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Chapter 2

ATTITUDE MEASUREMENT

Techniques for Measuring the Unobservable

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Elizabeth Almond had just thrown her hat into the ring in the mayoral race in Clarkton. The citizens made it clear that they expected their new mayor to have a solution to the city's most pressing problem—trash. The current landfill site would reach its capacity within the next 5 years, and there was no specific plan for what would be done with the trash when that happened. Elizabeth's plan was to implement a mandatory recycling program that would dramatically reduce the amount of waste being sent to the landfill site, giving the city more time to find a subsequent site. However, being a savvy politician, Elizabeth wanted to find out what people thought of this idea before centering her whole campaign on it. If the idea turned out to be extremely unpopular, she would have to come up with ways in which to make it more palatable.

Life circumstances can lead people to have very different thoughts and feelings about the world around them. Members of local environmental groups would most likely be favorably disposed to the recycling proposal. It would be consistent with their values and beliefs about the importance of environmental protection. Employees at the recycling plant also would probably react positively to the plan. It would be in their self-interest, making their work more important to the city and bringing them better job security. On the other hand, many members of the business community might not be so enthusiastic about the recycling proposal because

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it would add complications to the way in which they conduct their business. Employees would have to be vigilant of their waste (e.g., being sure to recycle office paper and not throw it out), and companies would have to hire additional workers specifically to deal with waste management. Average citizens might also find the plan to be a nuisance, but would they rather endure a tax increase to pay for their trash to be trucked to a neighboring city?

At this point, you probably have some sense that there could be a variety of attitudes about the mandatory recycling proposal and that finding out about these views will have real implications for Elizabeth and her mayoral campaign. It is important to remember that attitudes are rarely as simple as "for" or "against." Although both the environmentalists and the recycling plant workers may be in favor of the proposal, their attitudes might have little else in common. The challenge for scientists studying attitudes is to determine how we describe attitudes precisely and meaningfully. We must go beyond simple impressions and find a more rigorous and precise way in which to describe attitudes. We want concrete ways of measuring how attitudes differ from person to person. Simply put, we want to assign numbers to attitudes. However, this task can be especially difficult because attitudes cannot be directly observed. In other words, although we know that people have attitudes, we have no way of "reading their minds" and, thus, of directly observing their attitudes. Instead, we must infer attitudes from some sort of observable phenomenon that we believe reflects people's attitudes.

ISSUES TO CONSIDER IN MEASURING ATTITUDES

How Can We Know Another Person's Attitudes?

Short of mind reading, what kinds of information can Elizabeth Almond look at to find out how people feel about her recycling proposal? There are at least six sources of information that she could use to assess people's attitudes. The first and most obvious would be to simply ask people. However, as you will read later in this chapter, direct questions do not always lead to the most useful answers. A second source of information may come from observing how people react to the issue. Do they roll their eyes, or do they smile? Such nonverbal reactions can communicate a wealth of information but are often not easily interpreted. A third possibility is to look at more overt behaviors related to the policy. Are people willing to help distribute pamphlets to promote the proposal? Looking at whether people act to help or hinder the policy when confronted with the opportunity would be another indication of how they feel about it. Because people tend to associate with others who have similar attitudes, a fourth source of information is to consider people's friends and families to get an idea of their attitudes. A fifth possibility is to ask people to make judgments about the policy and to notice whether they show bias in their judgments that reflect their attitudes. Finally, although most of us do not have access to this sort of information in everyday life, it is possible to get information about people's attitudes by examining their physiological responses. To the extent that many of these sources of information paint a similar picture, we can have increasing confidence that we truly understand people's attitudes.

Clearly, gathering and interpreting all of this information would take an enormous amount of time. Political candidates (and attitude researchers) do not have the resources to spend the months, weeks, or even hours with each person to get a thorough understanding of that person's attitude. As attitude researchers, we have had to devise ways of measuring attitudes that can be administered in a very short period of time to a large number of people.

Why Measure Attitudes?

Attitude researchers in social psychology and other fields (e.g., political science, sociology, marketing, organizational behavior) hope to arrive at a scientific understanding of attitudes and persuasion. Just as biologists study cells, physicists study atoms, and chemists study molecules, attitude researchers want to use scientific principles to understand attitudes. The starting point of any scientific endeavor is observation and measurement. We need to know what to look for and how to assign numbers to it.

At the more concrete level, there are two basic reasons why we need effective measures of attitudes. The first is to predict behavior. We assume that if we know people's attitudes, we will have a good idea of how they will react in response to an object. For example, people who are opposed to Elizabeth's recycling proposal would probably not vote for her in the municipal election. The second reason why we need to measure attitudes is to know whether they change in response to persuasion. Imagine that Elizabeth got the feeling that citizens were not very happy about mandatory recycling, so she hired a team of consultants to help her portray her proposal more positively. If she were unable to measure attitudes, how would she know whether the consultants' tactics were working or whether she should fire them and try a different strategy?

Both of these reasons are important not only in the practical sense illustrated by the example but also for our theories of attitudes and persuasion. The primary way in which to evaluate the quality of a theory is through the accuracy of its predictions. Does the theory have an accurate description of when attitudes do and do not predict behavior? Can the theory predict which attitudes will be most vulnerable to persuasion? Attitude measures provide the data we need to reveal the inadequacies of poor theories, confirm the quality of good theories, and generate new theories.

Three Fundamental Considerations

The Attitude Object

People can have attitudes toward all sorts of things. They can have attitudes toward specific people (e.g., a roommate, David Letterman), social groups (e.g., the French, lawyers), policy decisions (e.g., raising taxes, increasing military spending), personal actions (e.g., getting married, studying for an exam), abstract concepts (e.g., democracy, Christianity), consumer products (e.g., Ford trucks, Crest toothpaste), and health behaviors (e.g., condom use, driving while intoxicated), among others. Nearly anything can become the object of an attitude. Social psychologists studying attitudes have developed measurement techniques that can apply to a wide range of different types of attitude objects. However, to use these techniques effectively when measuring attitudes, they must clearly specify exactly what attitude object is of interest. For example, when Elizabeth is measuring citizens' attitudes, she will need to decide whether she wants to measure attitudes toward recycling in general or attitudes toward her specific proposal.

Attitude Properties

Attitudes are complicated. People can have a wide range of thoughts and feelings about an attitude object, and these reactions may change over time. The first task in attitude measurement

is to simplify this complexity. In some sense, asking a social psychologist to measure an attitude is like asking a doctor to measure a person. This request is likely to be met with confusion. The doctor needs to know what it is about the person that you want measured. Height, weight, blood pressure? A person has many physical attributes that can be measured. The measurement process cannot begin until the relevant properties are specified.

