particular perspective. Consider attribution theories—theories about how people decide what caused others (and themselves) to act in certain ways in certain situations. Attribution theories do not tell us exactly how people assign or attribute causality. Instead, they suggest rules and make predictions about how people make such inferences in a variety of circumstances. These predictions are then tested with research.

The second important point about social psychological theories is that often, more than one theory can apply to a particular social behavior. For example, social psychologists have devised several attribution theories to help us understand how we make decisions about the causes for behaviors. Each theory helps provide a piece of the puzzle of social behavior. However, no single theory may be able to account for all aspects of a social behavior. One theory helps us understand how we infer the internal motivations of another individual; a second theory examines how we make sense of the social situation in which that individual's behavior took place.

Theory and the Research Process

Theories in social psychology are usually tested by research, and much research is guided by theory. Research designed to test a particular theory or model is referred to as **basic research**. In contrast, research designed to address a real-world problem is called **applied research**. The distinction between these two categories is not rigid, however. The results of basic research can often be applied to real-world problems, and the results of applied research may affect the validity of a theory.

basic research Research that has the principal aim of empirically testing a theory or a model.

applied research Research that has a principal aim to address a real-world problem.

For example, research on how stress affects memory may be primarily basic research, but the findings of this research apply to a real-world problem: the ability of an eyewitness to recall a violent crime accurately. Similarly, research on how jurors process evidence in complex trials (e.g., Horowitz & Bordens, 1990) has implications for predictions made by various theories of how people think and make decisions in a variety of situations. Both types of research have their place in social psychology.

Theory and Application

Application of basic theoretical ideas may take many forms. Consider, for example, the idea that it is healthy for individuals to confront and deal directly with psychological traumas from the past. Although various clinical theories have made this assumption, evidence in support of it was sparse.

In one study, social psychologist Jamie Pennebaker (1989) measured the effects of disclosure on mind and body. The research showed that when the participants confronted past traumas, either by writing or talking about them, their immunological functioning improved and their skin conductance rates were lowered. This latter measure reflects a reduction in autonomic nervous system activity, indicating a lessening of psychological tension. In other words, people were "letting go" as they fully revealed their feelings about these past traumas. Those who had trouble revealing important thoughts about the event—who could not let go of the trauma—showed heightened skin conductance rates. Pennebaker's work shows that the act of confiding in someone protects the body from the internal stress caused by repressing these unvoiced traumas. Thus, this is an example of basic research that had clear applications for real-life situations.

What Do We Learn from Research in Social Psychology?

Two criticisms are commonly made of social psychological research. One is that social psychologists study what we already know, the "intuitively obvious." The other is that because exceptions to research results can nearly always be found, many results must be wrong. Let's consider the merits of each of these points.

Do Social Psychologists Study the Obvious?

William McGuire, a prominent social psychologist, once suggested that social psychologists may appear to study "bubba psychology"—things we learned on our grandmother's knee. That is, social psychologists study what is already obvious and predictable based on common sense. Although it may seem this way, it is not the case. The results of research seem obvious only when you already know what they are. This is called **hindsight bias**, or the "I-knew-it-all-along" phenomenon (Slovic & Fischoff, 1977; Wood, 1978). With the benefit of hindsight, everything looks obvious. For example, after the attacks on 9/11, some commentators asked why President Bush or the CIA did not "connect the dots" and see the attacks coming. Unfortunately, those dots were not so clear in the months and years leading up to the attacks. In hindsight, the signs seemed to point to an attack, but before the incident, things were not so clear. In fact, the 9/11 Commission pointed out that hindsight can bias our perceptions of events:

hindsight bias
Also known as the "I-knew-it-all–along" phenomenon; shows that with the benefit of hindsight, everything looks obvious.

