
ATTITUDE STRENGTH

Jon A. Krosnick and Wendy R. Smith
The Ohio State University

- I. Introduction
 - II. Definitions and Measurement
 - III. Relations between Dimensions
 - IV. Evidence of Crystallization
 - V. Evidence of Greater Influence
 - VI. Causes of the Dimensions
 - VII. Conclusion
-

Glossary

Attitude A favorable or unfavorable orientation toward an object.

Attitude strength The degree to which an attitude is resistant to change and influences cognition and behavior.

ATTITUDES vary in the degree to which they are crystallized and consequential, and the notion of attitude strength is meant to capture this variation. Strong attitudes are resistant to change, are stable over time, and have powerful impact on information processing and behavior. A number of attributes differentiate strong attitudes from weak ones, including extremity, intensity, importance, and accessibility. We shall review the literature on the relations of 10 such attributes to crystallization and consequentiality.

I. INTRODUCTION

When social psychologists began their full-scale investigation of attitudes early in the century, they did so on the assumption that attitudes are enduring predispositions that exert strong forces shaping people's cognitive processes and behavior. To know whether a person likes and dislikes an object, it was presumed, was to be able to predict to some extent how he or she will think about and act toward that

object over a long period of time. But as empirical studies of attitudes began to amass, it quickly became clear that this was often not the case. In many instances, people were found to think and behave favorably toward objects they disliked and to think and behave unfavorably toward objects they liked. Furthermore, the view of attitudes as stable qualities of individuals was shaken by studies demonstrating that attitudes shift frequently during the course of everyday life and can be changed quite easily by persuasive messages in laboratory settings.

Through continued investigations of these issues, social psychologists have come to recognize that all attitudes do not have the same qualities. Some resemble the classic view, in that they exert powerful influence on cognition and conation and are firmly crystallized. Others, however, have relatively little impact and are highly flexible, constantly shifting in response to daily experiences. In recent years, this distinction has been viewed as one of attitude *strength*, with the former attitudes being relatively strong and the latter being relatively weak.

At the same time, social psychologists have come to recognize that attitude strength is not a simple, unitary construct. Instead, an attitude can be strong in many different ways. Research on these issues is at a relatively early point, but much is already known about what we shall call the *dimensions* of attitude strength. In this article, we will begin by defining the most commonly studied dimensions of strength and review evidence regarding the relations among them. Then, we will summarize the literature demonstrating that these dimensions are all related to the crystallization and consequentiality of attitudes. Finally, we will summarize work on the causes of the dimensions and propose directions for future research.

II. DEFINITIONS AND MEASUREMENT

Our focus here is on 10 dimensions or attributes of attitudes that have been discussed frequently in the

attitude literature in terms of their relations to strength: extremity, certainty, importance, intensity, latitudes of rejection and noncommitment, interest, knowledge, accessibility, direct experience, and affective-cognitive consistency. Here, we will describe each and enumerate how each has typically been measured in past research.

A. Extremity

Attitude extremity is the extent to which an individual likes or dislikes an object. The more extreme the individual's attitude is, the further it is from neutrality. Attitude extremity has typically been operationalized as the deviation of an individual's attitude rating from the midpoint of a dimension ranging from highly favorable to highly unfavorable.

B. Intensity

Some attitudes involve strong affective responses to objects, whereas others involve little or no emotional reaction. Attitude intensity has been measured routinely via self-perceptions: by asking people how strong or intense their feelings are toward an object.

C. Certainty

Attitude certainty refers to the degree to which an individual is confident that his or her attitude toward an object is correct. It has usually been measured by asking respondents how certain or sure they are of their attitudes, how easily their attitudes could be changed, or how confident they are that their attitudes are correct.

D. Importance

People consider some attitudes to be very important to them personally, and consequently they care deeply and are especially concerned about them. Attitude importance has generally been measured by asking people how personally important their attitudes are, how concerned they are about them, or how much they care about them.

E. Interest in Attitude-Relevant Information

Some people are very interested in attitude-relevant information, whereas others are not. This construct has usually been measured by asking people how closely they attend to information about an object,

or how interested they are in information about the object.

F. Knowledge

Some attitudes are accompanied by a great deal of attitude-relevant knowledge in memory, whereas others are accompanied by little or no such knowledge. Amount of attitude-relevant knowledge has been measured by asking respondents to list everything they know about an attitude object, by examining answers people give to quiz-like questions, or by asking individuals to report how knowledgeable they feel they are about an attitude.

