

Torn between me and us: On the moderating effects of group identity on interpersonal
ambivalence

by

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ABSTRACT

Traditionally studies in conformity have persistently found that people conform to group attitudes and judgments (Asch, 1951; Newcomb, 1966; Deutch & Gerard, 1955). Some have even suggested that prior to conforming, participants in these studies experience some discomfort. These feelings maybe characterized as feelings of subjective ambivalence that people experience as they recognize a discrepancy between their own attitude and that of people important to them (Priester & Petty, 2001). Since people are motivated to reduce subjective ambivalence (Hodson, Maio, and Esses, 2001), this study investigated the possibility that conformity is one strategy that people use to reduce feelings of subjective ambivalence. In this study, participants were exposed to consensus information that either supported or opposed their own views toward an issue concerning Texas Tech students. As predicted, being in the minority increased subjective ambivalence and subjective ambivalence destabilized attitudes. Counter to predictions, being in the minority did not destabilize attitudes.

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CHAPTER I

INTRODUCTION

It is not comfortable being the only member of the sales team who does not like the new sales strategy. People do not always agree with other members of the group, and it is uncomfortable to be a minority of one. Classic studies in social psychology have demonstrated that people often conform to the group (Asch, 1956; Newcomb, 1961; Deutsch & Gerard, 1955). For instance, the member of the sales team who does not agree with the other members of the group will eventually conform to the group's attitude and decide that the new sales strategy is a good idea after all. The goal of the current research is to investigate the mechanisms underlying private conformity.

Conformity

Classic studies in social influence have demonstrated that individuals conform to groups' attitudes. In some instances, people report genuine attitude change. For instance, Newcomb's (1961) studies at Bennington College demonstrated that after four years of attending the liberal college, incoming conservative students conformed to the more liberal views of the other members of the Bennington College Community.

Conforming to consensus information from a proximally close or salient in-group has also been demonstrated in more recent persuasion research. Axsom, Yates, and Chaiken (1987) examined the role of consensus effects in persuasion. To do this, they exposed participants to fake radio broadcasts of a debate over a social issue with varying levels of audience responses. In the enthusiastic audience condition, participants heard several rounds of rowdy applause supporting the speaker's argument. In the

unenthusiastic audience condition, participants heard little applause and even some dissenting outbursts from audience members to the speaker's comments. The audience response functioned as a cue, influencing participants' opinion toward the topic. That is, those participants who heard the enthusiastic audience were more persuaded by the speaker than those who heard the unenthusiastic audience. This was particularly the case when participants' personal involvement in the issue was low. Similarly, Maheswaran and Chaiken (1991) found that consensus information acts as a "the majority is right" heuristic that guides people's attitudes when they engage in peripheral route processing (peripheral route processing is the processing of messages by attending to cues such as the attractiveness of the source of a message rather than the quality of the message content) .

Although these studies provide evidence that consensus information can act as a cue to persuasion and attitude change, what they did not identify are the underlying cognitive processes taking place prior to the attitude change. For example, Axsom et al. (1987) measured pre- and post- persuasive message attitudes toward a social issue, but did not explore the role of intervening variables. Therefore, one question remaining is: What is the path to conformity when individuals recognize that they disagree with their group? One possibility is that the relationship between attitude discrepancy and conformity is mediated by subjective ambivalence. By demonstrating the role of subjective ambivalence in attitude change from consensus information provides us with a clearer understanding of the underlying mechanism of this type of attitude change.

Subjective Ambivalence

Subjective ambivalence is the tension that people experience when they hold both positive and negative evaluations of an attitude object (Lewin, 1951; Scott, 1966, 1969).

Subjective ambivalence has been indexed using direct, self-report measures (e.g., Newby-Clark, McGregor, & Zanna, 2002). For instance, participants may be asked to report the extent to which their reactions are mixed or concrete. They may also be asked to report on items such as the extent to which they have conflicting reactions to, feel indecisive about, and experience tension in their thoughts and feelings related to the attitude object and to what extent they feel ambivalent toward the attitude object (Priester & Petty, 1996, 2001; Priester, Petty, & Park, 2007; Newby-Clark, McGregor, & Zanna, 2002).

Interpersonal Discrepancy and Subjective Ambivalence

Though a principal source of subjective ambivalence is holding conflicting positive and negative evaluations of an attitude object (Priester & Petty, 1995), Priester and Petty (2001) suggested that subjective ambivalence may also result from the perceived attitudinal discrepancy between ourselves and people who are important to us. Priester and Petty (2001) suggested that the tension Heider (1946) discussed in balance theory is a type of subjective ambivalence. For instance, if Pat likes Austin but disagrees with Austin about whether the sale of medical marijuana is a good idea, Pat would experience subjective ambivalence.

Priester and Petty (2001) provided evidence for the role of attitudinal discrepancy on subjective ambivalence in a series of studies. In their first study, participants reported

their own attitudes toward a list of objects and reported what they perceived to be their parents' attitudes toward the same list of objects. The results indicated that participants experienced feelings of subjective ambivalence when they perceived a difference between themselves and their parents. The second and third studies illustrated group effects. During these studies, Ohio State University (OSU) undergraduates read a scenario in which a focus group comprised of other OSU students expressed an opposing or supporting attitude toward tuition subsidized by the state (Priester & Petty, 2001). The two experimental conditions in the Priester and Petty (2001) studies were a majority condition (where OSU students' attitude and the participant's attitude were congruent) and minority condition (where OSU students' attitude and the participant's attitude were incongruent). Participants in the minority condition reported greater feelings of subjective ambivalence in comparison to participants in the majority condition. This pattern of results is consistent with the hypothesis that a disagreement between two people or between the individual and the group lead an individual to experience feelings of subjective ambivalence (Priester & Petty, 2001).

Cognitive Dissonance and Balance Theories

Although Heider's (1946) balance theory is the theoretical framework for Priester and Petty's (2001) research question. However, cognitive dissonance theory could have also provided the theoretical framework for their research on the relationship between interpersonal discrepancy and subjective ambivalence. Both theories posit that people experience psychological discomfort when they recognize that they do not agree with people who are important to them. However, since balance theory includes a non-

personal element, such as an attitude object into social relationships, it has also been selected as one of the theoretical frameworks for the current project. In addition, balance theory emphasizes how one person's attitude toward a non-human object influences the affective state of another person. For these two reasons, balance theory has been selected as the primary theoretical framework for the current project.

Balance Theory. Heider (1946) theorized that people have a preference to agree with people that they like and to disagree with people whom they do not like (Heider, 1946). When people are in such states of agreement, Heider referred to it as being in a state of 'cognitive balance.' On the other hand, when people find that they disagree with people they like and agree with people whom they do not like, they are out of balance (an imbalanced state). As a consequence of being out of balance, Heider posited that people experience feelings of stress and tension.

Balance theory stresses what is referred to as transitive relationships (Eagly & Chaiken, 1993). Essentially these relationships form a triangle (called triads) among elements (elements being people and objects) in the relationship. Each of these elements is connected to another via some form of a relationship to one another and that the relationship is consistent for all three relationships. For example, the elements might be connected via "liking." When one person like another s/he is much more incline to like that person's friends and family. For example, if Pat likes Austin and Austin likes Tracy, Pat is much more likely to like Tracy as well (Eagly & Chaiken, 1993).

It is also possible for a triad to include an abstract object or idea, for example, because Pat likes Austin and Austin endorses the use of marijuana for medicinal purposes, Pat is likely to endorse medical marijuana as well (Eagly & Chaiken, 1993).

The stress and tension described in balance theory is the same psychological discomfort of subjective ambivalence (Priester & Petty, 2001). Moreover, Heider (1946) theorized that the tension people experience associated with imbalance leads to a cognitive re-organization. In other words, psychological discomfort leads people to adopt strategies to reduce that discomfort, including attitude change or conformity. For instance, Pat may initially disagree with Austin about the sale of medical marijuana. However, because Pat admires Austin, Pat will change his/her attitude toward medical marijuana in order to avoid experiencing a state of tension or to reduce it.

Newcomb's classic Bennington College (1961) field study was inspired by balance theory (Eagly & Chaiken, 1996). The study is a good example of how interpersonal disagreement can lead to feelings of subjective ambivalence and eventual conformity to group attitudes. The qualitative data that Newcomb (1961) reported reveals the psychological tension that students at Bennington experienced as underclassman, while at the same time leading to a cognitive re-organization. For example, one student commented on how the community drives the direction of her attitudes, even though she does not want it to. This is one example of how the Bennington study supports the propositions of balance theory.

Cognitive dissonance theory. Another closely related theory is cognitive dissonance theory (Festinger, 1957). Similar to balance theory, cognitive dissonance

theory asserts that people are motivated to maintain cognitive consistency in order to reduce the psychological discomfort associated with inconsistent cognitions. According to cognitive dissonance theory, people may experience dissonance when they recognize that they hold incongruent thoughts, or they may hold thoughts that are inconsistent with their behavior (Festinger, 1957). Festinger posited that dissonance is a negative drive state similar to that of hunger, and as people are motivated to reduce hunger, they are also motivated to reduce dissonance.

Cognitive dissonance theory has inspired a great deal of research; a large body of literature exists reporting the results of decades of research investigating the theory's propositions and its effects. Dissonance has been associated with both physiological arousal (Brehm & Cohen, 1962; Pallack & Pittman, 1972) and psychological discomfort (Elliot & Devine, 1994). In two experiments using the induced-compliance paradigm and self-report measures, Elliot and Devine established that dissonance is uncomfortable and that attitude change is a viable dissonance reduction strategy that people employ to reduce that discomfort.

Although Festinger (1957) does discuss dissonance as a consequence of a disagreement between ourselves and people who are important to us, balance theory is much more on point in that it directly addresses the notion that people experience tension when they disagree with people who are important to them (Heider, 1946). Indeed, Festinger wrote that balance theory is essentially the same as cognitive dissonance; he wrote that the words balanced and consonant (being in agreement) are synonymous with one another as are dissonance and imbalance (Festinger, 1957).

Subjective ambivalence and conformity.

Some additional evidence of the relationship between subjective ambivalence and conformity can be found in the research reports provided by Hodson et al. (2001) and Cavazza and Butera (2008). In these reports, investigators examined the influence of subjective ambivalence on participants' attitude change.

Hodson et al. (2001) posited that attitudinal ambivalence would moderate the influence of consensus information on the final attitude report. Hodson and colleagues recorded participants initial attitudes toward social welfare, and they had participants watch a video of a pro and anti welfare debate. Next, participants were asked to provide an initial rating of the debate, and then were presented with consensus data either pro- or anti-welfare. Finally, participants were asked to respond to measures of their attitude toward the debate and welfare, thereby providing a second measure of participants' attitude toward social welfare. Individuals who initially expressed some ambivalence toward social welfare were more likely to show attitude change. Such changes were in the direction of the consensus information. Participants lower in ambivalence reported their final attitudes toward social welfare in the opposite direction from the consensus information. In other words, people who are higher in subjective ambivalence toward an attitude object are more likely to shift their attitude toward that of the majority than those who are lower in subjective ambivalence.

