

17

# The Evolution of Theory and Research in Social Psychology: From Single to Multiple Effect and Process Models of Persuasion

*Richard E. Petty*

Richard E. Petty received his B.A. from the University of Virginia in 1973 and his doctorate in social psychology from Ohio State University in 1977. In 1987, he left his position as Middlebush Professor at the University of Missouri to return to Ohio State where he won the University Distinguished Scholar Award in 1994. He is the author of seven books and over 150 journal articles and chapters. Dr. Petty is a fellow of the American Association for the Advancement of Science, the American Psychological Association, and the American Psychological Society. He is former editor of the *Personality and Social Psychology Bulletin* and current serves on the editorial board of six journals.

Are similar people attracted to each other, or do opposites attract? Are men more effective leaders than women? Are attractive people more persuasive than unattractive ones? Furthermore, if people are more attracted to similar others, or if men are more effective leaders than women, or if attractive people are more persuasive, *why* is this the case? For example, if attractive people are more

persuasive than unattractive people, is this because we pay more attention to what attractive people say, or is it because we agree with attractive people so that they will like us? Humans have a natural curiosity about such questions and social psychologists study these issues scientifically.

Notice that the way in which each of these questions is framed appears to assume that there is one correct answer or outcome for each of the variables involved. That is, the questions seem to imply that *either* men *or* women are more effective as leaders or that *either* attractive *or* unattractive people are more persuasive. I refer to this as the *single-effect assumption* – that variables such as source attractiveness have just one effect on any one outcome measure (such as how much persuasion they produce). Furthermore, the questions seem to imply that whichever effect is obtained, there is one explanation for or reason for why this outcome is produced. I refer to the latter as the *single-process assumption*.

Just as people who are not trained as social psychologists tend to think about questions this way, so too do social psychologists – especially when they are at the earliest stages of examining a new phenomenon. Inevitably, however, it seems to turn out that whatever some initial investigation shows (e.g. that attractive people are more persuasive than unattractive people), some subsequent study will eventually show the opposite (i.e. that attractive people are less persuasive than unattractive people). In fact, McGuire (1983) has suggested that the opposite of virtually every social-psychological finding is also true. The fact that opposite results are often obtained can be frustrating in that it can leave both scientists and laypersons baffled as to what to believe. Ironically, the production of opposite results sometimes leads not to confusion, but to a new and better understanding of the phenomena under study. In fact, theories developed to predict and explain opposite results can be quite powerful and can simplify our understanding of complex outcomes.

Another complicating factor in understanding human behavior is that it turns out that it is rarely the case that any one explanation for any one outcome is universally correct. This means, for example, that sometimes people might be attracted to similar others for one reason (e.g. we are attracted to similar others because they enjoy similar activities), but at other times, another reason provides a better explanation for the same outcome (e.g. we are attracted to similar others because they can read our emotions better and communicate with us more easily).

In this essay, I address and critique the single-effect and single-process assumptions that have guided early social-psychological work in general, and social-psychological research on attitude change and persuasion in particular. I focus on attitude change research because of its long and illustrious history in social psychology (cf. Allport, 1935), and also because (quite frankly) it is an area I know more about than others!

## Single Versus Multiple Effects of Variables

### *First generation research*

Scientific work on persuasion began in the twentieth century (e.g. Knower, 1935), although speculation about how people come to be influenced by various source and message factors can be traced to the ancient Greeks (e.g. see Aristotle's *Rhetoric*). The early or *first generation* researchers concerned with understanding attitude change wondered about such fundamental issues as: Are expert and attractive people more persuasive than non-experts and unattractive people? Is it better to present people with logical arguments or with appeals based on emotion? Is fear a good emotional tool or does it turn people off? In the initial tests of these notions, researchers would give people a persuasive message on some topic and would manipulate whether the message contained an expert source or not, or included fearful elements or not. In this way, the investigator could determine if the critical variable (e.g. fear or an expert source) was beneficial or harmful for persuasion. Most often, the study was guided by some underlying theory or notion of *why* the variable would be harmful or beneficial.

For example, one of the earliest general theories of persuasion was based on learning theory principles (Hovland, Janis, & Kelley, 1953). In its simplest form, this theory held that anything that facilitated attending to, comprehending, and learning the contents of the message would be good for persuasion, and anything that would disrupt attending, comprehending, and learning would be bad for persuasion. Thus, for example, distracting someone from the message should reduce persuasion because distraction is generally bad for attention, comprehension, and learning. Although some research has supported this notion, as I forewarned you, other research has found the opposite (see Petty & Brock, 1981, for a review). For example, Festinger and Maccoby (1964) presented college fraternity men with a message that advocated that fraternities should be abolished. They found that those who were distracted during the message ended up agreeing *more* with the message than those who were not distracted. To account for this, these researchers hypothesized that attitude change depended not so much on verbatim learning of a message, but on whether or not people *counter-argued* the arguments that were presented. They reasoned that people who disagreed with a message resisted by counter-arguing the message points during its presentation. Distraction could disrupt this counter-arguing and thereby increase the likelihood of persuasion by undermining this resistance mechanism.

Thus, learning theory predicts one outcome – that distraction is bad for persuasion, and counter-arguing theory predicts the opposite – that distraction is good for persuasion. It would be more parsimonious if one theory could explain both outcomes (i.e. how distraction can both increase and decrease

persuasion). Petty, Wells, and Brock (1976) hypothesized that distraction could produce either outcome if distraction disrupted whatever people were thinking, rather than counter-arguments in particular. That is, if undistracted people would have been thinking favorable thoughts about the message, then distraction would disrupt these positive thoughts and would result in less persuasion than if no distraction were present, but if undistracted people would have been thinking unfavorable thoughts (counter-arguments), distraction would disrupt these negative thoughts and result in more persuasion. To test this thought disruption idea, Petty et al. (1976) developed two messages. One message was designed to elicit mostly favorable thoughts when people were paying careful attention to it (i.e. a *strong message* containing compelling arguments), and another message on the same topic was pre-tested to elicit mostly unfavorable thoughts when people were paying careful attention to it (i.e. a *weak message* containing specious arguments). These messages were then given to people who were exposed to either a minimal or a moderate amount of distraction during message exposure. The results of the study are presented in the top panel of figure 17.1. As expected by the thought disruption hypothesis, distraction was good for persuasion when the arguments were weak, but was bad for persuasion when the arguments were strong.