G. Accessibility

Attitude accessibility is defined as the strength of the link in memory between an object and an evaluation of it. It is presumably manifested as the ease with which an attitude comes to mind in the course of social perception. Accessibility has most often been measured by the length of time it takes people to report their attitudes toward an object. It has also been measured by the likelihood that people will mention the object in answering an open-ended question, by people's reports of how often they discuss the object with friends and family, or by reports of how often people think about the object.

H. Direct Experience

Direct experience includes both behavioral participation in activities related to an object and direct contact with the object itself. It has been measured by asking people the extent to which they have participated in activities related to the object, whether they have performed any of several types of actions with regard to the object, and whether they have had personal experiences involving the object.

I. Latitudes of Rejection and Noncommitment

Given a set of attitude statements ranging from very favorable toward an object to very unfavorable, a person's latitude of rejection includes those statements he or she finds unacceptable, and the latitude of noncommitment includes those statements he or she finds neither acceptable nor unacceptable. The more invested one is in the attitude object, the larger one's latitude of rejection is, and the smaller one's latitude of noncommitment is.

The sizes of individuals' latitudes of rejection and noncommitment can also be gauged using the "own categories method." For this, people are asked to sort a set of statements (that range from very favorable to very unfavorable) into groups, where statements in the same group represent the same stand on the issue. The fewer groups a person creates, the larger is his or her latitude of rejection, and the smaller is his or her latitude of noncommitment.

J. Evaluative-Cognitive Consistency

Attitudes vary in the degree to which there is consistency between overall evaluations of the object and cognitions about how the object is related to the attainment of valued goals. The measurement of evaluative-cognitive consistency has usually involved a multi-step approach. Individuals rate (1) their overall evaluation of the object, (2) the importance to them of various goals related to the object, and (3) the probabilities that the object would help achieve or block attainment of each goal. The importance ratings are multiplied by the instrumentality estimates, and the standardized sum of the products is subtracted from the standardized evaluation score. The absolute value of this difference is the measure of evaluative-cognitive consistency.

III. RELATIONS BETWEEN DIMENSIONS

These 10 dimensions have been defined and operationalized in ways that make them clearly distinct from one another. Some are attributes of the attitude itself (e.g., extremity and latitudes of rejection and noncommitment); some describe features of accompanying cognitive structures (e.g., knowledge and evaluative-cognitive consistency); some constitute subjective states (e.g., importance and certainty); some involve links in memory (e.g., accessibility); and some involve summaries of past events (e.g., direct behavioral experience). Thus, they seem likely to have unique origins and unique effects.

Despite these clear conceptual and operational distinctions, there have been many instances in the attitude literature where dimensions have been treated as interchangeable with one another. For example, a variety of investigators have presumed that intensity is equivalent to certainty, extremity, interest, or direct experience. Similarly, researchers have measured ego-involvement using intensity, importance, and latitudes of rejection and noncommitment.

Furthermore, a variety of investigators have presumed that these dimensions are indicators of higher-order constructs. For example, many researchers have measured the construct of "involvement" using questions assessing importance, interest, knowledge, and frequency or amount of thought, or the confluence of importance, frequency of thought, commitment, and social support. Others have argued that attitudinal "ego preoccupation" is a higher-order construct reflected by intensity, importance, and frequency of thought. Attitudinal "salience" has been measured by questions about importance and frequency of thought. And importance questions have been used to measure yet another construct as well: "personal relevance."

The most disagreement exists with regard to operationalizing the higher-order construct of "centrality." Questions about importance have frequently been used to gauge this construct, an approach that comes closest to the way most scholars have defined it. However, centrality has also been defined as the amount of mental time people spend thinking about an attitude object, which seems closer to the notion of accessibility. At the same time, others defined centrality as the extent of structural linkage among attitudes, yet direct measures of structural linkage have rarely if ever been employed in the attitude literature to operationalize this construct.

Thus, some attitude scholars have asserted that some of these dimensions are interchangeable with one another and reflect common, higher-order constructs. However, there is not complete agreement on exactly which dimensions reflect exactly which constructs.

