

THE FALSE CONSENSUS EFFECT: PROJECTION OR CONFORMITY?

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Abstract

The false consensus effect (FCE) is one of the most frequently cited phenomena in the social sciences and is widely presumed to illustrate how attitudes can shape perceptions. Yet, rarely have researchers directly tested this presumption. The purpose of this research is to address this gap in the literature. I begin with a review of the mechanisms presently thought to account for the FCE, formalizing them in causal diagrams that make explicit the mediational and moderational stories implicit in the explanations. Then, I describe what evidence exists for each of these explanations. And, finally, I report the results of four studies that tested the causal direction of the FCE. Study 1 manipulated participants' attitudes and found no impact of the resulting attitude change on perceptions of others' attitudes. Study 2 employed instrumental variable analysis to estimate the impact of participants' attitudes on their perceptions of others' attitudes and found no such impact. Study 3 tested an alternative explanation of the FCE: conformity to perceived social norms. Consistent with this claim, a manipulation of perceptions of others' attitudes influenced people's own attitudes. Applying covariance structure modeling to longitudinal data, Study 4 found evidence that perceptions of others' attitudes influence participants' own attitudes but no evidence that people's own attitudes shape perceptions of others' attitudes. Thus, instead of documenting attitude-distorted perceptions of others, the false consensus "effect" appears to result from one of the oldest social psychological phenomena in the literature: conformity to perceived social norms.

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Chapter 1: Mass Media, Individual Attitudes, and Perceptions of Public Opinion

Mass media researchers have considered *perceived* public opinion as a critical concept in several public opinion models, including the persuasive press inference theory (Gunther, Christen, Liehbart, & Chia, 2001) and the spiral of silence theory (Noelle-Neumann, 1974). The former is a projection-based theory, where individuals' attitudes influence perceived public opinion, and the latter is a conformity-based theory, where perceived public opinion influences individuals' attitudes.

Both theories share a connection with the phenomenon known as the false consensus effect (FCE)—the tendency of people who hold a particular attitude to generate higher public opinion consensus estimates compared to people whose attitudes are different (Ross, Greene, & House, 1977). The persuasive press inference theory conceptualizes individuals' attitudes as the cause of perceived public opinion, whereas the spiral of silence theory conceptualizes perceived public opinion as the causal force driving individual attitudes.

Both theories also posit that news media coverage mediates the FCE. Specifically, perceptions of mass media are thought to act as a projection conduit from individuals' opinions to perceived public opinion in the persuasive press inference model; whereas, in the spiral of silence model, perceptions of mass media are thought to serve as a conformity conduit from perceived public opinion to individuals' opinions.

Persuasive Press Inference Model of Perceived Public Opinion

Generally speaking, the persuasive press inference asserts that people believe media content significantly affects others' opinions on issues covered by the media;

thus, it follows that perceived public opinion can be accurately inferred from media coverage “What mass media are saying today must be what the public will be thinking tomorrow” (Gunther, 1998, p. 487). In experimental studies, people exposed to news stories with a clear favorable or unfavorable bias not only perceived a corresponding difference in public opinion but also noted that the public’s opinion would have changed “in the last few days,” reflecting the release of the news stories (Gunther 1998; Gunther & Christen, 1999).

As early as 1954, Berelson, Lazarsfeld, and McPhee investigated individual’s perception of how certain groups would vote. They found that when people felt a group to be close to them, they expected group members to vote in the same way as themselves. Likewise, Fields and Schuman (1976) inferred from survey data that assessments of general public opinion showed evidence of projection effects, or, in their terms, the looking-glass perception. People “look out onto the world and somehow see their own opinions reflected back” (p. 437).

More specifically, the persuasive press inference model explicates five relationships, as illustrated in Figure 1.1:

- 1) Relationship 1, a projection (or looking-glass) effect (path a): People’s own opinions are thought to bias their estimates of public opinion.
- 2) Relationship 2, the hostile media effect (path b): Partisans perceive media coverage to be biased against their opinions. When asked to rate the objectivity of the same news item, partisans on opposing sides of the issue report that the coverage is biased against them and in favor of their opponent’s view (Vallone, Ross, & Lepper, 1985). A *relative* hostile media effect may also be at work,

wherein partisans on both sides of an issue may not necessarily perceive media as biased against their views, but each will perceive media as more hostile to their own side relative to how the opposing side perceives it (Gunther et al, 2001).

- 3) Relationship 3, an extrapolation effect (path c): People fall prey to the law-of-small-numbers bias (Tversky & Kahneman, 1971) and see their own individual exposure to media content, however limited or idiosyncratic, as indicative of media content more generally (Gunther et al, 2001).
- 4) Relationship 4, the persuasive press inference (path d): People tend to believe that others' opinions are significantly influenced by media content. Thus, their perceptions of public opinion will reflect their perceptions of media content (Gunther, 1998).
- 5) Relationship 5, the perceived reach of media (path e): People believe that the media content they consume is the media content others consume. A higher media reach signifies a wider audience, with larger numbers of others exposed to the same media content as the individual (Gunther et al, 2001).

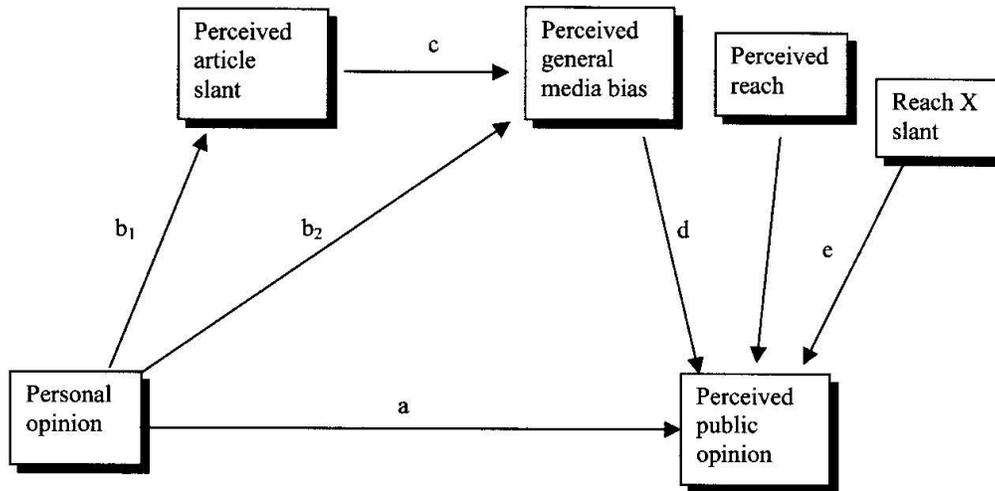


Figure 1.1: Persuasive press inference model of public opinion, including (a) projection, (b) hostile media effect, (c) extrapolation, (d) persuasive press inference, (e) moderating effect of perceived reach (Gunther et al, 2001).

Thus, the persuasive press inference model of perceived public opinion is essentially outlining a projection effect (or FCE) mediated by perceptions of press coverage. Projection heightens perceived public opinion consensus, with individuals likely overestimating consensus; whereas perceptions of a relatively hostile media suppress perceived public opinion consensus, with individuals likely underestimating consensus. The two effects could conceivably cancel one another.

Spiral of Silence Model of Perceived Public Opinion

Generally speaking, the spiral of silence theory, as illustrated in Figure 1.2, suggests that people who believe they hold a minority viewpoint on a public issue will remain in the background where their communication will be restrained. Those who believe they're a member of the opinion majority will be more encouraged to speak (Noelle-Neumann, 1974). Moreover, the media will focus more on the majority views, underestimating the minority views. Those in the minority will be less assertive in

communicating their opinions, thereby leading to a downward spiral of communication. Interestingly, those in the majority will overestimate their influence and may become emboldened in their communication. Subsequently, the media will report on their opinions and activities (Noelle-Neumann, 1983).

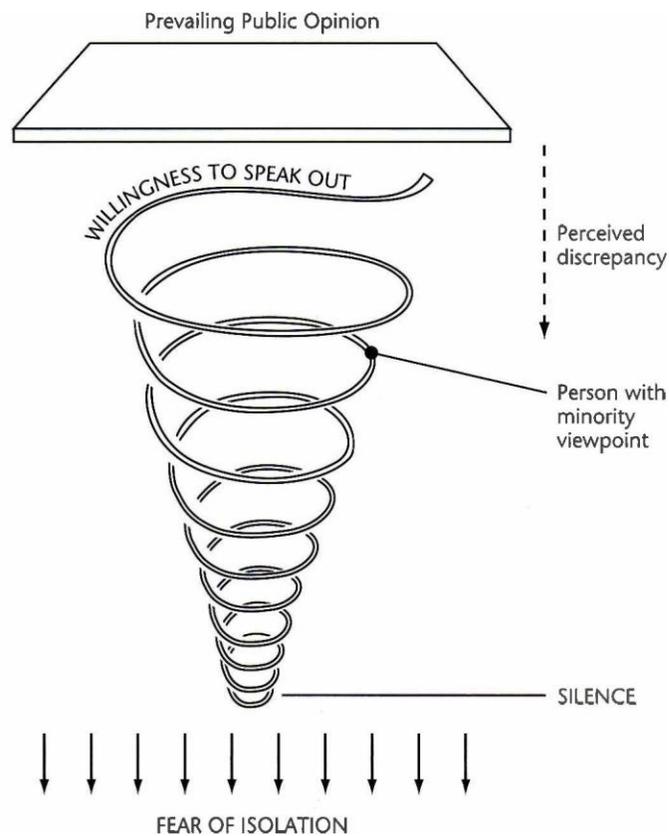


Figure 1.2: Spiral of silence model of public opinion (Noelle-Neumann, 1983).

Although Noelle-Neumann's theory is pre-Internet age, her interpretation of the media's influence still holds true. Today, given the popularity in usage of blogs, email, Listservs, and YouTube, we are bombarded with mediated messages. The

messages emanating from websites, television news, and e-commentary have contributed to our cultural discourse. Indeed, these media have even affected the direction of public discourse on socially significant issues (e.g., Butsch, 2007).

The spiral of silence theory is predicated on three assumptions (Noelle-Neumann, 1991, 1993):

- 1) Society threatens deviant individuals with isolation; fear of isolation is pervasive and represents the centrifugal force that accelerates the spiral of silence. Noelle-Neumann based this claim on the famous conformity research of Solomon Asch (1951), who demonstrated that people will ignore the plain evidence of their senses and yield to perceived group pressure, because thoughts of isolation are very real to the person who considers standing firm.
- 2) This fear of isolation causes individuals to try to assess the climate of opinion at all times. Individuals receive information about public opinion from two sources: personal observation and the media. Direct observation gives us only a small proportion of the information we use; thus, the media provide most of our knowledge about the world around us. Mistaken ideas of public opinion reflect the media failing to present a mix of viewpoints proportionate to their strength in society.
- 3) Public behavior is affected by public opinion assessment. Public behavior takes the form of either speaking out on a subject or keeping silent. If individuals sense support for a topic, then they are likely to communicate about it; if they feel that others do not support a topic, then they maintain silence.

To illustrate, consider how the spiral of silence would characterize the

Reagan/Carter presidential election campaign: Prevailing public opinion during the early fall of 1980 favored Reagan, but Carter supporters at first perceived only a slight discrepancy between their position and the prevailing public opinion. They felt comfortable expressing their views in public, perhaps even displaying campaign buttons or bumper stickers. But then the nagging fear of isolation convinced them to be more circumspect in what they said. Bumper stickers disappeared, and they avoided arguments with Reagan supporters. Carter hadn't lost any voting strength; only the outward fervor had tapered off. However, the Republican clamor for Reagan was undiminished, so Carter backers got the impression of a dip in support for their candidate. Reagan's apparent strength became a self-fulfilling prophecy because it caused Carter supporters to see a widening gap between themselves and the majority opinion. To an even greater degree, they drew back from public scrutiny and, thus, began a tighter circuit on the accelerating downward spiral toward silence. The greater the perceived discrepancy between the prevailing public opinion and their own viewpoint, the more they felt the force of society's demand that they give in. Finally, the pressure to conform became so great that wavering Carter supporters who were most fearful of isolation switched sides. The result was a surprising but predictable landslide for Reagan. (Glynn & McLeod, 1984).

Public Opinion Models and the FCE

The persuasive press inference and spiral of silence models of public opinion differ significantly in their assumptions regarding the causal direction of the FCE. The former assumes a projection effect and the latter a conformity effect. Before testing the validity of these claims within the framework of the public opinion models,

researchers should first familiarize themselves with the existing literature on the FCE. Thus, the next three chapters review the proposed causal mechanisms of the FCE, detail available evidence for each, and discuss the results of four studies that directly tested the two competing assumptions of the FCE—projection and conformity.

Chapter 2: The False Consensus Effect

Sixty years ago, Wallen (1943) was perhaps the first social scientist to discover that when people are asked to estimate the proportion of others who possess a particular attitude toward an object, perceivers who themselves hold that attitude generate higher estimates than do perceivers whose attitudes are different (see also Brown, 1982; Newcomb, 1943; Newcomb, Koenig, Flacks, & Warwick, 1967; Spears, Eiser, & van der Pligt, 1989). Thirty-four years later, Ross, Greene, and House (1977) dubbed this the *false consensus effect*; they said that people "...see their own behavioral choices and judgments as relatively common ... while viewing alternative responses as uncommon (p. 280)."

Before further discussion, it should be noted that the FCE is not necessarily false, or about consensus, or an effect. People can generate accurate estimates of others' attitudes that are in line with their own attitudes (e.g., Hoch, 1987). Moreover, people often perceive a similarity between their own and others' attitudes without perceiving a majority; instead, people may believe that the similarity is limited to a minority of the population (e.g., with attitudes toward deviant topics, Chambers, 2008). And, most important, the FCE, although extensively documented with correlations between attitudes and perceptions of others' attitudes (e.g., Goethals et al., 1979), it is not an effect. Still, however inaccurate the term, I will continue to use it in this document, as it is the prevailing term in the literature.

The false consensus effect has been demonstrated in numerous studies of political opinions, consumer choices, religious preferences, investment decisions, dietary and exercise habits, and much more (see, e.g., Marks & Miller, 1987; Mullen,

Atkins, Champion, Edwards, Hardy, Story, & Vanderklok, 1985; Mullen & Hu, 1988; Wetzel & Walton, 1985) and has been mentioned in more than 1,800 academic publications to date.

In textbooks and literature reviews, the FCE has been described in remarkably consistent ways, focusing on the impact of a perceiver's own attitude on his or her perceptions of others:

“... [there is] a pervasive tendency for people to use their subjective preferences and beliefs to evaluate behavioral community” (Alicke, 2000, p. 568)

“People tend to project their own personal attitudes and attributes onto others” (Balci et al., 2005, p. 190)

“... individuals tend to use their own personal perspective on a situation to estimate what others would do or think” (Crano & Brewer, 2002, p. 4)

“... people impute their attitudes and judgments to others...” (Fiske & Taylor, 1991, pp. 77-78)

“People's own beliefs, values, and habits tend to bias their perceptions of how widely they are shared” (Gilovich, 1990, p. 623)

“... People distort... consensus... estimates so that they can feel that their opinions are correct” (Goethals, Allison, & Frost, 1979, p. 579)

“... people's own choices, attitudes, or beliefs bias their estimates of those of other people...” (Kunda, 1999, p. 397)

“... people over-rely on their own reactions when guessing how most other people will act” (Leary, 2004, p. 65)

“...One may project one’s beliefs and attitudes onto favorable...targets to maintain cognitive balance” (Marks & Miller, 1987, p. 74)

“...the false consensus effect can truly be regarded as an overuse of self-information...” (Petty, Wegener, & Fabrigar, 1997, p. 637)

“The false consensus effect is the tendency for people to project their own opinions when predicting the attitudes, opinions, and behaviors of other people...” (Stanovich & West, 1998, p. 176)

“People project their views onto others, especially those who are similar” (Suls, 2000, p. 109)

“...adults’ estimates about the preferences and behaviors of others are...biased by their own references and behaviors” (Wetzel & Walton, 1985, p. 1352)

Even more remarkable than this near-unanimity of interpretation is the fact that little research has directly tested this presumption about the causal process yielding the FCE. In fact, the primary evidence of the FCE in the published literature is in the form of correlations of people’s reports of their attitudes, choices, and behaviors with their perceptions of the proportions of other people who hold particular attitudes or made particular choices or perform particular behaviors (e.g., Goethals et al., 1979; Manstead, 1982) or the mathematical equivalent in the form of tests of differences of means (e.g., Mullen, Driskell, & Smith, 1989; Suls & Wan, 1987; Wetzel & Walton, 1985). But, of course, such correlations do not document causal influence of one on the other.

The purpose of this research is to address this gap in the literature. I begin with a review of the mechanisms presently thought to account for the false consensus effect

(FCE). Then, I describe what evidence, if any, exists for each of these explanations.

And, finally, I report the results of directly testing the projection presumption made by most of the explanations – that a person’s own attitudes cause his or her perceptions of other people’s attitudes.

Chapter 3: Causal Mechanisms of the False Consensus Effect

A variety of cognitive and social mechanisms for the FCE have been proposed (e.g., see Gilovich, 1990; Marks & Miller, 1987). I review them here, and in doing so, formalize many of them in causal diagrams that make explicit the mediational and moderational stories implicit in the explanations. The first six accounts presume that individuals' own attitudes cause their perceptions of others' attitudes, whereas the final three accounts posit a third variable causes both attitudes and perceptions.

Attitude Salience

One explanation attributes the FCE to the salience of perceivers' own attitudes when estimates of prevalence are made (e.g., Mullen, Atkins, Champion, Edwards, Hardy, Story, & Vanderklok, 1985; Nisbett & Kunda, 1985; Ross, Greene, & House, 1977). Such attitudes serve as reference points against which others' attitudes are compared (Helson, 1964; Upshaw, 1969) and to which adjustments are made according to the perceived differences between oneself and others (e.g., Davis, Hoch, & Ragsdale, 1986). Because adjustments away from anchors are seldom sufficient (Tversky & Kahneman, 1974), perceptions are likely to be biased in the direction of the perceiver's own attitude.

Moreover, because people associate ease of retrieval with frequency of occurrence (Tversky & Kahneman, 1973), biased consensus estimates are magnified when the salience of perceivers' attitudes is greatest (e.g., Brown, 1982; Mullen, Atkins, Champion, Edwards, Hardy, & Vanderklok, 1985; Ross, Greene, House, 1977; Sanders & Mullen, 1983). Attitude salience can be enhanced directly by attentional focus or indirectly by certain attitude features. Focusing perceivers' attention on their

attitudes—whether by simply asking them to state their attitude or elaborate on it more fully—boosts attitude salience (e.g., Kernis, 1984; Sherman, Presson, & Chassin, 1984; Zuckerman, Mann, & Bernieri, 1982). Differential levels of attentional focus occur naturally as well: both attitude certainty (Marks & Miller, 1985) and attitude extremity (Crano, 1983; van der Plight, Ester, & van der Linden, 1983; Wagner & Gerard, 1983) are thought to focus perceivers' attention on their own attitudes, which in turn increases the salience of these attitudes.

Perceptions of others' attitudes are also more likely to be influenced by personal attitudes when people perceive greater similarity between themselves and target others (e.g., Ames, 2004; Holtz & Miller, 1985; Zuckerman, Mann, & Bernieri, 1982). Broadening the perceivers' knowledge of target others individuates them (Clement & Krueger, 2000), making them distinct (Sarason et al., 1991) and real (Krueger & Stanke, 2001), thereby reducing such perceptions of self-other similarity (Robbins & Krueger, 2005).

Thus, as seen in Figure 3.1, the attitude salience explanation of the FCE predicts that one's own attitude directly influences estimates of others' attitudes (path *a*). The degree of influence is determined by the salience of the individual's attitude (path *b*) and the individual's perceived similarity between oneself and others (path *c*). Attitude certainty or extremity increases focus of attention on one's own attitude (path *d*), which in turn heightens attitude salience (path *e*), and knowledge of others reduces perceived similarity between self and others (path *f*). Therefore, people whose own attitudes are highly accessible and who perceive great similarity with others will express larger consensus estimates than will people whose attitudes are only

moderately accessible and/or who perceive little similarity with others.