Following the report of this study in 1976, many other such studies were conducted that included both strong and weak arguments along with some variable of interest. These studies generally showed that many variables that were initially thought to have just one effect (i.e. either increasing or decreasing persuasion) could both increase and decrease persuasion depending on whether or not the variable was paired with a strong or a weak message (see Eagly & Chaiken, 1993; Petty & Cacioppo, 1986, for reviews). As another example of this dual outcome finding, consider the learning theory approach to message repetition. Learning theory suggested that repeating a message a few times would increase the likelihood of persuasion because with more exposures, people would have a greater chance to attend to, comprehend, and learn the message. However, research that varied the quality of the message that was presented along with message repetition found that going from one to three exposures of a strong message led to more persuasion, but going from one to three exposures of a weak message led to less persuasion (e.g. Cacioppo & Petty, 1989; see middle panel of figure 17.2). This suggested that learning *per se*, was not critical, but that increased repetition gave recipients a greater opportunity to think about and evaluate the arguments.

The persuasion work on distraction and message repetition supported a *cognitive response* (Greenwald, 1968; Petty, Ostrom, & Brock, 1981) or *elaboration likelihood model* of persuasion (Petty & Cacioppo, 1981, 1986). That is, variables could increase or decrease persuasion by influencing the likelihood that people would elaborate or think about the arguments presented (see also, Chaiken, Liberman, & Eagly, 1989). Some variables, like distraction, decreased

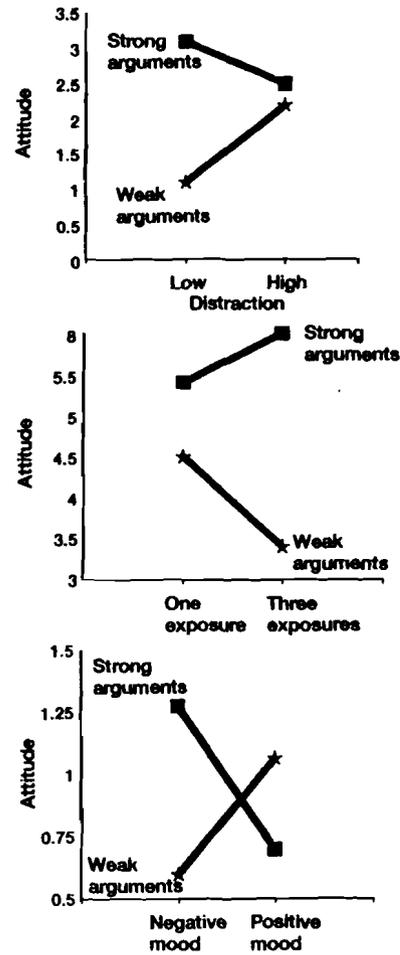


Figure 17.1 Examples of "second generation" research on message processing: Variables can increase and decrease persuasion by either increasing or decreasing message processing. Top panel: distraction reduces message processing (data from Petty, Wells, & Brock, 1976). Middle panel: message repetition increases message processing (data from Cacioppo & Petty, 1989). Bottom panel: positive mood reduces message processing (data from Worth & Mackie, 1987).

the likelihood that people would elaborate or generate cognitive responses to the message arguments, whereas other variables, like repeated exposure, increased the likelihood of the recipient cognitively responding to or elaborating the message arguments.

*Second generation research*

Because so many variables were shown to be associated with both increased and decreased persuasion since they influenced the likelihood of thinking about the

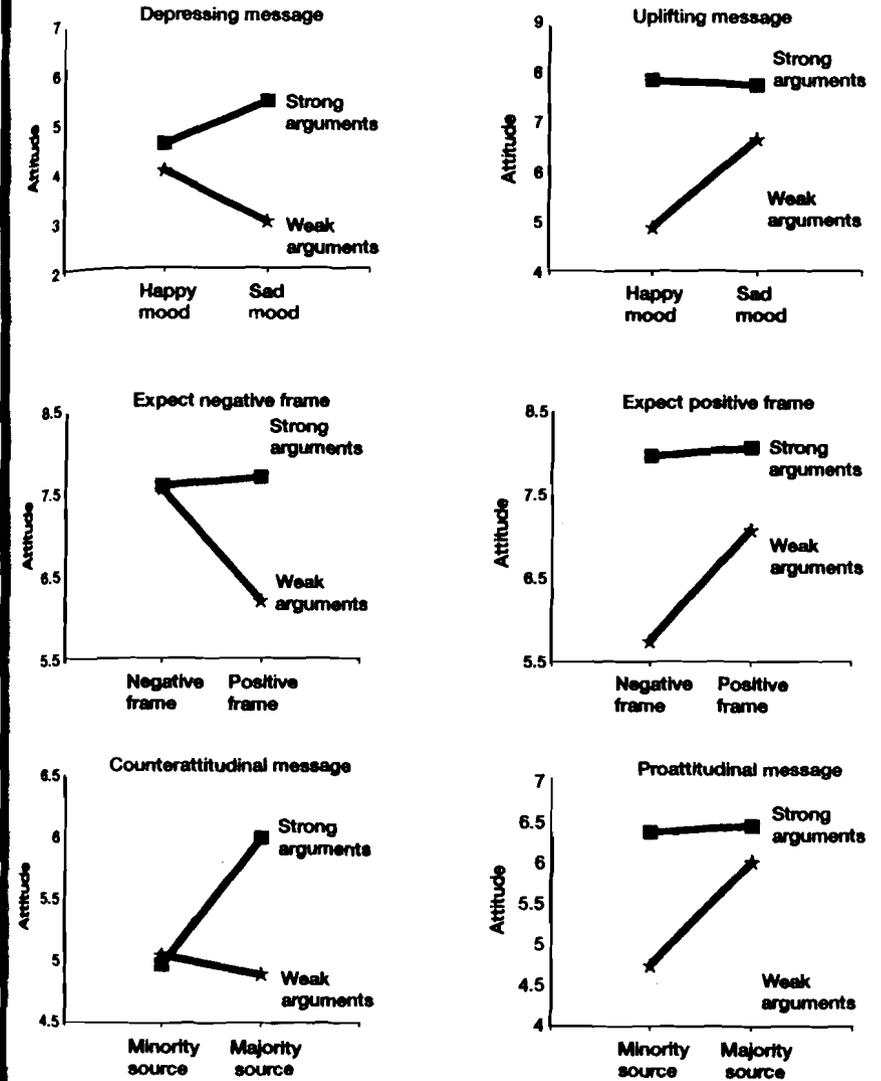


Figure 17.2 Examples of "third generation" research on message processing: Variables can both increase and decrease message processing. Top panel: positive mood can enhance or reduce message processing (data from Wegener, Petty, & Smith, 1995). Middle panel: positive message framing can enhance or reduce message processing (data from Smith & Petty, 1996). Bottom panel: minority sources can enhance or reduce message processing (data from Baker & Petty, 1994)