In contrast to this view, many studies have assessed associations among these dimensions and have documented only low to moderate positive correlations. Furthermore, exploratory factor analyses of these dimensions have uncovered complex underlying structures that varied a great deal from study to study. And in the most recent investigations, structural equation analyses have shown that any models treating two or more dimensions as manifestations of the same underlying construct must be rejected. Consequently, it seems that these dimensions are best thought of as distinct from one another.

IV. EVIDENCE OF CRYSTALLIZATION

Despite the clear distinctions among these dimensions, they all share one remarkable set of attributes

in common: they can all differentiate attitudes that are firmly crystallized and consequential from those that are not. Thus, they are all related to attitude strength. We will begin reviewing literature illustrating this by focusing on attitude crystallization, which has been shown to be associated with the attitude dimensions using nine sorts of approaches.

A. Persuasive Messages

One type of study has explored people's responsiveness to persuasive communications intended to change attitudes. Presumably, the stronger an attitude is, the less influenced it would be by such communications. To test this notion, one or more dimensions of strength have been measured in these studies, and respondents have been separated into groups high and low on those dimensions. As expected, less attitude change has been observed for attitudes that are more extreme, more important, more accessible, higher in interest, with larger latitudes of rejection and smaller latitudes of non-commitment, supported by more knowledge, or held with greater confidence.

A recent study demonstrated that direct experience also confers resistance to change, but this resistance can also be overcome. In this study, some subjects played with intellectual puzzles, while other subjects simply observed the puzzles without actually getting experience with them. Both groups of subjects were instructed to focus on the feelings the puzzles aroused in them and to report their attitudes toward the puzzles. When subjects were then exposed to emotion-focused arguments intended to change their attitudes, those people who had previously had direct experience with the puzzles were more resistant to change. However, when subjects were instead given informational counterarguments, attitudes based on more direct experience changed *more*. Thus, it seems that the direct experience strengthened the *affective* basis of the attitudes but left them vulnerable to cognitive attack.

The vast majority of persuasive communication studies have used messages that were counterattitudinal (i.e., advocating a viewpoint opposite to that held by subjects). However, one could also imagine proattitudinal persuasive messages, advocating a view consistent with that held by subjects but even more extreme. Individuals with strong attitudes would presumably be especially receptive and responsive to such messages. And indeed, more attitude change was observed recently in response to

such a manipulation among those individuals who had more direct experience. [See ATTITUDE CHANGE; PERSUASION.]

B. Leading Questions

A second approach that has been taken to testing the crystallization hypothesis involves examining people's responses to leading questions. Asking a leading question can induce people to generate cognitions consistent with the implications of the question and can thereby induce attitude change. If strong attitudes are more resistant to change, then people holding these attitudes should resist the persuasive impact of leading questions. As expected, researchers have found this to be the case with regard to certainty: people who were more certain about their attitude were more resistant to influence in this fashion.

However, one type of leading question was found to induce more attitude change among high certainty individuals than among low certainty individuals. In this case, loaded questions encouraged people to make statements that were consistent with but more extreme than their attitudes. Doing so led highly certain respondents' attitudes to become more moderate and had no effect on less certain respondents.

C. Explaining Reasons for Attitudes

A third set of studies has examined the impact of having people explain the reasons for their attitudes. This cognitive exercise often leads people to focus on reasons other than the true bases of their attitudes, and thinking about these reasons can in turn produce changes in attitudes. Consistent with the notion that weaker attitudes change more, the disruptive effect of explaining attitudes has been shown to be greatest among individuals with relatively little attitude-relevant knowledge.

D. Biased Autobiographical Recall

A fourth type of study examined attitude change caused by biased information retrieval. In one such study, some subjects were asked to recall pro-ecological behaviors they had performed in the past, and other subjects were asked to recall anti-ecological behaviors they had performed. This process led the former individuals to feel more pro-ecology and led the latter to feel less pro-ecology, thus changing attitudes. Not surprisingly, this atti-

tude change was especially pronounced among subjects low in evaluative-cognitive consistency.

E. Essay Writing

In studies using a fifth method, attitude change was induced by having people write essays opposing their own attitudes. Composing such essays required subjects to generate ideas that challenged their current attitudes, which caused those attitudes to become more consistent with the positions advocated in the essays. This was particularly true among people low in evaluative-cognitive consistency.