Similarly, Cavazza and Butera (2008) pretested participants for ambivalent attitudes toward traffic restrictions designed to reduce air pollution. During the experiment, participants read a persuasive message from an in-group source that argued

that traffic restrictions have no impact on pollution. Similar to the Hodson et al. (2001) studies, participants who were higher in ambivalence shifted their attitude toward the direction of the in-group attitude (i.e., toward the persuasive message). However, participants who were lower in ambivalence resisted the persuasive messages by shifting their attitude away from the direction of the group's attitude (Cavazza & Butera, 2008). These findings occurred for participants who received a direct persuasive message. People higher in ambivalence shifted away from the message's position, while those lower in ambivalence shifted toward the message's position.

Partial Summary

In sum, people experience subjective ambivalence when they disagree with their group (Priester & Petty, 2001), and people are more likely to conform to their group when they are ambivalent (Hodson et al., 2001). Thus, I propose that subjective ambivalence mediates the relationship between attitudinal discrepancy and conformity (see Figure 1 & 2). By this account, people conform to the group in order to reduce the feelings of tension that are a hallmark of subjective ambivalence.

Social identity and self-categorization theory

Social identity and self-categorization are two separate theories. However, the self-categorization proposed by Turner (Tajfel & Turner, 1986), is so closely aligned with social identity theory (Tajfel, 1981) that the two are stated as one theory. In the interest of clarity and brevity, I will do the same here.

Whereas social identity theory asserts a social cognitive approach to inter-group and intra-group relationships, it also attempts to explain both inter-group conflict and

cooperation through the social-cognitive processes associated with group membership. The theory argues that people belong to groups based on shared norms and shared stereotypes. That the self-concept is comprised of two different types of identities: a personal identity that is the individual self, and any number of social identities such as an identity as a parent or being a member of the school band or a member of the debate team or being a member of a political party. In addition, the theory suggests that people derive a portion of their self-esteem from their group memberships. The theory argues that people are motivated to maintain or enhance that self-esteem.

Self-categorization theory posits that a process of cognitive redefinition occurs when a social identity has been made salient for people in a given situation. (Turner, 1999). The group identity is now the acting identity, and it determines how people think and act. The process is referred to as depersonalization and occurs in any social context, and it is the process by which people shift the active identity as they navigate the social world. For example, a woman attending a meeting of the local chapter of the Green Party may experience shifts in identity from her identity as an individual to that of a Green party member. Consequently, she will express the appropriate attitudes and exhibit the appropriate behavior for a Green Party member. This shift is possible because information about the group's shared norms and stereotypes are stored within a cognitive representation of the group- a shared group prototype that contains information about the group's attitudes, beliefs, stereotype and so on (Hogg & Turner, 1987; McGarty, Turner, Hogg, David, & Wetherell, 1992).

Hogg and Turner (1987) have proposed that people refer to this shared prototype in order to know how to think and act in the current social situation. They referred to this process as referent informational influence. Hogg and Turner (1987) asserted that when a group identity is activated, people who consider themselves typical group members will refer to this prototype of the ideal group member for information about the group and adopt the group's standards / norms. Therefore, Hogg and Turner (1987) argue that social influence is not a process of informational or normative influence, but rather referent informational influence.

Both social identity-self categorization theory and referent informational influence assume consensus among group members, and there is some empirical evidence that supports this assumption (e.g., Ellemers, Spears & Doosje, 1995; Doosje, et al., 1998). For example, Mullen, Dovidio, Johnson, and Cooper (1992) compared research participants' estimates of consensus among their in-group to that of an out-group. All three studies found that people tend toward an "assimilation type of social projection" (Mullen et al., 1992, pp. 436). In other words, they show stronger false consensus effects for in-group members than out-group members (see also, Clement & Krueger, 2002; Robbins & Krueger, 2005). Indeed, Robbins and Krueger's (2005) meta-analysis of the false consensus effect indicate that social categorization is the only reliable factor that moderates the false consensus effect (Robbins & Krueger, 2005).

Social categorization effects can also be found in the literature investigating how people perceive variability among group members. Traditionally, research outside the social identity framework has consistently demonstrated the out-group homogeneity

effect: the tendency for people to perceive members of an out-group as more similar to one another than members of their in-group (for reviews of this literature see Ostrom & Sedikides, 1992; Linville, Salovey & Fisher, 1986; Messick & Mackie, 1989; Mullen & Hu, 1989; Park & Rothbart, 1982; and Quattrone & Jones, 1986). Yet, research on perceptions of group variability within the social identity framework has found that identity concerns weaken the out-group homogeneity effect (Doosje, Ellemers, & Spears, 1995). More specifically, these findings indicate that perceptions of group homogeneity are a function of group status and identification. People for whom the group identity is strongest tend to perceive groups in general as more homogeneous. On the other hand, people with lower group identity generally tend to perceive groups as more heterogeneous (Doosje, Ellemers, & Spears, 1995; Ellemers, Doosje, & Spears, 1997; Spears, Doosje, Ellemers, 1999).

Even so, social categorization does not always have such potent effects (Tajfel, 1981). Often, the extent to which a person identifies with the group determines the extent of the group's influence over individual group members. Social identity theory posits that the extent to which a person identifies with the group is based on the value and emotional significance that the individual places on group membership (Tajfel, 1981). Additionally, the degree to which people identify with the group exerts varying influence on group members' thoughts and behavior.

The level of group identification has been found to affect such phenomena as the polarization of group attitudes (McGarty et al., 1992), how committed group members are to the group (Ellemers, Spears, & Doosje, 1997), and the degree of attitude-behavior

(normative behavior) consistency among group members (Terry, Hogg, & 1996; Terry, Hogg, & McKimmie, 2000), and persuasion (Mackie, Worth, & Asuncion, 1990; Mackie, Gastardoconaco, & Skelly, 1992). In keeping with these findings, I propose that group identification moderates the relationship between attitudinal discrepancy, and subjective ambivalence, specifically people who are more identified with the group experience greater subjective ambivalence than those who are less identified with the group.

Measuring group identification. Luhtanen and Crocker (1992) developed the collective self-esteem scale based on the following definition of group identity. Group identity is defined as those constructs related to social interaction. For example, one of these constructs is the individual group member's reputation within the group as well among outsiders. Other examples include how well liked the group member is by other group members, and how attractive one is as a group member. Moreover, collective self-esteem is also considered to be the value that the group member assigns to his/her group membership. In other words, how important is that group membership to that member's overall self-concept. The collective self-esteem scale has been used in a variety of investigations into group level effects. For example, it has been used to measure school spirit (Reifman, 2004) and in an investigation of moderating effects of group identity on intra-group attitudes toward other group members (Kaiser et al., 2009). For example, Kaiser and his colleagues (2009) found that group identity moderated in-group members' attitudes toward fellow in-group members who were willing to confront discrimination by out-group members.

Some examples of the items on the collective self-esteem scale (Luhtanen & Crocker, 1992) include “In general, I’m glad to be a member of the social groups I belong to” and “The social groups I belong to are an important reflection of who I am, and I feel good about the social groups I belong to.”

Other potential moderators

Need to belong. It is possible that a need to belong may moderate the relationship between attitudinal discrepancy and subjective ambivalence in the same way that group identity moderates this relationship. People have a need for harmonious relationships with other people that are ongoing and stable over time. Belongingness has been found to have a strong effect on how people think and feel (Baumeister & Leary, 1995). Baumeister and Leary concluded that the need to belong is a “powerful, fundamental, and extremely pervasive motivation” (Baumeister and Leary, 1995, p. 497). Therefore, in order to maintain harmonious relationships, people who are higher in the need to belong may experience higher levels of subjective ambivalence because they will be torn between their own attitudes and their need to belong to the group when they recognized a disagreement between themselves and the group.

Need for cognition. In the persuasion literature Cacioppo, Petty and Morris (1983) found that people who are higher in their need for cognition are less likely to attend to consensus information and regard it as a cue for attitude change. Consequently, people with a high need for cognition are less likely to experience subjective ambivalence when they recognize a disagreement between themselves and their group (Maheswaran & Chaiken, 1991).

Preference for consistency. Newby-Clark, McGregor, and Zanna (2002) found that people who have a higher preference for consistency were more likely to experience subjective ambivalence when conflicting evaluations of an attitude object were simultaneously accessible. This finding was less pronounced for people who have a lower preference for consistency, suggesting that a preference for consistency may also have a moderating influence on the relationship between attitudinal discrepancy and subjective ambivalence. It is likely that high preference for consistency may increase feelings of subjective ambivalence when people discover a disagreement between themselves and their group.

Summary

Conformity is one strategy that people use to reduce subjective ambivalence that is occasioned by an interpersonal discrepancy. Furthermore, researchers in the social identity tradition have found that the extent to which group members identify with the in-group determines the influence the group has over individual group members. Therefore, I am proposing that group identity moderates the relationship between attitudinal discrepancy and subjective ambivalence, so that people who are more strongly identified with the group will experience a greater degree of subjective ambivalence and exhibit more conformity than people who are weakly identified with the group. The overall model predicts that attitudinal discrepancy leads to conformity through subjective ambivalence for people who are strongly identified with their group.

CHAPTER II

PRE-TEST

The main study requires 2 attitude objects about which there is at least some disagreement among Texas Tech students. I conducted an attitude pre-test in order to identify a pair of suitable attitude objects.

Method

Participants

Participants were 40 Texas Tech undergraduates recruited from the Psychology 1300 participant pool.

Procedure

An informed consent form was presented for participants to read. At the bottom of the form, participants were given the option to either continue with the survey or to cancel their participation (see Appendix B). For those participants who agreed to continue with the survey, they read a cover story that the survey was being conducted in partnership with the TTU Community Opinion Office (see Appendix C). They read that the purpose of the survey was to collect information on students' attitude toward issues concerning Texas Tech students. The survey read:

One of the roles of the TTU Community Opinion Office is to serve as a “suggestion box,” where members of the TTU community, including faculty, staff, students, and parents can voice their concerns about issues facing TTU. Many of the concerns lodged with the Community Opinion Office are shared by virtually no one other than the person who lodged

them. For instance, one parent suggested last year that the campus be entirely closed to cars and trucks to give it the feel of an old European university. Subsequent polling indicated that virtually no else found this to be a good idea, let alone a feasible idea. On other occasions, concerns lodged with the Community Opinion Office turn out to have widespread appeal. Five years ago, a staff member suggested that the university could save money by giving dormitory residents the option of not having a landline telephone in their dorm rooms. Polling revealed that virtually everyone agreed with that basic idea, the Housing Department developed a comprehensive plan, and its implementation saved \$800,000 in its first year alone.

One way that the TTU Community Opinion Office measures public opinion is by partnering with the Psychology Department to collect data from Introductory Psychology students. They would like your feedback on several concerns that have recently been raised by members of the TTU community.

The survey included six items that are of interest to Texas Tech students: 1) A campus wide ban on smoking; 2) Eliminating the fall break; 3) A requirement that all incoming students purchase a laptop computer at a fifty-percent discount; 4) A ban on the incorporation of new fraternities and sororities; 5) The implementation of senior comprehensive exams, and 6) A policy whereby the use of the “guns up” hand signal is discouraged.

Participants read a brief statement on each of these items to put it into context for them. For example, participants read that in light of school shootings on college campuses, some have asked that the university discourage the use of the “guns up” hand signal. After reading each of these statements, participants were asked to indicate the extent to which they support or oppose each item and to indicate the extent to which they think each item will be good or bad for Texas Tech. Both scales were Likert type scales that ranged from 1 strongly oppose the item, to 7, strongly support the item and 1, very bad for Tech to 7, very good for Tech.