The social psychologist faces a similar problem when asked to measure an attitude. Attitudes have many properties. However, most of the time, when scholars use the term *attitude,* they are referring to the *evaluative* property of the attitude.[1] This is probably also what you would assume if you were asked about your attitude toward something. The evaluative property refers to how positively or negatively the person feels toward the object—pro or con, good or bad, favorable or unfavorable, supportive or antagonistic. Thus, most attitude measures are designed to assess the evaluative property of attitudes, and it is these measures that are the primary focus of this chapter.

Although the evaluative property of attitudes is most commonly studied, attitudes also vary along other dimensions. One property on which social psychologists have increasingly begun to focus is attitude strength. It seems intuitively obvious that some attitudes are stronger than others. Strong attitudes are essentially those that are most likely to last over time, resist persuasion, guide behavior, and influence the way in which we interpret new information. Researchers have identified a host of different features of attitudes that reflect the strength of attitudes (Petty & Krosnick, 1995). For example, features such as certainty, importance, accessibility, knowledge, and ambivalence all have been found to be related to attitude strength. So to the extent that you are sure about your attitude, it is important to you, it comes readily to mind, you know a great deal about the attitude object, and you feel little conflict regarding the attitude object, your attitude will be likely to guide your behavior and resist change. Researchers have developed various ways of measuring the strength of an attitude (Wegener, Downing, Krosnick, & Petty, 1995), although these are not discussed in this chapter.

Another important property of attitudes is the extent to which they are based on different types of information. Attitude researchers have often distinguished between attitudes that are based predominantly on cognition and those that are based predominantly on affect (Crites, Fabrigar, & Petty, 1994; Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999; Millar & Millar, 1990). Affect refers to specific emotions or feelings, so attitudes based on affect are those that are concerned with the positive or negative feelings that are associated with an object or issue. Some environmentalists may have primarily affective attitudes toward Elizabeth's recycling proposal based, for example, on how great it feels to do something that is good for the earth. In contrast, attitudes based on cognition are those that are concerned with beliefs about the positive or negative attributes of an object or issue. Cognitive attitudes often tend to be based primarily on more objective information. Other environmentalists may have a cognitive attitude toward the recycling proposal based on facts such as that it would reduce the percentage of waste being sent to the landfill. Researchers have developed various ways of measuring the affective and cognitive bases of attitudes (Crites et al., 1994; Eagly, Mladinic, & Otto, 1994), although these are not discussed in this chapter.

Besides being based on different types of information, attitudes can vary in the functions they serve. For example, attitudes may serve a utilitarian function. That is, they may be primarily concerned with maximizing rewards and minimizing costs associated with an attitude

object and may emphasize the possibility of positive or negative outcomes. The recycling plant workers may have a primarily utilitarian attitude toward the recycling proposal because their job security may depend on it. Another commonly distinguished function of attitudes is the value-expressive function. These attitudes are concerned with a person's expression of important values and other central aspects of the self. So the environmentalists may have value-expressive attitudes to the extent that environmental protection is a deeply held and important value to them. A third function of attitudes is a social-adjustive one, for example, those attitudes or arguments pertaining to the facilitation of social relationships and relating to things such as group norms and the desire to be accepted by significant others. An example of a social-adjustive attitude would be Elizabeth's relatives and neighbors favoring her proposal on the basis that they feel close to her and want to support her. Researchers have developed various procedures for determining the functions that attitudes serve (e.g., Maio & Olson, 2000; Pratkanis, Breckler, & Greenwald, 1989), although measuring functions is beyond the scope of this chapter.

Target Population and Measurement Context

Even after Elizabeth has decided exactly what attitude objects she is interested in examining and what properties of attitudes she wishes to measure, there are still other measurement goals that she needs to consider. Exactly whose attitudes will be measured, and in what context will that be accomplished? The answers to these questions have implications for the wording and length of the measure. For example, if children are going to be included in the survey (perhaps not relevant for Elizabeth), the measure should be relatively short and questions should have simple wording in comparison with a survey designed for adults. If questions are going to be asked in a telephone survey, the response options should be limited because respondents have to keep them in memory as they consider the questions. In contrast, a more complex set of measures might be possible if questions are presented in a self-administered format for adults.

DIRECT MEASURES OF ATTITUDES

As mentioned earlier, the simplest route to discovering a person's attitude is to directly ask him or her. There are two different types of direct measures. *Structured* measures are close-ended, giving the respondent a limited number of answers from which to select. For example, Elizabeth Almond could have people answer simply "agree" or "disagree" when she asks them about her recycling proposal. *Unstructured* measures are open-ended, giving respondents the chance to describe their attitudes in their own words and to elaborate on their thoughts as fully as they wish. Using a measure of this sort, Almond might ask something like, "Tell me your thoughts about mandatory recycling."

The major advantage of unstructured measures is that they do not constrain people's responses. Thus, these measures can provide very rich data such as comments regarding why people hold the attitudes they do and comments reflecting subtle distinctions in the way in which the issue is construed. This makes unstructured measures especially useful during the early stages of investigating a particular issue. However, structured measures also have advantages over unstructured measures. Because specific response options are provided, the questions

are easy for respondents to answer. This also makes these measures easy for the researcher to score. Moreover, structured measures allow the researcher to focus more precisely on specific properties of the attitude such as asking questions related to different attitude functions or attitude strength. For these reasons, structured direct measures are far more popular than unstructured measures. Thus, structured measures are the focus of this chapter.

Single-Item Direct Measures

Types of Single-Item Measures

One seemingly simple way of directly measuring attitudes is to construct a single question directly asking people to report their attitudes about some issue. However, this task is far more complicated than one might expect. As can be seen in Figure 2.1, there are many different ways in which a simple evaluative question can be posed.

Potential Problems With Single-Item Measures

Moreover, there are a number of potential problems that can arise when using single-item measures. Consider the following questions about the mandatory recycling proposal:

1. Do you agree or disagree with the following statement: "I think Elizabeth Almond's mandatory recycling program is the best way in which to deal with Clarkton's trash crisis"?
2. Do you favor a tax increase to pay for Clarkton's garbage to be trucked to another county, or do you think that Elizabeth Almond's mandatory recycling proposal is a good idea?
3. What do you think is the biggest problem facing Clarkton today: public transit, trash, crime, unemployment, or the unbalanced budget?
4. What is your opinion about the mandatory recycling proposal: Do you favor it, oppose it, or neither?
5. Do you think it is particularly important that businesses and government-run services participate in mandatory recycling?
6. How do you feel about proposed city Bylaw C6-L347?