F. Priming

Yet another technique used to change attitudes is priming. In this approach, a manipulation is executed to make one particular basis of an attitude especially salient to subjects; and consequently, attitudes change to become more consistent with that basis. For example, in one study of students' attitudes toward new university parking facilities, some subjects listened to a conversation that highlighted the relevance of environmental attitudes to the parking issue, whereas other subjects heard an irrelevant conversation. The former conversation succeeded in changing attitudes and behaviors on the parking issue to be more consistent with subjects' environmental protection attitudes, but only among people who had relatively little direct behavioral experience with the parking issue.

Other studies taking this approach had subjects watch television news coverage of a political issue, thus enhancing the accessibility of subjects' attitudes about how well the President was handling that issue. As expected, this caused subjects to change their overall job performance evaluations of the President to be more consistent with their assessments of his handling of the primed issue. However, this attitude change was concentrated primarily among individuals who were least knowledgeable about politics.

G. Repeated Exposure

A seventh type of study has examined attitude change caused by repeated exposure to objects. In one case, subjects were shown pairs of paintings and were asked to indicate which in each pair they preferred. The process of considering many such pairs led some subjects to change their attitudes

toward some of the paintings, presumably because new features of the paintings became salient upon repeated viewings. The more accessible subjects' initial attitudes toward the paintings were, the less attitude change was caused by the repeated preference expression task.

H. Attitude Stability

The attitude change hypothesis has also been tested via an eighth type of study, assessing attitude stability over relatively long time periods during the course of everyday life. If stronger attitudes are indeed more resistant to change, they should show higher levels of stability. Consistent with this expectation, a number of studies have found more stability for attitudes higher in importance, extremity, evaluative-cognitive consistency, interest, and direct experience. Highly ambivalent attitudes have also been shown to be less stable over time.

I. Perceptions of Influenceability

Finally, a ninth type of study yielding results consistent with all the above has focused on people's *perceptions* of the crystallization of their own attitudes. In one case, investigators asked people about the impact that news media have in changing their attitudes on controversial political issues. The more important a person considered an attitude to be, the less he or she claimed the media influenced that attitude. Assuming that people's perceptions of their own influenceability are correct, this provides support for the notion that important attitudes are more resistant to change.

J. Resistance to Attitude-Relevant Behavior Change

One final sort of study we will mention examined not resistance of attitudes per se but rather resistance of attitude-relevant *behavior*. In one case, investigators explored the impact on one's own behavior of perceptions of others' opinions. When people perceive others to share their views on an issue, they are especially likely to express those views publicly. In contrast, when people perceive their opinion to be opposed by most other people, they tend not to express them. Thus, perceptions of others' attitudes shape attitude expression. Not surprisingly, this influence is more pronounced among individuals who attach less personal importance to the attitude in-

volved. People tend to express their important attitudes publicly, regardless of whether they feel others agree or disagree with them on the issue. Thus, people are again less influenced when an important attitude is involved.

K. Mechanisms

In addition to documenting these associations between attitude dimensions and crystallization, past research has highlighted mechanisms likely to be responsible for increased resistance. For example, with regard to attitude importance, important attitudes become more polarized when people are told that they will be discussing an issue with someone with whom they disagree, whereas unimportant attitudes become more moderate. Thus, people apparently brace to protect important attitudes and prepare to be flexible when attitudes are unimportant. Second, more important attitudes are more likely to be consistent with other attitudes and with basic values. These other attitudes and values presumably lend stability to the target attitude in the face of attack. And finally, people for whom an attitude is personally important are especially likely to generate challenging cognitive responses to counterattitudinal arguments. This tendency toward biased cognitive elaboration also presumably enhances resistance to change.

L. Conclusion

Taken together, the studies reviewed above show that 9 of the 10 attitude dimensions are related to crystallization (with the exception of intensity). Whereas some such associations have been documented using only a single method for assessing crystallization, most have been shown using multiple methods. Therefore, it seems appropriate to maintain some significant confidence in these relations.

V. EVIDENCE OF GREATER INFLUENCE

Just as the 10 dimensions of attitudes are apparently related to attitude crystallization, they all appear related to the degree to which attitudes have impact on cognition and behavior. There is a great deal of such evidence available, and it addresses many phenomena: the impact of attitudes on behavior and perceptions of others' attitudes, the impact of attitudinal similarity on social attraction, the impact of attitudes toward an object's individual attributes on attitudes toward the entire object, and the impact of attitudes on memory for attitude-relevant information. We review all this below.

dinal similarity on social attraction, the impact of attitudes toward an object's individual attributes on attitudes toward the entire object, and the impact of attitudes on memory for attitude-relevant information. We review all this below.