After completing the survey, participants read the debriefing page. The debriefing statement informed participants of the deception used in the survey and assured them that their responses will remain anonymous (see Appendix D).

Results

The means and standard deviations for all six attitude objects are shown in Tables 1 and 2. The results indicate that the distributions were heavily skewed for 4 of the attitude objects. The exceptions were the implementation of mandatory sex education seminars during freshman orientation ($M = 6.48, SD = 1.75$) and the implementation of senior comprehensive exams ($M = 2.97, SD = 1.60$), so we selected these attitude objects for the Main Study.

CHAPTER III

MAIN STUDY

The purpose of this study was to investigate whether conforming to group attitudes is one strategy that people use to reduce subjective ambivalence brought on by a disagreement between the self and important others. Furthermore, the research in the social identity tradition has found evidence of group level effects. This suggests that the extent to which individuals experience feelings of subjective ambivalence when they disagree with their group may be influenced by the degree to which they identify with the group.

Method

Participants

Participants were Texas Tech undergraduate students from the Psychology 1300 participant pool. One hundred and fourteen students participated in the experiment with the sex education seminars as the attitude object, and 119 participated in the comprehensive senior exams study. Four of the students in the seminar and eight in the exams studies did not complete the experiment; their data was removed from the final analysis.

Procedure

The same introductory procedures for the attitude object pre-test were repeated with the appropriate changes in the language for the informed consent (see Appendix E). Once participants responded to the consent form, a new page asked students to enter their first and last names. This page is strictly for assigning participants' course credit for their

participation. The response to the consent form and the participants' name will not be saved with their responses to the experiment (Appendix F).

The experimental procedures described below were conducted for two attitude objects in two studies run simultaneously. One experiment featured mandatory sex education seminars in freshman orientation as the attitude object and the other featured senior comprehensive exam. The opening page of the experiment read:

Thank you for participating in our experiment. This experiment is the second phase of a data collection partnership with the Offices of Institutional Research and TTU Community Opinion office.

In the following four sections, you will be asked to respond to a series of questions that will help the Office of Institutional Research gather data about the individual characteristics of Texas Tech Students.

The experiment began by administering several individual difference measures (see Appendices G - I). Each of these measures might moderate the relationship between the attitude discrepancy (the disagreement between the individual and the group) and subjective ambivalence. Among these measures were the Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2005) and the Need for Cognition scale (Cacioppo, Petty, & Kao, 1984). The measures, The Preference for Consistency scale (Cialdini, Trost, & Newsom, 1995) and The Texas Tech Identity Questionnaire were also included. The latter measure has been adopted from Luhtanen and Crocker's (1992) collective self-esteem scale.

The Need to Belong scale (Leary et al., 2005) is a 10 item, 5 point Likert type scale ranging from 1 (strongly disagree) to 5, (strongly agree). Some examples of the items included in the Need to Belong scale are, “If other people don't seem to accept me, I don't let it bother me” and “ I try hard not to do things that will make other people avoid or reject me.”

The Need for Cognition questionnaire (Cacioppo, Petty & Kao, 1984) will be administered next. The scale is an 18 item, 7 point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Some examples of the questions on this scale are: “I would prefer complex to simple problems” and “I like to have the responsibility of handling a situation that requires a lot of thinking.”

The Preference for Consistency scale will also be administered (Cialdini, Trost, & Newsom, 1995). This instrument has 18, 7 point Likert type scale items. The scale ranges from 1 (strongly disagree) to 7 (strongly agree). Some examples of the measure's items are, “I prefer to be around people whose reactions I can anticipate” and “It is important to me that my actions are consistent with my beliefs, even if my attitudes and actions seemed consistent with one another to me.”

Finally, the Texas Tech Identity questionnaire adopted from Luhtanen and Crocker's (1992) collective self-esteem scale (Appendix J) was used to identify students who are high and low in identification as a Texas Tech students. The Texas Tech Community questionnaire has 16 items and the scale ranges from 1 (strongly disagree) to 7 (strongly agree). A few examples of this measure are, “I am a worthy member of the

Texas Tech community” and “The Texas Tech community is an important reflection of who I am.”

Next participants were asked how they feel about either a mandatory sex education seminar being included in freshman orientation or comprehensive senior exams. Both items were selected from the attitude pre-screening survey. The language for the sex education seminar was changed slightly from the pre-test. The language in the main study includes the word “mandatory” which was not used during the pre-test. I changed the language in the main study in an attempt to move the mean closer to neutral.

Participants read the same contextual information regarding the partnership between the TTU Community Opinion Office and the Psychology Department and the same reason why we are asking about each item. For example, for the comprehensive exams attitude object is placed in the context of a need for uniform academic standards at Texas Tech. The prevention of unwanted pregnancies and the spread of sexually transmitted diseases is the context for the second attitude object.

However, one difference in procedures is that participants were to respond to two unipolar scales (Appendix K). The first scale will ask participants to ignore all the negative aspects of senior comprehensive exams (mandatory sex education seminar), and indicate how positively they rate senior comprehensive exams. The second scale will ask for their negative ratings of senior comprehensive exams (mandatory sex education seminar), ignoring the positive aspects. These two scores will later be used to calculate an overall attitude score for the first measure of participants’ attitudes which range from 1 (not at all negatively) to 4 (extremely negatively). I will calculate an overall index of

participants' attitudes by subtracting their negative ratings from their positive ratings (i.e., $P - N$; Larsen, Norris, McGraw, Hawkey, & Cacioppo, 2009). Overall attitude scores will thus range from -3 (extremely negative) to 3 (extremely positive).

Participants were pseudo-randomly assigned to either a majority condition or a minority condition based on whether they were born on an odd or even day of the month, and whether they support or oppose the attitude object, for example, senior comprehensive exams. Participants born on an odd day of the month who support comprehensive exams were directed to a web page where they will read that a majority of Texas Tech students also support such exams. Similarly, participants born on an odd day of the month, and who oppose comprehensive exams read that the majority of Texas Tech students oppose the exams. On the other hand, participants who are born on an even day of the month will be routed to a minority condition. Participants, born on an even day, who support the comprehensive exams, read that the majority of Texas Tech students oppose the exams. Likewise, those opposed read that the majority of students support the exams. The exact same procedures will be used for the mandatory sex education seminar attitude object.

The data was presented in the form of a pie chart, with 73% of previous subjects sharing the current participant's view toward the senior comprehensive exams. For the sake of clarity, the focus here will stay with the senior comprehensive exam item, but all the procedures were exactly the same for the sex education seminars item, and only 27% in opposition (see Appendix L). The reverse was true for participants in the minority condition. Note that these percentages did not actually appear in the pie charts. They are

mentioned here for the sake of clarity. In order to ensure that participants read the pie charts, they were asked to give their best estimates of the percentage of participants who *disagree* with them. A slide bar will allow students to slide an arrow along a continuum of 0 to 100. Their selected percentage will appear on to the left of the slide bar. This data served as a manipulation check.

Immediately following the presentation of the pie charts, the next page measured subjective ambivalence by asking participants to report the extent to which they felt conflicted, indecisive and had mixed reactions to senior comprehensive exams (see Appendix M). These measures are eight point scales that range from 0, feeling no conflict, indecision, and mixed reactions to 8, (maximum conflict, indecision, and mixed reactions). An average rating will be used as an index of subjective ambivalence.

In order to give participants' feelings of subject ambivalence time to influence their attitude toward the object, I administered a distraction task at this point in the experiment. The distraction task was a list of twelve anagrams of mammals. Some examples are, "Tip up shampoo" is an anagram for hippopotamus and "lone egg deal" is an anagram for "golden eagle." A complete list of the anagrams is included in appendix N.

In order to determine if consensus influenced participants' attitude toward senior comprehensive exams, I needed to measure attitudes a second time. This time, senior comprehensive exams will be embedded among the attitude items used in the pre-screening survey. One difference, however, is the unipolar ratings. Participants rated how positive and negative they feel about the senior comprehensive exams (Appendix O).

The last step in the experiment was to administer the ambivalence questionnaire for a second time. This allowed for testing whether attitude change (if it did occur) reduced feelings of subjective ambivalence. Finally, the debriefing page was presented to participants (Appendix P).

Results

Conformity is change in behavior or attitude in the direction of a majority. I have proposed that one path to conformity is through subjective ambivalence. When people learn that others who that important to them disagree, they will conform to opinion of those who are important to them. One approach to indexing conformity is with change scores. For instance, an individual in the minority condition who shifted from moderately negative (-2) to moderately positive (+2; change score = 4) could be quantified as showing greater conformity than one who shifted from moderately negative (-2) to mildly negative (-1; change score = 1). Change scores have a number of problems, however. Specifically, they confound two sources of variance (i.e., initial score; subsequent score) and typically show low reliabilities. As explained below, conformity was indexed by investigating how different variables (e.g., consensus, subjective ambivalence) influence the relationship between initial attitudes (i.e., initial attitude; those reported before the consensus manipulation) and subsequent attitudes (i.e., subsequent attitude: those reported after the consensus manipulation; (see Figure 6). Figure 6 is an elaborate model, illustrating a mediated moderation effect among variables. Specifically, the model shows a mediating effect of subjective ambivalence on the moderating effect of consensus on the relationship between the attitude score taken at time 1 (initial attitude) during the

experiment and the attitude score taken at time 2 (subsequent attitude). My intent was to conduct the mediated moderation regression analyses as described by Preacher, Rucker, and Hayes (2007; see also, DeMarree, 2008; Baron & Kenny, 1986; Muller, Judd, & Yzerbyt, 2005). The regression tests outlined by Preacher, Rucker, and Hayes (2007) determine if the model meets the four conditions necessary for mediated moderation. Before conducting these analyses, each of the predictor variables were centered and the consensus variable was effects coded as -1 (majority) and 1 (minority).

Does consensus moderate the relationship between initial attitude and subsequent attitude? The first question is whether the consensus manipulation influences the relationship between initial attitude and subsequent attitude. Attitudes tend to be fairly stable over time (McGuire, 1960; McGuire, 1990; McGuire, 1991) and assessed attitudes within the course of a single experimental session, so the initial attitude-subsequent attitude relationship should be quite strong. However, consensus should influence this relationship. To predict that people in the minority condition will conform to the group is to predict that they will report less polarized, more middling, attitudes. In contrast, participants who are told that others agree with them will likely show little attitude change or possibly show some attitude polarization. Therefore, the relationship between initial attitude and subsequent attitude should be weaker when people learn that others disagree with them, as opposed to agree with them.

Therefore, the first condition in order to demonstrate mediated moderation is to show that consensus moderates the initial attitude-subsequent attitude relationship (see path b on Figure 6). I tested this by running a hierarchical multiple regression analysis. At

Step 1 of the model, consensus and initial attitudes were entered as predictors of subsequent attitudes. Only the main effect of initial attitude was significant, both for senior comprehensive exams, $\beta = .58$, $t(105) = 6.20$, $p < .001$, and for sex education seminars, $\beta = .58$, $t(105) = 7.30$, $p < .05$. Not surprisingly, those with favorable attitudes at the beginning of the study had more favorable attitudes at the end of the study. At Step 2 of the model, the 2-way interaction between initial attitude and consensus was added to the model. It was not a significant predictor of subsequent attitudes toward senior comprehensive exams, $\beta = -.115$, $t(107) = -1.04$, $p > .05$, or sex education seminars, $\beta = .14$, $t(105) = 1.27$, $p < .05$ (see Figure 7). Thus, attitudes of participants in the both the majority and minority conditions were not influenced by the consensus manipulation.