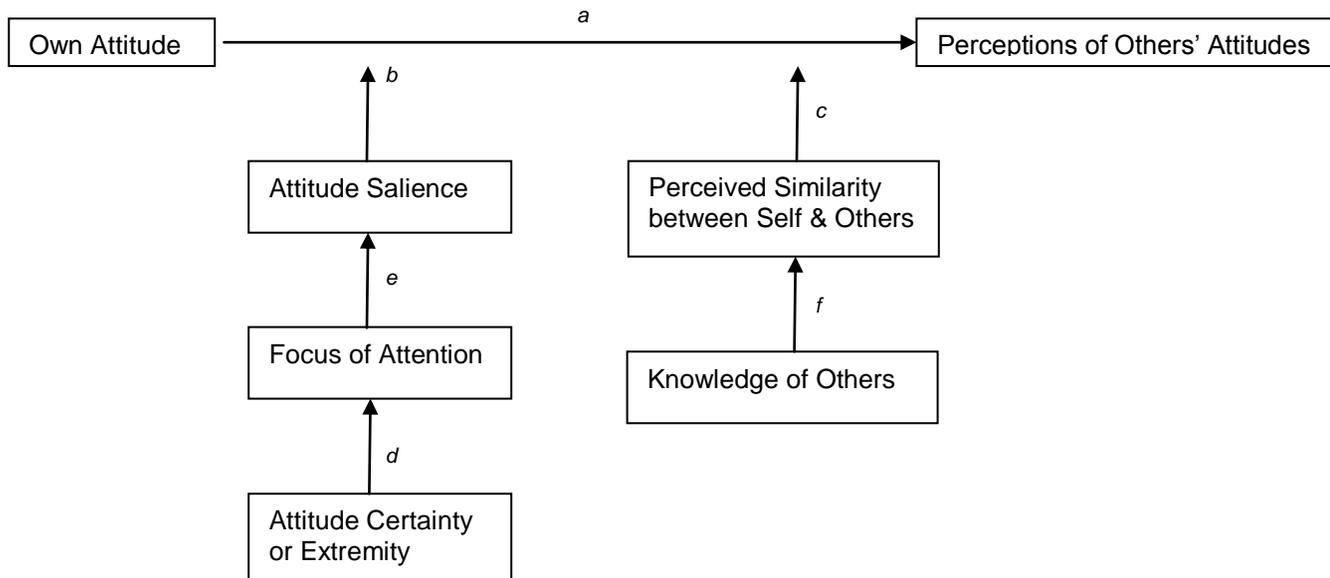


Figure 3.1: Attitude salience model of the FCE.

Selective Affiliation

Some theorists have argued that the FCE is due to selective affiliation (e.g., Kitts, 2003; Marks & Miller, 1982; Marks & Miller, 1987; Otten YEAR; Ross, Greene, & House, 1977; Sherman, Presson, Chassin, Corty, and Olshavsky, 1983). According to this explanation, people estimate the general prevalence of an attitude by assessing its prevalence among whatever sample of other individuals they can draw from their own memories. People's attitudes tend to shape their friendship selection, because people tend to associate with those whose attitudes are similar to their own (Byrne, 1971; Berscheid & Walster, 1978; Newcomb, 1961) and to avoid associating with others whose attitudes are different (Rosenbaum, 1986). Then, within friendship groups, individuals choose to reveal or suppress attitudinal information in a manner that avoids censure (Goffman, 1963). Such selective disclosure influences the degree

to which friendship selection determines individuals' perceptions of their friends' attitudes, which in turn biases their perceptions of the attitudes of general others (Kitts, 2003).

Thus, according to the selective affiliation perspective, represented by Figure 3.2, individuals' attitudes first determine the criteria they use to choose friends (path *a*). These criteria then inspire similarity-attraction and dissimilarity-repulsion behaviors (path *b*), which determine friend selection (path *c*). The friends ultimately selected shape individuals' perceptions of their friends' attitudes (path *d*) to the extent that their friends selectively disclose information (path *e*). When asked about the attitudes of other people generally, individuals draw directly from their perceptions of their friends' attitudes and estimate high attitude consensus among a general population (path *f*).

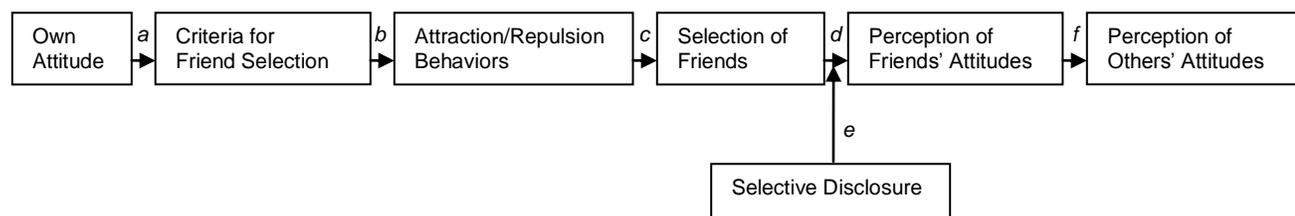


Figure 3.2: Selective affiliation model of the FCE.

Self-protection Motivation

As social comparison theory predicts (Festinger, 1950, 1954), a person's self-esteem may hinge partly on the belief that he or she holds correct attitudes, and perceived agreement with others may help to validate the correctness or appropriateness of those attitudes. Consequently, the desire to maintain, protect, or

enhance self-esteem may lead individuals to exaggerate agreement with others (e.g., Ames, 2004; Crano, 1983; Goethals, Allison, & Frost, 1979; Gross & Miller, 1997; Holtz & Miller, 1985; Kitts, 2003; Marks, 1984; Marks & Miller, 1982; Sanders & Mullen, 1983; Sherman, Presson, & Chassin, 1984; Sherman, S. J., Presson, Chassin, Corty, & Olshavsky, 1983; Wagner & Gerard, 1983).

Other self-protection needs will likewise motivate perceivers to overestimate attitudinal support, including the need to reduce social interaction anxiety (Jones & Thibaut, 1958; Marks & Miller, 1982), the need to feel socially connected (Arndt, Greenberg, Solomon, Pyszczynski, & Schimel, 1999; Pyszczynski, Wicklund, Florescu, Koch, Gauch, Solomon, & Greenberg, 1996), and the need to feel normal or likeable (Mullen & Hu, 1988; Sherman, Chassin, Presson, & Agostinelli, 1984; Sherman, Presson, Chassin, 1984). These self-protection needs are more likely to be activated when perceivers feel a threat to the self (Suls & Wan, 1987; Suls, Wan, & Sanders, YEAR; Sherman, Presson, & Chassin, 1984), when an issue is personally important or relevant (Crano, 1983), or when they have made a prior commitment (Marks & Miller, 1987).

The self-protection motivation theory also recognizes that people seek cognitive consistency between their own attitudes and the attitudes of liked others (Heider, 1946, 1958), and therefore predicts that people will generate larger consensus estimates when they perceive others favorably (Granberg & Brent, 1980; Kinder, 1978; Marks & Miller, 1982; Moreland & Zajonc, 1982) or as similar to themselves (Marks, Richardson, Lochner, McGuidgan, & Levine, YEAR; Wilder, 1984).

As illustrated by Figure 3.3, the self-protection motivation explanation of the

FCE proposes that people explicitly derive perceptions of others' attitudes directly from their own attitudes (path *a*). The magnitude of the effect is determined by the individual's self-protection needs (path *b*) and the perceived favorability of or similarity with others (path *c*). Several factors activate needs to self-protect, including threats to self (path *d*), prior commitment (path *e*), and issue relevance or importance (path *f*). Thus, estimates of attitude consensus are expected to grow as the perceivers' self-protection needs are activated and/or as their perceptions of others' favorability or similarity increases.

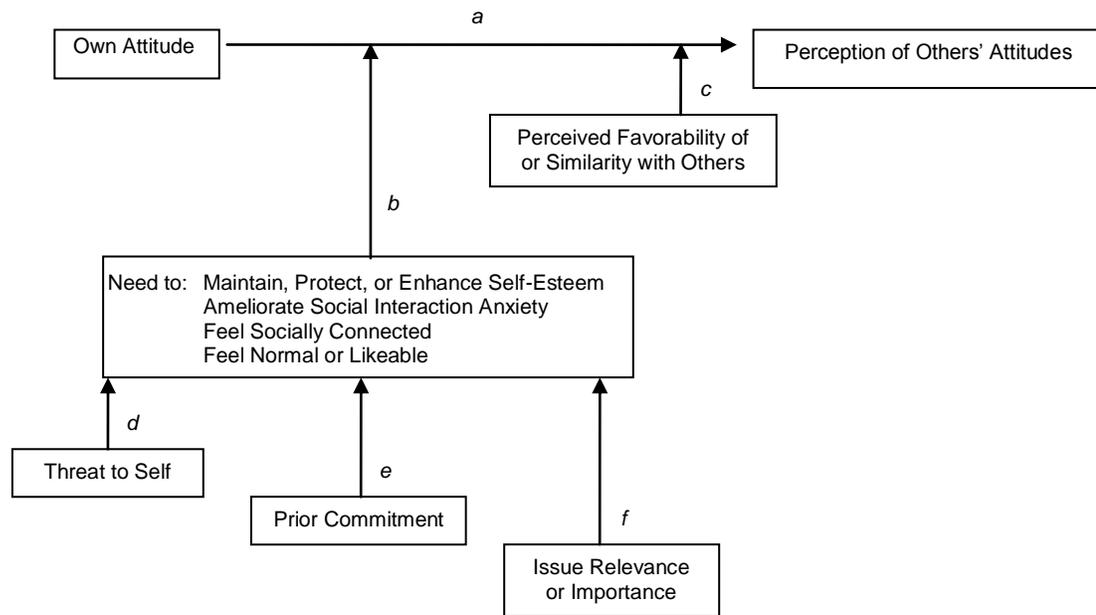


Figure 3.3: Self-protection motivation model of the FCE.

The Evaluation Principle

The FCE may also be attributable to a simple, evaluation-driven cognitive heuristic employed when estimating others' attributes, called the evaluation principle (Sherman, Chassin, Presson, & Agostinelli, 1984). Grounded in balance theory

(Heider, 1946, 1958), this principle proposes a tendency to ascribe positive attributes to others, but only to positive others. Because people judge their own attitudes to be good, assume that positive others hold similar (good) attitudes (Nisbett & Wilson, 1977; Schneider, 1973), and perceive most other people as good (Sears, 1983), an FCE occurs. However, this effect, according to the evaluation principle, is only expected to be produced when perceivers judge variably evaluated objects (e.g., withdrawing U.S. military troops from Iraq), rather than universally evaluated objects (e.g., allowing U.S. citizens, 18 years and older, to vote).

Thus, as shown in Figure 3.4, people’s own attitudes determine what attitudes they judge as “good” (path *a*). People then project these attitudes onto liked others (path *b*), and then people generalize from liked others to all others (path *c*). The tendency to infer that one’s own attitudes are generally good is thought to be moderated by the level of agreement among others about the merits of the object, called the universality of evaluations (path *d*). When people largely agree on whether the attitude object is good or bad, the tendency to project one’s own attitudes onto others should be minimized.

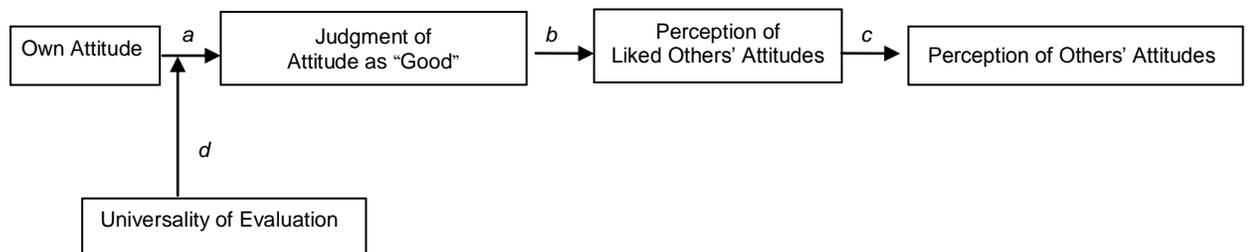


Figure 3.4: The evaluation principle model of the FCE.

Attributional Reasoning

Another perspective on the FCE is based on the well-established tendency of people to attribute their own attitudes to situational rather than dispositional forces (e.g., Jones & Nisbett, 1971; Jones, 1990). A rational attributional analysis would lead people to infer that whatever situational forces determined their own attitudes will also determine most others' attitudes (Heider, 1958). Consequently, when individuals are asked to judge the prevalence of their attitudes among others, they infer their attitudes to be relatively common (e.g., Gilovich, Jennings, & Jennings, 1983; Zuckerman & Mann, 1979; Zuckerman, Mann, & Bernieri, 1982).

The likelihood that people will engage in a causal attribution search is greatest when they find themselves in situations that are negative (Hastie, 1984; Pyszczynski & Greenberg, 1981; Wong & Weiner, 1981), personally important, novel, or stressful (Berscheid, Graziano, Monson, & Dermer, 1976; Clary & Tesser, 1983; Harvey, Harkins, & Kagehiro, 1976; Harvey, Yarkin, Lightner, & Town, 1980; Wong & Weiner, 1981). As previously noted, such attributional searches tend to result in the finding that situational forces shaped one's attitudes. This tendency is particularly likely when a person's attitudes are inconsistent with his or her self concept (Kulik, Sledge, & Mahler, 1986).

Perceivers usually fail to recognize that they and target others are in different situations, which likely produce different attitudes. Such mistakes in perspective taking magnify the likelihood that conclusions about the situational forces shaping one's own attitudes will be projected onto others (Van Boven & Lowenstein, 2005), ultimately resulting in overestimates of attitude consensus.

Thus, according to the attributional reasoning perspective, explicated by Figure 3.5, when people are asked to predict the attitudes of others, they first search for the causes of their own attitudes (path *a*). Certain situational traits (path *b*) also motivate them to engage in a causal attribution search. Such searches typically lead people to conclude that situational forces shaped their attitudes (path *c*), especially when their attitudes are inconsistent with their self concepts (path *d*). They then presume that the same situational forces must be operating on others (path *e*). Of course others may not be in the same situation as the perceivers, but faulty perspective taking (path *f*) increases the likelihood that perceivers will make the causal connection just the same. Ultimately, perceivers predict that others' attitudes, presumably shaped by the same situational forces perceivers faced, are similar to their own attitudes (path *g*).

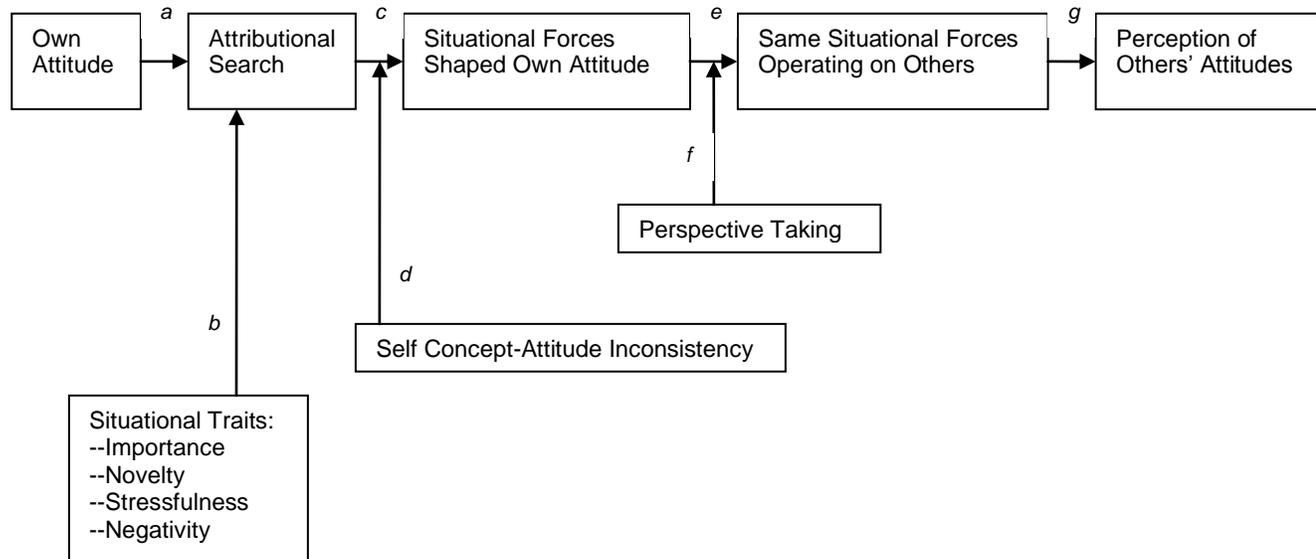


Figure 3.5: Attributional reasoning model of the FCE.

Rational Induction

Another explanation for the FCE posits that inferring from one's own attitude the attitudes of the general population is a sound diagnostic strategy. Unlike theories that favor cognitive availability explanations for the FCE (such as attitude salience and selective affiliation), the rational induction explanation argues that perceivers look to their own attitudes as representative samples of the population—individual data points that are likely normative of the population (Dawes, 1989). People are more likely than not to be in the majority (Clement & Krueger, 2000; Gross & Miller, 1997), so their views, rather than bias perceptions, actually inform perceptions. Indeed, researchers have recognized that attitude projection can yield accurate consensus estimates (e.g., Hoch, 1987; Krueger & Clement, 1994; Kulik & Taylor, 1980).

Because, according to this perspective, perceivers are rational inductionists, when exposed to other individual attitudes, they should adjust the weight their own attitude has on their perceptions of consensus. If individual others agree with their position, perceivers' own attitudes should be weighted more heavily; if individual others disagree, their own attitudes should carry less weight. Perceptions of minority attitude status should moderate the effect further. If people accurately judge themselves as members of the minority, they will justifiably report lower consensus estimates; if people inaccurately judge themselves as members of the minority, they commit a diagnostic error and produce a “failure of consensus effect” (Dawes, 1989, p. 3).

Thus, as seen in Figure 3.6, the rational induction explanation of the FCE predicts that one's own attitude directly influences estimates of others' attitudes (path

a). Exposure to another individual's attitude moderates the impact one's own attitude on perceptions (path *b*), magnifying it when the two are in agreement and weakening it when they are in opposition. The perception that one's attitude is the minority (path *c*) reduces the extent to which one's own attitude serves as a viable reference point for consensus estimates, with inaccurate perceptions of minority status producing a failure of consensus effect.

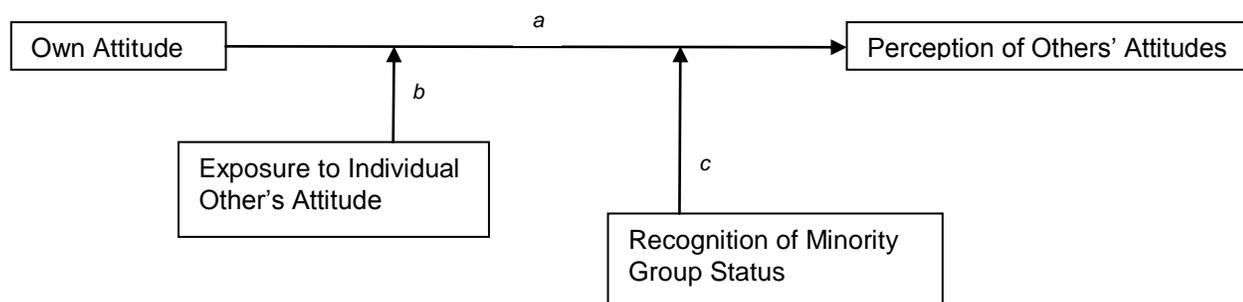


Figure 3.6: Rational induction model of the FCE.

De facto Selective Exposure

Other theorists have posited that consensus misperceptions are due to de facto selective exposure (Freedman & Sears, 1965) to people in our neighborhoods, communities, and places of employment. People choose those environments to some degree, and the environments shape the people in them. As a result, those around us tend to be similar, but not because we actively choose them to be so (e.g., Crocker, 1981; Mutz & Martin, 2001).

As shown in Figure 3.7, an individual's immediate social environments shape both the individual's attitude (path *a*) and those of others in that environment (path *b*). When asked to estimate the attitudes of the general population, people may generalize

from those in their immediate environments (path c), thus producing perceptions in line with their own attitudes.

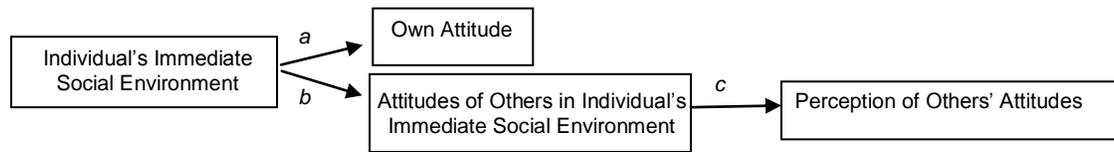


Figure 3.7: De facto selective exposure model of the FCE.