A. Attitude-Behavior Consistency

As we mentioned, one of the most important goals of attitude research is to understand the causes of individual's behavior. Although it is well known that the attitude-behavior relation is typically weak, this relation is, by definition, strong in the case of strong attitudes and weak in the case of weak attitudes. Consistent with this notion, attitude-behavior consistency is greater for attitudes higher in direct experience, certainty, importance, knowledge, accessibility, extremity, and evaluative-cognitive consistency, and for attitudes with larger latitudes of rejection and smaller latitudes of noncommitment.

B. Perceptions of Events

Attitudes have long been thought of as serving functional purposes in people's everyday lives, one of which has been dubbed the knowledge function. The idea here is that some attitudes help people to make sense of the world and interpret ambiguous events. So, for example, if Bill has a positive attitude toward Jeanette, Bill will be inclined to interpret Jeanette's actions in a favorable, complimentary way. And if Bill's attitude toward Jeanette is negative, he will be inclined to view her behavior unfavorably. Thus, Bill needs only to recall an attitude to access an informational basis for making inferences. Presumably, strong attitudes are more likely to serve this function than weak ones.

The effect of attitudes on perceptions of others' behavior has been examined in a number of studies. One study examined the effect of people's attitudes toward a Presidential candidate on their evaluations of his debate performance. People who had a positive attitude toward the candidate should presumably be inclined to evaluate his or her debate performance more positively than that of his or her competitors. This was found to be so, especially among people whose attitudes toward the candidate were highly accessible and those whose attitudes were extreme.

Another experiment sought to determine if increasing the accessibility of attitudes toward a person increases bias in perceptions of his or her behav-

ior. Some subjects were first asked to express their attitudes toward a particular famous person once; others were asked to express their attitudes many times; and still others were not asked to express their attitudes at all. The presumption here was that repeated expression of an attitude increases its accessibility. Consistent with this reasoning, subjects who had expressed their attitudes more often were more likely to evaluate an essay written by the famous person in a way consistent with their attitudes toward him.

Yet another study examined the impact of attitudes on political issues on evaluations of essays written about those issues. Presumably, essays supporting one's attitude on an issue should be evaluated positively, and essays opposing one's attitude should be evaluated negatively. This turned out to be so, especially among individuals whose attitudes on the issue were highly accessible.

One final bit of evidence here involves the impact of attitudes on thoughts generated about the attitude object. If one is asked to write an essay about an object, this presumably induces either favorable or unfavorable thinking about it, depending on the direction of one's attitude. And this should be especially true for individuals whose attitudes are strong. Consistent with this notion, the essay writing made people's attitudes more extreme, especially among those individuals who were high in evaluative-cognitive consistency.

C. Perceptions of Others' Attitudes

According to social judgment theory, actions and statements of attitudes are inherently ambiguous and require some degree of interpreting in order for a perceiver to specify precisely what another person's attitude is. This interpretation is accomplished partly through comparisons of the other person's behavior with one's own attitude, which acts as a perceptual anchor. And this comparative process is thought to bring about perceptual distortion: attitudes close to one's own are assimilated toward it, and attitudes clearly different are contrasted away from it.

Social judgment theory argues that stronger attitudes are more powerful anchors and therefore have more impact on perceptual processes. Thus, individuals with strong attitudes are thought to see others as primarily falling into one of two groups: those with whom they agree (at one end of the attitude continuum) and those with whom they disagree

sharply (at the other end). In support, researchers have found that voters who considered a political issue to be personally important perceived greater differences between the stands competing presidential candidates took on controversial issues. Similar findings regarding perceptions of individuals' and groups' attitudes have been reported with regard to attitude extremity: more extreme attitudes yield greater perceived differences between opposing individuals and groups.

Related evidence was reported in an experiment that explored perceptions of attitudes of social groups. Two sorts of groups were compared: those to which people belonged (i.e., ingroups), and those to which they did not belong and against which they competed for social status (i.e., outgroups). On issues people considered personally important, they exaggerated agreement with ingroups, and they exaggerated disagreement with outgroups. On issues that were not personally important to people, no such exaggeration occurred.