message, the field began to move away from asking the *first generation question* of whether some variable was good or bad for persuasion, and began to ask the *second generation question* of whether some variable was good or bad for message elaboration (Petty, Priester, & Wegener, 1994). For example, when Worth and Mackie (1987) began their research on the effects of positive mood on persuasion, instead of asking the first generation question of whether putting someone in a good mood would be beneficial or harmful for persuasion (e.g. see Janis, Kaye, & Kirschner, 1965), they asked the second generation question of whether putting someone in a good mood would increase or decrease message processing. They reasoned that being in a good mood would bring many positive thoughts to mind and that these message-irrelevant thoughts would consume a person's cognitive capacity making it difficult to process the message (i.e. good mood would reduce the likelihood of elaboration). To test this idea, they placed students in a good mood by having them win some money (happy mood condition) or not (neutral mood condition), and then exposed them to a message containing strong or weak arguments on the issue of controlling acid rain. The pattern of results depicted in the bottom panel of figure 17.1 was very similar to the distraction pattern depicted in the top panel of figure 17.1. That is, when the arguments were weak, positive mood led to more persuasion than neutral mood, but when the arguments were strong, positive mood led to less persuasion than neutral mood. This is precisely the pattern that would be expected if positive mood disrupted message processing. A number of other studies have replicated this second generation mood effect (see Schwarz, Bless, & Bohner, 1991; Mackie & Worth, 1991, for reviews).

### *Third generation research*

Now that the second generation research has been conducted for positive mood and many other variables, what is the third generation issue? If our warning about opposite results often being obtained holds, it should turn out that variables that were thought to *either increase or decrease* message processing in second generation research, will be shown to be capable of both increasing and decreasing message processing in third generation research. For example, distraction might not invariably reduce message processing. Under some circumstances, perhaps, the presence of some distraction could motivate people to be especially diligent in thinking about the message.

This "third generation" opposite effect on processing has not (yet) been shown for distraction. However, third generation effects have been shown recently for other variables. Let's return to the effect of positive mood on persuasion. We now know that positive mood is not invariably good or bad for persuasion as reviewers of the first generation of research on positive mood concluded (e.g. see McGuire, 1985). Rather, second generation researchers and

reviewers concluded that a pleasant mood could be good or bad for persuasion because a pleasant mood was invariably bad for message processing (Schwarz et al., 1991; Mackie & Worth, 1991; e.g. see bottom panel of figure 17.1). The third generation question would address the possibility that a pleasant mood could either be good or bad for message processing.

To account for both effects on message processing, a new explanation was needed for why mood affected thinking about a message. Wegener, Petty, and Smith (1995; see also Petty, Gleicher, & Baker, 1991) noted that second generation investigations of positive mood and persuasion used message topics that were rather unpleasant, counterattitudinal, and/or depressing (e.g. acid rain; tuition increases). Thus, happy people may not have thought about these messages because doing so would have destroyed their current good feelings. If the messages had been on topics that were pleasant and non-threatening, then perhaps people in a positive mood would be very interested in thinking about the messages because thinking about them would insure that their good feelings would be continued (Isen, 1993; Wegener & Petty, 1994).

To examine this idea, college students were first placed in a happy or sad mood by watching a video and reading an article that induced these states (Wegener et al., 1995, experiment 2). Then, the students were led to believe that the next article they would read (i.e. the persuasive message), would either make them feel happy (pleasant expectation condition) or sad (unpleasant expectation condition). The messages actually presented the same strong or weak arguments in favor of a new university service proposal. The top panel of figure 17.2 presents the results. Note that when the students expected the message to be unpleasant or depressing (first row, left panel), those in a positive mood were less attentive to message quality than those in a sad mood. When argument quality has a large effect on attitudes (as in the depressing message, sad mood condition), one can assume that people are attending to and thinking about the message, but when argument quality has a small (or no) effect on attitudes (as in the depressing message, happy mood condition), it appears that people are not forming their opinions based on an objective assessment of the merits of the proposal. This finding of reduced message processing for those in a positive mood replicates the second generation research suggesting that positive mood disrupts message processing (e.g. Worth & Mackie, 1987). Note however, that when the students expected the message to be uplifting and pleasant (first row, right panel), those in a positive mood actually engaged in *greater* message processing than those who were in a negative mood. This result, of course, suggests that positive mood does not invariably reduce message processing as the second generation research indicated, but can actually increase it. These results also provide support for a new explanation for why mood influences to message processing. Specifically, this research suggests that sometimes, the underlying motivation for message processing is to manage one's mood.

Other variables are beginning to receive the third generation treatment. For example, consider the long-standing question of whether it is better to present the arguments in a message in a positive frame (e.g. "if you stop smoking you will live a long, healthy life") or in a negative frame (e.g. "if you don't stop smoking, you will die sooner"). As with virtually all other persuasion variables, initial research and theory suggested that one framing was better for persuasion than the other. In this case, the evidence suggested that negative framing was more effective (e.g. Meyerowitz & Chaiken, 1987). Later, evidence was presented to support the second generation conclusion that negative framing tended to enhance information processing activity (e.g. Ditto & Lopez, 1992). Smith and Petty (1996) posed the third generation question of whether negative framing could both enhance and reduce message processing. They reasoned that people often expect persuaders to present the benefits of taking some action or agreeing with some position. Thus, when a message presents the costs of not taking some action, this is unexpected, and this surprise leads to greater information processing activity (see Olson, Roese, & Zanna, in press). This violation of expectancies notion suggests that if people were led to believe that a message would present the costs of not taking some action, but it instead presented the benefits of taking the action, this should lead to surprise and the (unexpected) positive framing would lead to greater information processing than the (expected) negative framing.

To test this idea, Smith and Petty (1996) led students to expect that an advertisement for a new vitamin would either present the benefits of taking the vitamin (positive expectancy condition) or the damages from not taking it (negative expectancy condition). The message then presented weak or strong arguments of the type expected or not. As the results in the middle panel of figure 17.2 demonstrate, people considered the arguments more in forming their attitudes when the arguments were of the type that were not expected (i.e. when the recipients were surprised). That is, when people expected a negatively framed message, greater message processing took place when the message used positively framed arguments (i.e. argument quality had a larger effect on attitudes when the arguments were framed positively than negatively; see left panel), but when people expected a positively framed message, greater message processing took place when the message used negatively framed arguments (i.e. argument quality had a larger effect on attitudes when the arguments were framed negatively than positively; see right panel).