The moderating effect of consensus on subsequent attitude is a critical path (see path b in Figure 6) in the model. Without the moderating effect of consensus on the relationship between initial attitude and subsequent attitude, it is no longer necessary to pursue a mediated moderation analysis strategy. However, it is worth examining the other relationships proposed in the model. For example, I hypothesized that subjective ambivalence would moderate the relationship between initial attitudes and subsequent attitudes (see path d in Figure 6). This analysis would be consistent with the notion that ambivalence destabilizes attitudes. Furthermore, I had hypothesized that group identity concerns would moderate the relationship between consensus and subjective ambivalence. Therefore, it is worth assessing whether consensus predicts subjective ambivalence in order to determine if testing for the moderating effects of identity concerns is necessary.

Does subjective ambivalence moderate the relationship between initial attitudes and subsequent attitudes? Referring to the diagram in Figure 6, the analysis tested the moderating effects of subjective ambivalence (Path *d*) on the relationship between initial attitude and subsequent attitude (Path *a*). At Step 1 of the model, initial attitude and subjective ambivalence were entered as predictors of subsequent attitudes. Not surprisingly, the analysis revealed a main effect of initial attitude for senior comprehensive exams $\beta = .517, t(108) = 6.23, p < .001$ ($\beta = .524, t(105) = 6.20, p < .001$ (for the sex education seminar) and no main effect of subjective ambivalence, $p > .05$ (for both attitude objects). When the initial attitude x subjective ambivalence interaction was entered at Step 2, the interaction term had a significant effect on subsequent attitudes toward senior comprehensive sex education seminars (figure 10), $\beta = -.199, t(104) = -2.40, p < .05$, senior exams (figure 11), $\beta = -.23, t(107) = -2.72, p < .01$.

The simple slopes analyses revealed that the effect of subjective ambivalence was significant for participants who were higher in subjective ambivalence, (seminars, $b = 1.03, t(102) = 6.57, p < .001$; exams $b = 1.04, t(102) = 6.88, p < .001$), but not for those who were lower in subjective ambivalence ($b = .37, t(102) = 1.60, p > .05$; exams, $b = .36, t(105) = 1.70, p > .05$). Additionally, the analyses reveal that participants who were higher in subjective ambivalence shifted their attitude more than those participants who were lower in subjective ambivalence (figures 10 & 11). Specifically, participants who were high in subjective ambivalence whose initial attitude was negative, reported their subsequent attitude to be less negative (shifted in a positive direction) attitudes toward

the attitude object. Among these participants, those whose attitude was initially positive reported their subsequent attitude to be less positive attitude (shifted in a negative direction). In contrast, participants who were low in subjective ambivalence reported a different pattern of shift in attitude. Participants whose initial attitude was negative remained consistent in their attitude when reporting their subsequent attitude, as is clear from a very small, positive shift in their attitude. Among these participants who were positive in their initial attitude, they too remained consistent by reporting more positive subsequent attitudes.

Subjective ambivalence destabilized the initial attitude for those participants who scored higher on the subjective ambivalence measure(s). In contrast, for participants who scored lower on this measure, their attitude remained consistent. These findings are consistent with evidence that ambivalence is associated with weak attitudes (Armitage & Connor, 2000).

Does consensus influence subjective ambivalence? I regressed subjective ambivalence on consensus. The effect of consensus was significant for senior comprehensive exams, $\beta = .19$, $t(108) = 1.98$, $p = .051$, and marginally significant for sex education seminars, $\beta = .18$, $t(108) = 1.92$, $p = .057$. As I had hypothesized, participants in the minority conditions (exams: $M = 13$, $SD = 4.90$; seminars: $M = 10.62$, $SD = 5.0$) experienced more subjective ambivalence than participants in the majority conditions (exam: $M = 11$, $SD = 4.30$; seminars: $M = 8.60$, $SD = 5.02$).

The model contends that group identity moderates the relationship between consensus and subjective ambivalence. Specifically, it contends that people who are

highly identified with the group should experience especially high levels of subjective ambivalence when they learn that they are in the minority. In keeping with Luhtanen and Crocker's (1992) advice to treat the collective self-esteem scales' 4 subscales as distinct constructs, I analyzed the membership self-esteem, private collective self-esteem, public collective self-esteem, and importance of group membership scores separately.

Specifically, I conducted four hierarchical multiple regression analyses following the procedures outlined by Baron and Kenny, 1986). In Step 1 of each analysis, consensus and one of collective self-esteem subscales were entered as predictors of subjective ambivalence. In Step 2 of each analysis, the interaction terms for the interaction between consensus and the collective self-esteem subscale were entered. No interactions involving the collective self-esteem subscales were significant for either comprehensive exams or sex education seminars (all $ps > .05$). These analyses provide no evidence that individuals who are highly identified with their group experience more subjective ambivalence when they learn that they disagree with most members of that group.¹

Manipulation checks. There were two manipulations checks in these experiments. First, on the consensus information page, participants were asked "Please give us your best estimate of the percentage TTU students who DISAGREE with you?"

¹ Unexpectedly, there was a main effect of importance of group membership to identity for comprehensive exams, $\beta = .25$, $t(108) = 2.75$, $p < .01$, such that for those participants for whom group membership was important to their identity experienced more subjective ambivalence. A number of other main effect also approached significance. For comprehensive exams, those higher in group membership self-esteem and public collective self-esteem tended to experience more subjective ambivalence, both $ps = .08$. For sex education seminars, those high in private collective self-esteem and group membership self-esteem tended to experience more subjective ambivalence, $p = .06$ and $.08$, respectively.

This question was in reference to the pie-chart above. The second manipulation check came at the end of the experiment, where participants were asked how believable they found the consensus information.

Believability. The ‘believability’ scale ranged from 1 not at all believable to 7 totally believable. On average, participants in both experiments reported that they found the consensus information somewhat believable (seminars, $n = 103$, $m = 4.07$, $SD = 1.60$; exams, $n = 110$, $m = 4.05$, $SD = 1.50$).

Perceived disagreement. I ran one-sample t-tests to determine if the average of participants' estimates of perceived disagreement were accurate. In this case, the average of participants' estimates should not be significantly different from the actual percentage presented in the pie-chart.

For the minority condition, I ran the one-sample t-test comparing the participants' average rating to 73%. The test revealed that the average of participants' estimates was significantly different from 73% (seminars, $n = 59$, $m = 65.14$, $SD = 17.60$, $t(58) = -3.44$, $p < .001$; exams, $n = 51$, $m = 61.20$, $SD = 19.73$, $t(50) = -4.30$, $p < .001$). Participants in the minority condition, on average, reported estimates of perceived disagreement significantly lower than the actual 73% displayed in the pie chart. This would indicate that, on average, participants' estimates of perceived disagreement were not very accurate.

The one-sample t-test for participants in the majority condition differed significantly from 23%, (seminars, $n = 44$, $m = 35.70$, $SD = 18.90$, $t(43) = 3.10$, $p < .01$; exams, $n = 58$, $m = 32.00$, $SD = 13.40$, $t(57) = 2.64$, $p < .05$). On average, participants in

the majority condition gave estimates that were significantly higher than 23%, suggesting, again, that participants' estimates of perceived disagreement were not very accurate.

Overall, the manipulation check on perceived disagreement provides additional evidence to the suggestion that the consensus information manipulation was a weak manipulation.

CHAPTER IV

DISCUSSION

The purpose of this research was to examine whether normative behavior can be a strategy to reduce feelings of subjective ambivalence. The model of conformity I proposed, illustrated in Figure 6, proposes that consensus is a path to conformity through subjective ambivalence. I had proposed that people experience subjective ambivalence when they disagree with their group (Priester & Petty, 2001), and as a consequence, people are more likely to conform to the group's position. Furthermore, I had proposed that the extent to which people experience subjective ambivalence over this disagreement with their group would be determined by social identity concerns (see Figure 6).

Speculation about the (null) effect of consensus on attitude stability

In order to demonstrate the model of conformity proposed, the consensus manipulation would have had to influence the stability of attitudes such that participants in the minority condition had less stable attitudes. This would have been reflected in the data if consensus had been found to moderate the relationship between initial attitudes and subsequent attitudes (see Path *c*, Figure 6). These data, however, did not demonstrate this moderating effect of consensus. Therefore, the overall model is not supported (figures 8 and 9).

The failure of consensus to influence attitude stability is the lynchpin to why the overall model failed. There are a few possibilities that might explain why consensus failed to influence stability. It is possible that I was wrong in my assertion that consensus would moderate the relationship between an initial attitude and a subsequent attitude.

However, I based my hypothesis, that consensus influences attitudes, on some of the classic conformity studies (Asch, 1956; Newcomb, 1961; Deutsch & Gerard, 1955). In these classic studies, participants were exposed to and conformed or complied with a majority. More recent research by Hodson, Maio and Esses (2001) has also demonstrated that consensus information can influence attitudes.

One possibility is that the manipulation of consensus information was too weak. In fact, the direct effect of consensus on subjective ambivalence only accounted for 3.5% of the variance in subjective ambivalence. In retrospect, perhaps this was due to the dullness of the consensus manipulation. The presentation of the consensus information was a pie chart that was divided into two sections. The pie chart division displayed a majority of participants in a previous survey who either supported or opposed the attitude object. They were also exposed to the pie chart for a fairly short amount of time, pausing only to indicate on a sliding scale an interpretation of the data presented in the pie chart. In addition, participants indicated that they found the consensus information only somewhat believable. I had asked participants to indicate on a scale ranging from 1 (not at all believable) to 7 (totally believable) to what extent they found the consensus information presented in the study to be believable. Overall, participants only found it to be somewhat believable ($M = 4.05$, $SD = 1.45$).

In comparison to my pie chart, Hodson et al.'s (2001) presentation of consensus information was probably more vivid. They asked participants to add their evaluation of a video debate over social welfare in a response booklet. The response booklet contained response ratings from approximately 24 or more fictitious participants. Depending on the

experimental condition, the majority of these bogus ratings indicated that either the pro-welfare debater won the debate or the anti-welfare debater won the debate. The experimenter ran his/her finger down the page in the response booklet, pretending to look for the next open slot, but the real intent was to highlight these bogus responses. It might be that having participants actively adding themselves to the majority or the minority was a more vivid and believable manipulation of consensus.

Another possibility is that the anagram distraction task, which was intended to prevent participants from anchoring on their initial attitude, was too long and may have obstructed some of the subjective ambivalence processes; the distraction task may have been *too* distracting. Though I intended the task to be fairly short, the average participant in my study spent roughly 17 minutes on the anagrams task. The duration of the task may have inhibited participants' ability to associate what discomfort (i.e., subjective ambivalence) they did experience to a disagreement with a majority of their peers. It is possible that they even attributed those feelings of tension to the difficulty they were having with the anagram task. In fact, Zanna and Aziza (1976) and Zanna (1975; as cited in Zanna and Aziza, 1976) found evidence that distraction is one alternative strategy that people use to reduce dissonance. If this were the case, it would explain why consensus had no influence on attitude stability even though it did influence subjective ambivalence.