Differential Object Construal

The FCE may result from differential object construal (Gilovich, 1990; Ross, Greene, & House, 1977). According to this theory, any verbal statement of an attitude object, such as “legalized abortion,” is ambiguous to at least some extent and is, therefore, open to interpretation. Some people may assume that this means legalized abortion under any circumstances, whereas other people may assume it means legalized abortion under specific conditions (e.g., in cases of rape or incest). The former individuals’ broad interpretation may lead them to express less positive attitudes and to assume that others would also be relatively negative toward the object. In contrast, the latter individuals’ more narrow interpretation might lead them to express more positive attitudes and to assume that others would be relatively positive. The difference between these two groups’ estimates of others’ attitudes would constitute what is traditionally viewed as the FCE.

This explanation is consistent with the larger finding that people presume their view of reality is shared by others. They fail to recognize the subjective and idiosyncratic nature of their perceptions (Jacoby, Bjork, & Kelley, 1994) and, thus, are

surprised by actions that are inconsistent with their “naïve reality” (Ross & Ward, 1995, 1996). The FCE, then, is simply a manifestation of perceivers’ tendency to presume that they and others similarly interpret, and thus similarly respond to, objects in the environment (Pronin, Gilovich, & Ross, 2004; see also egocentric perception: Clement & Krueger, 2000; Krueger, 2000).

The differential object construal perspective, as illustrated in Figure 3.8, presumes no direct or indirect causal link from individuals’ own attitudes to their perceptions of others’ attitudes. Instead, a third variable, interpretation of the object, drives both the individual’s attitude (path *a*) and his or her perception of others’ attitudes (path *b*).

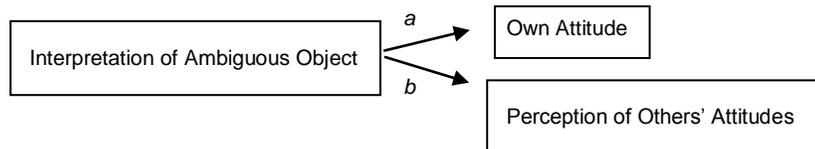


Figure 3.8: Differential object construal model of the FCE.

Protocentric Perception

One last perspective, protocentric perception, argues that overestimates of consensus stem from a protocentric, rather than an egocentric, bias (Karniol, 2003). This perspective draws from research on “artificial intelligence models of default reasoning...in which generic representations that serve as defaults are the cornerstone of the processing system” (p. 568). Similarly, perceivers’ attitudes and perceptions of others’ attitudes are believed to be based on generic representations, which include information on the thoughts and feelings of prototypic others. These generic

representations anchor consensus judgments, with perceivers ascribing prototypic others' attitudes to themselves and the general population (Karniol & Shomroni, 1998; Karniol, 2003).

Two factors, self-as-distinct knowledge and idiosyncratic representations, moderate the impact generic representations have on attitudes and perceptions respectively. Self-as-distinctive knowledge—which encodes information about contrasts between the self and prototypic others—determines whether or not one's own attitudes will match the generic representations. People look to prototypic others' to evaluate themselves only in the absence of self-as-distinct knowledge; the presence of such knowledge precludes FCEs. Idiosyncratic representations—which encode information about contrasts between specific people or groups and prototypic others—minimize the degree to which generic representations influence perceptions of others' attitudes (Karniol, 2003). FCEs should be largest when such information is limited or absent.

Thus, the protocentric perception explanation, as outlined in Figure 3.9, presumes no direct or indirect causal link from individuals' attitudes to their perceptions of others' attitudes. Instead, a third variable, generic representations, shapes both the individual's attitude (path *a*) and his or her perception of others' attitudes (path *b*). The impact of generic representations on individuals' attitudes is moderated by self-as-distinctive knowledge (path *c*), with FCEs occurring only in the absence of such knowledge. The effect of generic representations on individuals' perceptions of others' attitudes is moderated by idiosyncratic representations (path *d*), with smaller FCEs occurring when perceivers possess such information.

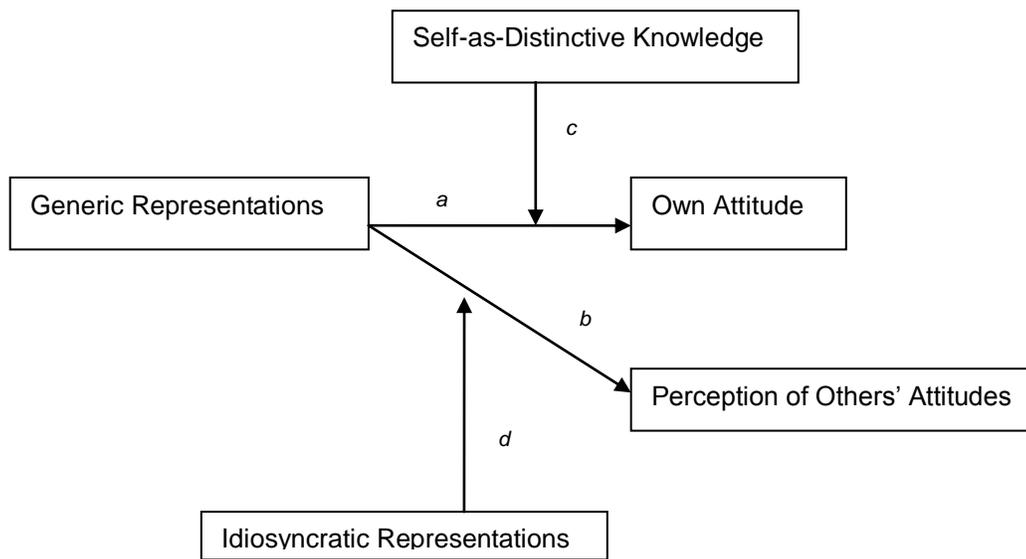


Figure 3.9: Procentric perception model of the FCE.

Chapter 4: Evidence for Causal Mechanisms of the False Consensus Effect

Correlational Studies: “Evidence” of Attitude Projection

Remarkably, evidence showing that the FCE occurs because individuals' attitudes directly or indirectly influence their perceptions of others' attitudes is extremely hard to find. In fact, the FCE has been “documented” overwhelmingly often by simple bivariate correlations between own attitudes and estimates of others' (e.g., Goethals et al., 1979; Judd & Johnson, 1981; Manstead, 1982; Sherman et al., 1984 Study 2) or the mathematical equivalent in the form of tests of differences of means (e.g., Goethals, 1986, Study 1; Mullen, Driskell, & Smith, 1989; Mullen & Goethals, 1986; Ross, Greene, & House, 1977; Sanders & Mullen, 1982; Suls & Wan, 1987; van der Plight, 1984; van der Plight, Ester, & van der Linden, 1983; Wetzel & Walton, 1985; Driskell, Mullen, & Smith, 1987; Mullen, 1983; Sanders & Mullen, 1983; Sherman, Presson, Chassin, Corty, & Olshavsky, 1983; Sherman, Presson, & Chassin, 1984, Study 1; Suls, Wan, & Sanders, 1988; Wallen, 1943).

Of course, a significant correlation between two variables does not provide evidence of causation. It merely indicates one of three possible relationships between our variables of interest: individuals' attitudes may have influenced perceptions of others' attitudes; perceptions of others' attitudes may have influenced individuals' attitudes; or some third variable may have influenced both individuals' attitudes and their perceptions of others' attitudes. And yet, it's more common than not to find researchers inferring false consensus *effects* from false consensus *correlations*. For example, a field study conducted during a water conservation crisis measured dormitory residents' reported bathing behaviors and their perceptions of the

prevalence of other dormitory residents' bathing behaviors. The two measures significantly and positively correlated, and the researchers concluded that "...*social projection* [emphasis added] was such that both bathers and non-bathers thought they were in the majority" (Monin & Norton, 2003, p. 563). The researchers failed to note that the correlation could just as likely represent a conformity effect, with dormitory residents bathing or not bathing in accordance with the prevalence of such behaviors among other dormitory residents. The bathing behaviors of others are easy to monitor in such a setting, as many dormitories have communal showers and most have limited privacy and frequent socializing. This is but one example from scores of studies (as cited previously) that infer an attitude projection effect from correlational evidence.

Studies of Attitude Accessibility: "Evidence" of Attitude Projection

Researchers seeking evidence of attitude projection often turn to studies of attitude accessibility. For example, a study of the comparative accessibility of attitudes and perceptions of others' attitudes demonstrated that people report their own attitudes more quickly than they report their perceptions of others' attitudes. Moreover, the expression of one's own attitudes was found to facilitate the expression of one's perceptions of others' attitudes to a greater degree than vice versa (Clement & Krueger, 2000; see also Biernat, Manis, & Kobrynowicz, 1997; Kuiper & Rogers, 1979). Likewise, a study comparing candidate preferences and election outcome expectations in eight presidential elections (1952-1980) revealed that, in addition to expecting one's preferred candidate to win by a 4:1 ratio, people's perceptions of election outcomes over time were more likely to change in response to changes in their attitudes toward presidential candidates than vice versa (Granberg & Brent, 1983;

see also Bauman & Ennett, 1996; Marks, Graham, & Hansen, 1992). These findings are consistent with the expectations of all six attitude-projection explanations of the FCE, particularly the attitude salience perspective, which asserts that perceivers believe the most readily accessible attitudes represent the attitudes most prevalent in the general population (e.g., Kelley & Jacoby, 1996).

Studies of Moderation: Evidence Consistent with Proposed Causal Mechanisms

Attitude salience. Numerous studies have demonstrated support for the proposed moderating effect of perceived similarity between self and others as well as its antecedent, knowledge of others. For example, students who viewed taped responses of other students, as opposed to taped responses of experimenters, generated larger consensus estimates (Zuckerman, Mann, & Bernieri, 1982; see also Ames, 2004; Holtz & Miller, 1985; Clement & Krueger, 2002; Karasawa, 2003; Wetzel & Walton, 1985). In addition, increasing one's knowledge of target others, as predicted by the attitude salience explanation, reduces perceived similarity between self and others: people project more to laboratory groups than they do to real groups (Krueger & Stanke, 2001), and simply viewing the back of the head of an otherwise anonymous person limits FCEs (Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995).

Research has also demonstrated the expected effects of attentional focus, an antecedent to the model's eponymous moderator, attitude salience. For instance, participants who focused on particular attitudes produced larger consensus estimates for those attitudes, a finding which has been attributed to an increase in attitude salience (Zuckerman, Mann, & Bernieri, 1982; see also Kernis, 1984). Attitude certainty (Marks & Miller, 1985) and attitude extremity (Crano, 1983; van der Plight,

Ester, & van der Linden, 1983; Wagner & Gerard, 1983) have also been shown, as predicted, to yield larger consensus estimates. However, a few studies have found no consistent association between the FCE and attitude extremity (Spears, Eiser, & van der Plight, 1989; van der Plight, Ester, & van der Linden, 1983).

Selective affiliation. Several studies indicate that FCEs are largest when people are asked to predict the attitudes of friends and liked others (e.g., ingroups: Clement & Krueger, 2000; Holtz & Miller, 1985; friends: Judd & Johnson, 1981; attractive others: Marks & Miller, 1982; Mashman, 1978; Moreland & Zajonc, 1982). These findings are consistent with the selective affiliation explanation of the FCE. However, other research indicates that greater knowledge about others minimizes associated consensus estimates (Krueger & Stanke, 2001), a finding in direct opposition to the selective affiliation explanation.

Support has been found for the moderating impact of selective disclosure as well. As explained previously, selective disclosure, or the suppressing of attitudinal information to avoid censure, is thought to moderate the degree to which friendship selection determines individuals' perceptions of their friends' attitudes, which in turn biases their perceptions of the attitudes of general others. Manipulations of selective disclosure did produce the expected moderation effects (Kitts, 2003).

Self-protection motivation. Various research findings indicate support for the moderating impact of self-protection needs, with people estimating greatest consensus when they are members of the attitude minority, and thus desire to feel "normal" (Ames, 2004; Crano, 1983; Goethals et al., 1979; Holtz & Miller, 1985; Marks, 1984; Miller & Marks, 1982; Mullen & Hu, 1988; Sanders & Mullen, 1983; Sherman et al,

1983; Wagner & Gerard, 1983; Wetzel & Walton, 1985), when they want to feel likeable (Sherman, Presson, & Chassin, 1984) when they need to socially connect (Arndt, Greenberg, Solomon, Pyszczynski, & Schimel, 1999; Pyszczynski et al, 1996); or when they need to reduce social interaction anxiety (Jones & Thibaut, 1958; Marks & Miller, 1982).

Research has also demonstrated the expected instigating effects of the antecedents to self-protection needs: threat to self (Arndt, Greenberg, Solomon, Pyszczynski, & Schimel, 1999; Pyszczynski et al, 1996; Sherman, Presson, & Chassin, 1984; Suls & Wan, 1987; Suls, Wan, & Sanders, YEAR), prior commitment (Koestner, Losier, Worren, Baker, & Vallerand, 1995), and issue relevance or importance (Crano, 1983; Judd & Johnson, 1981). However, a few studies of issue importance and the FCE report findings inconsistent with the self-protection motivation, with weaker FCEs when the issue was personally important to perceivers (Campbell, 1986; Fabrigar & Krosnick, 1995).

Numerous studies, as noted previously, have also indicated that FCEs are largest when people are asked to predict the attitudes of favorable or similar others (e.g., ingroups: Clement & Krueger, 2000; Holtz & Miller, 1985; friends: Judd & Johnson, 1981; attractive/favorable others: Granberg & Brent, 1980; Marks & Miller, 1982; Mashman, 1978; Moreland & Zajonc, 1982). These findings are consistent with the self-protection motivation explanation of the FCE.

Evaluation principle. The evaluation principle asserts that when people largely agree on whether an attitude object is good or bad, the tendency to project one's own attitudes should be minimized. Research does support this assertion. Larger consensus

estimates are generated when people judge variably-evaluated, as opposed to universally evaluated, items; for instance, FCEs are largest with divisive issues (Glynn, Herbst, O’Keefe, Shapiro, & Linderman, 2004; Sherman, Chassin, et al., 1984) and values rather than facts (Wagner & Gerard, 1983).

Attributional reasoning. Research has demonstrated that placing individuals in the situation of others for whom one is estimating levels of consensus improves the accuracy of those consensus estimates (Van Boven & Lowenstein, 2003). When asked to predict the feelings of a group of hikers, participants compelled by experimenters to exercise (and therefore simulate the arousal state of the hikers) produced more accurate predictions than did participants who had not been compelled to exercise. This finding is consistent with the expected effect of perspective taking within the attributional reasoning explanation of the FCE: perceivers who fail to appreciate the unique situational forces operating on others are more likely to overestimate consensus for their own attitudes (Van Boven & Lowenstein, 2005). Moreover, when perceivers were asked to talk about their prediction process, they typically reported having “mentally trading places” with the target others (Van Boven, Lowenstein, & Dunning, 2004).

Rational induction. Some research indicates that people often take advantage of non-egocentric “sample-based” information when it’s available (Dawes & Mulford, 1996; Kulik & Taylor, 1980), a finding consistent with the moderation effect predicted by the rational induction explanation of the FCE: when exposed to other individual attitudes, perceivers should adjust the weight their own attitude has on their perceptions of consensus. If individual others agree with their position, perceivers’

own attitudes should be weighted more heavily; if individual others disagree, their own attitudes should carry less weight. However, most studies have found that perceivers regularly overweight their own attitudes when predicting the attitudes of others (Alicke & Largo, 1995; Clement & Krueger, 2000; Krueger, 1998; Krueger & Clement, 1994). This tendency holds even when perceivers are provided with evidence that their predictions are wrong (Krueger & Clement, 1994; Van Boven & Lowenstein, & Dunning, 2003).

Protocentric perception. According to the protocentric perception explanation of the FCE, two factors, self-as-distinct knowledge and idiosyncratic representations, moderate the impact generic representations have on attitudes and perceptions respectively. Research findings support these expectations. Self-as-distinctive knowledge has been shown to determine whether or not one's own attitudes will match the generic representations. The presence of such knowledge (e.g., perceivers who are high in need for uniqueness or low in self-esteem) precludes FCEs (Karniol, 2003). Likewise, idiosyncratic representations have been found to minimize the degree to which generic representations influence perceptions of others' attitudes: a substantially large proportion of predictions presumably biased by one's own attitudes actually involved predictions that matched attitudes attributed to prototypic others (Brodt & Ross, 1998).

Studies of Mediation: Evidence of Proposed Causal Mechanism

Attributional reasoning. Several experiments have shown that the FCE is stronger when people are told to focus on the situational causes rather than on the dispositional causes of their choices (Gilovich, Jennings, & Jennings, 1983;

Zuckerman & Mann, 1979; Zuckerman, Mann, & Bernieri, 1982). Additionally, the FCE has been found to be stronger for hypothetical behaviors rated as likely to be influenced by situational determinants, and weaker for behaviors rated as likely to be influenced by dispositional determinants (Gilovich, Jennings, & Jennings, 1983). This finding—that causal attributions mediate the effect people’s own attitudes have on their perceptions of others—provides compelling evidence for the attributional reasoning explanation of the FCE.

De facto selective exposure. Theorists who posit that consensus misperceptions are due to de facto selective exposure, suggest that the effect of an individual’s immediate social environment on perceptions of others’ attitudes is mediated by the attitudes of those others also in the individuals’ immediate social environment. Research does indicate that lifestyle choices—in what neighborhood people choose to live, to what schools they choose to send their children, with what religious communities they choose to congregate—do limit opportunities for “cross-cutting interpersonal interactions” (Mutz & Martin, 2000, p. 98). Such limits translate into biased perceptions of others’ attitudes and skewed consensus estimates in favor of own attitudes.

Studies Manipulating Proposed Third-Variables

Differential object construal. Empirical evidence supporting the differential construal explanation has been provided in a series of studies (Gilovich, 1990). For example, questions that were rated as being open to wide latitudes of construal generated stronger FCEs than questions that were rated as permitting only narrow latitudes of construal. Similarly, experimental manipulations of the specificity of

questions have revealed that the FCE is greater when subjects receive a general version of a question (e.g., “Do you prefer the color tan or aqua?”) than when subjects receive a specific version of a question (e.g., “Do you prefer the tan or aqua swatch?”).

Numerous other studies provide further support that idiosyncratic interpretations of attitude objects are responsible for overestimates of consensus (e.g., Dunning, Milojkovic, Ross, & Griffin, 1990; Griffin, Ross, & Dunning, 1990; Vallone, Lin, Ross, & Griffin, 1990), with attitude objects ranging from “affirmative action towards women” (Bosveld, Koomen, & Vogelaar, 1997) to “going into town” (Bosveld, Koomen, & VanWoerden, 1996) to “Christian” (Bosveld, Koomen, & VanderPlicht, 1996). However, perceivers have been known to subjectively construe attitude objects even when they are objectively defined (e.g., Darley & Gross, 1983; Gilovich, 1981, 1983; Lord, Ross, & Lepper, 1979; Vallone, Ross, & Lepper, 1985).

Chapter 5: Direct Tests of the Causal Direction of the False Consensus Effect

Overview

This document has, to this point, reviewed the cognitive and social mechanisms proposed for the FCE, formalized the mediational and moderational stories implicit in their explanations, and documented what little evidence exists for each. Most of these explanations presume that individuals' own attitudes cause their perceptions of others' attitudes, yet little research has directly tested this presumption.

The current chapter of this document reports the results of four studies providing tests of the causal direction of the FCE using data from nationally representative samples of American adults. All four studies tested the basic FCE correlation between participants' own attitudes and their perceptions of others' attitudes and each sought evidence of the causal direction of the FCE. Study 1 manipulated participants' attitudes and tested whether those attitudes influenced perceptions of others' attitudes. Study 2 employed instrumental variable analysis to estimate the impact of participants' attitudes on their perceptions of others' attitudes. Study 3 tested an alternative explanation of the FCE: conformity to perceived social norms. Consistent with this claim, a manipulation of perceptions of others' attitudes influenced people's own attitudes. Applying covariance structure modeling to longitudinal data, Study 4 found evidence that perceptions of others' attitudes influence participants' own attitudes but no evidence that people's own attitudes shape perceptions of others' attitudes.

Projection versus Conformity: In what Direction does the FCE Occur?

The following studies directly tested the projection presumption underlying most of the theoretical accounts described above: that people's own attitudes cause their perceptions of other people's attitudes¹. These studies also tested an alternative conformity account for the FCE: that people's attitudes are derived from their perceptions of other people's.

Given the huge volume of research documenting conformity in social psychology, it is remarkable that very few publications in the FCE literature have even acknowledged that this process could account for the relation. If people differ from one another in the distributions of attitudes they perceive to be held by others, and if people at least sometimes conform to what they perceive to be the majority by adjusting their own attitudes accordingly (e.g., Asch, 1951), then this conformity would produce a positive correlation between own attitudes and perceptions of others' attitudes.