As a final example, the bottom panel of figure 17.2 presents the results of a third generation study examining the variable of majority or minority sources. More specifically, this research addressed how learning that a message is endorsed by either a substantial majority or a small minority of other people affects information processing and persuasion. We can now bypass the first generation question (i.e. does majority or minority endorsement produce more persuasion? e.g. Asch, 1956), and the second generation question (does majority or minority endorsement produce more message processing? e.g. Harkins &

Petty, 1981; Moscovici, 1980), and turn directly to the third generation question. Baker and Petty (1994) hypothesized that since people generally expect other people to agree with them (the "false consensus effect", false consensus effect; Ross, Greene, & House, 1977), they would be more surprised when the message implied that a majority rather than a minority of other people took a position that disagreed with them. On the other hand, they would be more surprised when only a minority rather than a majority took a position that agreed with their own. Whichever position was the more surprising would produce the most message processing.

To test this notion, Baker and Petty (1994) presented students with opinion polls that indicated that either a majority or a minority of students and residents of their state favored a position that they also favored, or that either a majority or minority favored a position that they opposed. These pro- and counter-attitudinal positions were supported in a message with either strong or weak arguments. As the results in the bottom panel of figure 17.2 demonstrate, people engaged in greater processing of the message when the advocacy was not expected (i.e. the majority taking a counterattitudinal position [see left panel] and the minority taking a proattitudinal position [see right panel]), rather than expected (i.e. the majority taking a proattitudinal position and the minority taking a counterattitudinal position).

In sum, researchers investigating positive/negative message framing and majority/minority sources initially examined which framing and which type of source was best for persuasion (the first generation question). Then, researchers examined which framing and which source was best for message processing (the second generation question). Most recently, work on both variables has concluded that either framing (positive/negative) or source (majority/minority) can be better for message processing depending on which induces the most surprise. That is, the third generation conclusion is that *surprise leads to more message processing*, and suggests that sometimes the underlying motivation for message processing is to provide understanding of an unexpected occurrence.

#### Fourth Generation Research

Now that some third generation studies have clearly indicated that any one variable is capable of both increasing and decreasing message processing, what is the fourth generation issue? Fourth generation research involves taking the general information processing principles uncovered in the third generation research – such as surprise leading to more message processing – and considering the opposite – that surprise can lead to less message processing. Fourth generation research would address the conditions under which this opposite result would occur, and the overall mechanism(s) that could account for this. Note that at each generation of research, the overall conclusion is stated as a

general prediction (e.g. negative framing leads to more persuasion, or negative framing leads to more message processing, or surprise leads to more message processing). The conclusions at each generation must account for the findings of the current and the previous generations. For example, the second generation principle that *negative framing leads to more processing* accounts for the first and second generation findings that negative framing can lead to more or less persuasion. Then, the third generation principle that *surprise leads to more processing* accounts for the second and third generation findings that negative framing can lead to more or less message processing and specifies the conditions under which each outcome occurs. The fourth generation general principle (not yet identified) would need to account for the finding (not yet obtained) that surprise can lead to more or less message processing. At this point, it is not clear how many generations of research will be needed before some *universal principles* of message processing are identified (i.e. principles for which the opposite does not occur or occurs under such unusual or near impossible circumstances that it need not be incorporated into a general theory of social behavior).

#### *Summary of progress in each generation*

In the domain of persuasion research (as in other social psychological areas of study), first generation research is important in documenting that some variable has *any* impact on persuasion (or some other socially relevant dependent measure). If some variable cannot be shown to either enhance or reduce persuasion (or increase or decrease aggression, altruism, prejudice, etc.), it is unlikely to be of much interest to social psychologists. As I noted, however, once a variable is shown to increase (or decrease) the measure of interest, the opposite result is often observed as well. When this occurs, second generation research is valuable when it uncovers a mechanism that can account for *both* effects. In the field of persuasion, the mechanism that was most successful in accounting for how any one variable could both increase and decrease persuasion had to do with the extent to which the variable influenced how much people processed or elaborated the message that was presented to them (e.g. Petty et al., 1976). The third and fourth generation research then builds on the second generation process identified. If the second generation mechanism had been different, then (as discussed further below) the third and fourth generation questions and conclusions would also be different.

In this regard it is important to note that our discussion of generational mechanisms has used the simplifying assumption that although the persuasion outcomes for any variable can be very different (i.e. the presence of a variable such as distraction sometimes leads to more and sometimes leads to less persuasion), the underlying mechanism by which a variable influences attitude change is the same (i.e. the mechanism by which variables influence persuasion is by

affecting the extent of message processing). However, this assumption is flawed. Just as there is not only one outcome associated with most persuasion variables, there is not only one mechanism by which variables produce attitude change. It is to this issue that I turn next.

#### Single Versus Multiple Process Models

The examples of different generations of persuasion research in the previous section seem to imply that persuasion is a rather thoughtful process and that variables can have an impact on persuasion by influencing the amount of thought that takes place. Furthermore, our discussion seems to imply that the thinking people do about messages is rather objective in that it is guided by the quality of the arguments presented. If the arguments are compelling and people are motivated and able to think about them, they will generate favorable thoughts and will be persuaded. On the other hand, if the arguments are specious, and people are motivated and able to think about them, they will generate unfavorable thoughts and will resist influence or even move in the direction opposite to that advocated. Is this the only means by which attitudes are changed, or are there other mechanisms of persuasion? For example, are people ever *biased* in their consideration of messages rather than objective? Also, what happens when the likelihood of thinking is low and people are not thinking very carefully (if at all) about the merits of the arguments presented? Can persuasion still take place, and if so, what is responsible for persuasion then?

#### *Biased thinking*

The accumulated research clearly suggests that thinking about a message can sometimes be biased rather than objective. Biases can be produced by both individual and situational factors (see Petty & Cacioppo, 1986; Petty et al., 1994). In one early study, for example, Petty and Cacioppo (1979a), developed a message with strong arguments advocating that college seniors should be required to take a comprehensive exam in their major as a prerequisite to graduation. Two variables were manipulated. Some students were led to believe that the proposal would affect their graduating class (high relevance) whereas other students were led to believe that the proposal would not affect their class (low relevance). In addition, some students were told that the speaker was specifically trying to change their attitudes (forewarning condition), whereas the other subjects were not warned (no forewarning condition). Following exposure to the message, the students' attitudes toward the proposal were assessed.