The (Null) Effects of Group Identity and Other Individual Difference Variables

I had proposed that social identity concerns and several other individual difference variables (e.g., need for cognition, preference for consistency, and need to belong) would moderate the relationship between consensus and subjective ambivalence.

I found no evidence of this. Since none of these variables moderated the effect, my weak manipulation of consensus information is probably to blame. In addition to using a stronger manipulation of consensus information, a manipulation of group identity might also be a good idea. The unstandardized regression coefficients were small (tables 3 and 4). In some of the social identity literature, researchers have used a writing task to manipulate group identity (Doosje, B., Ellemers, N., & Spears, R., 1998). Typically participants are asked to write about what it means to them to be a member of the target group (high group identity condition) or write about what it means to them to be an individual within the target group's community (low identity condition).

The Effect of Consensus on Subjective Ambivalence

Though the data did not support the overall model, they did reveal support for two of the paths. First, consensus did influence subjective ambivalence. This confirms Priester and Petty's (2001) earlier research on the intra-personal antecedents of subjective ambivalence. They found that once people become aware that they are in disagreement with other people who are important to them, they experience subjective ambivalence. These findings build upon Priester and Petty's work by demonstrating that people experience subjective ambivalence not only when they learn they disagree with other people who are important to them, but when people disagree with a social group they belong to. This result illustrates the importance that even fairly abstract groups can have on intrapersonal cognitive processes.

The effect of ambivalence on attitude stability

The data also supported my prediction that subjective ambivalence would weaken the effect of initial attitudes on subsequent attitudes. Ambivalent attitudes are thought to be weak attitudes (e.g., Thompson, Zanna, & Griffin, 1995), and one of four hallmarks of weak attitudes is that they are unstable (Petty & Krosnick, 1995), so ambivalent attitudes should be unstable (Jonas, Broemer, & Diehl, 2000a). However, little research has been conducted investigating the relationship between ambivalence and stability. Jonas, Diehl, and Bromer (2000b), provided some evidence that ambivalent attitudes were less stable over the course of two weeks, but other studies have provided different results. For example, Armitage and Connor (2000) were able to demonstrate that ambivalent attitudes were less predictive of behavior intentions and more resistant to persuasion, but they were unable to find any association between ambivalence and attitude stability. Likewise, Basili's (1996) earlier work on the relationship among attitude strength indicators was also unable to produce an association between attitude stability and ambivalence.

Unlike these researchers, I did find that ambivalent attitudes were less stable. What is especially remarkable is that ambivalent attitudes in my study were less stable over the course of a single experimental session. One possibility is that ambivalent attitudes are more likely to be unstable when they are fairly novel attitudes. Whereas Basilli and Armitage and Connor studied attitudes that people had probably already thought about (eating a low-fat diet), my participants had probably given very little thought to sex education seminars and absolutely no thought to senior comprehensive exams.

Conclusion

In sum, some of the effects I predicted were obtained, but the proposed model of conformity was not supported. We know that being in the minority can influence attitudes (Asch, 1956, Sherif, 1936), but it did not happen in this study. Whether subjective ambivalence plays a role when the minority does influence attitudes will remain a question for future research.

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Table 2.1

The means and standard deviations to the question of whether participants support or oppose the attitude object. Lower values indicate opposition and higher values indicate support for the attitude object.

Attitude object	Mean	SD
Campus wide ban on smoking	5.0	2.0
Discouraging the use of the “guns up” hand signal	2.55	1.82
Sex education seminar included in freshman orientation.	4.68	1.75
Cancelling fall break	2.38	1.96
Mandatory purchase of discounted laptops	5.30	1.83
Ban on the incorporation of new fraternities and sororities	3.89	1.70
Senior comprehensive exams	3.97	1.60

Table 2.2

The means and standard deviations to the question of whether participants believe the attitude object would be good or bad for Texas Tech. Lower values indicate “bad for Tech” and higher values indicate “Good for Tech” responses.

Attitude object	Mean	SD
Campus wide ban on smoking	5.15	1.6
Discouraging the use of the “guns up” hand signal	2.55	1.83
Sex education seminar included in freshman orientation.	4.98	1.50
Cancelling fall break	2.80	1.67
Mandatory purchase of discounted laptops	5.48	1.54
Ban on the incorporation of new fraternities and sororities	3.90	1.61
Senior comprehensive exams	4.57	1.5

Table 3.1

Testing Moderator Effects Using Hierarchical Multiple Regressions: Tests of group identity on the relationship between consensus and subjective ambivalence

Step and variable	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²
Effects coding (Minority coded 1, Majority coded -1)				
Step 1				
Consensus	.79/.93	.42/.49	.17/.18*	.10/.03
Importance of group membership to identity	.85/.93	.31/.45	.25*/.01	
Step 2				
Consensus x Importance of group identity	-.045/-.15	.31/.48	-.013/-.03	.10/.04
Step 1				
Consensus	.98/.98	.48/.48	.19*/.19*	.06/.06
Group membership self-esteem	-1.3/-1.3	.48/.72	.72/-.17	
Step 2				
Consensus x group membership self-esteem	-.52/-.52	.73/.73	-.07/-.07	.07/.07
Step 1				
Consensus	.86/.92	.44/.48	.19*/.18*	.04/.07
Private collective self-esteem	.12/-.96	.74/.50	.02/-.18*	
Step 2				
Consensus x private collective self-esteem	-.26/.51	.75/.50	-.03/.10	.04/.08
Step 1				
Consensus	.85/.99	.43/.49	.18*/.19*	.06/.05
Public collective self-esteem	.76/-.69	.42/.58	.17/-.11	
Step 2				
Consensus x public collective self-esteem	.51/-.26	.42/.60	.11/-.04	.07/.05

Note: the first number is for comprehensive exams, the second is for sex-ed seminars
 p* <.05. (or marginal) ** *p* <.01. * *p* <.001.

Table 3.2

Testing Moderator Effects Using Hierarchical Multiple Regressions: Tests of other individual differences variables on the relationship between consensus and subjective ambivalence

Step and variable	<i>B</i>	<i>SE B</i>	β	R^2
Step 1				
Consensus	.87/.94	.44/.49	.19*/.02	.04
Need to belong	.13/.04	.12/.13	.10/.03	
Step 2				
Consensus x need to belong	.15/.15	.13/.13	.11/.11	.06/.05
Step 1				
Consensus	.87/.92	.43/.49	.19*/.18	.07/.04
Need for cognition	-.15/.032	.06/.064	-.23*/.048	
Step 2				
Consensus x need for cognition	-.05/.01	.06/.07	-.07/.02	.06/.04
Step 1				
Consensus	.86/.93	.44/.49	.19*/.18*	.04/.03
Preference for consistency	.01/.00	.05/.05	.01/.00	
Step 2				
Consensus x preference for consistency	-.04/.03	.05/.05	-.07/.05	.04/.04

Note: the first number is for comprehensive exams, the second is for sex-ed seminars
 * $p < .05$. (or marginal) ** $p < .01$. *** $p < .001$.

Table 3.3

Regression analyses: Tests of whether the individual differences measures predicted the believability ratings (exams / seminars).

Variable	<i>B</i>	<i>SE B</i>	β	R^2
Importance of group membership to identity	.03 / .06*	.03 / .03	.13 / .18	.02 / .04
Group membership self-esteem	.004 / .006	.04 / .05	.01 / .01	.004 / .001
Group private collective self-esteem	.04 / .06	.03 / .04	.13 / .17	.02 / .03
Group public collective self-esteem	.05 / .10*	.03 / .05	.15 / .22	.03 / .03
Need to belong	.02 / .08*	.03 / .16	.05 / .26	.006 / .07
Need for cognition	-.03 / .06	.20 / .02	-.13 / .07	.02 / .006
Preference for consistency	.001 / .2	.08 / .02	.003 / .12	.004 / .02

Note: the first number is for comprehensive exams, the second is for sex-ed seminars

** $p < .05$. (or marginal) ** $p < .01$. *** $p < .001$.*

Figure 1

The model of conformity in the context of inter-personal attitude discrepancy.

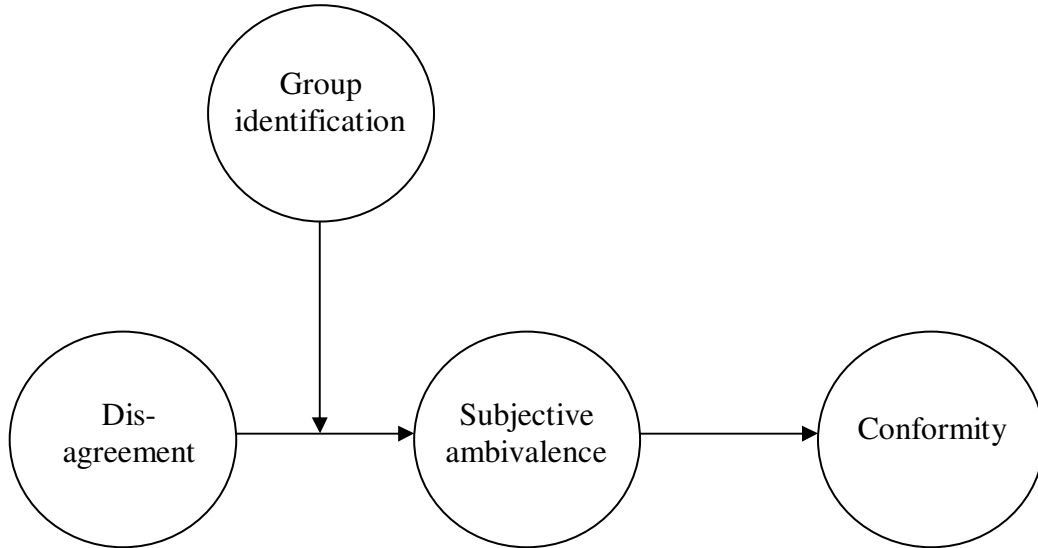


Figure 2

Where, X is the Predictor (IV), W is the Moderator, M is the Mediator, and Y is the Criterion (DV)