The first study manipulated participants' attitudes using a traditional social psychological method: exposure to a persuasive message. If the FCE is due to attitudes causing perceptions of others' attitudes, then this induced attitude change should produce a corresponding change in perceptions of others' attitudes, especially among the people who manifest the largest changes in their own attitudes.

In Study 2, participants reported their attitudes on an issue and their perceptions of others' attitudes on the issue. In addition, people reported beliefs that

¹ We did not test the de facto selective exposure, differential object construal, or protocentric perception explanations of the FCE, which presume a third variable causes both attitudes and perceptions of others' attitudes.

might be causes of their attitudes but not of their perceptions of others' attitudes.

These data were then analyzed using instrumental variable analysis, a technique that allowed statistically isolating the impact of attitudes on perceptions of others.

Study 3 tested the conformity hypothesis by manipulating perceptions of others' attitudes prior to asking them about their own attitudes. If people adjust their own opinions to come into line with their perceptions of others' attitudes, then exposure to the results of an opinion poll documenting what most people think may cause some people to adopt those same attitudes.

Finally, Study 4's participants were interviewed twice in a longitudinal, panel survey and on both occasions reported their attitudes on an issue and their perceptions of others' attitudes on the issue. Covariance structure modeling was applied to the data to test simultaneous and lagged effects reflecting projection and conformity.

Study 1

Study 1 replicates classic communication persuasion studies by examining the effect of a message on attitudes and expands upon those studies by examining the effect of a message on perceived public opinion. To manipulate a representative national sample of participants' attitudes, people were exposed to a persuasive message embedded in a survey, and the quality of the arguments, extracted from the ACLU website, was manipulated between participants. Some people read strong arguments against capital punishment, and others read weak arguments. Attitudes were expected to change more in response to the strong arguments, replicating numerous past laboratory studies done with samples of college students (see Cacioppo et al, 1996). If the attitude projection explanation of the FCE is valid, participants

exposed to strong arguments should also manifest the largest increase in perceptions of the percent of Americans who oppose capital punishment.

Method

Participants

This study involved survey data collection from a representative national sample of American adults via the Internet, done by Knowledge Networks (KN). Knowledge Networks made list-assisted random digit dial telephone calls to a sample of American households to invite them to join an Internet survey panel. Prior to calling, KN attempted to obtain mailing addresses for all sampled telephone numbers and succeeded in doing so for about 60% of them. These households were sent letters explaining that they had been selected to participate in a survey panel, that it would not cost them anything, that their confidentiality was assured, and that a staff member would call them within a week to provide details of the invitation. A \$5 or \$10 bill was included with the letter.

Telephone interviews were then attempted with all households that received an advance letter and with one-third (selected randomly) of the telephone numbers for which an address could not be obtained. During the telephone interviews, participants were told they had been selected to participate in an important national study and that they could receive a WebTV device, which would allow them free access to the Internet and opportunities to answer brief surveys on their televisions. Participants were told that their participation was important and were asked some questions about the household members. Arrangements were then made to mail the WebTV equipment to households that agreed to join the panel.

After the WebTV equipment had been installed (with assistance from a technical support office via telephone if necessary), participants were asked to answer “profile” surveys that measured attributes of each adult household member, including gender, date of birth, race, whether they headed their households, highest level of education attained, work status, primary language spoken at home, income, interest in politics, voter registration status, party identification, political ideology, and religious affiliation.

Each adult in the household was given a free email account and was invited by email to respond to surveys via WebTV. Whenever a household member had a new email message waiting to be read, a notification light flashed on the WebTV receiver (a box located near the television set). Panel members could then log into their personal WebTV accounts and read the email invitation for the survey, which contained a hyperlink to the questionnaire. Panel members were usually sent one short survey per week, typically not exceeding 15 minutes. When a panel member was asked to respond to a longer survey, he or she was then given a week off or offered some other form of incentive or compensation. Participants could answer the questionnaires whenever they liked and could stop before completing a survey and return to complete it later.

Although KN provided free Internet access to its panel members, its sampling technique brought with it the same coverage error inherent in all RDD telephone surveys, excluding about 5% of the country’s population in 2002 because their households were without working landline telephone service. An additional source of coverage error came from the fact that KN excluded about 6-7% of the general

population because their telephone numbers were not in a WebTV service area.

A stratified sample of 2,788 of KN's panel was invited to complete the first of our two waves of data collection with an email saying it was about "important national issues".² 2,140 of these people completed the Wave 1 questionnaire between August 15 and September 16, 2002, yielding a survey completion rate of 76.8% percent. The cumulative response rate for Wave 1 was 10.0%.³

The Wave 1 questionnaire measured attitudes toward capital punishment; 1,478 of the participants (69%) said that they either favored capital punishment or neither favored nor opposed it and were therefore invited to complete the Wave 2 questionnaire between August 23 and September 20, 2002. 1,172 of these individuals did so, yielding a re-interview rate of 79%.

Measures

Pre-message attitude. Before being asked about their attitudes toward capital punishment, participants read a statement defining the policy: "Over the years, there has been a lot of discussion about whether people convicted of first-degree murder should ever be executed." Attitudes toward capital punishment were then assessed with four questions. Participants first selected a point on a fully labeled 7-point rating scale to indicate whether they favored, opposed, or neither favored nor opposed capital punishment ("favor a great deal" to "oppose a great deal"). Then people described capital punishment on three additional 7-point rating scales with labels on the end

² Stratification was done in terms of gender, race, education, and geographic region within age groups (18-24, 25-34, 35-44 45-54, 55-64, 65-74, 75+) to match the sample to population characteristics based on estimates from the Current Population Survey.

³ This rate was computed by multiplying the rate at which households to be contacted and recruited to join the panel were indeed recruited x the rate at which recruited households actually completed an initial survey x the percent of people who completed the initial survey who later dropped out of the panel prior to our survey x the percent of people invited to do our survey who did it.

points: (1) “extremely bad” to “extremely good;” (2) “extremely foolish” to “extremely wise;” and (3) “extremely harmful” to “extremely beneficial.” Responses to the four questions were coded to range from 0 to 1, with higher scores representing greater opposition toward capital punishment. The four items were then averaged to yield a pre-manipulation attitude index.

Persuasive message. Participants who answered all Wave 1 attitude questions by indicating favorable or neutral responses regarding capital punishment were invited to complete the Wave 2 questionnaire, which began, “In this survey, we’d like to get your reaction to some ideas that have been written on the issue of capital punishment in recent years. On the next screens, you will see a message disseminated by the American Civil Liberties Union (also called the ACLU), an organization that opposes the death penalty. The ACLU believes that the death penalty is unconstitutional and should be outlawed. Here are the ACLU’s answers to some questions people often have about the death penalty.”

Participants were randomly assigned to read either five strong arguments or six weak arguments taken from the ACLU (2002) website, in a question and answer format. For example, one strong argument question and answer pair was:

“Doesn’t the death penalty deter crime, especially murder? No, there is absolutely no evidence that the death penalty deters crime. States that have death penalty laws do not have lower murder rates than states without such laws. And murder rates do not go down when states start using the death penalty, nor do they go up when states outlaw the death penalty. The reason the death penalty has no effect on murder rates is because, most often, people

commit murder in the heat of passion, or under the influence of alcohol or drugs. They do not stop to think about the possible consequences of their acts.”

After reading all of the strong arguments, participants read this conclusion:

“The death penalty does nothing to reduce crime. It is unfair – used most often against minorities and people who can’t afford expensive lawyers. And there is no way to avoid mistakes, so innocent people will sometimes be put to death. People who commit crimes must be punished, but the death penalty has no place in our society.”

An example of a weak argument question and answer pair is:

“But what about the victims’ families? Doesn’t the death penalty provide peace of mind? All of us would feel extreme anger and a desire for revenge if a loved one was murdered. Many family members and loved ones of murder victims may favor the death penalty. But some relatives of murder victims may not approve of the death penalty. There is no way to satisfy everyone.”

After reading the weak arguments, those participants read this conclusion:

“The death penalty was illegal in the U.S. for a brief period in the 1970s, and even now, it is rarely put into effect. It detracts our attention from other solutions to crime, and it is inefficient. And occasionally, things go wrong and convicted murderers suffer painful executions. People who commit crimes must be punished, but the death penalty has no place in our society.”

Post-message attitude. After exposure to the persuasive message, attitudes toward capital punishment were assessed again with the same four items used in Wave 1, which were used to yield an index in the same way as well.

Attitude change. Attitude change was calculated by subtracting Wave 1 attitudes from Wave 2 attitudes, which produced a range of scores from -1 to +1. Positive scores indicated message-congruent attitude change.

Perceptions of others' attitudes. During the Wave 2 interviews, respondents reported the percents of American adults they thought favored, opposed, and neither favored nor opposed capital punishment. Responses were required to total 100%. A net perception score was created by subtracting the percent who favored from the percent who opposed. These scores were converted to a 0-to-1 scale by adding 100 and dividing by 200. Higher scores indicated more perceived opposition to capital punishment.

Demographics. Participants reported their age, gender, race, household income, and education. Age was categorized into six groups: ages 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75 and older. Gender was coded as male or female. Race was coded as white or non-white. Household income was categorized into six groups: less than \$20,000, \$20,000-29,999, \$30,000-39,999, \$40,000-49,999, \$50,000-59,999, and \$60,000 and above. Education was categorized into five groups: no high school diploma, high school diploma, some college, bachelor's degree, and post-graduate education.

Weights

Base weights were computed to adjust for unequal numbers of voice telephone lines per household (households with two or more phone lines were treated as if they had two), and to adjust for under-sampling of households for which mailing addresses could not be obtained. In addition, post-stratification was done using age, gender,

race, region, and education to match recent U.S. Census Bureau data on the national population.

Results

Sample Representativeness

To assess the representativeness of the sample, we compared its demographic characteristics to those of the nation as a whole, as gauged by the March, 2002, Current Population Survey, conducted by the U.S. Census Bureau (see Table 5.1, column 4). The correspondence of the survey sample's characteristics (shown in Table 5.1, column 5) to the nation's population was generally quite close. People who made \$100,000 or more a year were under-represented, but no other notable discrepancies appeared. This bias is typical of sample surveys with the best response rates (see, e.g., Brehm 1993).

Table 5.1: Demographic Distributions of the Nation and Demographic Characteristics of Participants in Studies 1 - 4

	Studies Conducted in 1997-8		Studies Conducted in 2002		
	1997 CPS	Study 2	Study 4	2002 CPS	Studies 1&3
<u>Age</u>					
18-19	4%	4%	2%	4%	3%
20-29	19	19	15	18	17
30-39	22	21	27	20	15
40-49	20	25	23	21	25
50-59	13	13	14	16	18
60 and up	22	18	19	21	22
<u>Race</u>					
White	84%	81%	84%	83%	77%
African American	12	9	7	12	11
Other	4	10	9	5	12
<u>Gender</u>					
Female	52%	53%	55%	52%	49%
Male	48	47	45	48	51
<u>Household Income</u>					
\$9,999 or less	8%	11%	11%	---	---
\$10,000 to \$19,999	13	15	15	---	---
\$20,000 to \$29,999	14	15	17	---	---
\$30,000 to \$39,999	12	13	17	---	---
\$40,000 to \$49,999	11	10	12	---	---
\$50,000 to \$59,999	10	9	6	---	---
\$60,000 to \$69,999	8	6	6	---	---
\$70,000 to \$79,999	6	5	6	---	---
\$80,000 to \$89,999	4	3	2	---	---
\$90,000 or above	14	9	6	---	---
\$9,999 or less	---	---	---	6%	9%
\$10,000 to \$19,999	---	---	---	11	11
\$20,000 to \$29,999	---	---	---	11	13
\$30,000 to \$39,999	---	---	---	11	16
\$40,000 to \$49,999	---	---	---	10	13
\$50,000 to \$59,999	---	---	---	9	10
\$60,000-\$74,999	---	---	---	12	11
\$75,000 to \$84,999	---	---	---	6	6
\$85,000 to \$99,999	---	---	---	7	4
\$100,000 or above	---	---	---	18	7
<u>Education</u>					
Less Than High School	19%	7%	5%	17%	14%
High School Degree	33	25	25	32	32
Some College or AA Degree	26	33	33	27	29
BA Degree or Higher	22	35	37	24	25
<u>Region</u>					
New England	5%	6%	5%	5%	6%
Mid-Atlantic	15	15	12	14	14
East North Central	16	17	18	16	11
West North Central	7	10	10	7	8
South Atlantic	18	19	21	19	21
East South Central	6	6	5	6	9
West South Central	11	11	13	11	12
Mountain	6	6	5	6	7
Pacific	16	10	12	16	12
N	95,179^a	725^b	497^b	149,879^a	2135^c

^a Sample sizes for the 1997 March CPS and 2002 March CPS were obtained from unweighted data. Percentages reported were calculated using data weighted with person-level expansion weights, which weight March CPS samples to the size of the estimated total population. Sample sizes and percentages represent respondents aged 18 years or older. ^b To correct for unequal probabilities of selection, RDD survey data are usually weighted by the number of adults in a respondent's household and the reciprocal of the number of telephone lines that can be used to reach the household. These questions were not asked, so this sort of weighting could not be done. ^c Base weights were computed to adjust for unequal numbers of voice telephone lines per household (households with two or more phone lines were treated as if they had two), and to adjust for under-sampling of households for which mailing addresses could not be obtained.

Randomization Check

The groups of participants in the two experimental conditions (strong vs. weak arguments) did not differ significantly in terms of age, $\chi^2(6) = 6.33, n.s.$; gender, $\chi^2(1) = 2.77, n.s.$, race, $\chi^2(1) = .11, n.s.$; household income, $\chi^2(5) = 3.55, n.s.$, or education, $\chi^2(4) = .83, n.s.$, nor did they differ significantly in terms of pre-manipulation attitudes, Kruskal-Wallis $\chi^2(1) = .52, n.s.$

Traditional Assessment of the FCE

Participants' post-message attitudes significantly predicted their perceptions of others' attitudes in an OLS regression, $b = .12, SE = .02, t(1123) = 7.84, p < .001$; $r(1125) = .23, p < .001$. Compared to people who favored capital punishment, people who opposed it perceived a greater proportion of others opposing capital punishment as well.

Persuasion

For the full sample, attitude change occurred significantly in the direction of the message, $t(1124) = 8.53, p < .001$. The amount of attitude change was significantly affected by the argument quality manipulation, $t(1123) = 5.33, p < .001$: more attitude change occurred among people who received the strong arguments ($M = .08, SE = .01$) than among people who received the weak arguments ($M = .02, SE = .01$).

Persuasive Message Effect on Perceptions of Others' Attitudes

Controlling for pre-manipulation attitudes, people's perceptions of others' attitudes toward capital punishment did not vary as a function of argument quality, $b = .002, SE = .01, t(1127) = .29, n.s.$ Mean consensus estimates were essentially the

same among people who received strong and weak arguments ($M_{strong} = .41$, $SE_{strong} = .005$; $M_{weak} = .40$, $SE_{weak} = .004$; $t(1128) = .34$, *n.s.*). Moreover, a retrospective power analysis indicated that a sample size of 5402 people would have been required to find a minimal detectable difference (r) of .04 at the observed significance level of .37.

Discussion

Replicating past studies, exposure to a persuasive message provoked attitude change in the direction of the message, and most notably so among people exposed to strong arguments who were. But the attitude change provoked by the message did not yield a commensurate change in people's reports of the proportions of other people who held positive attitudes toward capital punishment. This latter finding is inconsistent with the claim that people's attitudes shape their perceptions of the distribution of others' attitudes.

Study 2

For Study 2, American adults were asked about their views on global climate change, an issue that has received increased media exposure in the past few years. They were asked to report their attitudes and perceptions of others' attitudes, as well as beliefs that we thought might be a cause of attitudes but not perceptions of others. We then implemented instrumental variable analysis (Kenny, 1979) to estimate the impact of attitudes on perceptions of others' attitudes.

Method

Overview

Computer-assisted telephone interviews with a representative sample of 725 American adults were conducted by the Ohio State University Survey Research Unit

between December 20, 1997, and February 13, 1998. The sample was generated via random digit dialing, and the resident of each household with the most recent birthday was asked to participate (Salmon & Nichols, 1983). 605 participants answered all the questions required for our analysis.

Sampling Procedures

Household sampling. A sampling pool of telephone numbers for the 48 contiguous states was purchased from Survey Sampling, Inc. (SSI), of Fairfield CT, using their “Random B” option. In this option each working block of numbers (a set of 100 contiguous numbers identified by the first two digits of the last four digits of a telephone number) that contains at least one directory-listed residential telephone number has a probability of selection that is equal to its share of listed telephone residential households. SSI’s database is stratified by county. All blocks within a county are organized in ascending order by area code, exchange, and block number. Once the quota has been allocated to all counties in the frame, a sampling interval is calculated by summing the number of listed residential numbers in each eligible block within the county and dividing that sum by the number of sampling points assigned to the county. From a random start between zero and the sampling interval, blocks are systematically selected in proportion to their density of listed households. Once a block has been selected, a two-digit random number in the range 00-99 is appended to the exchange and block to form a 10-digit telephone number. Business numbers were not eliminated by SSI.

Then, the last two digits of the sampled listed telephone numbers were dropped and two new random digits were added, thereby forming new seven-digit telephone

numbers. These new telephone numbers constitute a Random-Digit Dialing sampling pool, in that the telephone numbers may be working or not working, and if working, may reach listed or unlisted residential telephone numbers. This approach for generating a RDD sampling pool is not the most efficient from the standpoint of dialing a set of numbers with the highest proportion of residential numbers present. However, it is the most comprehensive approach available at the time of the survey for extending the coverage of the survey sampling across the entire nation, including covering new residential communities with few residents that have been assigned unique local telephone exchanges.

Respondent sampling. Within households, the person with the most recent birthday was selected to participate in the survey. Although not random, research suggests that when compared with Troldahl and Carter's (1964) matrices, male/female alteration, and first contact, this method was relatively efficient in selecting a sample that was representative of household members (Salmon & Nichols, 1983).

Data Collection

This survey was in the field from Saturday, December 20, 1997 until Friday, February 13, 1998, a period of nearly 8 weeks. Calls were made between the hours of 10:30 AM and 11:00 PM Eastern Daylight Time. The majority of total calls (57.40%) were made during weekdays, and 41.10% of completed interviews were conducted during these times. About a quarter (24.29%) of calls were made on weeknights, and 35.45% of interviews were conducted during this time. The remainder of calls (18.20%) were made on weekends, and 23.17% of interviews were conducted during this time.

Survey Response Rate

The AAPOR Response Rate 3 was 34.8%.

Measures

Attitudes. Attitudes toward federal government efforts to reduce air pollution by U.S. businesses were measured with this question: “Some people believe that the United States government should limit the amount of air pollution that U.S. businesses can produce. Other people believe that the government should not limit air pollution from U.S. businesses. What about you? Do you think the government should or should not limit air pollution from U.S. businesses?” Responses were coded 1 and 0, respectively.

Perceptions of others’ attitudes. Following the attitude measure, perceptions of others’ attitudes on the same issue were measured with two questions: “About what percent of Americans do you think agree with you on this?” and “About what percent of Americans do you think disagree with you on this?” Answers to both questions ranged from 0% to 100% and were used to create two new perception variables: the perceived percent of Americans who favored government limitation of air pollution by U.S. businesses, and the perceived percent of Americans who opposed government limitation of such air pollution. The difference between these two new variables was calculated to produce a net perception score, which was recoded to range from 0 to 1, with higher scores reflecting perceptions of more people favoring government limitation of air pollution.

Beliefs. Beliefs about the link between air pollution and global warming were measured with the question, “Do you think that reducing air pollution will reduce

future global warming, or do you think reducing air pollution will not reduce future global warming?" Responses were coded 1 or 0, respectively.

Demographics. Survey interviewers observed and recorded gender.

Participants reported their age, race, education, household income, and political party identification. Gender was categorized as male (0) or female (1). Participants' age was categorized into six groups and coded with five dummy variables for ages 30-39, 40-49, 50-59, 60-69, 70 and older (reference group: age 18-29). Race was categorized as white (0) or non-white (1). Highest education level attained was categorized into six groups and coded with five dummy variables for high school diploma, trade school, some college, bachelor's degree, and post-graduate degree (reference group: less than high school). Household income was categorized into five groups and coded with four dummy variables for \$31,000-50,000, \$51,000-70,000, \$71,000-90,000, and \$91,000 and above (reference group: \$30,000 or less). Political party identification was categorized as Republican, Democrat, or Independent/Other and coded with two dummy variables for Democrat and Republican (reference group: Independent/Other).