The information obtained with single-item measures can sometimes be misleading. Over the past three decades, researchers have identified many *biases* that can exist in single-item measures (Krosnick, 1999; Krosnick & Fabrigar, 1997; Schuman & Presser, 1981; Sudman, Bradburn, & Schwarz, 1995; Visser, Krosnick, & Lavrakas, 2000). These biases are revealed when seemingly trivial variations in wording, format, or question order can have a dramatic effect on the answers that people give. Each of the preceding six questions is an example of a particular kind of bias.

The problem with the first question is that some people will report agreeing with a statement regardless of what it says. This tendency to generally agree with a statement independent of the actual content of the statement is called *acquiescence bias*. This bias can be a problem when respondents read a statement and then must decide whether they agree or disagree with it. With the first question phrased as it is, acquiescence bias would

lead to an overestimation of how many people actually support the recycling proposal. One of the reasons that acquiescence bias occurs is that respondents think that the interviewer believes the statement and they agree so as to seem helpful or cooperative (e.g., Schuman & Presser, 1981). Alternatively, sometimes respondents might simply be too tired or uninterested to devote much effort to answering the question. In such cases, it might be easier to just agree with whatever is proposed (e.g., Krosnick, 1991). The best way in which to correct this bias would be to rephrase the question in such a way that simple acquiescence is not possible.

The second item, in an effort to offer two contrasting points of view, instead contains two problems that could lead to distorted results. First, it contains a *persuasive argument* in favor of the mandatory recycling (i.e., a possible tax increase) but no such argument against the recycling proposal. The argument within the question itself may persuade some respondents to indicate positive attitudes (Bishop, Oldendick, & Tuchfarber, 1982). Because a survey is supposed to measure attitudes and not change them, this question could lead to ambiguous results. The second problem with this question is that it may be difficult or impossible for some people to answer. If you were opposed to a tax increase but also opposed to mandatory recycling, how would you answer? Neither of the given choices describes your attitude!

Similarly, the third question could potentially have *omitted important response options.* If the respondent's preferred answer is not listed, how will he or she answer? If a relative judgment is made and the respondent indicates which of the choices given he or she feels is most important rather than what he or she feels is truly most important overall, the results could be misleading. Thus, when constructing questions, it is important to make sure that a complete set of response options is included. In addition, in some cases it might be important to know how important the different options are relative to one another. One possibility would be to have people rate the importance of each issue. Another possible solution in this case would be to ask that the options be ranked from most important to least important. Although rankings are more difficult for respondents than are ratings (Elig & Frieze, 1979; Taylor & Kinnear, 1971), they can sometimes yield responses that are more valid and reliable (Miethe, 1985; Munson & McIntyre, 1979; Nathan & Alexander, 1985; Rankin & Grube, 1980; Reynolds & Jolly, 1980).

Again, the fourth question may be difficult to answer due to the response alternatives offered. If a person is only moderately opposed to mandatory recycling, would the appropriate answer be "oppose"? Or, would this imply more opposition than the person actually feels, so that "neither" might be a better choice? This demonstrates the importance of selecting the appropriate *number of scale points* for a question. A scale with more points (i.e., intermediate levels of favorability and opposition) would permit such individuals to express their attitudes more precisely and comfortably. However, too many scale points may reduce the clarity of the response options. For example, on a scale with only a small number of options (e.g., favor, oppose, or neither), the meaning of each of these is quite clear. But when the number of options becomes quite large (e.g., the feeling thermometer in Figure 2.1), the meaning of any particular point becomes less easy to determine. In addition, including too many response options can make it difficult for respondents to decide where they fall on the scale. Consequently, the best scale is usually one of moderate length, that is, five to seven scale points (Krosnick & Fabrigar, 1997).

Favorability Item

Instructions: Place a check mark in one of the following categories.

Question: How favorable or unfavorable do you feel toward mandatory recycling?

Very Unfavorable — *Neutral* — *Very Favorable*

Agree–Disagree Item

Instructions: Please circle one of the following numbers.

Question: How much do you agree or disagree with mandatory recycling?

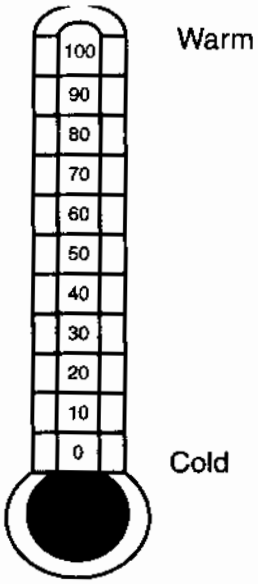
−3 −2 −1 0 +1 +2 +3

Strongly Disagree — *Neither Agree nor Disagree* — *Strongly Agree*

Feeling Thermometer

Instructions: Circle the number on the thermometer scale that best describes your feelings.

Question: How do you feel toward the proposed mandatory recycling program?



Pictorial Measure

Instructions: Circle the face that best represents your feelings about mandatory recycling.

Question: How do you feel about mandatory recycling?

Figure 2.1 Examples of Single-Item Direct Measures

The fifth item is a *double-barreled question.* It is actually asking two different questions that could have two different answers. What if a respondent felt that government services, but not businesses, should be required to recycle? Because the expected answers are either "yes" or "no," there is no suitable way in which to answer. The best solution in this case would be to ask two separate questions.

Once a researcher has determined which response alternatives should be offered, there is another important decision to be made: In what order should the response alternatives be presented? As it turns out, even when the question seems to be the same, different orders of response choices can lead to different answers! This is called a *response order effect.* The third item in the list provided earlier is an example of a question that may have a response order effect. Research has shown that there are two sorts of effects that can commonly occur as a result of response order: primacy and recency (Krosnick & Alwin, 1987; Sudman et al., 1995). *Primacy effects* cause respondents to be biased toward choosing one of the first options they hear. One reason for primacy effects is laziness; the first answer that seems acceptable is chosen. *Recency effects,* on the other hand, bias respondents toward choosing one of the last options given. One reason why recency effects occur is memory; after hearing a long list of response choices, it is sometimes easier to remember the last ones heard.

Although response order effects would not be too surprising in a question such as the "biggest problem" item mentioned previously, they can also occur in much simpler rating scale questions. For example, asking whether someone feels "extremely favorable, very favorable, somewhat favorable, neither favorable nor unfavorable, somewhat unfavorable, very unfavorable, or extremely unfavorable" toward a policy can lead to a different answer than when the response choices were given in the reverse order. Unfortunately, it is impossible to know from simply reading a question whether it has a response order bias built into it. The only way of being sure is to see whether answers differ when the alternatives are given in different orders.