Analogous evidence was found in another study that varied the physical attractiveness of a target individual. On issues people considered personally important, they exaggerated perceived agreement between themselves and attractive others, and they exaggerated perceived disagreement between themselves and unattractive others. No such effects appeared for attitudes that subjects considered personally unimportant.

D. Similarity-Attraction Effect

Theories of cognitive consistency argue that people should be attracted to others who share their attitudes and repulsed by others who hold attitudes that conflict with their own. Consistent with this notion, a great deal of research has demonstrated that attitudinal similarity leads to interpersonal attraction. Presumably, this should be especially true in the case of strong attitudes as compared to weak ones. [See INTERPERSONAL ATTRACTION AND PERSONAL RELATIONSHIPS.]

There is much evidence in support of this expectation. A number of studies have shown greater correspondence between an individual's attitudes and his or her friends' attitudes on issues that are extreme or highly important. Similarly, attitude similarity is a more powerful determinant of attraction to strangers and to political candidates when the attitude involved is personally important. And finally, the more one knows about a particular attitude object, the

more heavily he or she weighs self–other similarity in terms of attitudes toward it when evaluating others.

E. Part–Whole Attitude Consistency

According to various theories, people's attitudes toward objects are sometimes derived from their beliefs about the objects' attributes and their attitudes toward those attributes. Presumably, attributes toward which an individual has stronger attitudes have greater impact on one's overall attitude toward the object. And this enhanced impact is presumably reflected by a greater level of evaluative consistency between the overall attitude and attitudes toward the attributes.

Consistent with this reasoning, studies have shown that the attributes of cigarette smoking that individuals consider more important are also more strongly correlated with overall evaluations of smoking. Similarly, attitudes toward one's own body parts are more strongly correlated with overall attitudes toward one's body when attitudes toward the body parts are especially important. Analogously, individuals' self-esteem is more influenced by satisfaction with dimensions of self-evaluation that are more personally important to them and that were evaluated with greater certainty. Also, considerations of economic self-interest have more impact on presidential candidate preferences among people for whom economic issues are especially important.

F. Memory for Attitude-Relevant Information

According to cognitive dissonance theory, retaining information in memory that challenges one's attitude on an issue is uncomfortable. Therefore, people are presumably biased toward remembering attitude-consistent information and forgetting attitude-inconsistent information. This has been termed a "congeniality bias" in memory and is presumably stronger in the case of strong attitudes. Consistent with this expectation, recent results showed that attitude importance does indeed regulate the strength of this effect. Individuals who consider an issue to be more important are more likely to remember attitude-consistent information and less likely to remember attitude-inconsistent information than people who consider the issue to be unimportant. [See COGNITIVE DISSONANCE.]

A second hypothesis involving attitude strength and memory has also received some support. This

hypothesis proposes that people should attend more closely to and think more deeply about information relevant to stronger attitudes. As a result, this information should be better remembered than information relevant to weaker attitudes. Consistent with this logic, studies have found that attitude importance is associated with better memory for attitude-relevant information. In addition, people who have more attitude-relevant knowledge and those more interested in the attitude object have better recall of attitude-relevant information. Also, perceptions of others' political attitudes are more accurate among people who considered the attitudes to be more personally important, presumably reflecting better memory for attitude-revealing behaviors or events.

Based on one particularly interesting set of findings, one might imagine that attitude accessibility would induce better memory for attitude-relevant information. In these studies, people were exposed to a set of objects simultaneously, and the researchers gauged how much attention people paid to each object. Interestingly, people were most likely to gaze at objects toward which they had highly accessible attitudes. If this is a general tendency, people presumably invest more effort in gathering information about such objects and therefore can recall such information better.

VI. CAUSES OF THE DIMENSIONS

In addition to the work we have reviewed above documenting the relations of attitude dimensions to crystallization and consequentiality, researchers have explored the causes or origins of some of the dimensions. This research is less well-developed, but there are some findings documented in this area that merit mention.