Results

Sample Representativeness

Study 2's sample (described in Table 5.1, column 2) was quite similar to the nation as a whole in terms of demographic distributions, as gauged by a comparison with the March, 1997 Current Population Survey, conducted by the U.S. Census Bureau (see Table 5.1, column 1). Again, the highest income group was under-represented, as were the lowest two education groups.

Traditional Assessment of the FCE

As expected, participants' attitudes significantly predicted their perceptions of others' attitudes, $b = .13$, $SE = .03$, $t(604) = 4.39$, $p < .001$; $r(660) = .18$, $p < .001$. As compared to people who thought government should not limit air pollution by businesses, people who thought government should limit such air pollution believed that more people shared that view.

The Impact of Beliefs on Attitudes and Perceptions of Others' Attitudes

We thought that beliefs about the effectiveness of air pollution to reduce global warming might be a cause of people's attitudes toward government regulation of air pollution by businesses. Specifically, we thought that people who thought global warming could be reduced by air pollution reduction might be more favorable toward government regulation of air pollution than would people who thought air pollution reduction would not reduce global warming. Consistent with this assumption, beliefs were significant predictors of attitudes, $b = .12$, $SE = .03$, $t = 4.33$, $p < .001$. This significant relation demonstrates instrument relevance, a necessary condition for instrument validity (Stock & Watson, 2003). In fact, applying the rule of thumb for checking instrument strength—that the first-stage F -statistic surpass a value of 10—revealed that our instrument was not only relevant but strong, $F(1, 603) = 19.66$, $p < .001$ (Stock & Watson, 2003).

In order for beliefs to serve as an instrument, they must also have no direct effect on perceptions of others' attitudes. This condition was met as well; beliefs failed to significantly predict perceptions, whether entered alone [$b = .01$, $SE = .02$, t

(604) = .47, *n.s.*] or with attitudes as a control variable [$b = -.01$, $SE = .02$, $t(604) = -.31$, *n.s.*]⁴.

The Effect of Attitudes on Perceptions of Others' Attitudes

Having found a viable instrument, we estimated the impact of attitudes on perceptions via two-stage least squares regression, controlling for age, gender, race, education, household income, and party identification. Unstandardized predicted values of attitudes from the first regression were saved and entered as a predictor for perceptions in the second regression. This analysis revealed that the effect of attitudes on perceptions was not significant, $b = .05$, $SE = .17$, $t(604) = .28$, *n.s.*⁵ This again challenges the notion that the FCE occurs because attitudes shape perceptions of the distribution of others' attitudes.

Study 3

Study 3 is a classic communication bandwagon study examining the impact of normative cues on attitudes, which allowed us to test the conformity account of the FCE. To do so, we manipulated participants' perceptions of others' attitudes and measured the manipulation's impact on participants' own attitudes. Adopting procedures analogous to the Asch (1951) experimental paradigm, participants read the results of a national survey measuring attitudes toward strict gun control laws and the

⁴ A test of another necessary condition of instrument validity—instrument exogeneity—could not be computed, because we had only one instrument for the endogenous regressor. However, the second-stage regression indicated no significant correlation between belief-instrumented attitudes and perceptions. This lack of correlation suggests instrument exogeneity (Stock & Watson, 2003).

⁵ Because attitudes were measured dichotomously, it might seem most appropriate to conduct logistic regression to generate the first stage estimates, but experts on two-stage least squares have determined that doing so is unwarranted and may actually increase the likelihood of misspecification (Angrist & Krueger, 2001).

results of a national survey measuring attitudes toward increasing foreign aid and then reported their own attitudes on those issues.

Although the American news media are notorious for their “horse race” coverage of elections (Iyengar, 1990), the polling manipulation used in this study is ecologically valid, as the media also report the results of polls on various political issues. In fact, a content analysis of the nation’s three most widely circulated newspapers, *USA Today*, *The Wall Street Journal*, and *The New York Times*,^{6 7} revealed that, during three weeks (December 9-15, 2007; June 8-14, 2008; April 26-May 2, 2009)⁸, these newspapers reported 59 stories mentioning poll questions about attitudes toward politicians and 34 stories mentioning poll questions about attitudes toward political issues, including, but not limited to, climate change, energy policy, gay marriage, gun control, health insurance, immigration, Iran, Iraq, taxes, terrorism, and trade policy.⁹

The New York Times published the greatest number of stories mentioning poll questions, reporting a total of 53 relevant stories, with 31 pertaining to politicians and 23 pertaining to issues. *USA Today* came in second with 23 stories on politician-centric poll questions and 8 on issue-centric poll questions, for a total of 31 relevant

⁶ Based on daily circulation rates for the 6th month period ending September 30, 2009, compiled by the Audit Bureau of Circulations.

⁷ Intermedia agenda-setting, wherein various mass media interact with and influence each other, provides an argument for restricting the search to these publications, as they frequently play the role of primary intermedia agenda setter. An appearance on the front page of the *New York Times* can legitimize a topic as newsworthy. Once the *Times* covers a story, network and cable news coverage and major newspaper coverage of the issue soon follow (e.g., Mazur, 1987).

⁸ One week was randomly selected per year for three years.

⁹ The terms “poll” or “survey” was used in 402 news stories during these three weeks. 309 of these stories were irrelevant, as they reported either (a) poll results conducted outside the U.S., (b) poll results on non-political topics (e.g., consumer goods, sports teams), (c) survey results of experts in a particular field (e.g., employment forecasts, population growth), or (d) stories using the terms in some other manner (e.g., “confusion at the polls...” or “recent geological surveys reveal...”).

stories. *The Wall Street Journal* placed a distant third with 5 stories on politician-centric poll questions and 3 stories on issue-centric poll questions, for a total of 8 relevant stories.

Coverage of poll questions also differed by week, with the greatest number of stories mentioning poll questions published during the week of December 9-15, 2007. The three sampled newspapers reported 36 stories on politician-centric poll and 16 issue-centric poll questions, a publication rate unsurprising given that the Iowa Republican and Democratic presidential primary debates were held during this sampled week. The fewest number of stories mentioning poll questions was published during the week of June 8-14, 2008. Again, a finding not surprising given that Hillary Rodham Clinton conceded the Democratic presidential primary race to Barack Obama one week earlier on June 7, 2008. (See Table 5.2 for a complete breakdown of stories by source, week, and poll question topic.)

Table 5.2: Number of stories mentioning poll questions by source and week

	Source			
Week	<i>USA Today</i>	<i>WSJ</i>	<i>NYT</i>	Total
Dec 9-15, 2007	13p, 4i, 17c*	3p, 2i, 5c	20p, 10i, 30c	36p, 16i, 52c
Jun 8-14, 2008	5p, 2i, 7c	1p, 1i, 2c	3p, 3i, 6c	9p, 6i, 15c
Apr 26-May 2, 2009	5p, 2i, 7c	1p, 0i, 1c	8p, 10i, 18c	14p, 12i, 26c
Total	23p, 8i, 31c	5p, 1i, 8c	31p, 23i, 54c	59p, 32i, 93c

*Stories mentioning poll questions. p: politician-centric; i: issue-centric; c: combined.

Survey results used for Study 3's perceptions manipulation were from real polls conducted by ABC News, the Gallup Organization, and the Pew Center for the Press and Politics. Some participants read that the majority of Americans favored

stricter gun control laws and increasing foreign aid, and other participants read that the majority of Americans opposed stricter gun control laws and increasing foreign aid.

If conformity occurred as it did in the Asch (1951) studies, then participants should have changed their own attitudes in line with the survey results. People who read that most Americans favored stricter gun control laws and increasing foreign aid should have become more favorable toward these two policies. And participants who read that most Americans opposed stricter gun control laws and increasing foreign aid should have become more unfavorable toward those policies.

Method

Participants and Sampling Procedures

Participants were a representative sample of American adults recruited, sampled, and compensated by Knowledge Networks according to the procedures used in Study 1, Wave 1.

Manipulation of Others' Opinions

All participants were exposed to the results of actual polls conducted by the Pew Center for the Press and Politics (2002), ABC News (2002), or the Gallup Organization (2002). Half of the participants, selected randomly, read these descriptions:

“In another recent survey, ABC News found that a majority of American adults favor changing the laws in the U.S. to make it more difficult for people to purchase a gun.”

and

“In a recent survey, the Pew Center for the Press and Politics found that a

majority of American adults think the United States should increase the amount of money it gives as foreign aid to other countries around the world.”

The other half of the participants instead read:

“In another recent survey, the Gallup Organization found that a majority of American adults oppose changing the laws in the U.S. to make it more difficult for people to purchase a gun.”

And

“In a recent survey, the Gallup Organization found that a majority of American adults think the United States should not increase the amount of money it gives as foreign aid to other countries around the world.”

The description of each poll was followed by the question, “Do you think you probably have or have not heard about that sort of poll result before today?”

Measures

Attitudes. After reading the survey results, all participants were asked: “What is your personal opinion about increasing the amount of money the U.S. gives to other countries around the world?” and “What is your personal opinion about changing the laws in the U.S. to make it more difficult for people to purchase a gun?” Each question offered participants a fully labeled 7-point rating scale with end points labeled “favor a great deal” and “oppose a great deal.” Responses were coded to range from 0 to 1, with higher scores representing more favorable attitudes.

Demographics. Age, gender, race, household income, and education were measured and coded as noted in Study 1.

Weights

Weights were computed as noted in Study 1.

Results

Sample Representativeness

As noted in Study 1, the correspondence of the survey sample to the nation's population was generally quite close (see Table 5.1, columns 4 and 5).

Randomization Check

The groups of participants in the two experimental conditions (favor vs. oppose) did not differ significantly in terms of age, $\chi^2(6) = 3.41, n.s.$; gender, $\chi^2(1) = .22, n.s.$; race, $\chi^2(1) = 1.24, n.s.$; household income, $\chi^2(5) = 7.29, n.s.$, or education, $\chi^2(4) = 4.21, n.s.$

Attitudes

Gun control. Post-message attitudes on gun control also varied as a function of the reported poll results, $b = .04, SE = .02, t(2132) = 2.20, p < .05$. People who read that a majority of Americans favored strengthening gun control laws were more likely to favor that policy ($M = .66, SE = .01$) than were people who read that most Americans opposed strengthening gun control laws in that way ($M = .62, SE = .01$); $t(2132) = 2.20, p < .01$.

Foreign aid. Attitudes on foreign aid varied as a function of the reported poll results, $b = .03, SE = .01, t(2130) = 2.52, p < .01$. People who read that a majority of Americans thought foreign aid should be increased were more likely to favor increasing foreign aid ($M = .33, SE = .01$) than were people who read that a majority of Americans thought foreign aid should not be increased ($M = .30, SE = .01$); $t(2130)$

= 2.52, $p < .01$.

Thus, Study 3 showed that manipulating perceptions of others' attitudes influenced participants' reports of their own attitudes, providing a plausible account for the correlation between these two variables observed in past FCE research.

Study 4

As with Study 2, participants in Study 4 were asked about their views on global climate change. Their attitudes and perceptions of others' attitudes were assessed at two time points. The longitudinal data were then analyzed using covariance structure modeling in order to gauge the impact of attitudes on perceptions of others and the impact of perceptions of others on attitudes.

Method

Overview

Computer-assisted telephone interviews were conducted with a representative sample of 497 American adults by the Ohio State University Survey Research Unit twice. The first interviews were conducted between September 17, 1997, and October 5, 1997 (which we refer to as Wave 1), and the second interviews took place between December 20, 1997, and February 13, 1998 (which we refer to as Wave 2). 420 of these participants answered all the questions required for our analyses.

Sampling Procedures and Data Collection

Participants were sampled and data were collected as detailed in Study 2.

Survey Response Rates

The AAPOR Response Rate 3 for Wave 1 of the panel study was 27.5%. The re-interview rate for Wave 2 of the panel study was 80%, yielding a cumulative response rate of 22.0%.

Measures

Participants answered the same attitudes, attitude importance, and perception questions used in Study 2 on two occasions, at Wave 1 and Wave 2. Answers were coded here as they had been in Study 2. Participant demographic information was also collected and coded here as it was in Study 2.

Analysis

We estimated the parameters of two covariance structure models using Mplus (B. O. Muthén & L. K. Muthén, 2006) to gauge conformity and projection. The first model is what we call the “simultaneous model” and is represented by these structural equations:

$$\begin{aligned} \text{Attitudes}_2 = & b_0 + b_1 (\text{Perceptions}_2) + b_2 (\text{Attitudes}_1) + b_3 (\text{Gender}) + b_4 (\text{Race}) + \\ & b_5 (\text{High School}) + b_6 (\text{Trade School}) + b_7 (\text{Some College}) + b_8 (\text{Bachelor's} \\ & \text{Degree}) + b_9 (\text{Post-Graduate Degree}) + b_{10} (\text{Age 30-39}) + b_{11} (\text{Age 40-49}) + b_{12} \\ & (\text{Age 50-59}) + b_{13} (\text{Age 60-69}) + b_{14} (\text{Age 70 or older}) + b_{15} (\$31,000-50,000 \\ & \text{Income}) + b_{16} (\$51,000-70,000 \text{ Income}) + b_{17} (\$71,000-90,000 \text{ Income}) + b_{18} \\ & (\$91,000 \text{ or above}) + b_{19} (\$31,000-50,000 \text{ Income}) + b_{20} (\text{Republican Party ID}) \\ & + b_{21} (\text{Democratic Party ID}) + b_{22} (\text{Independent/Other Party ID}) \end{aligned} \quad (1)$$

$$\begin{aligned}
\text{Perceptions}_2 = & b_{23} + b_{24} (\text{Attitudes}_2) + b_{25} (\text{Perceptions}_1) + b_{26} (\text{Gender}) + b_{27} \\
& (\text{Race}) + b_{28} (\text{High School}) + b_{29} (\text{Trade School}) + b_{30} (\text{Some College}) + b_{31} \\
& (\text{Bachelor's Degree}) + b_{32} (\text{Post-Graduate Degree}) + b_{33} (\text{Age 30-39}) + b_{34} (\text{Age} \\
& 40-49) + b_{35} (\text{Age 50-59}) + b_{36} (\text{Age 60-69}) + b_{37} (\text{Age 70 or older}) + b_{38} \\
& (\$31,000-50,000 \text{ Income}) + b_{39} (\$51,000-70,000 \text{ Income}) + b_{40} (\$71,000- \\
& 90,000 \text{ Income}) + b_{41} (\$91,000 \text{ or above}) + b_{42} (\$31,000-50,000 \text{ Income}) + b_{43} \\
& (\text{Republican Party ID}) + b_{44} (\text{Democratic Party ID}) + b_{45} (\text{Independent/Other} \\
& \text{Party ID})
\end{aligned}
\tag{2}$$

Attitudes at Wave 2 were posited to be a function of perceptions at Wave 2 and attitudes at Wave 1. Likewise, perceptions at Wave 2 were posited to be a function of attitudes at Wave 2 and perceptions at Wave 1. The control variables included gender, race, education, age, income, and party identification. The effects of perceptions at Wave 2 on attitudes at Wave 2 (b_1) estimated conformity. The effects of attitudes at Wave 2 on perceptions at Wave 2 (b_{24}) estimated projection.

The second approach to estimating conformity and projection, the “lagged effects model,” was embodied in these equations:

$$\begin{aligned}
\text{Attitudes}_2 = & b_{46} + b_{47} (\text{Perceptions}_1) + b_{48} (\text{Attitudes}_1) + b_{49} (\text{Gender}) + b_{50} \\
& (\text{Race}) + b_{51} (\text{High School}) + b_{52} (\text{Trade School}) + b_{53} (\text{Some College}) + b_{54} \\
& (\text{Bachelor's Degree}) + b_{55} (\text{Post-Graduate Degree}) + b_{56} (\text{Age 30-39}) + b_{57} (\text{Age} \\
& 40-49) + b_{58} (\text{Age 50-59}) + b_{59} (\text{Age 60-69}) + b_{60} (\text{Age 70 or older}) + b_{61} \\
& (\$31,000-50,000 \text{ Income}) + b_{62} (\$51,000-70,000 \text{ Income}) + b_{63} (\$71,000- \\
& 90,000 \text{ Income}) + b_{64} (\$91,000 \text{ or above}) + b_{65} (\$31,000-50,000 \text{ Income}) + b_{66} \\
& (\text{Republican Party ID}) + b_{67} (\text{Democratic Party ID}) + b_{68} (\text{Independent/Other} \\
& \text{Party ID})
\end{aligned} \tag{3}$$

$$\begin{aligned}
\text{Perceptions}_2 = & b_{69} + b_{70} (\text{Attitudes}_1) + b_{71} (\text{Perceptions}_1) + b_{72} (\text{Gender}) + b_{73} \\
& (\text{Race}) + b_{74} (\text{High School}) + b_{75} (\text{Trade School}) + b_{76} (\text{Some College}) + b_{77} \\
& (\text{Bachelor's Degree}) + b_{78} (\text{Post-Graduate Degree}) + b_{79} (\text{Age 30-39}) + b_{80} (\text{Age} \\
& 40-49) + b_{81} (\text{Age 50-59}) + b_{82} (\text{Age 60-69}) + b_{83} (\text{Age 70 or older}) + b_{84} \\
& (\$31,000-50,000 \text{ Income}) + b_{85} (\$51,000-70,000 \text{ Income}) + b_{86} (\$71,000- \\
& 90,000 \text{ Income}) + b_{87} (\$91,000 \text{ or above}) + b_{88} (\$31,000-50,000 \text{ Income}) + b_{89} \\
& (\text{Republican Party ID}) + b_{90} (\text{Democratic Party ID}) + b_{91} (\text{Independent/Other} \\
& \text{Party ID})
\end{aligned} \tag{4}$$

Attitudes at Wave 2 were posited to be a function of perceptions at Wave 1 and attitudes at Wave 1. Likewise, perceptions at Wave 2 were posited to be a function of attitudes at Wave 1 and perceptions at Wave 1. The control variables again included gender, race, education, age, income, and party identification. The lagged effects of perceptions on attitudes (b_{47}) estimated conformity. The lagged effects of attitudes on perceptions (b_{70}) estimated projection. In both models, we allowed the disturbances to

the endogenous variables to correlate at each time point.

The “simultaneous” and “lagged effects” approaches to estimation make different assumptions in order to separate the impact of perceptions on attitudes from the reverse effect in slightly different ways. The simultaneous model is most realistic, in the sense that conformity and projection are presumed to occur at the moment that each survey question is answered. That is, during a survey interview, the respondent is presumed to generate an attitude by consulting his or her perceptions of others’ attitudes, as well as other factors. And people may construct their perceptions by consulting their attitudes at that time. In order to generate separate estimates of conformity and projection, the analytic approach assumes that each variable affects the other one only simultaneously and without a time lag from the prior interview. That is, in Equation 1, attitudes at Wave 2 are presumed not to be associated with perceptions at Wave 1 when controlling for perceptions at Wave 2. Likewise, in Equation 2, perceptions at Wave 2 are presumed not to be associated with attitudes at Wave 1 when controlling for attitudes at Wave 2.

The notion of no lagged effects may seem implausible, so the lagged effects model is designed to permit such over-time causal influence. However, in order to do so, this model presumes that there was no simultaneous influence of perceptions and attitudes on one another. That is, in Equation 3, perceptions at Wave 1 are presumed to have influenced attitudes at Wave 2, a few months later. Likewise, in Equation 4, attitudes at Wave 1 are presumed to have influenced perceptions a few months later at Wave 2. This approach no doubt underestimates the magnitude of conformity and projection that occurred, so whatever evidence of these processes we find will have

appeared over and above this bias against finding such effects.

Results

Sample Representativeness

A comparison of the sample’s demographic distributions (see Table 5.1, column 3) with those from the March, 1997, Current Population Survey (see Table 5.1, column 1) reveal the same discrepancies we saw for Study 2.

Hypothesis Tests

The simultaneous effects model revealed a marginally significant effect of perceptions on attitudes ($b_1 = 0.22$, $SE = 0.16$, $p = .09$) and a non-significant effect of attitudes on perceptions ($b_{11} = .07$, $SE = .07$, n.s.; see Figure 5.1). Likewise, in the lagged effects model, the impact of perceptions on attitudes was marginally significant ($b_{21} = 0.08$, $SE = 0.06$, $p = .09$), whereas the effect of attitudes on perceptions was non-significant ($b_{31} = .03$, $SE = .03$, n.s.; see Figure 5.2).