A particularly tricky problem with attitude measurement is *nonattitudes* (Converse, 1964). Nonattitudes are responses that people express that really do not reflect any preexisting attitude toward the issue. Rather, they are responses concocted on the spot, based on little or no information. If someone did not know what Bylaw C6-L347 was, how would they answer? Some people would openly admit it, but others would pretend to have an attitude. Presumably they do this to appear thoughtful and knowledgeable in the eyes of whoever is asking (and sometimes even to themselves!). Unfortunately, research suggests that such responses, created on the spur of the moment, are often not much more than random choices from among the offered alternatives. If these people were asked the same question 1 or 2 weeks later, they could very well give completely different answers.

An obvious solution to the problem of nonattitudes would be to include an option for "no opinion" or "don't know." People who do not have preexisting evaluations could then answer the question honestly. However, the problem of socially desirable responses would not be solved, and some people would probably still make up attitudes on the spot to appear knowledgeable (e.g., Schuman & Presser, 1981). Furthermore, for people who truly do have attitudes but prefer not to put in the effort to think about them, a "don't know" or "no opinion" option might be an easy way in which to avoid the mental work (Krosnick, 1991). Another possibility for distinguishing between attitudes and nonattitudes is to measure attitude strength. Presumably, people who have previously expended the effort to arrive at meaningful attitudes should report greater levels of various strength-related properties such as

certainty, importance, and accessibility. Although this might not solve the problem of nonattitudes completely, it may be preferable to a "no opinion" or "don't know" option in that such strength measures have been shown to be effective at differentiating consequential attitudes (i.e., attitudes that predict behavior and influence information processing) from inconsequential attitudes (Petty & Krosnick, 1995).

The *order in which questions are asked* can also have a sizable impact on answers. This is most often the case when questions can be interpreted as being related to one another. For example, if you were asked about your general life satisfaction *after* being asked about your satisfaction with your social life, you might give a very different answer than you would if you were asked about your general satisfaction first (Schwarz, Strack, & Mai, 1991). One reason for the difference in this case is that you might assume that because you have already reported your satisfaction with your social life, you do not have to include it in your subsequent general life satisfaction report (Haviland & Clark, 1974).

Another reason for question order effects is the perception of fairness or consistency (Schuman & Ludwig, 1983). If asked whether they agreed with the statement "The Ku Klux Klan should have the right to speak freely in public," significantly more people reported agreement if they had just been asked whether they endorsed free speech than if they had not (Ottati, Riggle, Wyer, Schwarz, & Kuklinski, 1989). Presumably, after saying that they believed in free speech, people were less willing to endorse limiting it than if they had not been asked this general question first.

Finally, information that is made accessible in earlier questions may have a larger impact on later questions than it would otherwise (Tourangeau & Rasinski, 1988). For example, imagine that people were asked their attitudes toward the mandatory recycling proposal and then later were asked about their overall attitudes toward Elizabeth. It is possible that the evaluation of the recycling program would influence the overall attitude toward Elizabeth more strongly than would be the case if the questions were asked in the reverse order.

As with response order effects, it is difficult to tell whether question order bias exists by simply looking at the questions. Researchers often *counterbalance* questions, that is, have two or more different orders. This permits them to test whether order affected responses and, perhaps more important, allows them to reduce the impact of the bias because not all respondents were exposed to the same order. In addition, question order effects can sometimes be reduced by separating the target questions in the survey with filler items—that is, questions that are unrelated to the attitudes assessed by the target questions and, thus, are usually of little interest to the researcher. Filler items also have the potential to help make less obvious the intended goal of the survey by embedding the questions of interest among a much larger set of questions. Such a practice may prevent respondents from deliberately distorting their answers to confirm or disconfirm the hypotheses of the researcher.

Multiple-Item Direct Measures of Attitudes

Single-Item Versus Multiple-Item Measures of Attitudes

To this point, we have discussed single-item measures of attitudes. Measures of this sort are commonly used in both applied and basic research. The primary strengths of single-item measures are their ease of use and efficiency. For example, in a matter of a few minutes, single-item measures can allow Elizabeth to gauge a voter's attitudes on a wide range of issues and rival political candidates. As is so often the case in life, however, this ease of use and

efficiency come with certain costs! For this reason, attitude researchers (and psychologists in general) often prefer to construct multiple-item measures.

Attitude researchers often prefer multiple-item measures to single-item measures for two reasons. First, as our earlier discussion has probably made clear, any single-attitude measure can potentially have subtle biases and ambiguities in wording and format. Attitude researchers obviously try very hard to avoid such problems, and much of the research we have reviewed so far has provided them with useful guidelines for accomplishing this goal. Unfortunately, even the best-designed attitude item is unlikely to be perfect. The idea behind multiple-item measures is that the impact of imperfections in individual items can be minimized by averaging or summing across a set of related attitude items. For instance, although some items may be slightly biased to encourage a positive attitude response toward a particular policy stand (e.g., Elizabeth's recycling plan), other items may be biased to encourage reports of negative attitudes on that policy stand. By combining responses across items, the errors in items cancel each other out and provide us with an attitude score that is more reliable and accurate than any single item could accomplish.

A second reason for using multiple-item measures is that even an unbiased and unambiguous single-item measure may often be too narrow to fully capture the attitude in question. To illustrate this point, imagine that you took a course in which your professor decided to give you a final exam consisting of a single multiple-choice question. You and your fellow students might be understandably upset with the professor! Obviously, the full range and depth of what you and your fellow students learned in the course is going to be poorly represented by a single question. The same is true with attitudes. Your evaluations of people, objects, and issue stands are unlikely to be fully captured by a single item. Only by obtaining your reactions to a set of attitude questions are we likely to obtain a valid reading of your attitude on the issue.

As it turns out, researchers have developed a number of formal procedures for constructing multiple-item attitude measures. A comprehensive review of these procedures is beyond the scope of this chapter. However, to give you a sense of how such measures are constructed, we briefly describe three of the more commonly used approaches. If you are interested in more detailed and comprehensive discussions, you should consult one or more of several useful general references for attitude measurement (Edwards, 1957; Mueller, 1986; Summers, 1970). In addition, if you are interested in obtaining previously developed multiple-item attitude measures for specific topics, a number of compendia of attitude measures are available (Robinson, Athanasiou, & Head, 1967; Robinson, Rusk, & Head, 1968; Robinson & Shaver, 1969; Robinson, Shaver, & Wrightsman, 1991, 1999; Shaw & Wright, 1967).