In the unwarned conditions, the effect of increasing relevance was to increase persuasion. This is the effect that is expected if increasing relevance motivates

people to consider the strong arguments in a relatively objective fashion. If the arguments had been weak, and relevance increased thinking, then the effect of increasing relevance would have been to decrease persuasion (Petty & Cacioppo, 1979b, 1990). However, an interesting result occurred when the students were warned that the speaker was trying to persuade them. When the warning was given, increasing relevance *decreased* the amount of persuasion even though the arguments were strong. What is going on? To account for these data, Petty and Cacioppo (1979a) hypothesized that ordinarily (i.e. without the warning), relevance increases thinking about the strong arguments in a relatively objective fashion. However, when people are forewarned that someone is trying to persuade them, they feel a threat to their freedom to think as they wish (i.e. they experience "reactance"; see Brehm, 1966). To restore their freedom, people are motivated to resist or counter-argue the message. So, when relevance is high and people are motivated to think about the issue, the reactance induced by the warning biases thoughts in a negative manner. Consistent with this explanation, when the warning was absent, increased relevance was associated with increased favorable thoughts, but when the warning was present, increased relevance was associated with increased counterargumentation (i.e. unfavorable thoughts). In sum, a warning on a high relevance topic did not lead to objective thinking about the strong arguments, but to biased thinking. Other studies have also demonstrated clear evidence of biased thinking on the part of message recipients (e.g. Liberman & Chaiken, 1992).

#### *Low elaboration effects*

We have seen that when people are motivated and able to think about a persuasive message, persuasion can result from either relatively objective thinking or from relatively biased thinking about the information presented. But what, if anything, is responsible for persuasion when thinking is low? The accumulated research has documented two types of effects that can occur when the extent of thinking about a message is low.

One type of low elaboration outcome occurs as a result of processes that are virtually identical to those that occur when thinking is high, but the processes are of a reduced magnitude (*a quantitative effect*). For example, consider a person who is exposed to a message containing eight strong arguments. The high elaboration objective processor might think of two or three favorable implications of each of the arguments whereas the low elaboration processor might think of only one or two favorable implications (since he or she is not thinking as much). The effect of this is that the high elaboration processor will have more favorable attitudes toward the issue than the low elaboration processor because he or she will have generated more favorable implications of the strong arguments presented. An alternative way to bring about this effect is if the low elaboration processor thinks diligently, but about fewer arguments (e.g. if the person generates two or three favorable thoughts to the first four argu-

ments and does not think at all about the last four). This would also leave this person with a less favorable attitude than the person who thought carefully about all of the arguments.

This second (quantitative) low elaboration process – thinking about fewer arguments – can lead to some interesting effects. For example, what if the message contained four strong arguments followed by four weak ones? A high elaboration processor who thought about all of the information in a relatively objective manner would likely have a moderate opinion about the issue because the arguments are mixed (Friedreich, Fetherstonhaugh, Casey, & Gallagher, 1996; Petty & Cacioppo, 1984). However, an individual who considered only the early arguments would likely have a more favorable opinion because only the strong arguments were given careful consideration. If the message had four weak arguments followed by four strong ones, then the low elaboration processor would have a less favorable opinion than the high elaboration processor who considered all of the arguments objectively.

In addition to these quantitative effects, low elaboration attitude change can also be produced by processes that are substantively different from the argument consideration processes just described (*qualitative effect*). For example, consider another person who is exposed to the message with eight arguments. We have noted that the high elaboration processor would tend to think about all of the information. Also, we have noted that if the motivation to think was reduced, the recipient might think about each argument less carefully, or think about fewer arguments. However, other mechanisms of attitude change could occur when the elaboration likelihood is low that do not involve thought about the substantive merits of the arguments at all. For example, a low elaboration processor might simply count the arguments and reason that "if there are eight reasons to favor it, it must be worthwhile" (see Petty & Cacioppo, 1984). Note that this process is qualitatively different from the argument elaboration process in that this mechanism does not involve consideration of the merits of the arguments but instead involves reliance on a rule of thumb or heuristic that the person generates or retrieves from memory (see Chaiken, 1987, for more on heuristic processing). Other relatively low effort mechanisms that are capable of producing attitude change without processing the substantive merits of the arguments include: classical conditioning (Staats & Staats, 1958; Cacioppo et al., 1992), identification with the source of the message (Kelman, 1958), misattribution of affect to the message (Petty & Cacioppo, 1983; Schwarz & Clore, 1983), and mere exposure effects (Bornstein, 1989; Zajonc, 1968).

#### *Multiple roles for variables*

If the same persuasion outcome can be produced by different psychological processes, then theories of persuasion need to accommodate this. We have already noted that a single-process theory that can account for multiple and

complex effects is generally better than one that can account for only one effect. Yet even the best single process theory accounting for the most complicated of effects (such as those depicted in figure 17.2) will be insufficient to account for human behavior because effects are often not produced by just one process.

Consider a very simple effect that could be observed in an experiment – that good mood leads to more persuasion than bad mood. In figure 17.1 (bottom panel) we saw that this could occur if good mood influenced information processing activity. For example, if a message was on an unpleasant topic and the arguments were specious, greater persuasion would result when in a positive rather than a neutral or negative mood because people in a good mood would be less likely to think about and generate unfavorable thoughts to the weak arguments (see also figure 17.2, top row). This outcome presumes that mood influences persuasion by affecting how much thinking a person is doing about a communication. However, can mood influence persuasion by other means? Just as we need to consider that any one process can bring about multiple effects, we must also consider that any one effect can be brought about by multiple processes.

Consider some of the persuasion processes that we mentioned above. Could mood bias processing of a message, or could mood influence attitudes by some qualitatively different means that did not involve affecting the amount or nature of information processing that took place? Petty, Schumann, Richman, and Strathman (1993) noted that previous research on positive mood and message processing did not attempt to render the likelihood of message elaboration as especially high or low. With the likelihood of elaboration not already preset by some other variable (such as distraction), mood was free to influence the extent of message processing. They hypothesized that if people were already highly motivated and able to think about a message for some reason other than their mood, then a positive mood would bias the thoughts that came to mind and could result in more persuasion than if the person was not feeling good. On the other hand, if the person was not at all motivated or able to think about a message, then positive mood would influence attitudes without affecting thinking. For example, people without scrutinizing the arguments at all might infer (falsely) that if they feel good, it's because they like or agree with the message (a misattribution of their positive feelings to the communication).