> Commenting on Pearl Harbor, Roberta Wohlstetter found it "much easier after the event to sort the relevant from the irrelevant signals. After the event, of course, a signal is always crystal clear; we can now see what disaster it was signaling since the disaster has occurred. But before the event it is obscure and pregnant with conflicting meanings." As time passes, more documents become available, and the bare facts of what happened become still clearer. Yet the picture of how those things happened becomes harder to reimagine, as that past world, with its preoccupations and uncertainty, recedes and the remaining memories of it become colored by what happened and what was written about it later. (9/11 Commission Report, 2004)

Although the results of some research may seem obvious, studies show that when individuals are given descriptions of research without results, they can predict the outcome of the research no better than chance (Slovic & Fischoff, 1977). In other words, the results were not so obvious when they were not already known!

Do Exceptions Mean Research Results Are Wrong?

When the findings of social psychological research are described, someone often points to a case that is an exception to the finding. Suppose a particular study shows that a person is less likely to get help when there are several bystanders present than when there is only one. You probably can think of a situation in which you were helped with many bystanders around. Does this mean that the research is wrong or that it doesn't apply to you?

To answer this question, you must remember that in a social psychological experiment, groups of participants are exposed to various levels of the independent variable. In an experiment on the relationship between the number of bystanders and the likelihood of receiving help, for example, one group of participants is given an opportunity to help a person in need with no other bystanders present. A second group of participants gets the same opportunity but with three bystanders present. Let's say

Table 1.1 Results from a Hypothetical Study of Helping Behavior

Participant Number	No Bystanders	Three Bystanders
1	No help	No help
2	No help	No help
3	Help	No help
4	Help	Help
5	No help	Help
6	Help	No help
7	Help	No help
8	Help	No help
9	Help	No help
10	Help	No help

that our results in this hypothetical experiment look like those shown in Table 1.1. Seven out of 10 participants in the no-bystander condition helped (70%), whereas only 2 out of 10 helped in the 3-bystander condition (20%). Thus, we would conclude that you are more likely to get help when there are no other bystanders present than if there are three bystanders.

Notice, however, that we do not say that you will never receive help when three bystanders are present. In fact, two participants helped in that condition. Nor do we say that you always receive help when there are no bystanders present. In fact, in three instances no help was rendered.

The moral to the story is that the results of experiments in social psychology represent differences between groups of participants, not differences between specific individuals. Based on the results of social psychological research, we can say that *on the average*, groups differ. Within those groups, there are nearly always participants who do not behave as most of the participants behaved. We can acknowledge that exceptions to research findings usually exist, but this does not mean that the results reported are wrong.

Ethics and Social Psychological Research

Unlike research in chemistry and physics, which does not involve living organisms, research in social psychology uses living organisms, both animal and human. Because social psychology studies living organisms, researchers must consider research ethics. They have to concern themselves with the treatment of their research participants and with the potential long-range effects of the research on the participants' well-being. In every study conducted in social psychology, researchers must place the welfare of the research participants among their top priorities.

Questions about ethics have been raised about some of the most famous research ever done in social psychology. For example, you may be familiar with the experiments on obedience conducted by Stanley Milgram (1963; described in detail in Chapter 7). In these experiments, participants were asked to administer painful electric shocks to an individual who was doing poorly on a learning task. Although no shocks were actually delivered, participants believed they were inflicting intense pain on an increasingly

unwilling victim. Following the experiment, participants reported experiencing guilt and lowered self-esteem as well as anger toward the researchers. The question raised by this and other experiments with human participants is how far researchers can and should go to gain knowledge.

Research conducted by social psychologists is governed by an ethical code of conduct developed by the American Psychological Association (APA). The main principles of the APA (2002) code are summarized in Table 1.2. Notice that the code mandates that participation in psychological research be voluntary. This means that participants cannot be compelled to participate in research. Researchers must also obtain **informed consent** from the participants, which means that they must inform them of the nature of the study, the requirements for participation, and any risks or benefits associated with participating in the study. Subjects must also be told they have the right to decline or withdraw from participation with no penalty.

informed consent An ethical research requirement that participants must be informed of the nature of the study, the requirements for participation, any risks or benefits associated with participating in the study, and the right to decline or withdraw from participation with no penalty.