A. Extremity

One of the most elaborate research programs on the origins of attitude strength has explored the impact of mere thought on attitude extremity. According to this work, simply thinking about an attitude object often leads attitudes toward it to become more polarized. This is so because thinking leads people to revise the knowledge base underlying the attitude, generating attitude-supportive beliefs and eliminating attitude-inconsistent beliefs. The effect of thinking on attitude extremity can be reduced by confronting individuals with the attitude object about

which they are thinking, thus making it more difficult to reinterpret its qualities. Also, the impact of thinking on extremity is reduced when one's beliefs about the object are complex and multi-dimensional.

Another documented cause of attitude extremity is repeated attitude expression. The more often a person expresses his or her attitude toward an object, the more extreme it becomes.

B. Certainty

Recent research has shown that mere thought about an attitude object also increases certainty in one's attitude toward it. Direct behavioral experience with an attitude object also enhances attitudinal certainty. Group discussions of an object increase individual's certainty about their attitudes toward it, particularly when a large fraction of the group shares the same attitude. And finally, attitudinal certainty can sometimes be increased by giving people the opportunity to think about how other people feel about the object in question. Individuals have a tendency to overestimate the number of others who share their views, and the resulting (and illusory) perceived social support enhances confidence in those views.

C. Accessibility

The accessibility of an attitude presumably reflects the strength of the link between the object and its evaluation in one's memory. Therefore, any process that strengthens this link would presumably enhance the attitude's accessibility. One such process is repeated expression or rehearsal. The more often one expresses an attitude, the more accessible it becomes. A second cause of accessibility is behavioral experience with the attitude object. The more such experience one freely chooses to undertake, the more accessible one's attitude toward the object becomes.

D. Importance

What leads people to attach personal importance to an attitude object? According to speculations offered by social scientists for many years, there are three categories of factors. First, people come to care about an attitude when they perceive the object to be relevant to their material self-interests—the behavioral rights and privileges they enjoy in living their daily lives. Second, importance may result

from social identification with a reference group or a reference individual. If that person or group's material interests are relevant to an attitude object, or if that person or group cares deeply about their attitude(s) toward the object, an individual's attitude importance may be enhanced. Finally, attitude importance can grow when an individual perceives an object to be related to his or her cherished values regarding how life should be lived. Recent research has lent support to all three of these proposed causes of importance.

E. Knowledge

According to a number of investigations, knowledge about an attitude object can develop through direct behavioral experience with it, through discussions with other people about the object, and through exposure to the media.

VII. CONCLUSION

So what do we know about attitude strength? First, we know that some attitudes are stronger than others, in that the former are more firmly crystallized and consequential. Second, we know that strong and weak attitudes can be differentiated using any of the 10 dimensions we have described. That is, extreme attitudes are stronger than moderate ones; important attitudes are stronger than unimportant ones; accessible attitudes are stronger than inaccessible ones; and so on.

Third, it seems that the various dimensions of attitudes we discussed are not all merely surface manifestations of a single underlying construct. Rather, they are each independent sources or aspects of strength. This conclusion is supported by evidence of weak correlations among the dimensions, as well as by findings from confirmatory factor analysis studies. It is also consistent with evidence of discrepancies between the dimensions in terms of their relations with other criteria. For example, whereas attitude importance, intensity, and certainty do not regulate the magnitude of question wording effects, evaluative-cognitive consistency and extremity do seem to exert such regulatory influences. Also, more frequent thought about a serious personal trauma is associated with decreased health, whereas more frequent discussion about a trauma is associated with increased health. Finally, although many of the 10 dimensions have been

shown to be related to the stability of attitudes over time during daily life, accessibility (as measured by frequency of discussion) appears not to manifest that relation. Clearly, then, these dimensions do not always behave identically to one another and therefore merit being treated as distinct.

According to this perspective, any given attitude may be strong for any of a series of reasons (e.g., because it is important *or* intense *or* accessible). Furthermore, attitudes that have many sources of strength (e.g., importance *and* intensity *and* accessibility) may be particularly crystallized and consequential. That is, rather than merely being additive in enhancing strength, the various dimensions may combine interactively or synergistically in ways that magnify their independent effects. We look forward to future research exploring this possibility.

Some such work has been done and has yielded useful and quite plausible results. For example, one study showed that attitude-defensive biased processing of a persuasive message was most likely to occur among people high in knowledge and intensity. Interestingly, though, some investigations exploring interactions among these dimensions have turned up more complex patterns. For instance, an effect of question order on responses is most likely to occur among people who are low in certainty but consider an attitude to be personally important. Such findings, of course, reinforce the notion that these dimensions are not merely interchangeable with one another.