Thurstone Equal-Appearing Intervals

The Thurstone equal-appearing intervals (EAI) method (Edwards, 1957; Mueller, 1986; Thurstone & Chave, 1929) was the first multiple-item attitude scaling procedure to be developed and is still regarded as one of the best. This procedure starts with an initial item generation stage. The goal at this stage is to specify the object to be evaluated (e.g., the mandatory recycling program) and then to generate a large pool of verbal statements (e.g., 50–100) reflecting varying levels of positivity or negativity toward the object. The goal for Elizabeth at this point is to create statements about the mandatory recycling program that include extremely positive statements, extremely negative statements, and everything in between. Next, Elizabeth gives the statements to a group of judges (usually 10 or more), who then rate each statement on an 11-point scale, indicating the extent to which each statement reflects a positive or negative reaction to the recycling program (Figure 2.2). The judges are told to

Instructions: For each statement below, circle the number that you feel indicates the degree of favorableness or unfavorableness of the statement toward mandatory recycling in Clarkton. Do not worry about whether you personally agree or disagree with each statement. Simply indicate the extent to which you think each statement reflects a positive or negative reaction toward mandatory recycling in Clarkton.

I would support mandatory recycling in Clarkton if it really can work.

1	2	3	4	5	6	7	8	9	10	11
Extremely Negative										*Extremely Positive*

A mandatory recycling program in Clarkton would provide a major improvement to our "trash disposal crisis."

1	2	3	4	5	6	7	8	9	10	11
Extremely Negative										*Extremely Positive*

Thinking that a mandatory recycling program in Clarkton can solve our trash disposal problem is wishful thinking on the part of well-meaning but foolish idealists.

1	2	3	4	5	6	7	8	9	10	11
Extremely Negative										*Extremely Positive*

Mandatory recycling may be part of the solution, but it can't solve all of our trash disposal problems.

1	2	3	4	5	6	7	8	9	10	11
Extremely Negative										*Extremely Positive*

Figure 2.2 Sample Instructions and Items for Rating Thurstone Equal-Appearing Intervals Items

ignore how they personally feel about the statements and instead to simply decide the degree to which each statement reflects a positive or negative reaction to the program.

Once the judges have rated the statements, Elizabeth calculates the average (or median) rating across the judges for each statement. The variance (or other measure of dispersion) in ratings for each item is also calculated as an index of agreement among judges. Low variance on an item indicates that most of the judges gave ratings that were very similar to one another (i.e., most of the judges' ratings were very close to the average for that item), whereas high variance indicates that many of the judges rated the item quite differently (i.e., many of the judges' ratings were much higher or lower than the average for that item). Elizabeth then constructs the final measure by selecting the two best items representing each point on the evaluative rating scale (two items to represent 1, two items to represent 2, two items to represent 3, and so on). Good items have a mean rating very close to one of the 11 scale points (e.g., a mean value of 3.1 is better than a mean value of 3.4) because they allow a researcher to select items at equal intervals and capture all gradations of the evaluative continuum. Good items also have low variance in ratings because low variance suggests that the judges agree about how positive or negative those statements are.

Instructions: Try to indicate if you either agree or disagree with each statement listed below. If you simply cannot decide about a statement, you may mark it with a question mark.

This is not an examination. There are no right or wrong answers to these statements. This is simply a study of people's attitudes toward mandatory recycling in Clarkton. Please indicate your own convictions with a check mark when you agree and with an "X" when you disagree.

Put a check mark if you agree with the statement.

Put an "X" if you disagree with the statement.

_____ 1. Mandatory recycling may be part of the solution, but it can't solve all of our trash disposal problems.

_____ 2. A mandatory recycling program in Clarkton would provide a major improvement to our "trash disposal crisis."

_____ 3. Thinking that a mandatory recycling program in Clarkton can solve our trash disposal problem is wishful thinking on the part of well-meaning but foolish idealists.

_____ 4. I would support mandatory recycling in Clarkton if it really can work.

Figure 2.3 Sample Instructions and Items for a Thurstone Equal-Appearing Intervals Scale

Finally, Elizabeth can then measure citizens' attitudes toward the recycling program by presenting a random sample of community residents with the final items in a checklist form (Figure 2.3). This checklist instructs respondents to place a check mark next to any statements with which they agree and to place an "X" next to any statements with which they disagree. The final score for each person is computed by finding the average (or median) of the scale values of the statements endorsed. For example, if a respondent checked a statement with a scale value of 6.1 (as determined by the original judges' ratings) and a statement with a scale value of 7.9 (as determined by the original judges' ratings), that person's final attitude score would be 7.0, thereby indicating a moderately positive overall attitude.

Likert Summated Ratings

Although there is lots of research to suggest that the Thurstone EAI procedure produces reliable and valid measures of attitudes, some researchers avoid using the procedure because it requires so much time to develop the measure. Assuming that Elizabeth and her advisers are pressed for time, the Likert method of summated ratings (Likert, 1932; Mueller, 1986) provides a popular alternative approach. This method once again starts with Elizabeth defining the object of interest and then generating statements (30 or so) reflecting positive or negative reactions to the proposed recycling program. However, unlike with the EAI method, half of the statements should be strongly positive and the other half should be strongly negative. Elizabeth then presents these statements, with 5-point response scales ranging from "strongly agree" to "strongly disagree," to a random sample of community residents (Figure 2.4). Respondents indicate their level of agreement with each statement. A person's score on each item is computed by assigning a value of 5 for "strongly agree" responses to positive

Instructions: Please answer each item by circling the response that best reflects your level of agreement or disagreement with the statement.

A mandatory recycling program in Clarkton would provide a major improvement to our "trash disposal crisis."

Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*

A mandatory recycling program in Clarkton would cost more than it is worth.

Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*

A mandatory recycling program in Clarkton is not only smart policy, it is responsible policy.

Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*

Thinking that a mandatory recycling program in Clarkton can solve our trash disposal problem is wishful thinking on the part of well-meaning but foolish idealists.

Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*

Figure 2.4 Sample Instructions and Items for a Likert Summated Rating Scale

statements, a value of 4 for "agree" responses to positive statements, and so on. Negative items are reverse scored; that is, "strongly disagree" responses are assigned a value of 5, "disagree" responses are assigned a value of 4, and so on. The sum of all item response scores reflects the overall attitude. For example, if a person were to strongly agree with all of the positive items and to strongly disagree with all of the negative items on a 30-item Likert summated rating scale, that person would receive a total score of 150.