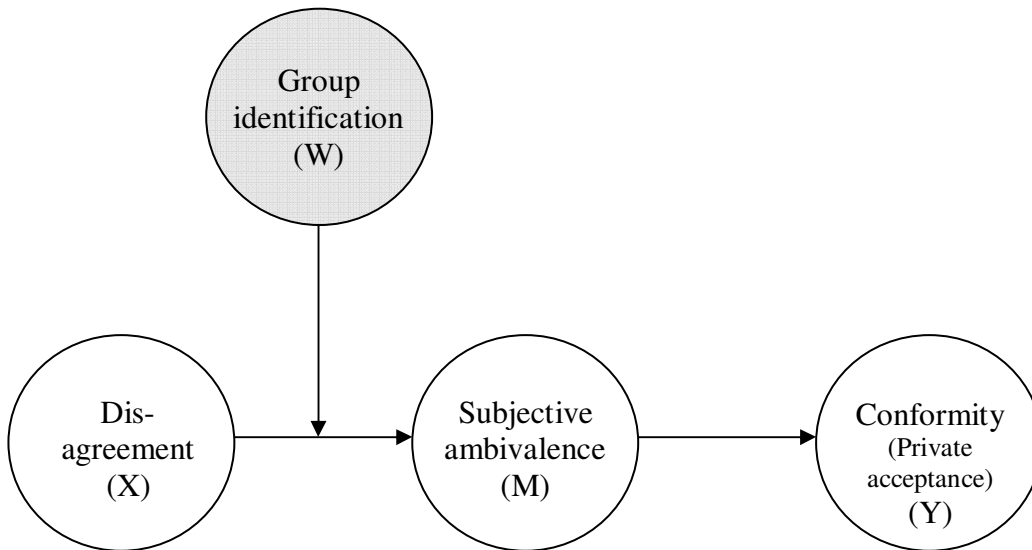


Figure 3.1. Predicted determinants of subsequent attitudes

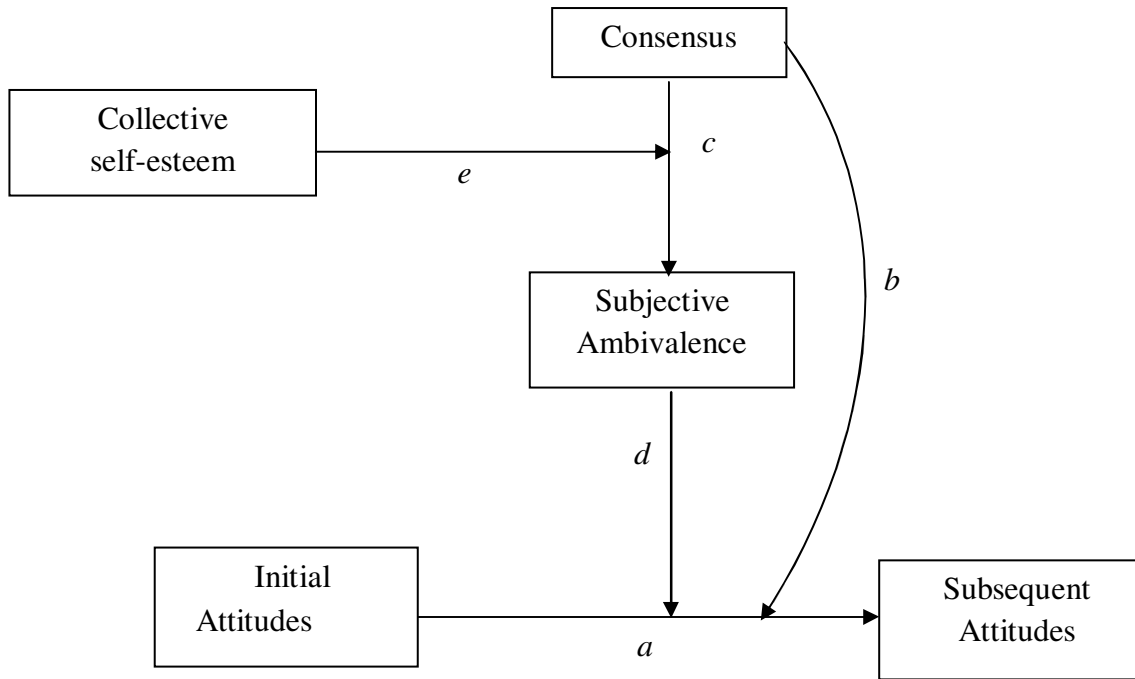
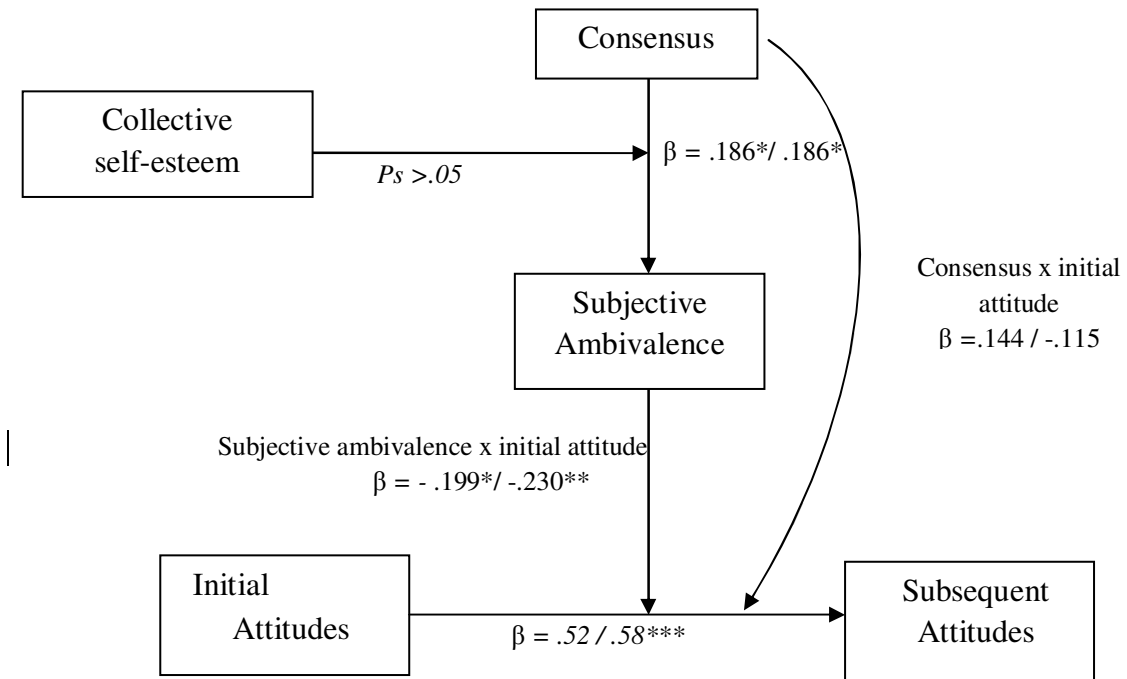


Figure 3.2. Predicted determinants of subsequent attitudes with the regression coefficients and p-values from the analyses of both the exam and seminars attitude objects



* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 3.3. Subsequent attitudes toward comprehensive exams as a function of initial attitudes, with separate curves for participants in the majority condition (dashed line) and minority condition (solid line).

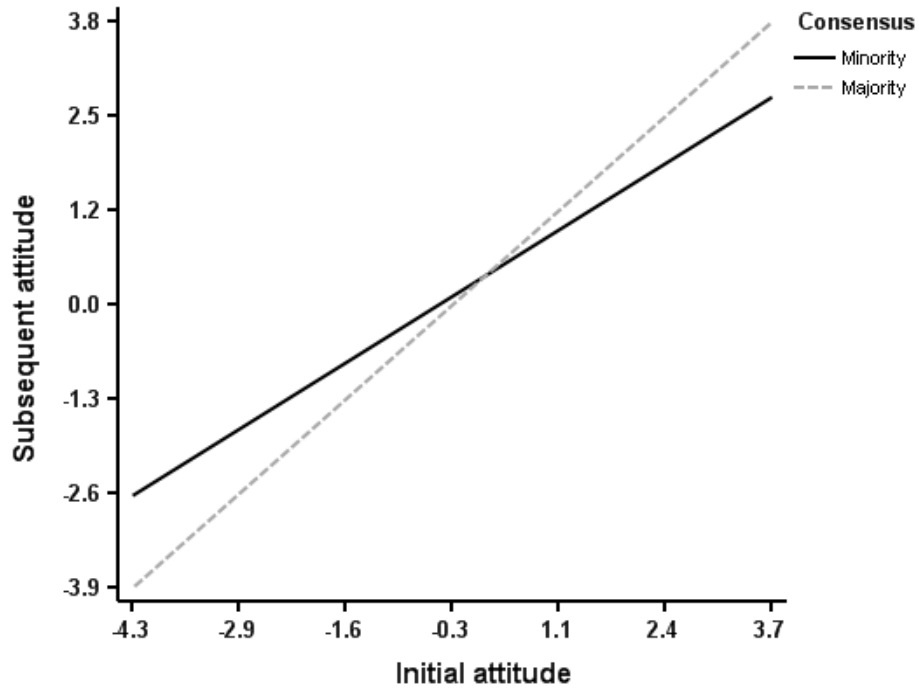


Figure 3.4. Subsequent attitudes toward sex education seminars as a function of initial attitudes, with separate curves for participants in the majority condition (dashed line) and minority condition (solid line).

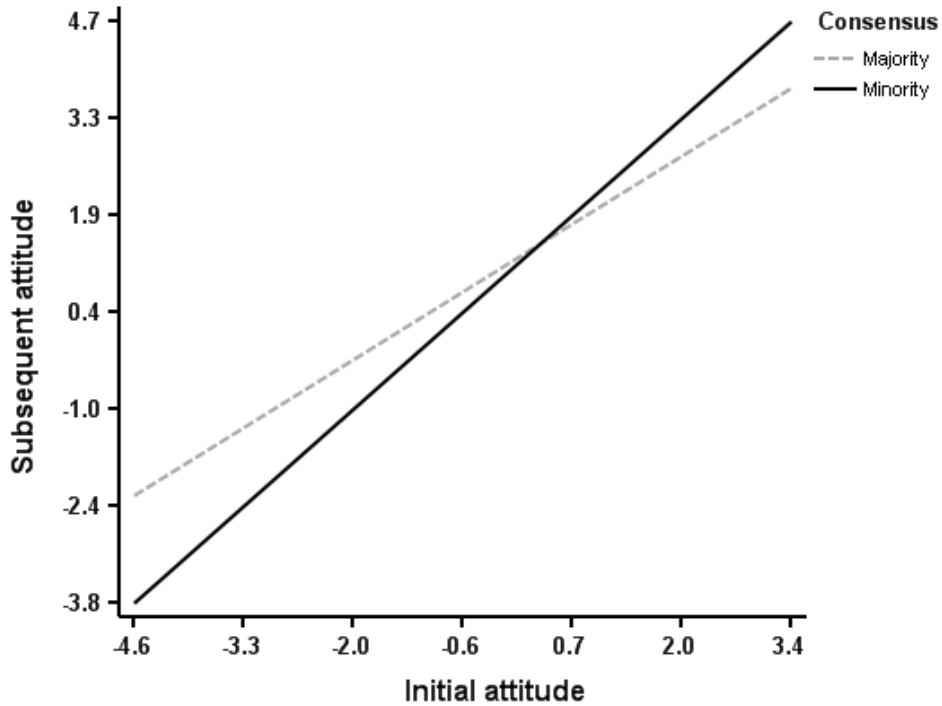


Figure 3.5. Subsequent attitudes toward sex education seminars as a function of initial attitudes, with separate curves for participants high in subjective ambivalence (dark line) and low in subjective ambivalence (grey line).