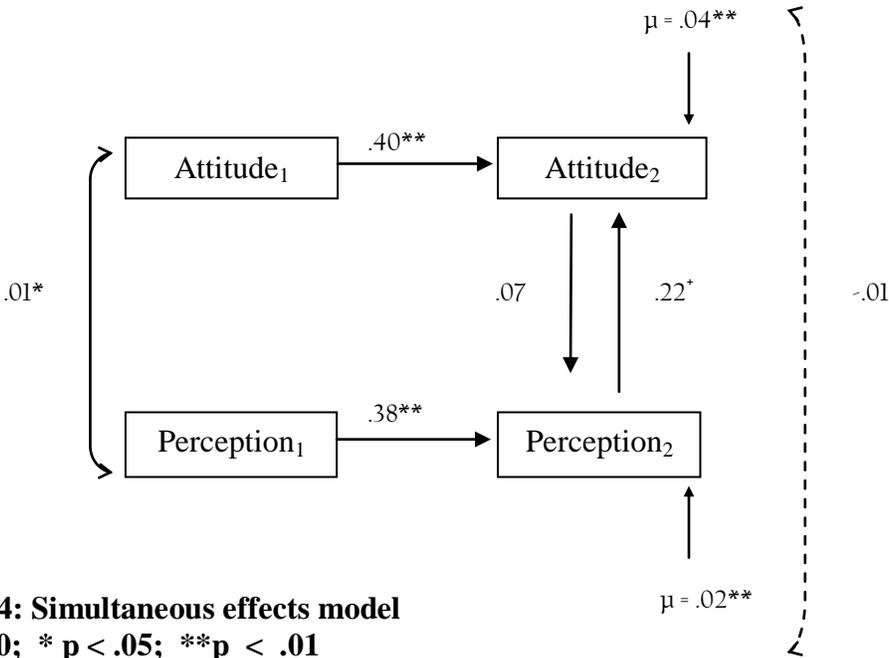


Figure 5.1: Study 4: Simultaneous effects model
N = 420; ⁺ p < .10; * p < .05; **p < .01

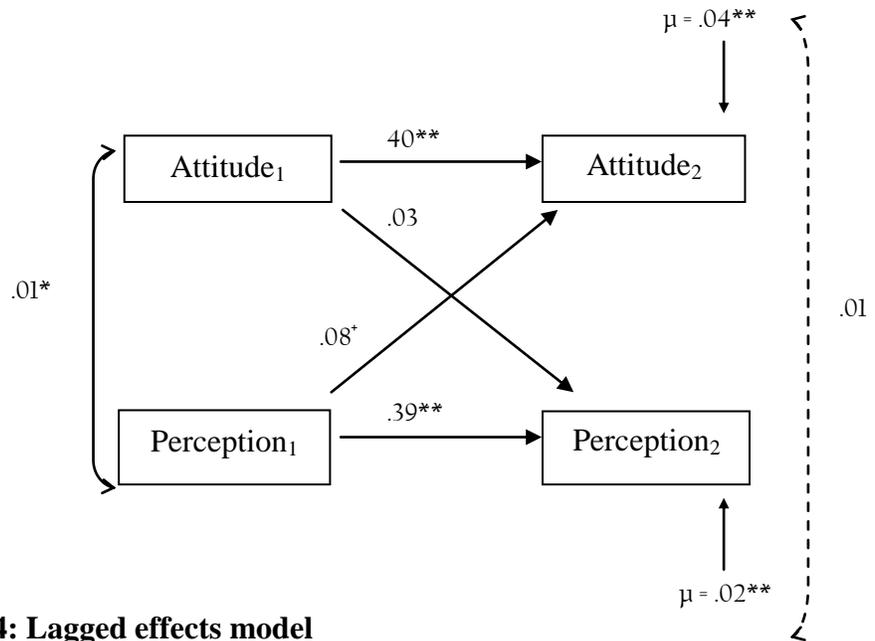


Figure 5.2: Study 4: Lagged effects model
N = 420; ⁺ p < .10; * p < .05; **p < .01

General Discussion: Studies 1- 4

The results of these four studies call into question the widely held assumption that the FCE correlation occurs because people project their own attitudes onto their perceptions of others' attitudes. These studies also offer evidence of a new explanation: conformity. Study 1 demonstrated that people's attitudes toward a policy change in response to persuasive arguments, but their perceptions of others' attitudes toward the policy remain stable. In Study 2, two-stage least squares analysis revealed no effect of attitudes on perceptions of others. Study 3 documented that conformity can explain the FCE correlation: when people were exposed to the results of surveys documenting distributions of others' attitudes, participants adjusted their attitudes to

be similar to those of the majority of others. Study 4 tested the projection and conformity hypotheses concurrently and demonstrated that people's perceptions of others shaped their own attitudes, whereas attitudes had no effect on perceptions.

Study 1's results challenge most of the existing theoretical accounts of the FCE. Study 1 most obviously challenges the attitude salience, self-protection motivation, and rational induction explanations, which assert direct and immediate effects of own attitudes on perceptions of others. But Study 1's results might also be reasonably viewed as challenging the evaluation principle and attributional reasoning accounts of the FCE, because the posited mediators could shift immediately in response to the attitude change we induced.

Study 1's argument quality manipulation is especially valuable, because it not only directly tests the attitude projection presumption, but it does so using a representative national sample of the general public. Sears (1986) proposed that many social psychological processes may play out differently in the general public than they do in the samples of college students who have been the subject of the vast majority of past persuasion studies in social psychology. There was no theoretical reason to expect the FCE to manifest differently among the general public, but it is nonetheless useful to see it. This reinforces confidence in the generalizability of the findings from those many laboratory studies of students.

Study 1's results challenge Bobo and Johnson's (2004) claim that the public's attitudes toward capital punishment are so cemented that they will not change. In their studies, which also used members of KN's nationally representative panel, participants were exposed to messages intended to make attitudes toward capital punishment more

negative, but the distributions of their answers did not change significantly. Our results were quite different. We found that exposing people to arguments against capital punishment, whether those arguments were strong or weak, generated significant movement of attitudes in a negative direction. Thus, it seems that public attitudes toward capital punishment are not quite as recalcitrant as Bobo and Johnson's (2004) evidence suggested. This is encouraging regarding the potential for the American public to respond to evidence on this issue.

Like Study 1, Study 2's findings contradict the attitude salience, self-protection motivation, rational induction, evaluation principle and attributional reasoning accounts of the FCE. But they also refute a sixth account: the selective affiliation explanation for the FCE. The selective affiliation explanation proposes that individuals' own attitudes influence their selection of friends, which in turn influences perception of others. Although the attitude change induced in Study 1 could not have changed the composition of participants' friend groups, this causal chain could have appeared in Study 2's analysis, but it did not.

Our third study's finding is hardly revolutionary – it illustrates that the conformity effect so powerfully demonstrated by Asch (1951) many decades ago in a laboratory setting with college student participants can be replicated with the simplest of manipulations and a representative national sample of American adults. No need for the drama of a sequence of confederates saying their beliefs aloud, one at a time. No need for the task to be one of physical perception where there is clearly a correct answer. And no need for the experience to take place in a psychological laboratory with a researcher peering at the participant and potentially judging his or her mental

competence. The simple presentation of a survey results documenting majority opinion is enough to move a significant number of people—even when reporting privately and confidentially on the Internet—in the direction of that majority. When people were exposed to the results of a survey, they reported attitudes more consistent with those results. This effect held across polling organization (the Pew Center, ABC News, or Gallup) and policy topic (foreign aid and gun control).

Interestingly, our finding that presentation of a survey result can induce conformity-based attitude change is inconsistent with at least one prior study that is sometimes cited as such. Tyson and Kaplowitz (1977) exposed some participants to the results of surveys documenting people's opinions and found these exposures to have no impact on participants' later reports of their own opinions. However, a close look at Tyson and Kaplowitz's methodology reveals that their participants were a total of 15 college students, and the survey results they presented were described as coming from “a recent survey of college students.” Thus, their failure to find evidence of conformity may be due to lack of statistical power and/or to the fact that surveys of college students done by an unspecified organization may be less credible or influential than surveys of the general public done by well-known organizations.

Our evidence that survey-induced conformity does occur in the American public has dramatic implications for the huge social psychological literature on the FCE. Quite simply, the answer to the puzzle we sought to solve has been in front of our eyes all these many years. In one chapter of every contemporary introductory social psychology textbook is a discussion of Asch and conformity. In another chapter, ostensibly on a different topic (e.g., social cognition), appears a description of the

FCE, attributing it to attitude projection. And yet the evidence for this explanation was simply a cross-sectional correlation and no documentation of causal influence at all. Here, we have demonstrated that people's perceptions of majority opinion sometimes shape their own views on an issue, presumably the result of informational influence (Deutsch & Gerard, 1955). This can account for the cross-sectional correlation that constitutes the FCE and has so often been attributed to projection. Our findings therefore suggest that perhaps a more appropriate place to discuss the FCE in introductory social psychology textbooks is in the conformity chapter rather than the social cognition chapter.

Study 4 replicated findings from the previous three studies, challenging the projection hypothesis and supporting the conformity explanation. Applying covariance structure modeling to longitudinal data on people's attitudes and perceptions regarding global climate change revealed that perceptions of other's attitudes shaped participants' attitudes. In contrast, perceptions of others' attitudes were not influenced by participants' attitudes.

Study 4 employed an analytic approach not previously used in FCE research, an approach particularly valuable because it addresses a long lamented endogeneity problem in multivariate statistical estimation—the notion that cross-sectional associations between variables are inherently ambiguous about the directions of causal influence at work. Of course, no statistical method for identifying causal flow is without potential weaknesses. Yet when multiple methods yield comparable conclusions, we can have increased confidence in those findings. This convergence offers compelling evidence that conformity underlies the FCE.

Of course, the reality of conformity does not mean that the many theoretical accounts of the FCE that we previously reviewed are incorrect. Conformity may coexist with all these processes. But the fact that even the simple version of conformity shown in Studies 3 and 4 can exist means that social psychology should step back from its past presumptions about *why* the FCE correlation occurs. More tests must be conducted, explicitly evaluating specific proposed causal mechanisms, manipulating the purported independent variable(s), measuring or manipulating the purported mediators and moderators, and carrying out full-blown analysis of the causal influences at work.

Question Order and the FCE

Yet another set of evidence consistent with our conformity explanation has been in the literature for some time, though not recognized as such. During the last two decades, multiple studies have explored whether the magnitude of the FCE correlation varies depending upon the order in which the two key questions are asked. If the correlation is truly attributable to projection, then asking participants to report their own attitudes before reporting their perceptions of others attitudes should enhance the salience of the former and presumably instigate self-initiated pressure to express perceptions that are consistent with those attitudes. Yet in study after study, the opposite pattern has been observed: the FCE was stronger when participants reported their perceptions of others' attitudes before reporting their own attitudes (e.g., Jones, 2004; Mullen et al, 1985; Mullen, Driskell, & Smith, 1989; Mullen & Hu, 1988; Mullen & Smith, 1990). And a series of meta-analyses combining 41 studies and almost 200 separate tests of the FCE revealed a consistent effect of sequence of

measurement, with the other-self order generating stronger FCE correlations than the self-other order (Mullen et al., 1985; Mullen & Hu, 1988). Yet never did authors notice that this question order effect was inconsistent with the projection hypothesis and instead was consistent with conformity. Thus, that literature and our current findings point in the same direction.

New Hypotheses Generated by the Conformity Perspective

If the FCE is attributable at least in part to conformity, then that suggests a raft of interesting hypotheses about possible new moderators of the FCE correlation, including all the factors that regulate susceptibility to conformity. For example, people want to be correct. When they find themselves in ambiguous situations, uncertain what the “correct” attitude is, people rely on social norms as an indicator of correctness (Cialdini, 2001; Deutsch & Gerard, 1956). That is, they interpret normativeness as an indicator of accuracy (David & Turner, 2001) and conform to the attitudinal norm. Thus, when people find themselves in ambiguous situations, informational influence would likely yield greater correspondence between people’s own attitudes and their perceptions of attitudinal norms. People can, however, resist such informational influence: people dispositionally or situationally motivated to be accurate are less likely to conform (Quinn & Schlenker, 2002), and, thus, should demonstrate weaker correlations of attitudes with perceptions of others' attitudes.

People also conform to the attitudes of others, especially valued groups, to gain social approval (Deutsch & Gerard, 1956) or maintain positive self-assessments (Brewer & Roccas, 2001). Thus, normative influence would likely strengthen the

correlation between people's own attitudes and their perceptions of the group's attitudes. Fear of being ostracized increases one's susceptibility to such normative influence (Tafarodi, Kanf, & Milne, 2002; Williams, Cheung, & Choi, 2000); whereas affirming one's self-concept reduces the susceptibility (Arndt, Schimel, Greenberg, & Pyszczynski, 2002). Thus, correlations of attitudes with perceptions of others' attitudes should be stronger under the former condition and weaker under the latter.

The degree to which people are informationally or normatively influenced is partly determined by characteristics of the groups to which they belong or aspire to belong. Membership groups and reference groups that are highly cohesive, interdependent, and unanimous tend to produce greater conformity than do groups low in these traits (Turner, 1991). Thus, we might expect to see stronger associations of people's attitudes and their perceptions of attitudinal norms in cohesive, interdependent, and unanimous groups.

Nationally Representative Samples in Natural Settings

The current research also contributes to our understanding of the FCE and its possible causal explanations by extending research to the general population. The typical social psychology participant, the college undergraduate, may possess stronger cognitive skills, less formed self-concepts, and more malleable attitudes than the general public (Sears, 1986). Our studies used participant samples that were representative of a national adult population and completed our measures in natural settings: their own homes. Thus, our results have strong external validity.

The Impact of Public Opinion Polls on Public Opinion

Our findings contribute to a growing literature on the impact of public opinion polls. For decades, the news media have enjoyed sponsoring surveys to measure the public's views on controversial issues and describing their findings. Coverage of polls in the news has been on the rise, with 11,237 news stories mentioning polls in 2004, up from 4,489 in 1992 (Frankovic, 2005). Some observers have expressed concern that this dissemination of information about what the public thinks may become self-fulfilling by instigating conformity to the majority (e.g., Noelle-Neumann, 1974), especially in the context of election campaigns that might induce so-called "bandwagon effects" (Goidel & Shields, 1994; McAllister & Studlar, 1991; Morwitz & Pluzinski, 1996).

A series of experimental studies have shown that presenting results of a survey indicating which candidate people said they would vote for influenced participants' later reports of their own voting intentions in accord with the bandwagon effect hypothesis (see Ansolabehere & Iyengar, 1994; Atkin, 1969; Cook & Welch, 1940; Forsythe, Myerson, Rietz, & Weber, 1993; Mehrabian, 1998). And correlational studies have also yielded supportive evidence (Schmitt-Beck, 1996; Skalaban, 1988), although other experimental studies found patterns consistent with bandwagon effects that were not statistically significant (Dizney & Roshens, 1962; Malhotra, 2000), and a few experiments found no evidence of bandwagon effects at all (Cantril, 1980; Ceci & Kain, 1982; Fleitas, 1971; Laponce, 1966; Lavrakas, Holley, & Miller, 1991). Thus, this literature is a bit mixed.

Rather than gauging the impact of poll results on candidate preferences, our Study 3 presented poll results documenting the distribution of opinions on a policy issue and documented that some people changed their own opinions to come into line with those of the majority. This finding suggests that the scope of bandwagon effects can be expanded to include policy preferences, and news coverage of public opinion poll results may produce the same effects outside the context of surveys that we examined.

Limitations of the Present Research

Our findings may be specific to attitude reports or the specific political issues we focused on and may not generalize to statements of behavioral tendencies or in other domains. However, given past findings on the robustness of the FCE, it seems improbable that our findings would be constrained by construct or stimuli choices. The FCE has been seen with a wide variety of constructs (e.g., behaviors, decisions, traits) and non-political stimuli (e.g., food, clothing, dating). Nonetheless, future research can explore the generalizability of our findings across constructs and domains and can also explore how long the effects we induced last, how resistant conformity-induced attitudes are to change, and what impact they have on behavior.

It is also possible that using different measures might have yielded different results than those we reported. For example, if participants in Study 3 had been asked to publicly express their attitudes instead of doing so privately, we might have seen even more conformity than we did (see Cialdini & Trost, 1998). Again, this question can be explored in future research.

Conclusion

The findings reported here challenge a widespread assumption in social psychology in ways that suggest quick revision of conventional wisdom. Because various analytical approaches yielded comparable results, we can have confidence in the conclusion that conformity, not projection, explains the FCE correlation. This finding draws together two phenomena (the FCE and conformity) that have both been at the center of social psychology but that heretofore have been treated as theoretically distinct. Consequently, the findings reported here encourage a new agenda for future FCE research, integrating the separate literatures on those phenomena and more explicitly testing propositions about mediators and moderators to clarify the mechanisms at work in people's thinking about themselves and others.

Chapter 6: Implications for Communication and Public Opinion Research

Most causal explanations of the FCE are projection-based, but the present empirical results are more consistent with a conformity explanation of the FCE. This finding should not be surprising to communication or public opinion scholars, as it is widely known in both fields that people have a tendency to do and believe things merely because many other people do and believe the same things. Behaviors and beliefs spread among people with "the probability of any individual adopting it increasing with the proportion who have already done so" (Coleman, 2003, p. 77). As more people come to believe in something, others also "hop on the bandwagon" regardless of the underlying evidence (Nadeau, Cloutier, & Guay, 1993).

But what seems to be less apparent to many communication and public opinion scholars is the role of conformity in perceptions of public opinion. Of course, neither the spiral of silence model nor the persuasive press inference model of public opinion was tested directly, so stronger causal inferences cannot be made. Still, the present studies demonstrated that, separate from these models, conformity, not projection, is more likely the explanation for the similarity between the opinions of the individual and the public. Thus, it's time that both conformity and projection effects within public opinion models should be stringently tested. The results of such tests may be surprising; perhaps conformity effects outweigh the more popular presumed projection effects.

Chapter 7: Implications for Society

Humans are social animals who live in a state of tension between values associated with individuality and values associated with conformity. We may be disdainful of conformists and even believe that conformity happens to others not us; e.g., that poll results will influence other people's voting preferences but not our own (a phenomenon known as the third person effect, Davison, 1983). In fact, most people believe that *they* are motivated primarily by a desire to be correct but that *others* are motivated primarily by a desire to stay in the good graces of other people (Wolosin, Sherman, & Cann, 1975).

And yet, the goal to be correct can lead people to rely on consensus information. Rather than conforming in order to receive a reward or punishment, people often rely on others' actions and attitudes as a potentially valid source of information about the nature of reality, with a common reliance on the consensus-implies-correctness heuristic (Darke, Chaiken, Bohner, Einwiller, Erb., & Hazlewood, 1998).

Such heuristics, or cues, are more likely to be used when we don't have time to think carefully about an issue, when we are so overloaded with information that it becomes impossible to process the information fully, when the issues at stake are not very important, or when we have little solid knowledge or information to use making a decision (Pratkanis, 1989). Or, put more simply, the conditions which commonly prevail in people's lives every day.

Given the prevalence of heuristic-prone conditions in our everyday lives, a consideration of the impact of conformity effects and the spiral of silence on

communication society-wide is warranted. To what degree may conformity pressures help or harm communication? When should we push against their influence and how might we break the spiral of silence?

Indeed, Study 3 demonstrated a bandwagon-like effect, with one simple poll result significantly influencing individual attitudes. It's time then that we recall the warnings about polls that Bernays raised more than sixty years ago: "[Polls] are potentially dangerous weapons in the hands of the unwise, the inept, the dishonest or the antisocial" (1945, p. 264). More recently, communication and public opinion scholars have warned that "the way in which an issue is defined and presented to the public can affect the intensity, distribution, and expression of public opinion" (Bennett, 1980, p. 251); polling has replaced rather than augmented other democratic forms of communicating opinions in or about public life (Herbst, 1993); elites use public opinion polls to manage and control public opinion (Ginsberg, 1989).

And polls are becoming ever more popular. Roper Center's iPOLL Databank (2010) contains over one-half million poll questions asked between 1935 and the present day. And the databank continues to grow, as each year more media, political, and policy organizations collect and disseminate results from their own public opinion polls.

It shouldn't be surprising that conformity occurs most especially in the political realm. In his famous *Public Opinion* (1922/1960), Lippmann advanced the argument that the trials and tribulations of daily life are compelling in a way that politics can rarely be. To expect ordinary people to become absorbed in the affairs of

state would be to demand of them an appetite for political knowledge quite peculiar. We are “concerned in public affairs,” but “immersed in our private ones” (p. 36).

Moreover, shortcuts work (sometimes), and shortcuts can be low cost (in some situations). As discussed in *An Economic Theory of Democracy* (Downs, 1957), in a larger society, one person’s vote is “lost in a sea of votes,” so the benefits of an enlightened vote are infinitesimal.