Once Elizabeth has collected responses from the sample, the final phase of the procedure involves discarding poor items and recomputing the attitude scores for each respondent based on the improved scale. Poor items are identified by computing the correlation between each item and the corrected total score for the scale (i.e., the total score on the measure except for the item being correlated with it). Elizabeth discards any statements that fail to show large positive item–total correlations. This approach is based on the notion that such items do not differentiate between high and low scorers on the overall measure. Thus, these items contribute little to the overall score. For example, if Elizabeth were to find that one of the items in her scale did not correlate with the overall scale score, this would indicate that respondents' answers to this question were totally unrelated to how they responded to the other items in the scale. This suggests that the item might be measuring something quite different from the other items and, thus, should not be included in the scale. By adopting this approach rather than the EAI method, Elizabeth can save time because it is no longer necessary for her to conduct pretesting of items with a separate sample of people.

Instructions: Place a check mark in the position between each adjective pair that best describes your reaction to mandatory recycling in Clarkton.

Bad	:	:	:	:	:	:	:	: Good
Negative	:	:	:	:	:	:	:	: Positive
Foolish	:	:	:	:	:	:	:	: Wise
Worthless	:	:	:	:	:	:	:	: Valuable

Figure 2.5 Sample Instructions and Items for a Semantic Differential Scale

NOTE: Semantic differentials are typically administered with instructions similar to those provided above. However, in their original form (see Osgood, Suci, & Tannenbaum, 1957, pp. 82–83), instructions provided a much more extensive explanation of the meaning of each scale point. Respondents were told to check the first box from the end of the scale if the object was "very closely related to" the adjective, to check the second box from the end if it was "quite closely related to" the adjective, to check the third box from the end if it was "only slightly related to" the adjective, and to check the middle box if it was "equally associated with" or "completely irrelevant to" the adjectives at the ends of the scale.

Semantic Differentials

Although Likert summated rating scales are a bit easier to use than Thurstone EAI scales and have been found to provide reliable and valid measures of attitudes, they do have their drawbacks. These scales, like Thurstone EAI scales, are generally topic specific in that the same scale cannot be used to measure attitudes toward different objects (e.g., attitudes toward other issues facing the town of Clarkton). Second, because these scales are made up of a large number of items, they are time-consuming to complete. The semantic differential approach (Mueller, 1986; Osgood, Suci, & Tannenbaum, 1957) provides a popular method that overcomes these limitations and provides reasonably valid and reliable measures of attitudes.

A semantic differential measure of attitudes usually consists of 4–10 bipolar rating scales. These are typically 7-point scales with scale points represented by boxes (numerical values are also sometimes used) that respondents check to indicate their reactions to some object. The endpoints are labeled with adjectives that reflect opposite meanings and are highly evaluative in nature (e.g., good/bad, positive/negative, wise/foolish). Respondents rate the object on each of these bipolar scales (Figure 2.5). The attitude score for each item is typically computed by assigning a value of 7 to maximally positive ratings, a value of 6 to the next most positive ratings, and so on. The overall score is computed by summing or averaging the ratings across all of the items. One of the strengths of this approach is that semantic differential adjective pairs tend to be very general properties that can be applied to virtually any issue. Thus, if Elizabeth wants to measure citizens' attitudes regarding lots of different issues (e.g., reactions to mass transit proposals, reactions to local sales tax proposals), she can use the same set of items for each issue. Second, because attitudes toward each issue can be measured with as few as four items, it is possible for people to report their attitudes toward a variety of issues during a short time period.

INDIRECT MEASURES OF ATTITUDES

Reasons for Using Indirect Measures of Attitudes

So far our focus has been on discussing both single-item and multiple-item direct measures of attitudes. Direct measures are based on the premise that if you want to know people's

attitudes, you should just ask people. They remain far and away the most popular approaches to measuring attitudes, and there is no doubt that in many situations they can be quite useful. However, attitude researchers have long been aware that direct approaches have their limitations (Hammond, 1948; Milgram, Mann, & Harter, 1965; Webb, Campbell, Schwartz, & Sechrest, 1966). One potential problem is that people are not always truthful. When faced with socially sensitive issues, people might report answers that they expect others will see as desirable rather than honestly reporting their true attitudes (i.e., social desirability response bias) (Paulhus, 1991). More recently some attitude researchers have also suggested that there may be times when people are not completely aware of their attitudes (e.g., Greenwald & Banaji, 1995; Wilson, Lindsey, & Schooler, 2000). For example, a person might be unaware that he or she holds certain negative reactions toward a particular racial group (Amodio & Devine, chap. 11, this volume). Some researchers (e.g., Greenwald & Banaji, 1995) have suggested that indirect measures may be more useful than direct measures for capturing such unconscious attitudes, called *implicit attitudes* (however, see Fazio & Olson, 2003; Petty, Wegener, & Fabrigar, 1997). For these reasons, social psychologists have attempted to develop a number of indirect measures of attitudes.

Indirect Attitude Measures Based on Behavior

The Lost Letter Technique

Imagine that Elizabeth Almond has decided that the proposed mandatory recycling program is simply too controversial an issue to assume that people will honestly report their views. One way in which she may indirectly measure citizens' attitudes toward the plan is to measure some sort of behavior that might be related to attitudes toward the program. The lost letter technique is an example of this type of approach (Milgram, 1992; Milgram et al., 1965). The lost letter technique begins with Elizabeth creating two sets of letters. For one set, she addresses the letters to a fictitious organization that is obviously in favor of the recycling program (e.g., "Citizens for Mandatory Recycling"). For the other set, she addresses the letters to a fictitious organization that is clearly opposed to the program (e.g., the "Say No to Mandatory Recycling Coalition"). The letters all have the same address on them (Elizabeth's address) and sufficient postage to be mailed. These letters (usually 200 or so of each version) are then randomly dropped throughout the community.

The idea behind this approach is that any person who finds one of these letters will assume that someone mistakenly dropped the letter before he or she had a chance to mail it. If that person happens to agree with the organization to which the letter is addressed, he or she might be inclined to help out the person who supposedly dropped the letter by mailing it. However, if the organization advocates a policy to which the person is opposed, the person might be less likely to mail the letter. Attitudes in the community can then be determined by calculating the proportion of each set of letters that is returned. For example, if a much higher percentage of pro-recycling letters than anti-recycling letters are returned, Elizabeth concludes that the majority of community residents favor the program.