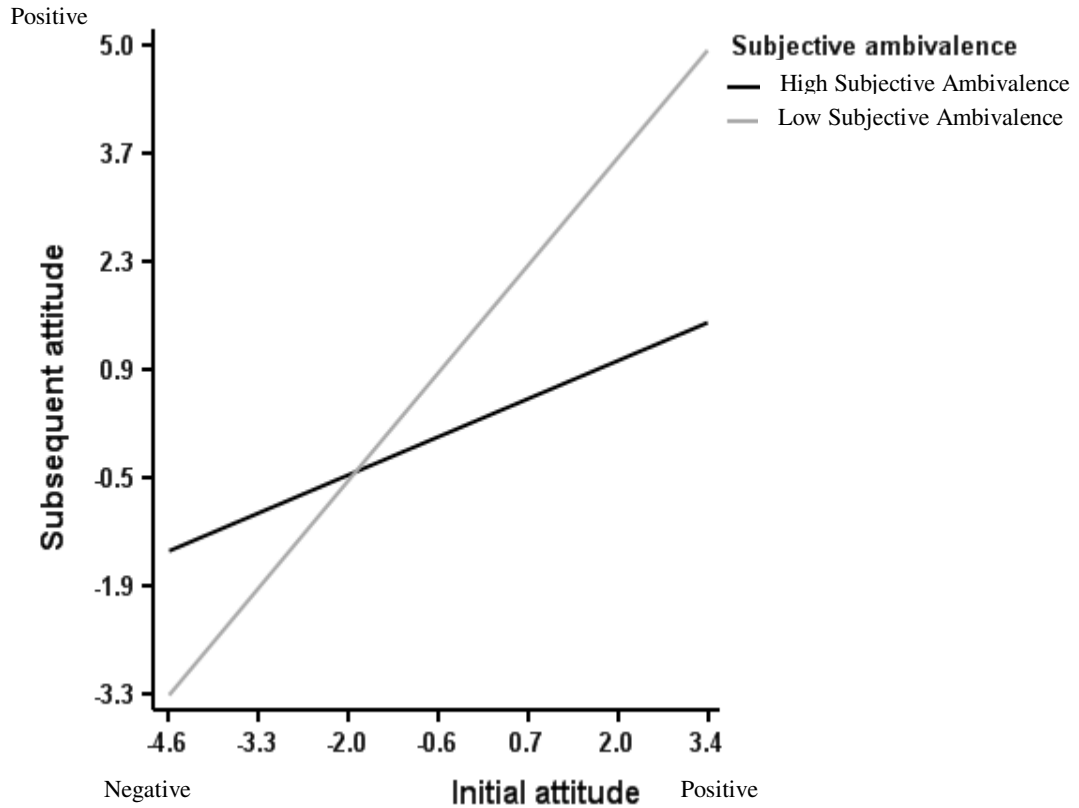


Figure 3.6. Subsequent attitudes toward comprehensive exams as a function of initial attitudes, with separate curves for participants high in subjective ambivalence (dark line) and low in subjective ambivalence (grey line).

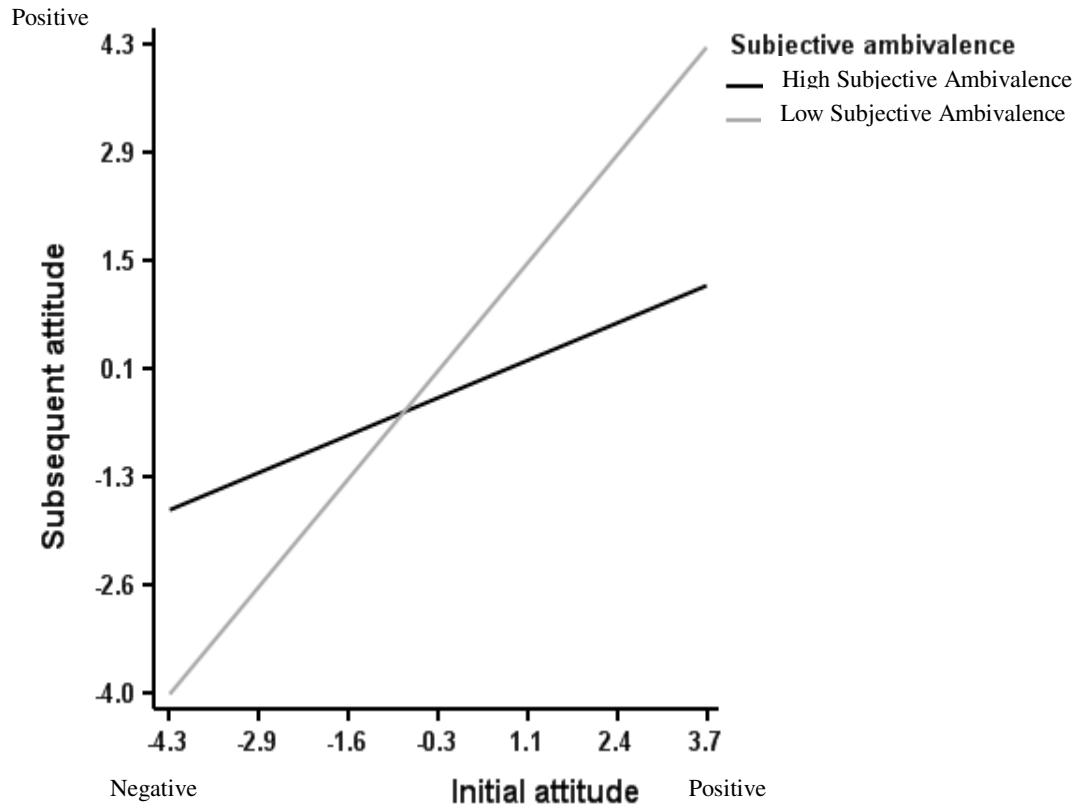
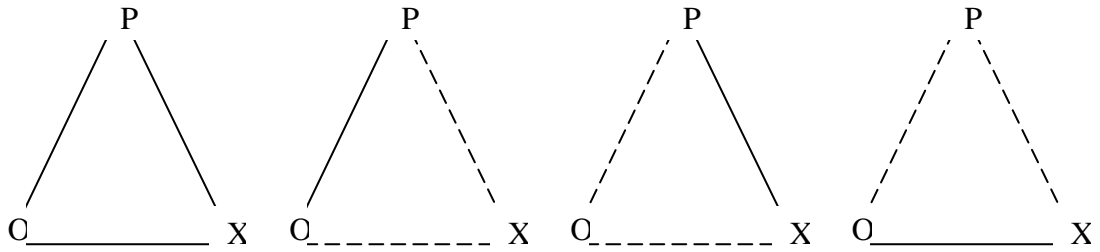


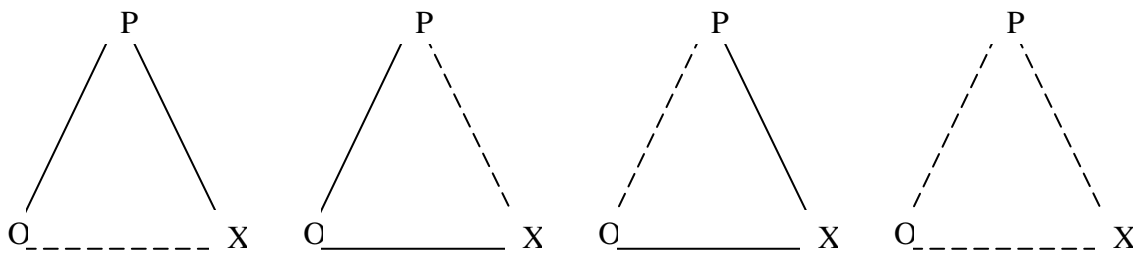
Figure 6.1²

Balance theory triads

Balanced



Imbalanced



² Figure 3 is from Eagly & Chaiken, 1993, p.135

Figure 6.2
The Theory of Reasoned Action

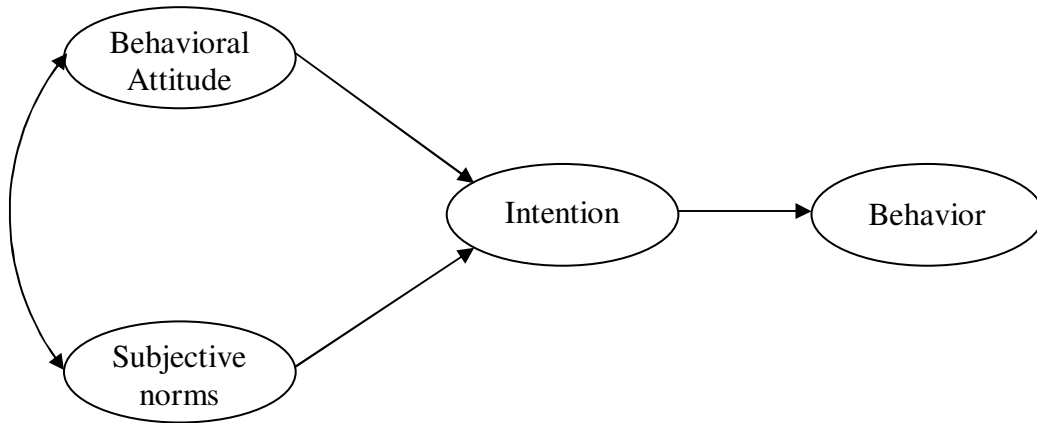
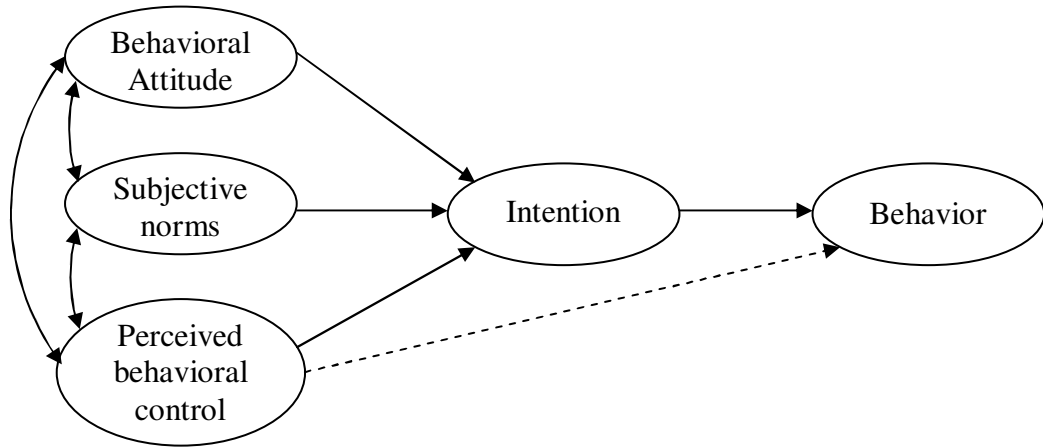


Figure 6.3
The theory of Planned Behavior



APPENDIX A

HUMAN SUBJECTS PROPOSAL (IRB)

Cover Sheet for Human Subjects Proposal

Texas Tech University
Protection of Human Subjects Committee (IRB)

Title: Train between me and us: On the moderating effects of group identity... Date: 3/30/10

- Human subjects proposals can be approved only for TTU faculty
Students are to be listed as Co-PIs and must have a faculty PI

Faculty PI Larsen, Jeff T.
Co PI Citti, Danette
Co PI

Department Psychology
Phone 2-3711 x234
Mail Stop 2051
E-mail jeff.larsen@ttu.edu

Checklist (Include all the following items)

- Cover Sheet (this form)
Claim of Exemption
Expedited Form
Full Board Summary
Proposal (Items 1 through 6)
Proofread Consent Form
Recruiting Materials
Questionnaire(s)
Sponsored projects Information
Other (misc. items that need not be included)

Signatures:

Faculty PI
Co-PI
Department Chair or Dean

Requested Review:

- (List the category of exempt/expedited if fits)
Exemption Claim
Expedited Review 7
Full Board Review
Proposal involves minors or other special population