And yet, nonconformists do exist. Early critics of conformity research and the spiral of silence theory pointed out that there are people who will never be silenced. Even though their cause appears hopeless, they continue to voice their opinions. Noelle-Neumann (1991) describes two types of individuals who form this vocal minority that remains at the top of the spiral in defiance of threats of isolation: the “hard core” and the “avant-garde.” Hard core nonconformists are those who “have been overpowered and relegated to a completely defensive position in public” (Noelle-Neumann, 1991, p. 274). Already beaten down, they have nothing to lose by speaking out. People in the hard core cling to the past and regard isolation as the price they have to pay. The avant-garde are the intellectuals, artists, and reformers who for the vanguard of new ideas. Unlike the hard core, they seek public response, even though it’s usually negative. “Those who belong to the avant-garde are committed to the future and thus by necessity, are also isolated; but their conviction that they are ahead of their time enables them to endure” (Noelle-Neumann, 1993, p. 218).

Nonconformists can be socially influential themselves; they can fight conformity effects and break the spiral of silence pattern by unswervingly holding to its position. A minority that does so is far more successful in swaying the majority

than is a minority that waffles. Holding consistently to a minority opinion will not make you popular, but it may make you influential (e.g., Bray, Johnson, & Chilstrom, 1982). This is especially so if your self-confidence stimulates others to consider why you react as you do (e.g., Moscovici & Nemeth, 1974). Although people often follow the majority view publicly, they may privately develop sympathy for the minority view. Even when a minority's influence is not yet visible, it may be persuading some members of the majority to rethink their views (Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994). For example, social movements such as the civil rights movement and the women's movement represent efforts of what was initially a small minority to convince the majority that existing social arrangements are inequitable or otherwise insufficient.

Thus, although conformity is prevalent and the spiral of silence can be pernicious, patterns can be broken. The first step is recognizing the powerful and often stealthy influence of conformity in our day-to-day lives.

Chapter 8: Suggestions for Future Research

Additional research is necessary to clearly differentiate between the proposed projection and conformity explanations of the FCE. Three investigations should be considered: (1) improve the design of Studies 1 and 3; (2) elicit or suppress conformity; and (3) test moderators that differentiate between projection and conformity.

Improve the Design of Studies 1 and 3

Studies 1 and 3 maximize external validity by possessing both mundane and psychological realism, as the studies' settings and stimuli are similar to real-life situations and their designs trigger the relevant psychological processes. However, using the real-life topics of capital punishment, gun control, and foreign aid as the stimuli may have muddied the results, as people come to the study with preexisting thoughts about those topics. The extraneous influence of those thoughts could have inhibited our ability to see an effect when the effect was really there.

We can maximize the studies' internal validity, and thereby increase our chance at determining the causal direction of the FCE, either by using pre-manipulation measures of attitudes and perceptions or by using fictional topics. Pre-manipulation measures would provide the baseline necessary to determine the magnitude of the movement in preexisting attitudes and perceptions, whereas the use of fictional issues would eliminate the confounding effect of preexisting attitudes and perceptions. Measuring or eliminating the presence of preexisting thoughts should limit the error-inducing extraneous influence of real-life topics without a significant

compromise to mundane realism and without any likely change in psychological realism.

Elicit or Suppress Conformity

The current set of studies seems to indicate that conformity, rather than projection, explains the FCE correlation. If that is indeed the case, then situations that encourage conformity should produce larger FCEs than situations that discourage conformity. If, instead, projection is the underlying causal mechanism, we would expect to see the opposite pattern of correlation sizes. Thus, it makes sense to manipulate conformity conditions to determine when FCEs are magnified and minimized.

Such manipulations of conformity can be produced using non-conscious primes as demonstrated by Epley and Gilovich (1999). Replicating their procedures, participants could be randomly assigned to one of three conformity conditions: a control condition, with a neutral prime; a conformity condition, with a conformity elicitation prime; and a non-conformity condition, with a conformity suppression prime. All participants would be asked to complete a scrambled sentence task, requiring them to unscramble twenty separate strings of scrambled words. One word in each string would be semantically rated to conformity, non-conformity, or a neutral condition, as noted in Table 8.1.

Table 8.1: Word primes for conformity, non-conformity, and neutral conditions

Condition	Word Primes
Conformity	adhere, agree, comply, conform, copy, customary, emulate, follow, habitual, imitate, maintain, mime, obey, oblige, respect (present twice), simulate, supportive, uniform, uphold
Non-conformity	challenge, confront, counter, defy, deviate, differ, different, disagree, disobey, disrespect, ignore, individual, independent, oppose (present twice), opposite, rebel, refute, reject, unique
Control	allergic, alternate, chase, excuse, imprint, meet, mobile, naïve, nervous, notion, orient, perplex, review, simplify, sociable, stretch, thirsty, transport, vault, wonder

Then, all participants would be asked to report their own attitude and provide an estimate of other Americans' attitudes on a particular topic (counterbalancing attitude and perception question order). For example, participants could be asked the following questions about capital punishment:

1. Using the scale below, please indicate whether you favor, oppose, or neither favor nor oppose capital punishment.

Favor Favor Favor Neither favor Oppose Oppose Oppose
a great deal somewhat slightly nor oppose slightly somewhat a great deal

2a. What percent of American adults do you think favor capital punishment? ____%

2b. What percent of American adults do you think oppose capital punishment? ____%

2c. What percent of American adults do you think neither favor nor oppose capital punishment? ____%

Responses to the attitude question would be coded to range from 0 to 1, with higher scores representing greater favorability toward capital punishment. A net perception score would be created by subtracting the percent who opposed capital punishment from the percent who favored capital punishment and converted to a 0-to-1 scale by adding 100 and dividing by 200, with higher scores indicating more perceived favorability toward capital punishment.

Correlations between these attitude and perception scores would be calculated and compared across conditions. If the FCE correlation is caused by conformity, then it should be magnified by the elicitation prime and minimized by the suppression prime. On the other hand, if the FCE correlation is caused by projection, then it should be magnified by the suppression prime and minimized by the elicitation prime. To illustrate, assuming an FCE correlation of .50 in the control condition, we would expect effect size patterns similar to those noted in Table 8.2.

Table 8.2: Predicted FCE effect size patterns for each causal explanation

	Condition		
	Conformity	Control	Non-conformity*
Causal Explanation			
Conformity	.60	.50	.45
Projection	.40	.50	.55

*Epley and Gilovich's (1999) primes were asymmetrically effective, with the conformity prime more effective than the non-conformity prime. The authors theorized that the non-conformity prime may have inadvertently primed conformity in some participants. The effect sizes noted in this table reflect our expectation for a similar asymmetrical finding.

Test Moderators that Differentiate between Projection and Conformity

As noted in Chapter 4 of this document, researchers have attempted to identify the causal mechanism of the FCE correlation by testing moderating variables. For example, numerous studies have demonstrated a moderating effect of perceived similarity between self and others, with larger consensus estimates generated when people are asked about similar, compared to dissimilar, others (Zuckerman, Mann, & Bernieri, 1982; see also Ames, 2004; Holtz & Miller, 1985; Clement & Krueger, 2002; Karasawa, 2003; Wetzel & Walton, 1985). This finding is often taken as support for

the projection-based attitude salience explanation of the FCE. Similarly, proponents of another projection-based explanation, self-protection motivation, point to the finding that people estimate greatest consensus when they need to reduce social interaction anxiety (Jones & Thibaut, 1958; Marks & Miller, 1982).

The problem with such inferences is that each of these findings lend credence not only to the aforementioned projection-based explanations, they also provide evidence for the conformity explanation. If moderators are to be used to infer causal direction of the FCE correlation, then researchers must test moderators that differentially impact FCEs in a way that provides evidence for only one of these two explanations.

For example, an individual's prior attitude commitment could help differentiate between projection and conformity explanations of the FCE. Prior commitment has been associated with larger FCEs – a finding interpreted as support for projection-based explanations (Marks & Miller, 1987). But if conformity is the true underlying mechanism, then people who have made prior commitments should actually produce smaller FCEs (Deutsch & Gerard, 1955).

Individual differences in the need to control life's events could also be a differentiating moderator of the FCE. People who score high on desire-for-control (DFC) measures prefer to direct events and make choices independently. Conversely, people low in DFC generally value judgment independence less and may prefer to simply go along with majority opinion (Burger, 1987). Thus, larger FCEs would be consistent with a conformity explanation but inconsistent with a projection explanation.

The moderating impact of issue importance on FCE correlations may also offer evidence for one causal mechanism over another, although existing evidence is inconclusive. A few studies report larger FCEs when issue importance is high (Crano, 1983; Judd & Johnson, 1981), which would suggest that projection explains the FCE. Other studies, however, report smaller FCEs when issue importance is high (Campbell, 1986; Fabrigar & Krosnick, 1995; Gauthier, Krosnick, Visser, & Holbrook, n.d.). A detailed review of the measures and procedures used in each of these studies could shed light on these contradictory findings. Additional tests of the issue importance moderator may also be warranted.

References

- ABC News. (2002). *Large majority says 2nd Amendment guarantees right to gun ownership*. Retrieved Spring 2002 from <http://abcnews.go.com/images/PollingUnit/883a4GunRights.pdf>
- Alicke, M. D. (2000). Culpable control and the psychology of blame. *Psychological Bulletin*, 126(4), 556-574.
- Alicke, M. D., & Largo, E. (1995). The role of self in the false consensus effect. *Journal of Experimental Social Psychology*, 31, 28-47.
- Alicke, M. D., Klotz, M. L., Breitenbecher, D. L., Yurak, T. J., & Vredenburg, D. S. (1995). Personal contact, individuation, and the better-than-average effect. *Journal of Personality and Social Psychology*, 68, 804-825.
- American Civil Liberties Union (n.d.) *Capital punishment project*. Retrieved Spring 2002 from <http://www.aclu.org/capital/index.html>
- Ames, D. R. (2004). Strategies for social inference: A similarity contingency model of projection and stereotyping in attribute prevalence estimates. *Journal of Personality and Social Psychology*, 87(5), 573-585.
- Angrist, J. D., & Krueger, A. B. (2001). Instrumental variables and the search for identification: From supply and demand to natural experiments. *The Journal of Economic Perspectives*, 15 (4), 69-85.
- Ansolabehere, S., & Iyengar, S. (1994). Riding the wave and claiming ownership over issues. *Public Opinion Quarterly*, 58, 335-357.
- Arndt, J., Schimel, J., Greenberg, J., & Pyszczynski, T. (2002). The intrinsic self and defensiveness: Evidence that activating the intrinsic self reduces self-

- handicapping and conformity. *Personality and Social Psychology Bulletin*, 28, 671-683.
- Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgment. In H. Guetzkow (Ed.) *Groups, leadership and men*. Pittsburgh, PA: Carnegie Press.
- Atkin, C. K. (1969). The impact of political poll reports on candidate and issue preferences. *Journalism Quarterly*, 46, 515-521.
- Audit Bureau of Circulations (2010). <http://www.accessabc.com/>.
- Balcetis, E., & Dunning, D. A. (2005). Judging for two: Some connectionist proposals for how the self informs and constrains social judgment. In M. D. Alicke, D. A. Dunning, & J. I. Krueger (Eds.) *The self in social judgment* (pp. 181-211). New York: Psychology Press, Taylor & Francis Group.
- Bauman, K. E., & Ennett, S. T. (1996). On the importance of peer influence for adolescent drug use: Commonly neglected considerations. *Addiction*, 91, 185-198.
- Bennett, W. L. (1980). Myth, ritual, and political control. *Journal of Communication*, 30 (4), 166-179.
- Berelson, B. R., Lazarsfeld, P. F., & McPhee, W. N. (1954). *Voting: A study of opinion formation in a presidential campaign*. Chicago: University of Chicago Press.
- Bernays, E. L. (1945). Attitude polls: Servants or masters? *Public Opinion Quarterly*, 9 (3), 264-268b.
- Berscheid, E., & Walster, E. H. (1978). *Interpersonal attraction*. Reading, MA:

Addison-Wesley.

- Bobo, L. D., & Johnson, D. (2004). A taste for punishment: Black and white Americans' views on the death penalty and the war on drugs. *Du Bois Review, 1*, 151-180.
- Bosveld, W., Koomen, W., & VanderPlight, J. (1994). Selective exposure and the false consensus effect: The availability of similar and dissimilar others. *British Journal of Social Psychology, 33*, 457-466.
- Bosveld, W., Koomen, W., & VanWoerden, C. W. (1996). Are we going into town? Differential construal and group-based expectations mediating popularity ratings. *European Journal of Social Psychology, 26*, 839-844.
- Bosveld, W., Koomen, W., & Vogelaar, R. (1997). Construing a social issue: Effects on attitudes and the false consensus effect. *British Journal of Social Psychology, 36* 263-272.
- Bosveld, W., Koomen, W., VanderPlight, J., & Plaisier, J. W. (1995). Differential construal as an explanation for false consensus and false uniqueness effects. *Journal of Experimental Social Psychology, 31* (6), 518-532.
- Bray, R. M., Johnson, D., & Chilstrom, J. T., Jr. (1982). Social influence by group members with minority opinions: A comparison of Hollander and Moscovici. *Journal of Personality and Social Psychology, 43*, 78-88.
- Brehm, J. (1993). *The phantom respondents: Opinion surveys and political representation*. Ann Arbor, MI: University of Michigan Press.
- Brown, C. E. (1982). A false consensus bias in 1980 presidential preferences. *Journal of Social Psychology, 118*, 137-138.

- Burger, J. M. (1987). Desire for control and conformity to a perceived norm. *Journal of Personality and Social Psychology*, 53 (2), 355-360.
- Butsch, R. (2007). *Media and public spheres*. New York: Palgrave Macmillan.
- Byrne, D. (1971). *The attraction paradigm*. New York: Academic.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, 42, 116-131.
- Cacioppo, J. T., Petty, R. E., Feinstein, J., & Jarvis, W. B. G. (1996). Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition. *Psychological Bulletin*, 119, 197-253.
- Campbell, J. (1986). Similarity and uniqueness: The effects of attribute type, relevance, and individual differences in self-esteem and depression. *Journal of Personality and Social Psychology*, 50, 281-294.
- Cantril, A.H. (1980). *Polling on the issues: A report from the Charles F. Kettering Foundation*. Cabin John, MD: Seven Locks Press.
- Catrambone, R., Beike, D., & Niedenthal, P. (1996). Is the self-concept a habitual referent in judgments of similarity? *Psychological Science*, 7, 158-183.
- Ceci, S.J., & Kain, E. L. (1982). Jumping on the bandwagon with the underdog: The impact of attitude polls on polling behavior. *Public Opinion Quarterly*, 46, 228-242.
- Chambers, J. R. (2008). Explaining false uniqueness: Why we are both better and worse than others. *Social and Personality Psychology Compass*, 2 (2), 878-894.
- Clement, R. W., & Krueger, J. (2000). The primacy of self-referent information in

- perceptions of social consensus. *British Journal of Social Psychology*, 39, 279-299.
- Colman, A. (2003). *Oxford Dictionary of Psychology*. Oxford: Oxford University Press.
- Cook, S. W., & Welch, A. C. (1940). Methods of measuring the practical effect of polls of public opinion. *Journal of Applied Psychology*, 24(4), 441-454.
- Crano, W. D. (1983). Assumed consensus of attitudes: The effect of vested interest. *Personality and Social Psychology Bulletin*, 9, 597-608.
- Crano, W. D., & Brewer, M. (2002). *Principles and methods of social research*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Crocker, J. (1981). Judgment of covariation by social perceivers. *Psychological Bulletin*, 90, 272-292.
- Darke, P.R., Chaiken, S., Bohner, G., Einwiller, S., Erb, H.-P., & Hazlewood, J.D. (1998). Accuracy motivation, consensus information, and the law of large numbers: Effects on attitude judgment in the absence of argumentation. *Personality and Social Psychology Bulletin*, 24, 1205–1215.
- Darley, J. M., & Gross, P. H. (1983). A hypothesis-confirming bias in labeling effects. *Journal of Personality and Social Psychology*, 44, 20-33.
- Davis, H. L., Hoch, S. J., & Ragsdale, E. K. E. (1986). An anchoring and adjustment model of spousal predictions. *Journal of Consumer Research*, 13, 25-37.
- Davison, W. P. (1983). The third-person effect in communication. *Public Opinion Quarterly*, 47(1), 1-15.
- Dawes, R. M. (1989). Statistical criteria for establishing a truly false consensus effect.

Journal of Experimental Social Psychology, 25, 1-17.

Dawes, R. M., & Mulford, M. (1996). The false consensus effect and overconfidence:

Flaws in judgment or flaws in how we study judgment? *Organizational*

Behavior and Human Decision Processes, 65 (3), 201-211.

Deutsch, M., & Gerard, H. B. (1955). A study of normative and informational social

influences upon individual judgment. *Journal of Abnormal and Social*

Psychology, 51, 629-36.

Dizney, H. F., & Roshens, R. W. (1962). An investigation of the Bandwagon effect in

a college straw election. *Journal of Educational Sociology*, 36(3), 108-114.

Downs, A. (1957). *An economic theory of democracy*. New York: Harper.

Driskell, J. E., Mullen, B., & Smith, C. (1987). The effects of sequence of

measurement and salience of own choice on the false consensus effect. Paper

presented at the annual meeting of the Eastern Psychological Association,

Roanoke, VA.

Dunning, D. A., Krueger, J. I., & Alicke, M. D. (2005). The self in social perception:

Looking back, looking ahead. In M. D. Alicke, D. A. Dunning, & J. I. Krueger

(Eds.) *The self in social judgment* (pp. 269-280). New York: Psychology Press,

Taylor & Francis Group.

Dunning, D., Milojkovic, J. D., Ross, L., & Griffin, D. W. (1990). The overconfidence

effect in social prediction. *Journal of Personality and Social Psychology*, 58,

568-581.

- Epley, N., & Gilovich, T. (1999). Just going Along: Nonconscious priming and conformity to social pressure. *Journal of Experimental Social Psychology, 35*, 578-589.
- Fabrigar, L. R., & Krosnick, J. A. (1995). Attitude importance and the false consensus effect. *Personality and Social Psychology Bulletin, 21*, 468-479.
- Fazio, R. H. (1989). On the power and functionality of attitudes: The role of attitude accessibility. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 153-179). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Festinger, L. (1950). Informal social communication. *Psychological Review, 57*, 271-282.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*, 117-140.
- Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). New York: McGraw-Hill.
- Fleitas, D. W. (1971). Bandwagon and underdog effects in minimal information elections. *American Political Science Review, 65*, 434-438.
- Forsythe, R., Myerson, R. B., Rietz, T. A., & Weber, R. J. (1993). An experiment on coordination in multi-candidate elections: The importance of polls and election histories. *Social Choice and Welfare, 10*(3), 223-247.
- Frankovic, K. A. (2005). Reporting “the polls” in 2004. *Public Opinion Quarterly, 69* (4), 682-697.
- Freedman, J. L., & Sears, D. O. (1965). Selective exposure. In L. Berkowitz (Ed.),

- Advances in experimental social psychology* (Vol. 2, pp. 57-97). San Diego, CA: Academic Press.
- Gallup Organization. (2002). *Americans' perceptions: World affairs*. Retrieved Spring 2002 from <http://www.gallup.com/poll/9907/Americans-Perceptions-World-Affairs.aspx>
- Gauthier, L. D., Krosnick, J. A., Visser, P. S., & Holbrook, A. L. (n.d.). The “false” consensus “effect”: Projection or conformity? Unpublished manuscript.
- Gilovich, T. (1981). Seeing the past in the present: The effect of associations to familiar events on judgments and decisions. *Journal of Personality and Social Psychology, 40*, 797-808.
- Gilovich, T. (1983). Biased evaluation and persistence in gambling. *Journal of Personality and Social Psychology, 44*, 1110-1126.
- Gilovich, T. (1990). Differential construal and the FCE. *Journal of Personality and Social Psychology, 59*, 623-634.
- Gilovich, T., Jennings, D. L., & Jennings, S. (1983). Causal focus and estimates of consensus: An example of the false-consensus effect. *Journal of Personality and Social Psychology, 45*, 550-559.
- Ginsberg, B. (1989). How polling transforms the public. In M. Margolis & G. Mauser (Eds.), *Manipulating public opinion: Essays on public opinion as a dependent variable* (pp. 271-293). Pacific Grove, CA: Brooks/Cole.
- Glynn, C. J., & McLeod, J. M. (1984). Public opinion du jour: An examination of the spiral of silence. *Public Opinion Quarterly, 48*, 731-740.
- Glynn, C. J., Herbst, S., O'Keefe, G. J., Shapiro, R. Y., & Linderman, M. (2004).

Public opinion (2nd ed.). Boulder, CO: Westview Press.

Goethals, G. R. (1986). Fabricating and ignoring social reality: Self-serving estimates of consensus. In J. Olson, C. P. Herman, & M. P. Zanna (Eds.) *Relative deprivation and social comparison: The Ontario symposium on social cognition: IV*. Hillsdale, NJ: Erlbaum.