The lost letter technique can provide a rough estimate of the popularity of particular issues positions. However, because many factors might influence whether letters are returned (e.g., whether letters are found, the general helpfulness of the people finding the letters), it is not clear how precise a measure of attitudes this technique provides. In addition, the procedure does not provide information on the attitudes of individual people (because it is impossible to

know who mailed each letter); instead, it merely provides an overall estimate of attitudes in the community. Often Elizabeth might want to know the attitude scores of individual people so that she can examine whether recycling attitudes are related to preferences for candidates, attitudes toward other issues, or particular demographic characteristics (e.g., age, sex, education).

Other Behavioral Measures of Attitudes

Numerous other behavioral indexes have been examined (e.g., Gaertner & Bickman, 1971; Kremer, Barry, & McNally, 1986; Webb et al., 1966). For example, selection of personal clothing, nonverbal behavior, choice of physical location, linguistic behavior, and willingness to help a person of a particular social group all have been used to infer attitudes. Unfortunately, because many factors besides attitudes can affect behavior, these approaches do not always provide clear insight into people's attitudes.

Indirect Attitude Measures Based on Judgmental Biases

The Error Choice Technique

Another general approach to indirectly measuring attitudes is to attempt to measure some bias in the manner in which people make judgments that is likely to reflect their attitudes. One of the first indirect measures based on this idea was the error choice technique, also called the *information error technique* (Hammond, 1948). This technique starts with Elizabeth generating a large number of objective knowledge questions about the topic of mandatory recycling. The goal in developing these items is to select questions that have objective answers in principle but for which respondents are nearly certain not to know the answers. Response options that are provided for each item imply a positive or negative evaluation of mandatory recycling (Figure 2.6).

The assumption underlying the error choice technique is that when people are faced with questions to which they do not know the answers, they will not guess randomly. Instead, they will tend to guess in a way that is consistent with their attitudes. An attitude score can then be computed by scoring the direction of guessing across the items. For each answer selected that is extremely positive, Elizabeth might give 4 points, each slightly positive answer might net 3 points, each slightly negative answer might net 2 points, and each extremely negative answer might net 1 point. Thus, if a person consistently guesses answers that imply something favorable about recycling, this suggests that he or she has a positive attitude. These target items usually are mixed with filler items that are not used to compute the final attitude score. Filler items are selected to be knowledge questions about the topic for which people might know the answers and which have answers that are not necessarily evaluative in nature. Intermingling the error choice items with these filler items helps to conceal the true intent of the test. Thus, Elizabeth can measure attitudes toward recycling under the guise of an objective knowledge test without ever directly asking participants to report their attitudes.

Evaluative Priming

Although the error choice technique was one of the first methods to measure attitudes by way of judgmental biases, two other measures of this type have become very popular recently. One of these is the evaluative priming technique, sometimes called the *bona fide pipeline* technique (Fazio, Jackson, Dunton, & Williams, 1995). This procedure is based on the notion

Instructions: Please respond to the following set of questions by circling the letter of the answer choice you believe to be true. Please answer all questions to the best of your ability.

According to recent estimates, a mandatory recycling program in Clarkton would reduce the town's trash output by approximately

A. 20%
B. 40%
C. 60%
D. 80%

Based on recent studies conducted by experts on trash disposal, which of the following is true?

A. The use of incinerators for trash disposal has increased by 20%
B. The use of incinerators for trash disposal has increased by 10%
C. The use of mandatory recycling for trash disposal has increased by 10%
D. The use of mandatory recycling for trash disposal has increased by 20%

Feasibility studies have revealed that a mandatory recycling program in Clarkton would

A. Substantially reduce the cost of trash disposal
B. Slightly reduce the cost of trash disposal
C. Slightly increase the cost of trash disposal
D. Substantially increase the cost of trash disposal

Estimates of participation rates in communities of similar size to Clarkton that have mandatory recycling programs reveal that

A. About 9 in 10 households recycle each week
B. About 7 in 10 households recycle each week
C. About 5 in 10 households recycle each week
D. About 3 in 10 households recycle each week

Figure 2.6 Sample Instructions and Items for an Error Choice Scale

that when you are presented with an object (e.g., the word "recycling"), your attitude toward that object can spontaneously come to mind even if you are not specifically asked to report your attitude. Interestingly, that spontaneously activated attitude can then influence your judgments of other objects. For example, it has been found that if the attitude that comes to mind is positive, it will speed up your ability to make judgments about other objects for which you have positive attitudes and will slow down your ability to make judgments about objects for which you have negative attitudes (Fazio, Sanbonmatsu, Powell, & Kardes, 1986). The reverse is true if the spontaneously activated attitude is negative.

Evaluative priming procedures involve presenting respondents with a dual judgment task in which people are told that they will first be briefly presented with a word prime on computer that they should try to remember and that they will then be presented with a second target word for which they will need to make an evaluative judgment (i.e., judge whether the word is positive or negative). Respondents are presented with numerous word pairs of this

sort, and the durations of time it takes them to make the judgments about the second word in the pair are recorded by the computer. Elizabeth can measure attitudes using this procedure by including the word "recycling" among the primes. The critical feature of the measurement procedure is for Elizabeth to present the word "recycling" as a prime for some target words that are nearly universally liked (e.g., love, happy, justice) and as a prime for some target words that are nearly universally disliked (e.g., death, hate, poverty). If a person's attitude toward recycling is positive, that person should be faster in making judgments about the second words when "recycling" is a prime for positive words than when it is a prime for negative words. In contrast, if a person's recycling attitude is negative, that person should be faster in making judgments about the second words when "recycling" is a prime for negative words than when it is a prime for positive words.

Elizabeth can obtain an attitude score for each respondent by examining the difference between the average speed of recycling-positive target word judgments and the average speed of recycling-negative word judgments. Thus, because Elizabeth never directly asks respondents their attitudes regarding the prime (i.e., recycling), people's attitudes toward recycling can be measured without people being aware of that fact. Although this procedure is relatively new and more work is needed to test its effectiveness, there is some evidence that this measure can be used to predict behavior and that it may be less susceptible to social desirability bias than are direct measures (Fazio et al., 1995; Fazio & Olson, 2003).

The Implicit Association Test

Another recently developed indirect measure (based on judgmental bias) that Elizabeth could use to assess attitudes is the implicit association test (IAT) (Greenwald, McGhee, & Schwartz, 1998; see also Amodio & Devine, chap. 11, this volume). The IAT measures the association of two concepts (e.g., recycling vs. landfills) with positive and negative evaluations. In this procedure, Elizabeth tells respondents that they will be given a list of words on computer that will fall into one of four categories: recycling-related words, landfill-related words, positive words, and negative words. The respondents assign each word to one of these four categories by pressing one of two response keys. In one set of trials, respondents are told to press one key if the word is a recycling-related word *or* a positive word and to press a different key if the word is a landfill-related word *or* a negative word. In a second set of trials, the task is reversed so that recycling words and negative words share the same response key and landfill words and positive words share the same response key. The computer records the time it takes for respondents to make their categorizations.