In addition to exploring these issues further, we expect future research on attitude strength to focus on controversies that have emerged in this literature only very recently. One controversial issue involves the distinction between attitudes that are important to an individual because of self-interest and those that are important because of value-relevance. Some researchers have argued that value-relevance induces resistance to attitude change under all circumstances, whereas self-interest induces openness to attitude change when one encounters compelling information justifying such change. In contrast, other researchers have proposed that both sources of importance yield the same result: openness to change in response to compelling information, but strong resistance to change thereafter. We expect to see much research exploring these matters in coming years.

Another controversy involves the question of whether self-perceptions are inferior measures of attitude strength when compared to other, more di-

rect sorts of measures. According to some observers, self-perceptions are clouded by a variety of interfering forces, such as desires about the sort of person one would *like* to be. In contrast, measures such as response latency that do not rely upon subjects' perceptions of themselves may therefore be more reliable and valid. On the other hand, these latter measures are likely to be distorted by irrelevant constructs as well, such as how recently a person has thought about an attitude or how quick he or she is at making judgments generally. Consequently, it is always important to employ complex assessment procedures using multiple methods to overcome sources of error. It will be interesting to see whether once such procedures are implemented for self-perception dimensions and other sorts of dimensions alike, the dimensions differ in the magnitudes of their relations with attitude crystallization and consequentiality.

Yet another controversy involves the question of mediation. Some researchers have argued that accessibility may be a mediator of many or most of the effects of attitude dimensions on crystallization and consequentiality that we reviewed above. Thus, for example, attaching personal importance to an attitude might lead a person to think about it frequently, which might enhance its accessibility and thereby magnify its impact on cognition and behavior. Consequently, controlling for accessibility might reduce or eliminate effects of importance and other such dimensions. A very new view on this matter is that accessibility may play an important regulatory role only under some conditions, such as when decisions or behavior are executed effortless and automatically. Under these circumstances, which attitudes are most accessible and happen to come to mind will be the ones that have the most impact. In contrast, attitude dimensions such as importance may be the primary regulators of attitude effects when decisions are made carefully, effortfully, and involve extensive deliberation. Under these conditions, people presumably retrieve even relatively inaccessible attitudes if they are important.

Another controversy involves the question of how best to change a strong attitude. Some recent research suggests that the most effective way to do so is to directly attack the basis of its strength. So, for example, if an attitude is strong because it is based on an extensive body of information, it can best be changed by confronting the individual with new information that challenges what he or she al-

ready believes. To the contrary, other researchers have argued that the best way to change such an attitude is to provide a new basis of strength implying a different evaluation of the object. So, for example, an attitude that is strongly positive because of its information basis might be changed most effectively by arousing intense negative feelings toward the object. Some research has been reported supporting each of these two contradictory positions, and little is currently known about the conditions under which each perspective is most likely to apply.

As these controversies are addressed with empirical studies and as new controversies emerge, the literature on attitude strength will grow in volume and scientific significance. Thus far, work in this area has made it clear that an understanding of attitudinal processes requires theoretical and empirical attention to the many aspects of strength considered in this entry. Further work along these lines will no

doubt broaden the value of the attitude literature and its applicability in the analysis and amelioration of significant social problems.

Bibliography

- Abelson, R. P. (1988). Conviction. *Am. Psychol.* **43**, 267-275.
- Converse, P. E. (1970). Attitudes and nonattitudes: Continuation of a dialogue. In "The Quantitative Analysis of Social Problems" (E. R. Tuft, Ed.). Addison-Wesley, Reading, MA.
- Fazio, R. H. (1986). How do attitudes guide behavior? In "The Handbook of Motivation and Cognition: Foundation of Social Behavior" (R. M. Sorrentino and E. T. Higgins, Eds.), pp. 204-243. Guilford, New York.
- Krosnick, J. A. (1990). Government policy and citizen passion: A study of issue publics in contemporary America. *Political Behav.* **12**, 59-92.
- Petty, R. E., and Krosnick, J. A. (Eds.) (1994). "Attitude Strength: Antecedents and Consequences." Erlbaum, Hillsdale, NJ.
- Raden, D. (1985). Strength-related attitude dimensions. *Soc. Psychol. Quart.* **48**, 312-330.