Additionally, the APA code restricts the use of deception in research. Deception occurs when researchers tell their participants they are studying one thing but actually are studying another. Deception can be used only if no other viable alternative exists. When researchers use deception, they must tell participants about the deception (and the reasons for it) as soon as possible after participation.

Following ethical codes of conduct protects subjects from harm. In this sense, ethical codes help the research process. However, sometimes ethical research practice conflicts with the requirements of science. For example, in a field experiment on helping, it may not be possible (or desirable) to obtain consent from participants before they participate in the study. When such conflicts occur, the researcher must weigh the potential risks to the participants against the benefits to be gained.

Rick Rescorla and 9/11 Revisited

How can we explain the behavior of Rick Rescorla on 9/11? Social psychologists would begin by pointing to the two factors that contribute to social behavior: individual characteristics and the social situation. Was there something about Rescorla's personality, attitudes, or other characteristics that predisposed him to act altruistically? Or was it the social environment that was more important? Social psychologists focus on the latter. Rescorla's experiences in Vietnam, where he lost several men under his command, surely helped shape his behavior on 9/11. Close associates indicate that he was determined never to lose people for whom he had responsibility. Of course, there were others who experienced the same kind of loss as Rescorla, but did not translate it into altruism. His unique way of viewing the social situation led him to do what he did.

Social psychology is not the only discipline that would be interested in explaining Rick Rescorla's and the 9/11 hijackers' behavior. Biologists studying ethology would look at Rescorla's behavior in the light of what altruism does to help a species survive. Sociologists might point to poverty and lack of education contributing to terrorist acts. Each discipline has its own way of collecting information about issues of interest. Social psychology would face the daunting task of explaining Rescorla's behavior (and the behavior of the hijackers) by conducting carefully designed research. Through the scientific method, one could isolate the variables that contribute to aggressive acts and altruistic acts such as those that occurred on September 11, 2001.

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Table 1.2 Summary of the 2002 APA Ethical Principles That Apply to Human Research Participants

1. Research proposals submitted to Institutional Review Boards shall contain accurate information. Upon approval researchers shall conduct their research within the approved protocol.
2. When informed consent is required, informed consent shall include: (1) the purpose of the research, expected duration, and procedures; (2) their right to decline to participate and to withdraw from the research once participation has begun; (3) the foreseeable consequences of declining or withdrawing; (4) reasonably foreseeable factors that may be expected to influence their willingness to participate such as potential risks, discomfort, or adverse effects; (5) any prospective research benefits; (6) limits of confidentiality; (7) incentives for participation; and (8) whom to contact for questions about the research and research participants' rights. They provide opportunity for the prospective participants to ask questions and receive answers.
3. When intervention research is conducted that includes experimental treatments, participants shall be informed at the outset of the research of (1) the experimental nature of the treatment; (2) the services that will or will not be available to the control group(s) if appropriate; (3) the means by which assignment to treatment and control groups will be made; (4) available treatment alternatives if an individual does not wish to participate in the research or wishes to withdraw once a study has begun; and (5) compensation for or monetary costs of participating including, if appropriate, whether reimbursement from the participant or a third-party payer will be sought.
4. Informed consent shall be obtained when voices or images are recorded as data unless (1) the research consists solely of naturalistic observations in public places, and it is not anticipated that the recording will be used in a manner that could cause personal identification or harm, or (2) the research design includes deception, and consent for the use of the recording is obtained during debriefing.
5. When psychologists conduct research with clients/patients, students, or subordinates as participants, psychologists take steps to protect the prospective participants from adverse consequences of declining or withdrawing from participation. When research participation is a course requirement or an opportunity for extra credit, the prospective participant is given the choice of equitable alternative activities.
6. Informed consent may be dispensed with only (1) where research would not reasonably be assumed to create distress or harm and involves (a) the study of normal educational practices, curricula, or classroom management methods conducted in educational settings; (b) only anonymous questionnaires, naturalistic observations, or archival research for which disclosure of responses would not place participants at risk of criminal or civil liability or damage their financial standing, employability, or reputation, and confidentiality is protected; or (c) the study of factors related to job or organization effectiveness conducted in organizational settings for which there is no risk to participants' employability, and confidentiality is protected or (2) where otherwise permitted by law or federal or institutional regulations.
7. Psychologists make reasonable efforts to avoid offering excessive or inappropriate financial or other inducements for research participation when such inducements are likely to coerce participation. When offering professional services as an inducement for research participation, psychologists clarify the nature of the services, as well as the risks, obligations, and limitations.
8. Deception in research shall be used only if they have determined that the use of deceptive techniques is justified by the study's significant prospective scientific, educational, or applied value and that effective nondeceptive alternative procedures are not feasible. Deception is not used if the research is reasonably expected to cause physical pain or severe emotional distress. Psychologists explain any deception that is an integral feature of the design and conduct of an experiment to participants as early as is feasible, preferably at the conclusion of their participation, but no later than at the conclusion of the data collection, and permit participants to withdraw their data.
9. Participants shall be offered a prompt opportunity to obtain appropriate information about the nature, results, and conclusions of the research, and they take reasonable steps to correct any misconceptions that participants may have of which the psychologists are aware. If scientific or humane values justify delaying or withholding this information, psychologists take reasonable measures to reduce the risk of harm. When psychologists become aware that research procedures have harmed a participant, they take reasonable steps to minimize the harm.