To examine this hypothesis, in two studies Petty et al. (1993) gave college students a task that either induced a good mood (e.g. watching a humorous video) or a relatively neutral mood (e.g. listening to classical music). Then, the students were exposed to a persuasive message either under conditions that would foster message thinking (e.g. the message was on a topic of high personal relevance) or not (e.g. the message was on a topic of low personal relevance; Petty & Cacioppo, 1979b). The results of this research revealed that under both high and low elaboration conditions, the effect of mood on attitudes was the

same – positive mood was associated with significantly more agreement with the message than neutral mood. However, other results from the study indicated that these identical attitudinal outcomes were produced by different processes. Specifically, when the conditions favored elaboration (e.g. a high relevance message), positive mood influenced the favorableness of the students' thoughts about the message as well as their attitudes, and these positive thoughts induced by the mood were responsible for the positive attitudes. However, under low elaboration conditions (e.g. a low relevance message), positive mood did not have any impact on the favorableness of the students' thoughts. That is, their attitudes were more favorable when mood was positive, but their thoughts were not, suggesting a non-thoughtful process was responsible for the effect of positive mood on attitude change (e.g. classical conditioning or simply inferring they agreed with the message because they felt good; see Petty et al., 1991; Wegener & Petty, 1996, for additional discussion of the multiple processes by which mood influences attitudes).

#### *Consequences of different processes*

It is obvious why social psychologists care about predicting the effects of variables – we want to know if it is better to put somebody in a good or bad mood before attempting to persuade them. But, why do we care about the processes leading to the effect? To use our mood example, why do we care if good mood produced more persuasion by biasing the content of a person's thoughts about the message, or by invoking a simple "I feel good, so I must like it" heuristic? Of course, a sufficient conceptual justification is that we cannot really understand an outcome unless we know what produced it. However, sometimes there are important consequences of the process by which some effect is brought about. To take a simple example, someone can get a good grade on a test by cheating, or by studying. The outcome (i.e. a good grade) is identical, but the processes that brought the outcome about are different, and thus the consequences could vary. For example, the person who studied will probably be more likely to carry the substantive content of the course with him or her than the person who cheated. In a similar vein, if a person's attitude is changed because he or she generated many favorable thoughts about the topic, this change is more likely to endure over time, resist counter-persuasion, and direct the person's behavior than if the change was brought about with little thinking (see Petty, Haugtvedt, & Smith, 1995, for a review). That is, attitude changes brought about by thinking are stronger and more consequential than the *same* changes brought about with little thinking (see Petty & Krosnick, 1995, for additional discussion of attitude strength). This has important implications for many applications of persuasion research (e.g. producing favorable attitudes toward seat-belt usage, safe sex, etc.; see Petty, Gleicher, & Jarvis, 1993).

### *Multiple processes and the generations of research*

Multi-outcome findings have been widely researched for one of the persuasion processes that we discussed. Specifically, when variables determine attitude change by influencing the extent of thinking, the outcome can be either more or less persuasion (e.g. see figures 17.1 and 17.2). In fact, research on relatively objective message processing is in its third generation of studies. However, the multiple outcomes of the other fundamental processes of persuasion have not received much empirical attention. For example, although it is clear that attractive sources can sometimes induce attitude change by serving as simple cues, the current assumption of investigators is that the cue value of attractive sources is positive. That is, when serving as a cue, attractive sources increase persuasion over unattractive sources – a first generation cue conclusion. However, it is reasonable that attractive sources (under some circumstances and/or for some individuals) can serve as negative cues as well and thereby reduce persuasion. The second generation of research on cue effects (yet to be conducted) will accommodate these divergent possibilities and produce insights into the psychological mechanisms by which cues have their impact.

In a similar vein, although research has focused on how some variables produce a positive (e.g. good mood) or a negative (e.g. forewarning of persuasive intent) bias to issue-relevant thinking, these first generation studies will inevitably yield to second generation research on biased message processing. Second generation research will examine circumstances under which forewarnings of persuasive intent can lead to enhanced persuasion by invoking favorable thoughts, and positive mood can lead to reduced persuasion by invoking negative thoughts, and will provide a conceptual framework to account for both effects.

### **Summary and Conclusions**

In this chapter, I have used research on attitude change and persuasion to illustrate two key assumptions that have influenced research in social psychology – the single-effect assumption and the single-process assumption. The single-effect assumption typically dominates early research on a variable when investigators battle over what the effect of some variable is. A good case study is the voluminous literature on the effect of incentives on attitudes. First generation researchers asked: which is a more effective way to change attitudes – providing a person with a large (e.g. \$20) incentive for engaging in a counterattitudinal action (e.g. writing an essay against your own point of view), or providing a small (e.g. \$1) incentive? Consistent with learning theory, some work suggested that the large incentive was more effective in producing attitude change (e.g. Rosenberg, 1965). However, other work suggested the oppo-

site – that small incentives can be more effective (e.g. Festinger & Carlsmith, 1959). After much debate in the literature in the 1960s about which effect was the correct one, social psychologists eventually abandoned the single-effect assumption and recognized that each effect could be produced reliably depending on the circumstances.

Once social psychologists agree on what the effect of some variable is and when this effect occurs, debate typically centers around the *process* that is responsible for the outcome. The single process assumption is that there is just one true process that is responsible for each effect. For example, social psychologists initially assumed that for the reverse incentive outcome (i.e. when low incentives produce more attitude change than high incentives), there was just one psychological process that was responsible, and the goal of researchers should be to uncover which process was the correct one. Considerable research and journal space in the 1970s centered around determining whether the reverse incentive effect was due to effortful cognitive reorganization stemming from the psychological tension induced by engaging in a discrepant action (as suggested by “dissonance theory,” Festinger, 1957), or whether the effect was due to a relatively low effort cognitive inference process based on observation of one’s own behavior (as suggested by “self-perception theory,” Bem, 1972). Eventually, social psychologists recognized that each process could produce the same outcome (i.e. reverse incentive effect), but in different circumstances (see Fazio, Zanna, & Cooper, 1977).

Currently researchers in this area are wondering about those cases where psychological tension is produced by engaging in discrepant action, and cognitive reorganization takes place; what is the motivation behind the tension and the reorganization? Several alternative motivational frameworks have been proposed (e.g. Aronson, 1992; Cooper & Fazio, 1984; Steele, 1988), and theorists in the 1980s and early 1990s are currently engaged in battle over which is the *one* true motivation that is responsible for these tension/reorganization effects. Given the strong support for each of the motivational positions, however, it is likely that subsequent theorizing will attempt to accommodate multiple motivations by which these effects can be produced, and place these divergent motivations in an overarching framework.