Goethals, G. R., Allison, S. J., & Frost, M. (1979). Perceptions of the magnitude and diversity of social support. *Journal of Experimental Social Psychology*, *45*, 550-559.

Goidel, R. K., & Shields, T. G. (1994). The vanishing marginals, the bandwagon, and the mass media. *The Journal of Politics*, *56*, 802-810.

Granberg, D., & Brent, E. (1983). When prophecy bends: The preference-expectation link in U.S. presidential elections, 1952-1980. *Journal of Personality and Social Psychology*, *45* (3), 477-491.

Griffin, D. W., Ross, L., & Dunning, D. (1990). The role of construal processes in overconfident predictions about the self and others. *Journal of Personality and Social Psychology*, *59*, 1128-1139.

Gross, S. R., & Miller, N. (1997). The “golden section” and bias in perceptions of social consensus. *Personality and Social Psychology Review*, *1*(3), 241-271.

Gunther, A. C. (1998). The persuasive press inference: Effects of mass media on perceived public opinion. *Communication Research*, *25* (5), 486-504.

Gunther, A. C., & Christen, C. T. (1999). Effects of news slant and base rate information on public opinion inferences. *Journalism and Mass Communication Quarterly*, *76* (2), 277-292.

- Gunther, A.C., Christen, C. T., Liehbart, J. L., & Chia, S. C.-Y. (2001). Congenial public, contrary press and biased estimates of the climate of opinion. *Public Opinion Quarterly*, *65*, 295-320.
- Heider, F. (1946). Attitudes and cognitive organization. *Journal of Psychology*, *21*, 107-112.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Helson, H. (1964). *Adaption-level theory*. New York: Harper & Row.
- Herbst, S. (1993). The meaning of public opinion: Citizens' constructions of political reality. *Media, Culture and Society*, *15*, 437-454.
- Hoch, S. (1987). Perceived consensus and predictive accuracy: The pros and cons of projection. *Journal of Personality and Social Psychology*, *53*, 221-234.
- Hodges, S. D. (2005). A feature-based model of self-other comparisons. In M. D. Alicke, D. A. Dunning, & J. I. Krueger (Eds.) *The self in social judgment* (pp. 131-153). New York: Psychology Press, Taylor & Francis Group.
- Holtz, R., & Miller, N. (1985). Assumed similarity and opinion certainty. *Journal of Personality and Social Psychology*, *3*, 1-24.
- Iyengar, S. (1990). The accessibility bias in politics: Television news and public opinion. *International Journal of Public Opinion Research*, *2* (1), 1-15.
- Jacoby, L. L., Bjork, R. A., & Kelley, C. M. (1994). Illusions of comprehension, competence, and remembering. In D. Druckman & R. A. Bjork (Eds.), *Learning, remembering, believing: Enhancing human performance* (pp. 57-80). Washington, DC: National Academy Press.
- Jones, E. E. (1990). *Interpersonal perception*. New York: Freeman.

- Jones, E. E., & Nisbett, R. E. (1971). The actor and the observer: Divergent perceptions of the causes of behavior. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior*. Morristown, NJ: General Learning.
- Jones, P. E. (2004). Are we over- or under-projecting and how much? Decisive issues of methodological validity and item type. *European Journal of Social Psychology, 34*, 55-68.
- Joslyn, M. R. (1999). Perceiving public opinion of political figures: Examining the link between individual and collective opinion. *International Journal of Public Opinion Research, 11*(3), 213-232.
- Judd, C. M., & Johnson, J. T. (1981). Attitudes, polarization, and diagnosticity: Exploring the effect of affect. *Journal of Personality and Social Psychology, 41*, 26-36
- Karylowski, J. J. (1990). Social reference points and accessibility of trait-related information in self-other similarity judgments. *Journal of Personality and Social Psychology, 58*, 975-983.
- Kelley, C., & Jacoby, L. L. (1996). Adult egocentrism: Subjective experience versus analytic bases for judgment. *Journal of Memory and Language, 35*, 157-175.
- Kenny, D. A. (1979). *Correlation and causality*. New York: Wiley.
- Kitts, J. A. (2003). Egocentric bias or information management? Selective disclosure and the social roots of norm misperception. *Social Psychology Quarterly, 66* (3), 222 -237.
- Koestner, R., Losier, G. F., Worren, N. M., Baker, L., & Vallerand, R. J. (1995). False

- consensus effects for the 1992 Canadian Referendum. *Canadian Journal of Behavioural Science*, 27 (2), 214-225.
- Krueger, J. (1998). On the perception of social consensus. In M. P. Zanna (Ed.) *Advances in Experimental Social Psychology* (Vol. 30, pp. 164-290). San Diego, CA: Academic Press.
- Krueger, J. (2000). The projective perception of the social world. In J. Suls & L. Wheeler (Eds.) *Handbook of social comparison: Theory and research* (pp. 323-351). New York: Kluwer Academic/Plenum Publishers.
- Krueger, J., & Clement, R. W. (1994). The truly false consensus effect: An ineradicable and egocentric bias in social perception. *Journal of Personality and Social Psychology*, 67, 596-610.
- Krueger, J., & Stanke, D. (2001). The role of self-referent and other-referent knowledge in perceptions of group characteristics. *Personality and Social Psychology Bulletin*, 27, 878-888.
- Krueger, J., & Zeiger, J. S. (1993). Social categorization and the truly false consensus effect. *Journal of Personality and Social Psychology*, 65, 670-680.
- Kunda, K. (1999). *Social cognition: Making sense of people*. Cambridge, Massachusetts: Bradford Books.
- Laponce, J. A. (1966). An experimental method to measure the tendency to equibalance in a political system. *American Political Science Review*, 55, 434-438.
- Lavrakas, P. J., Holley, J. K., & Miller, P. V. (1991). Public reactions to polling news during the 1988 presidential election. In P. J. Lavrakas and J. K. Holley (Eds.)

- Polling and presidential election coverage*. Newbury Park, CA: Sage.
- Leary, M. R. (2004). Through the eyes of the ego. *Curse of the self: Self-awareness, egotism, and the quality of human life*. New York: Oxford University Press, Inc.
- Lippman, W. (1922/1960). *Public opinion*. New York: Free Press.
- Lord, C. G., Ross, L., & Lepper, M. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology*, 37, 2098-2109.
- Malhotra, N. (2000). Bandwagons and ballots: The effects of polls on political behavior. Unpublished manuscript, Department of Economics, Yale University, New Haven, CT.
- Manstead, A. S. R. (1982). Perceived social support for opinions: A test of the magnitude and diversity hypothesis. *British Journal of Social Psychology*, 21, 35-41.
- Marks, G., & Miller, N. (1982). Target attractiveness as a mediator of assumed attitude similarity. *Personality and Social Psychology Bulletin*, 8, 728-735.
- Marks, G., & Miller, N. (1987). Ten years of research on the FCE: An empirical and theoretical review. *Psychological Bulletin*, 102(1), 72-90.
- Marks, G., Graham, J. W., & Hansen, W. B. (1992). Social projection and social conformity in adolescent alcohol use: A longitudinal analysis. *Personality and Social Psychology Bulletin*, 18, 96-101.
- Mashman, R. C. (1978). The effect of physical attractiveness on the perception of attitude similarity. *Journal of Social Psychology*, 106, 103-110.

- Mazur, A. (1987). Putting radon on the public risk agenda. *Science, Technology and Human Values, 12*, 86-93.
- McAllister, I., & Studlar, D. T. (1991). Bandwagon, underdog, or projection? Opinion polls and electoral choice in Britain, 1979-1987. *The Journal of Politics, 53*, 720-740.
- Mehrabian, A. (1998). Effects of poll reports on voter preferences. *Journal of Applied Social Psychology, 28*. 2119-2130.
- Moreland, R. L., & Zajonc, R. B. (1982). Exposure effects in person perception: Familiarity, similarity, and attraction. *Journal of Experimental Social Psychology, 18*, 395-415.
- Morwitz, V. G., & Pluzinski, C. (1996). Do polls reflect opinions or do opinions reflect polls? *Journal of Consumer Research, 23*, 53-65.
- Moscovici, S., & Nemeth, C. (1974). Social influence: Minority influence. In C. Nemeth (Ed.), *Social psychology: Classic and contemporary integrations* (pp. 217-249). Chicago: Rand McNally.
- Mullen, B. (1983). Egocentric biases in estimates of consensus. *Journal of Social Psychology, 121*, 31-38.
- Mullen, B., & Hu, L. (1988). Social projection as a function of cognitive mechanisms: Two meta-analytic integrations. *British Journal of Social Psychology, 27*, 333-356.
- Mullen, B., & Smith, C. (1990). Social projection as a function of actual consensus. *The Journal of Social Psychology, 130*(4), 501-506.
- Mullen, B., Atkins, J. L., Champion, D. S., Edwards, C., Hardy, D., Story, J. E., &

- Vanderklok, M. (1985). The FCE: A meta-analysis of 115 hypothesis tests. *Journal of Experimental Social Psychology, 21*, 262-283.
- Mullen, B., Atkins, J. L., Champion, D. S., Edwards, C., Hardy, D., Story, J. E., & Vanderklok, M. (1985). The FCE: A meta-analysis of 115 hypothesis tests. *Journal of Experimental Social Psychology, 21*, 262-283.
- Mullen, B., Driskell, J. E., & Smith, C. (1989). Availability and social projection: The effects of sequence of measurement and wording of question on estimates of consensus. *Personality and Social Psychology Bulletin, 15*(1), 84-90.
- Mullen, B., & Goethals, G. R. (1986). The consequences of social projection. Unpublished manuscript, Syracuse University, Syracuse, NY.
- Muthén, B. O., & Muthén, L. K. (2006). Mplus (Version 3.01). Los Angeles: Muthén & Muthén.
- Mutz, D. C., & Martin, P. S. (2001). Facilitating communication across lines of political mass media. *The American Political Science Review, 95*(1), 97-114.
- Nadeau, R., Cloutier, E., & Guay, J.-H. (1993). New evidence about the existence of a bandwagon effect in the opinion formation process. *International Political Science Review, 14* (2), 203-213.
- Newcomb, T. L. (1943) *Personality and social change: Attitude formation in a student community*. New York: Dryden Press.
- Newcomb, T. L., Koenig, K. E., Flacks, R., & Warwick, D. P. (1967) *Persistence and change: Bennington College and its students after 25 years*. New York: John Wiley & Sons.
- Newcomb, T. M. (1961). *The acquaintance process*. New York: Holt, Rinehar &

Winston.

- Nisbett, R. E., & Kunda, Z. (1985). Perception of social distributions. *Journal of Personality and Social Psychology*, 48(2), 297-311.
- Noelle-Neumann, E. (1974). The spiral of silence: a theory of public opinion. *Journal of Communication*, 24, 43-51.
- Noelle-Neumann, E. (1974). The spiral of silence: a theory of public opinion. *Journal of Communication*, 24, 43-51.
- Noelle-Neumann, E. (1983). The effect of media on media effects research. *Journal of Communication*, 33, 157-165.
- Noelle-Neumann, E. (1991). The theory of public opinion: The concept of the spiral of silence. In J. A. Anderson (Ed.), *Communication yearbook 14* (pp. 256-287). Newbury Park, CA: Sage.
- Noelle-Neumann, E. (1993). *The spiral of silence: Public opinion—our social skin* (2nd ed.). Chicago: University of Chicago Press.
- Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer-Verlag.
- Petty, R. E., Wegener, D. T., & Fabrigar, L. R. (1997). Attitudes and attitude change. *American Review of Psychology*, 48, 609-647.
- Pew Center for the Press and Politics. (2002). *Americans and Europeans differ widely on foreign policy issues*. Retrieved Spring 2002 from <http://people-press.org/report/153/americans-and-europeans-differ-widely-on-foreign-policy-issues>

- Pratkanis, A. R. (1989). The cognitive representation of attitudes. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 71-98). Hillsdale, NJ: Erlbaum.
- Pronin, E., Gilovich, T., & Ross, L. (2004). Objectivity in the eye of the beholder: Divergent perceptions of bias in self versus others. *Psychological Review*, *111* (3), 781-799.
- Pyszczynski, T., Wicklund, R. A., Florescu, S., Koch, H., Gauch, G., Solomon, S., & Greenberg, J. (1996). Whistling in the dark: Exaggerated consensus estimates in response to incidental reminders of mortality. *Psychological Science*, *7*, 332-336.
- Quinn, A., & Schlenker, B. R. (2002). Can accountability produce independence? Goals as determinants of the impact of accountability on conformity. *Personality and Social Psychology Bulletin*, *28*, 472-483.
- Roper Center iPOLL Databank (2010).
http://www.ropercenter.uconn.edu/data_access/ipoll/ipoll.html.
- Rosenbaum, M. (1986). The repulsion hypothesis: On the nondevelopment of relationships. *Journal of Personality and Social Psychology*, *51*, 1156-1166.
- Roskos-Ewoldsen, D. R. (1997). Attitude accessibility and persuasion: Review and a transactive model. In B. Burleson (Ed.), *Communication yearbook 20* (pp. 185-225). Beverly Hills, CA: Sage.
- 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.

- 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.
- Ross, L., & Ward, A. (1995). Psychological barriers to dispute resolution. In M. Zanna (Ed.), *Advances in experimental social psychology, 27*, 255-304.
- Ross, L., & Ward, A. (1996). Naïve realism in everyday life: Implications for social conflict and misunderstanding. In T. Brown, E. S. Reed, & E. Turiel (Eds.), *Values and knowledge: The Jean Piaget Symposium Series* (pp. 103-135). Hillsdale, NJ: Erlbaum.
- Salmon, C. T., & Nichols, J. S. (1983). The next-birthday method of respondent selection. *The Public Opinion Quarterly, 47* (2), 270-276.
- Sanders, G. S., & Mullen, B. (1982). The big majority and the modest minority. Unpublished manuscript, State University of New York at Albany.
- Sanders, G. S., & Mullen, B. (1983). Accuracy in perceptions of consensus: Differential tendencies of people with majority and minority positions. *European Journal of Social Psychology, 13*, 57-70.
- Schmitt-Beck, R. (1996). Mass media, the electorate, and the bandwagon. A study of communication effects on vote choice in Germany. *International Journal of Public Opinion Research, 8*(3), 266-291.
- Sears, D. O. (1983). The person-positivity bias. *Journal of Personality and Social Psychology, 44*, 233-250.
- Sears, D. O. (1986). College sophomores in the laboratory: Influences of a narrow data base on social psychology’s view of human nature. *Journal of Personality and*

- Social Psychology*, 51(3), 515-530.
- Sherif, M. (1935). A study of some social factors in perception. *Archives of Psychology*, 27(187), 53-54.
- Sherman, S. J., Chassin, L., Presson, C. C., & Agostinelli, G. (1984). The role of evaluation and similarity principles in the FCE. *Journal of Personality and Social Psychology*, 47, 1244-1262.
- Sherman, S. J., Presson, C. C., & Chassin, L. (1984). Mechanisms underlying the false consensus effect: The special role of threats to the self. *Personality and Social Psychology Bulletin*, 10, 127-138.
- Sherman, S. J., Presson, C. C., Chassin, L., Corty, E., & Olshavsky, R. (1983). The false consensus effect in estimates of smoking prevalence: Underlying mechanisms. *Personality and Social Psychology Bulletin*, 9, 197-207.
- Skalaban, A. (1988). Do the polls affect election? Some 1980 evidence. *Political Behavior*, 10, 136-150.
- Spears, R., Eiser, J. R., & van der Pligt, J. (1989). Attitude strength and perceived prevalence of attitude positions. *Basic and Applied Social Psychology*, 10, 43-55.
- Stanovich, K. E., & West, R. F. (1998). Individual differences in rational thought. *Journal of Experimental Psychology: General*, 127(2), 161-188.
- Stock, J. H., & Watson, M. W. (2003). Instrumental variables regression. In *Introduction to econometrics* (pp. 331-372). Delhi, India: Pearson Education.
- Suls, J. (2000). Opinion comparison: The role of the corroborator, expert, and proxy in social influence. In J. Suls & L. Wheeler (Eds.) *Handbook of social*

- comparison: Theory and research* (pp. 105-122). New York: Kluwer Academic/Plenum Publishers.
- Suls, J., & Wan, C. K. (1987). In search of the false uniqueness phenomenon: Fear and estimates of social consensus. *Journal of Personality and Social Psychology*, 52, 211-217.
- Suls, J., Wan, C. K., & Sanders, G. S. (1988). False consensus and false uniqueness in estimating the prevalence of health-protective behaviors. *Journal of Applied Social Psychology*, 18, 66-79.
- Tafarodi, R. W., Kanf, S. J., & Milne, A. B. (2002). When different becomes similar: Compensatory conformity in bicultural visible minorities. *Personality and Social Psychology Bulletin*, 28, 1131-1142.
- Troldahl, V. C., & Carter, R. E., Jr. (1964). Random selection of respondents within households in phone surveys. *Journal of Marketing Research*, 1, 71-76.
- Turner, J. C. (1991). Social conformity. In J. C. Turner, *Social influence*. Bristol, PA: Open University Press.
- Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5 (2), 207-232.
- Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185, 1124-1131.
- Tyson, H. L., & Kaplowitz, S. A. (1977). Attitudinal conformity and anonymity. *Public Opinion Quarterly*, 41, 226-234.
- Upshaw, H. S. (1969). The personal reference scale: An approach to social judgment. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 4, pp.

- 315-371). San Diego, CA: Academic Press.
- Upshaw, H. S. (1969). The personal reference scale: An approach to social judgment. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 4, pp. 315-371). San Diego, CA: Academic Press.
- Vallone, R. P., Lin, S., Ross, L., & Griffin, D W. (1990). Overconfident prediction of future actions and outcomes by self and others. *Journal of Personality and Social Psychology*, *58*, 582-592.
- Vallone, R. P., Ross, L., & Lepper, M. (1985). The hostile media phenomenon: Biased perception and perceptions of media bias in coverage of the "Beirut Massacre." *Journal of Personality and Social Psychology*, *49*, 577-585.
- Vallone, R. P., Ross, L., & Lepper, M. R. (1985). The hostile media phenomenon: Biased perception and perceptions of media bias in coverage of the Beirut massacre. *Journal of Personality and Social Psychology*, *49* (3), 577-585.
- Van Boven, L., & Lowenstein, G. (2003). Social projection of transient drive states. *Personality and Social Psychology Bulletin*, *29*, 1159-1168.
- Van Boven, L., & Lowenstein, G. (2005). Cross-situational perspectives. In M. D. Alicke, D. A. Dunning, & J. I. Krueger (Eds.) *The self in social judgment* (pp. 43-64). New York: Psychology Press, Taylor & Francis Group.
- Van Boven, L., Lowenstein, G., & Dunning, D. (2003). Mispredicting the endowment effect: Underestimation of owners' selling prices by buyer's agents. *Journal of Economic Behavior and Organization*, *51*, 351-365.
- Van der Plicht, J. (1984). Attributions, false consensus and valence: Two field studies. *Journal of Personality and Social Psychology*, *46*, 57-68.

- Van der Plight, J., Ester, P., & Van der Linden, J. (1983). Attitude extremity, consensus and diagnosticity. *European Journal of Social Psychology, 13*, 437-439.
- Wallen, R. (1943). Individuals' estimates of group opinion. *Journal of Social Psychology, 17*, 269-274.
- Wallen, R. (1943). Individuals' estimates of group opinion. *Journal of Social Psychology, 17*, 269-274.
- Wetzel, C. G., & Walton, M. D. (1985). Developing biased social judgments: The false-consensus effect. *Journal of Personality and Social Psychology, 49*(5), 1352-1359.
- Williams, K. P., Cheung, C. K. T., & Choi, W. (2000). Cyberostricism: Effects of being ignored over the internet. *Journal of Personality and Social Psychology, 79*, 748-762.
- Wolosin, R., Sherman, S., & Cann, A. (1975). Predictions of own and other's conformity. *Journal of Personality, 43*, 357-378.
- Wood, W., Lundgren, S., Ouellette, J. A., Busceme, S., & Blackstone, T. (1994). Minority influence: A meta-analytic review of social influence processes. *Psychological Bulletin, 115*, 323-345.
- Zuckerman, M., & Mann, R. W. (1979). The other way around: Effects of causal attributions on estimates of consensus, distinctiveness, and consistency. *Journal of Experimental Social Psychology, 15*, 582-597.
- Zuckerman, M., Mann, R. W., & Bernieri, F. J. (1982). Determinants of consensus estimates: Attribution, salience, and representativeness. *Journal of Personality*

and Social Psychology, 42(5), 839-952.