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Chapter Review

1. What is social psychology?

   Social psychology is the scientific study of how we think and feel about, interact with, and influence each other. It is the branch of psychology that focuses on social behavior—specifically, how we relate to other people in our social world. Social psychology can help us understand everyday things that happen to us, as well as past and present cultural and historical events.

2. How do social psychologists explain social behavior?

   An early model of social behavior proposed by Kurt Lewin suggested that social behavior is caused by two factors: individual characteristics and the social situation. This simple model has since been expanded to better explain the forces that shape social behavior. According to modern views of social behavior, input from the social situation works in conjunction with individual characteristics to influence social behavior through the operation of social cognition (the general process of thinking about social events) and social perception (how we perceive other people). Based on our processing of social information, we evaluate the social situation and form an intention to behave in a certain way. This behavioral intention may or may not be translated into social behavior. We engage in social behavior based on our constant changing evaluation of the situation. Once we behave in a certain way, it may have an effect on the social situation, which in turn will affect future social behavior.

3. How does social psychology relate to other disciplines that study social behavior?

   There are many scientific disciplines that study social behavior. Biologists, developmental psychologists, anthropologists, personality psychologists, historians, and sociologists all have an interest in social behavior. Although social psychology has common interests with these disciplines, unlike biology and personality psychology, social psychology focuses on the social situation as the principal cause of social behavior. Whereas sociology and history focus on the situation, social psychology takes a narrower view, looking at the individual in the social situation rather than the larger group or society. In other words, history and sociology take a top-down approach to explaining social behavior, making a group or institution the focus of analysis. Social psychology takes a bottom-up approach, focusing on how individual behavior is influenced by the situation.

4. How do social psychologists approach the problem of explaining social behavior?

Unlike the layperson who forms commonsense explanations for social behavior based on limited information, social psychologists rely on the scientific method to formulate scientific explanations—tentative explanations based on observation and logic that are open to empirical testing. The scientific method involves identifying a phenomenon to study, developing a testable research hypothesis, designing a research study, and carrying out the research study. Only after applying this method to a problem and conducting careful research will a social psychologist be satisfied with an explanation.