In sum, the history of research in attitude change and persuasion may hold general lessons for the field of social psychology more generally and for any research enterprise. It is now clear that any given variable (e.g. source attractiveness, the mere presence of others) can produce different (even opposite) effects. The presence of many opposite effects in the attitude change domain led some investigators in the 1970s to see the area as a “reigning confusion” (Sherif, 1977, p. 370). These opposite effects for many variables contributed to the crisis in social psychology and the disillusionment with attitudes research in particular (see the editors’ introduction to this volume). It is confusing when a variable that seems as simple as distraction or a positive mood is shown to both

increase and decrease persuasion. Fortunately, this confusion was ended, in part, when researchers recognized that different (and opposite) effects can result from the same underlying process (see figures 17.1 and 17.2). The confusion was further clarified when it was realized that just as one process can be responsible for multiple outcomes, any one effect can be caused by different processes. Theories in social psychology tell us when these different processes operate. Although some investigators continue to cling to a single process model of attitudes (e.g. Fishbein & Middlestadt, 1995), the field in general has embraced multi-process models of persuasion (e.g. Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1981, 1986) and many other social psychological phenomena (e.g. see Abelson, 1994; Smith, 1994).

Social-psychological work on attitude change has taught us that if we are interested in the effects of any variable, it is probably too simplistic to stop with the first generation question of whether the variable increases or decreases some outcome. It is likely that sometimes the variable increases and sometimes it decreases the outcome. The research enterprise is a quest to determine and understand when each effect occurs (i.e. one variable can have multiple effects, though these different effects can be a product of just one process). Second, however, it is critical to uncover all of the processes linking the variable to its outcomes. There probably isn't just one process involved (i.e. different processes can produce the same outcome). A coherent theory of the variable would account for multiple effects, would likely include multiple processes, and would specify the conditions under which these processes operate, and any differential consequences of these processes. Attitude change researchers have made great strides over the past century in identifying the building blocks of such a coherent theory, though much work remains to be done.

#### Further Reading

- Baker, S. M., & Petty, R. E. (1994). Majority and minority influence: Source-position imbalance as a determinant of message scrutiny. *Journal of Personality and Social Psychology*, 67, 5-19. The first published "third generation" study on how variables influence message processing.
- McGuire, W. J. (1983). A contextualist theory of knowledge: Its implications for innovation and reform in psychological research. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 16, pp. 1-47). Orlando, FL: Academic Press.

An interesting essay making the argument that opposite results are highly likely in social psychology.

- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 123-205). New York: Academic Press.
- A presentation of the concepts of and research on the elaboration likelihood model of persuasion - a theory that follows the principles outlined in this essay.

#### References

- Abelson, R. P. (1994). A personal perspective on social cognition. In P. G. Devine, D. L. Hamilton & T. M. Ostrom (Eds.) *Social cognition: Impact on social psychology* (pp. 15-37). Hillsdale, NJ: Lawrence Erlbaum.
- Allport, G. W. (1935). Attitudes. In C. Murchison (Ed.), *Handbook of social psychology* (pp. 798-884). Worcester, MA: Clark University Press.
- Aronson, E. (1992). The return of the repressed: Dissonance theory makes a comeback. *Psychological Inquiry*, 3, 303-311.
- Asch, S. E. (1956). Studies of independence and conformity: I. A minority of one against a unanimous majority. *Psychological Monographs*, 70 (9, Whole No. 416).
- Baker, S. M., & Petty, R. E. (1994). Majority and minority influence: Source-position imbalance as a determinant of message scrutiny. *Journal of Personality and Social Psychology*, 67, 5-19.
- Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1-62). New York: Academic Press.
- Bornstein, R. F. (1989). Exposure and affect: Overview and meta-analysis of research, 1968-1987. *Psychological Bulletin*, 106, 265-289.
- Brehm, J. W. (1966). *A theory of psychological reactance*. San Diego, CA: Academic Press.
- Cacioppo, J. T., Marshall-Goodell, B. S., Tassinary, L. G. & Petty, R. E. (1992). Rudimentary determinants of attitudes: classical conditioning is more effective when prior knowledge about the attitude stimulus is low than high. *Journal of Experimental Social Psychology*, 28, 207-233.
- Cacioppo, J. T., & Petty, R. E. (1989). Effects of message repetition on argument processing, recall, and persuasion. *Basic and Applied Social Psychology*, 10, 3-12.
- Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario symposium* (Vol. 5, pp. 3-39). Hillsdale, NJ: Lawrence Erlbaum.
- Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 212-252). New York: Guilford Press.
- Cooper, J., & Fazio, R. H. (1984). A new look at dissonance theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 17, pp. 229-266). New York: Academic Press.
- Ditto, P. H., & Lopez, D. F. (1992). Motivated skepticism: The use of differential decision criteria for preferred and nonpreferred conclusions. *Journal of Personality and Social Psychology*, 63, 568-584.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt, Brace, Jovanovich.
- Fazio, R. H., Zanna, M. P., & Cooper, J. (1977). Dissonance and self-perception: An integrative view of each theory's proper domain of application. *Journal of Experimental Social Psychology*, 13, 464-479.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.
- Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology*, 58, 203-210.
- Festinger, L., & Maccoby, N. (1964). On resistance to persuasive communications. *Journal of Abnormal and Social Psychology*, 68, 359-366.
- Fishbein, M., & Middlestadt, S. (1995). Non-cognitive effects on attitude formation and change: Fact or artifact? *Journal of Consumer Psychology*, 4, 181-202.
- Friedreich, J., Fetherstonhaugh, D., Casey, S., & Gallagher, D. (1996). Argument in-