The logic underlying this approach is that if a person's attitude toward recycling is positive, that person will be able to perform the task more quickly when recycling words share the same response key with positive words than when recycling words share the same response key with negative words. In contrast, if the person's attitude is negative, performance will be quicker when recycling words share the same response key with negative words than when they share the same response key with positive words. Attitude scores are created by computing a numerical index that reflects the difference between the average speed with which people performed the task when recycling words shared the same response key with positive words and the average speed with which people performed the task when recycling words shared the same response key with negative words. Thus, Elizabeth can once again measure attitudes without ever directly asking people their attitudes toward recycling.[2]

The IAT is a very new measure of attitudes, and research is still being conducted to assess its reliability and validity. Although some evidence suggests that this measure has promise, its properties are not yet fully understood (Fazio & Olson, 2003; Greenwald et al., 1998). One important feature of the IAT that distinguishes it from most other attitude measures is that it is a relative measure of attitudes. That is, the IAT assesses attitudes toward some object relative to some other object. For instance, in our example, the IAT would tell Elizabeth what people's attitudes toward recycling were relative to what they were toward landfills. Obviously if Elizabeth were to select some other comparison object, the results might be different. For example, IAT scores might generally be positive when landfills are the comparison object but negative when trash incinerators are the comparison object.

Physiological Measures of Attitudes

Yet another general approach that Elizabeth might take to indirectly measure attitudes is to identify some sort of physiological response that reflects attitudes. Over the years, researchers have examined numerous such responses, including pupillary responses and galvanic skin reflex (GSR).[3] Unfortunately these measures have been found to have serious problems (e.g., Goldwater, 1972; Sokolov, 1963).

Facial Electromyography

More recently, some researchers have explored the possibility that facial electromyography (EMG) can be used to measure attitudes (Cacioppo, Martzke, Petty, & Tassinary, 1988; Cacioppo & Petty, 1979; Cacioppo, Petty, Losch, & Kim, 1986). When confronted with a particular object, people sometimes have emotional responses to the object that are reflected in their facial expressions. These facial expressions often can be so slight that they are undetectable to the naked eye. However, if electrodes are attached to specific areas of the face, it is possible to record these patterns of facial muscle activation and thereby determine the valence and intensity of people's emotional responses. Thus, Elizabeth might measure citizens' attitudes toward mandatory recycling by recording facial EMG while presenting a description of her mandatory recycling program or while presenting the phrase "mandatory recycling in Clarkton." Based on people's emotional responses to these stimuli, she might be able to infer whether attitudes are positive or negative.

Of course, one issue that remains to be resolved is how effective this procedure would be if people had few emotional reactions associated with the topic. As we noted earlier, it is possible that a person might have an attitude based predominantly on beliefs rather than emotional reactions (e.g., Edwards, 1990; Fabrigar & Petty, 1999; Millar & Millar, 1990). In such a situation, facial EMG might fail to capture that person's attitude. In addition, facial EMG obviously requires expensive equipment and extensive training to administer. In many situations, it might not be feasible to use such a procedure.

Event-Related Brain Potentials

Perhaps the most promising physiological measure of attitudes available to Elizabeth is the use of the event-related brain potential (ERP) (Crites & Cacioppo, 1996; Crites, Cacioppo, Gardner, & Berntson, 1995). The ERP refers to a particular pattern of electrocortical activity

(measured by attaching electrodes to specific areas of the scalp) that occurs when people are categorizing a sequence of objects. A large ERP occurs when a person has categorized a sequence of objects on some dimension and the person encounters one object that is inconsistent with the categorization of the previous objects. A small ERP occurs when an object's categorization is consistent with the previously categorized objects.

Using this idea, Elizabeth could actually measure people's attitudes toward recycling. She could accomplish this goal by measuring ERPs while respondents categorize whether they like or dislike various word phrases. In one set of trials, Elizabeth can include the phrase "mandatory recycling in Clarkton" near the end of a sequence of phrases that are nearly universally regarded as positive. If a person's attitude toward recycling is positive (i.e., it is evaluated in a manner consistent with previously categorized positive objects), a small ERP should occur when that person categorizes "mandatory recycling in Clarkton." If a person's attitude is negative, a very large ERP should occur. In a second set of trials, Elizabeth can then include the phrase "mandatory recycling in Clarkton" near the end of a sequence of phrases that are nearly universally regarded as negative. Within this sequence, positive recycling attitudes should produce a large ERP and negative recycling attitudes should produce a small ERP. A final attitude score can be obtained by computing a numerical index reflecting the size of the mandatory recycling ERP when the phrase was embedded in the negative sequence relative to the size of the mandatory recycling ERP when the phrase was embedded in the positive sequence. Research suggests that such scores can capture not only the valence of a person's attitude but also the intensity of his or her attitude. In addition, the ERP can accurately assess attitudes even when a person is deliberately misreporting his or her attitude during the categorization task.

SUMMARY

At the start of this chapter, we noted how difficult the task of attitude measurement can be. The goal of attitude measurement is quite simply to find a way in which to measure something we can never directly observe. Although this might at first seem to be an impossible task, as we have seen, attitude researchers have shown considerable ingenuity in developing a variety of strategies to accomplish this goal. Indeed, perhaps the most striking aspect of attitude measurement is just how diverse an array of procedures is available to anyone who wants to measure attitudes. None of these procedures is perfect. Each has its strengths and its drawbacks. Each procedure will be useful in some contexts and not so useful in others. Together, however, these procedures provide us with a remarkably flexible and effective "tool kit" for investigating exciting applied and theoretical questions about how people form attitudes, what changes people's attitudes, and how attitudes influence the way in which people behave and think.

NOTES

1. When referring to attitudes in everyday conversation, people frequently use the term "opinion." Opinion is a broad term that, in addition to including attitudes, is often used to refer to any belief, feeling, or impression that a person might have about a topic. These beliefs, feelings, or impressions may

or may not be evaluative in nature. Thus, social psychologists typically prefer to use the term *attitude* due to its greater precision.

2. Demonstrations of the IAT can be found at the following Web site: https://implicit.harvard.edu/implicit/.

3. For an extended discussion of physiological measures of attitudes, see Cacioppo, Petty, Losch, and Crites (1994).

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