5. What is experimental research, and how is it used?

Experimental research is used to uncover causal relationships between variables. Its main features are (1) the manipulation of an independent variable and the observation of the effects of this manipulation on a dependent variable, (2) the use of two or more initially comparable groups, and (3) exercising control over extraneous and confounding variables. Every experiment includes at least one independent variable with at least two levels. In the simplest experiment, one group of participants (the experimental group) is exposed to an experimental treatment, and a second group (the control group) is not. Researchers then compare the behavior of participants in the experimental group with the behavior of participants in the control group. Independent variables can be manipulated by varying their quantity or quality. Researchers use random assignment to ensure that the groups in an experiment are comparable before applying any treatment to them.

The basic experiment can be expanded by adding additional levels of an independent variable or by adding a second or third independent variable. Experiments that include more than one independent variable are known as factorial experiments.

6. What is correlational research?

In correlational research, researchers measure two or more variables and look for a relationship between them. When two variables both change in the same direction, increasing or decreasing in value, they are positively correlated. When they change in opposite directions, one increasing and the other decreasing, they are negatively correlated. When one variable does not change systematically with the other, they are uncorrelated. Even if a correlation is found, a causal relationship cannot be inferred.

7. What is the correlation coefficient, and what does it tell you?

Researchers evaluate correlational relationships between variables with a statistic called the correlation coefficient (symbolized as *r*). The sign of *r* (positive or negative) indicates the direction of the relationship between variables; the size of *r* (ranging from –1 through 0 to +1) indicates the strength of the relationship between variables.

8. Where is social psychological research conducted?

Social psychologists conduct research either in the laboratory or in the field. In laboratory research, researchers create an artificial environment in which they can control extraneous variables. This tight control allows the researchers to be reasonably confident that any variation observed in the dependent variable was caused by manipulation of the independent variable. However, results obtained this way are sometimes legitimately generalized beyond the laboratory setting.

There are several kinds of field research. In the field study, the researcher observes participants but does not interact with them. In the field survey, the researcher has direct contact with participants and interacts with them. Both of these techniques allow the researcher to describe behavior, but causes cannot be uncovered. In the field experiment, the researcher manipulates an independent variable in the participant's natural environment. The field experiment increases the generality of the research findings. However, extraneous variables may cloud the causal relationship between the independent and dependent variables.

9. What is the role of theory in social psychology?

A theory is a set of interrelated statements or propositions about the causes of a phenomenon that helps organize research results, makes predictions about how certain variables influence social behavior, and gives direction to future research. A theory is not the final word on the causes of a social behavior. Theories are developed, revised, and sometimes abandoned according to how well they fit with research results. Theories do not tell us how things are in an absolute sense. Instead, they help us understand social behavior by providing a particular perspective. Often, more than one theory can apply to a particular social behavior.

Sometimes, one theory provides a better explanation of one aspect of a particular social behavior, and another theory provides a better explanation of another aspect of that same behavior. Some research, called basic research, is designed to test predictions made by theories. Applied research is conducted to study a real-world phenomenon (e.g., jury decisions). Basic and applied research are not necessarily mutually exclusive. Some basic research has applied implications, and some applied research has theoretical implications.

10. What can we learn from social psychological research?

Two common criticisms of social psychological research are that social psychologists study things that are intuitively obvious and that because exceptions to research results can nearly always be found, many results must be wrong. However, these two criticisms are not valid. The findings of social psychological research may *appear* to be intuitively obvious in hindsight (the hindsight bias), but individuals cannot predict how an experiment will come out if they don't already know the results. Furthermore, exceptions to a research finding do not invalidate that finding. Social psychologists study groups of individuals. Within a group, variation in behavior will occur. Social psychologists look at average differences between groups.

11. What ethical standards must social psychologists follow when conducting research?

Social psychologists are concerned with the ethics of research—how participants are treated within a study and how they are affected in the long term by participating. Social psychologists adhere to the code of research ethics established by the American Psychological Association. Ethical treatment of participants involves several key aspects, including informing participants about the nature of a study and requirements for participation prior to participation (informed consent), protecting participants from short-term and long-term harm, and ensuring anonymity.

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