- tegration and attitude change: Suppression effects in the integration of one-sided arguments that vary in persuasiveness. *Personality and Social Psychology Bulletin*, 22, 179-191.
- Greenwald, A. G. (1968). Cognitive learning, cognitive response to persuasion, and attitude change. In A. G. Greenwald, T. C. Brock, & T. M. Ostrom (Eds.), *Psychological foundations of attitudes* (pp. 147-170). New York: Academic Press.
- Harkins, S. G., & Petty, R. E. (1981). Effects of source magnification of cognitive effort on attitudes: An information processing view. *Journal of Personality and Social Psychology*, 40, 401-413.
- Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and persuasion: Psychological studies of opinion change*. New Haven, CT: Yale University Press.
- Isen, A. (1993). Positive mood and decision making. In Haviland (Ed.), *Handbook of Emotion*, New York: Guilford Press.
- Janis, I. L., Kaye, D., & Kirschner, P. (1965). Facilitating effects of "eating while reading" on responsiveness to persuasive communications. *Journal of Personality and Social Psychology*, 1, 17-27.
- Kelman, H. C. (1958). Compliance, identification, and internalization: Three processes of attitude change. *Journal of Conflict Resolution*, 2, 51-60.
- Knower, F. H. (1935). Experimental studies of change in attitude: I. A study of the effect of oral arguments on changes of attitudes. *Journal of Social Psychology*, 6, 315-347.
- Liberman, A., & Chaiken, S. (1992). Defensive processing of personally relevant health messages. *Personality and Social Psychology Bulletin*, 18, 669-679.
- Mackie, D. M., & Worth, L. T. (1991). Feeling good, but not thinking straight: The impact of positive mood on persuasion. In J. Forgas (Ed.), *Emotion and social judgment* (Oxford: Pergamon Press).
- McGuire, W. J. (1983). A contextualist theory of knowledge: Its implications for innovation and reform in psychological research. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 16, pp. 1-47). Orlando, FL: Academic Press.
- McGuire, W. J. (1985). Attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (Vol. 2, pp. 233-346). New York: Random House.
- Meyerowitz, B. E., & Chaiken, S. (1987). The effect of message framing on breast self-examination attitudes, intentions, and behavior. *Journal of Personality and Social Psychology*, 52, 500-510.
- Moscovici, S. (1980). Toward a theory of conversion behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 209-239). New York: Academic Press.
- Olson, J. M., Roesse, N. J., & Zanna, M. P. (in press). Expectancies. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles*. New York: Guilford.
- Petty, R. E., & Brock, T. C. (1981). Thought disruption and persuasion: Assessing the validity of attitude change experiments. In R. E. Petty, T. M. Ostrom, & T. C. Brock (Eds.), *Cognitive responses in persuasion* (pp. 55-79). Hillsdale, NJ: Lawrence Erlbaum.
- Petty, R. E., & Cacioppo, J. T. (1979a). Effects of forewarning of persuasive intent and involvement on cognitive responses. *Personality and Social Psychology Bulletin*, 5, 173-176.
- Petty, R. E., & Cacioppo, J. T. (1979b). Issue-involvement can increase or decrease persuasion by enhancing message-relevant cognitive responses. *Journal of Personality and Social Psychology*, 37, 1915-1926.
- Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and persuasion: Classic and contemporary approaches*. Dubuque, IA: Wm. C. Brown.
- Petty, R. E., & Cacioppo, J. T. (1983). The role of bodily responses in attitude measurement and change. In J. T. Cacioppo & R. E. Petty (Eds.), *Social psychophysiology: A sourcebook* (pp. 51-101). New York: Guilford.
- Petty, R. E., & Cacioppo, J. T. (1984). The effects of involvement on responses to argument quantity and quality: Central and peripheral routes to persuasion. *Journal of Personality and Social Psychology*, 46, 69-81.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 123-205). New York: Academic Press.
- Petty, R. E., & Cacioppo, J. T. (1990). Involvement and persuasion: Tradition versus integration. *Psychological Bulletin*, 107, 367-374.
- Petty, R. E., Gleicher, F., & Baker, S. M. (1991). Multiple roles for affect in persuasion. In J. Forgas (Ed.), *Emotion and social judgments* (pp. 181-200). Oxford: Pergamon Press.
- Petty, R. E., Gleicher, F. H., & Jarvis, B. (1993). Persuasion theory and AIDS prevention. In J. B. Pryor & G. Reeder (Eds.), *The social psychology of HIV infection* (pp. 155-182). Hillsdale, NJ: Lawrence Erlbaum.
- Petty, R. E., Haugtvedt, C. P., & Smith, S. M. (1995). Elaboration as a determinant of attitude strength. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 93-130). Mahwah, NJ: Lawrence Erlbaum.
- Petty, R. E., & Krosnick, J. A. (Eds.) (1995). *Attitude strength: Antecedents and consequences*. Mahwah, NJ: Lawrence Erlbaum.
- Petty, R. E., Ostrom, T. M., & Brock, T. C. (Eds.) (1981). *Cognitive responses in persuasion*. Hillsdale, NJ: Lawrence Erlbaum.
- Petty, R. E., Priester, J. R., & Wegener, D. T. (1994). Cognitive processes in attitude change. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (2nd ed., Vol. 2, pp. 69-142). Hillsdale, NJ: Lawrence Erlbaum.
- Petty, R. E., Schumann, D. W., Richman, S. A., & Strathman, A. J. (1993). Positive mood and persuasion: Different roles for affect under high- and low-elaboration conditions. *Journal of Personality and Social Psychology*, 64, 5-20.
- Petty, R. E., Wells, G. L., & Brock, T. C. (1976). Distraction can enhance or reduce yielding to propaganda: Thought disruption versus effort justification. *Journal of Personality and Social Psychology*, 34, 874-884.
- Rosenberg, M. (1965). When dissonance fails: On eliminating evaluation apprehension from attitude measurement. *Journal of Personality and Social Psychology*, 1, 28-42.
- Ross, L., Greene, D., & House, P. (1977). The "false consensus effect": An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology*, 13, 279-301.
- Schwarz, N., Bless, H., & Bohner, G. (1991). Mood and persuasion: Affective states influence the processing of persuasive communications. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 24, pp. 161-201). San Diego: Academic Press.
- Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45, 513-523.
- Sherif, M. (1977). Crisis in social psychology: Some remarks towards breaking through the crisis. *Personality and Social Psychology Bulletin*, 3, 368-382.
- Smith, E. R. (1994). Procedural knowledge and processing strategies in social cognition. In R. S. Wyer (Ed.), *Handbook of social cognition* (Vol. 1, pp. 99-152). Hillsdale, NJ: Lawrence Erlbaum.
- Smith, S. M., & Petty, R. E. (1996). Message framing and persuasion: A message processing analysis. *Personality and Social Psychology Bulletin*, 22, 257-268.
- Staats, A. W., & Staats, C. K. (1958). Atti-

- tudes established by classical conditioning. *Journal of Abnormal and Social Psychology*, 57, 37-40.
- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 261-302). New York: Academic Press.
- Wegener, D. T., & Petty, R. E. (1994). Mood management across affective states: The hedonic contingency hypothesis. *Journal of Personality and Social Psychology*, 66, 1034-1048.
- Wegener, D. T., & Petty, R. E. (1996). Effects of mood on persuasion processes: Enhancing, reducing, and biasing scrutiny of attitude-relevant information. In L. L. Martin & A. Tesser (Eds.), *Striving and feeling: Interactions between goals and affect* (pp. 329-362). Mahwah, NJ: Lawrence Erlbaum.
- Wegener, D. T., Petty, R. E., & Smith, S. M. (1995). Positive mood can increase or decrease message scrutiny: The hedonic contingency view of mood and message processing. *Journal of Personality and Social Psychology*, 69, 5-15.
- Worth, L. T., & Mackie, D. M. (1987). Cognitive mediation of positive affect in persuasion. *Social Cognition*, 5, 76-94.
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology Monograph Supplements*, 9, 1-27.