Reviewers Approval:

Submission:

- Please allow 10 working days for approval of this request
Please submit to:
Elizabeth Johnston Vasquez (742-3884)
Institutional Review Board for the Protection of Human Subjects
Texas Tech University, Office of Research Services
203 Holden Hall * MS 1035

If this HS protocol is to be used with a sponsored project:

- Include a copy of the technical part of the sponsored project proposal
(if multi-task proposal, only relevant sections are needed)

APPENDIX B
ATTITUDE PRE-SCREENING CONSENT FORM

1. We are asking you to be a participant in a research study called “Texas Tech Student Attitudes Survey.”
 2. Dr. Jeff T. Larsen of the Department of Psychology at Texas Tech is in charge of the study. His phone number is 742-3711 x234 and his email address is jeff.larsen@ttu.edu.
 3. The purpose of this project is to collect information regarding student attitude toward various issues of concern to Texas Tech students.
 4. You will be asked to respond to some questionnaires with rating scales.
 5. It will take less than 20 minutes to complete the experiment.
 6. None of these procedures will hurt you.
 7. You will receive credit for your PSY 1300 research requirement in exchange for your participation in this and any other studies you complete during this session. Specifically, you will receive ½ credit for every ½ hour of participation.
 8. No one but Dr. Larsen and his assistants will see your data. They will be kept in secure file cabinets and computer files in his offices at Texas Tech. Your answers will be put into a computer without your name.
 9. Completing this experiment is up to you. No one can force you to do it and you will receive research requirement credit for the time you’ve spent here even if you choose not to complete it or choose to quit partway through.
 10. Dr. Larsen or his assistant will answer any questions you have about the study. For questions about your rights as a participant, contact: Texas Tech University
 11. Institutional Review Board for the Protection of Human Subjects, Office of Research Services, Texas Tech University, Lubbock, TX 79409. Or you can call 806-742-3884.
 12. This consent form is not valid after 3/31/2011.
- Yes, I have read and understand the above informed consent. I agree to continue with my participation in this experiment.
- Yes, I have read and understand the above informed consent. I *do not* agree to continue my participation in this experiment.

APPENDIX C

PRE-SCREENING ATTITUDE QUESTIONNAIRE

One of the roles of the TTU Community Opinion Office is to serve as a “suggestion box,” where members of the TTU community, including faculty, staff, students, and parents can voice their concerns about issues facing TTU. Many of the concerns lodged with the Community Opinion Office are shared by virtually no one other than the person who lodged them. For instance, one parent suggested last year that the campus be entirely closed to cars and trucks to give it the feel of an old European university. Subsequent polling indicated that virtually no else found this to be a good idea, let alone a feasible idea. On other occasions, concerns lodged with the Community Opinion Office turn out to have widespread appeal. Five years ago, a staff member suggested that the university could save money by giving dormitory residents the option of not having a landline telephone in their dorm rooms. Polling revealed that virtually everyone agreed with that basic idea, the Housing Department developed a comprehensive plan, and its implementation saved \$800,000 in its first year alone.

One way that the TTU Community Opinion Office measures public opinion is by partnering with the Psychology Department to collect data from Introductory Psychology students. They would like your feedback on several concerns that have recently been raised by members of the TTU community.

As you answer the questions below, keep in mind that the Community Opinion Office is in the first stages of its consideration of these issues and that no policy changes will occur soon, if ever. At this point, the goal is simply to determine community members’ opinions.

1. Given the health risks of secondhand smoke, some have called for a campus-wide ban on smoking.

- a. To what extent would you support or oppose such a ban?

1	2	3	4	5	6	7
Strongly Oppose	Moderately Oppose	Slightly Oppose	No Opinion	Slightly Support	Moderately Support	Strongly Support

- b. To what extent do you think such a ban would be good or bad for Texas Tech?

1	2	3	4	5	6	7
Very Bad	Quite Bad	Somewhat Bad	No Opinion	Somewhat Good	Quite Good	Very Good

2. In light of school shootings on college campuses over the past few years, some would like the use of the “guns up” hand signal to be discouraged.
 - a. To what extent would you support or oppose such a move? (*see scale above*)
 - b. To what extent do you think such a move would be good or bad for Texas Tech? (*see scale above*)
3. For the last several years, there has been a “fall break” one Monday in mid-October. With Thanksgiving just around the corner and the end of the fall semester being so crammed, some students would rather start the semester one day later and do away with the fall break. To what extent would you support or oppose putting an end to the fall break?
 - a. To what extent would you support or oppose putting an end to the fall break? (*see scale above*)
 - b. To what extent do you think putting an end to the fall break would be good or bad for Texas Tech? (*see scale above*)
4. It has become clear that laptop computers are essential for success in college, but many students can’t afford them and others come to school with old laptops with limited capabilities. To remedy this problem, some would like to negotiate a contract with HP, Dell, or another major computer manufacturer so that all incoming undergraduates purchase a new, high-quality, but inexpensive laptop when they arrive on campus. Based on similar experiences at other colleges, the negotiated price would be 50% of retail price, so the computers would probably cost about \$400. To what extent would you support or oppose?
 - a. To what extent would you support or oppose a plan whereby all incoming students would be required to purchase a laptop at a 50% discount? (*see scale above*)
 - b. To what extent do you think a plan whereby all incoming students would be required to purchase a laptop at a 50% discount would be good or bad for Texas Tech? (*see scale above*)
5. Given past incidents of hazing during rush week, Texas Tech is considering banning the incorporation of any new fraternities and sororities. To what extent would you support or oppose banning the incorporation of any new fraternities and sororities?
 - a. To what extent would you support or oppose banning the incorporation of any new fraternities and sororities? (*see scale above*)

- b. To what extent banning the incorporation of any new fraternities and sororities would be good or bad for Texas Tech? (*see scale above*)

6. Unlike many of the universities that Texas Tech is trying to compete with, Texas Tech has no uniform set of academic standards and no means of testing whether graduating seniors are prepared to enter the workforce or graduate study. Other colleges have successfully determined students' academic preparation by implementing senior comprehensive exams. Prior to graduating, seniors at these colleges must pass a 3-hr exam covering material that they have learned while taking the required courses in their major. Universities who have implemented senior comprehensive exams have seen their graduates enjoy higher starting salaries and greater success at getting into graduate and professional programs. In light of these data, some have called for the implementation of senior comprehensive exams at Texas Tech. To what extent would you support or oppose the implementation of senior comprehensive exams?
 - a. To what extent would you support or oppose the implementation of senior comprehensive exams at TTU? (*see scale above*)
 - b. To what extent do you think the implementation of senior comprehensive exams at TTU? (*see scale above*)

APPENDIX D

ATTITUDE PRE-SCREENING DEBRIEFING

Thank you for participating in our attitude survey. This survey is the first phase of a two phase study being conducted in the psychology department dealing with conformity.

Based on your responses, we will select two attitude issues about which people disagreed, such that some supported the plan and others opposed it. During the second phase of the study, participants will be asked to report their attitudes toward one of these plans, then will be told that the majority of TTU students either agree or disagree. We will then determine how being in the majority or minority makes people feel and ultimately affects their opinion toward the plan.

This study involved deception. We told you that the survey was being conducted in partnership with the TTU Community Opinion Office, but there is no such office. We also told you that members of the TTU community raised the issues that you read about, but that is not the case. We invented these concerns for this survey, the sole purpose of which is to select attitude issues for the second phase of this study.

All of this deception is necessary to study the psychology of conformity. By definition, people are usually in the majority. To get around this, it is necessary to lead some people to believe that they are actually in the minority. In addition, it will be necessary to use issues that people find meaningful because being in the minority usually only bothers us when we are in the minority on things that we care about. That's why we invented the Community Opinion Office and came up with fictitious policy issues that would be relevant to TTU students.

Your responses to this survey are anonymous and will not be used for any other purpose that what has been mentioned here.

Finally, we would like to thank you for your participation and invite you to contact us if you have any further questions, comments or concerns. You may reach the primary investigator of this study, Dr. Jeff Larsen at jeff.larsen@ttu.edu

APPENDIX E

Main Experiment Consent

Consent Form for Experiment Participation

1. We are asking you to be a participant in a research study called “Texas Tech Student Attitudes Survey.”
2. Dr. Jeff T. Larsen of the Department of Psychology at Texas Tech is in charge of the study. His phone number is 742-3711 x234 and his email address is jeff.larsen@ttu.edu.
3. The purpose of this project is to collect information regarding student attitude toward various issues of concern to Texas Tech students specifically.
4. You will be asked to respond to some questionnaires with rating scales and one small anagrams task.
5. It will take approximately 60 minutes to complete the experiment.
6. None of these procedures will hurt you.
7. You will receive credit for your PSY 1300 research requirement in exchange for your participation in this and any other studies you complete during this session. Specifically, you will receive ½ credit for every ½ hour of participation.
8. No one but Dr. Larsen and his assistants will see your data. They will be kept in secure file cabinets and computer files in his offices at Texas Tech. Your answers will be put into a computer without your name.
9. Completing this experiment is up to you. No one can force you to do it and you will receive research requirement credit for the time you’ve spent here even if you choose not to complete it or choose to quit partway through.
10. Dr. Larsen or his assistant will answer any questions you have about the study. For questions about your rights as a participant, contact: Texas Tech University Institutional Review Board for the Protection of Human Subjects, Office of Research Services, Texas Tech University, Lubbock, TX 79409. Or you can call 806-742-3884.
11. This consent form is not valid after 03/31/2011.



Yes, I have read and understand the above informed consent. I agree to continue with my participation in this experiment.

- Yes, I have read and understand the above informed consent. I *do not agree* to continue my participation in this experiment.

APPENDIX F

EXPERIMENT PARTICIPATION CREDIT

Participation Credit

This study focuses on the attitudes of Texas Tech students on a variety of different issues of concern students here at Texas Tech University.

Phase one of this research project was conducted earlier this semester. This experiment is the second phase of that research project.

We assure you that all of your data will be kept private.

In order to ensure that you receive credit for your participation, please enter your first and last name in the spaces provided.

Thank you.

First name:

Last name:

APPENDIX G

NEED TO BELONG SCALE

For each of the statements below, indicate the degree to which you agree or disagree with the statement by writing a number between 1 and 5 in the space beside the question using the scale below:

	1	2	3	4	5
Strongly disagree					Strongly agree

1. _____ If other people don't seem to accept me, I don't let it bother me.
2. _____ I try hard not to do things that will make other people avoid or reject me.
3. _____ I seldom worry about whether other people care about me.
4. _____ I need to feel that there are people I can turn to in times of need.
5. _____ I want other people to accept me.
6. _____ I do not like being alone.
7. _____ Being apart from my friends for long periods of time does not bother me.
8. _____ I have a strong need to belong.
9. _____ It bothers me a great deal when I am not included in other people's plans.
10. _____ My feelings are easily hurt when I feel that others do not accept me.

APPENDIX H

NEED FOR COGNITION

For the next several questions, please choose a number between 1 and 7 and write it next to each statement to indicate how much you agree with that statement.

1	2	3	4	5	6	7	
Strongly disagree							Strongly agree

- | | |
|--|---|
| <p>1. _____ I would prefer complex to simple problems.</p> <p>2. _____ I like to have the responsibility of handling a situation that requires a lot of thinking.</p> <p>3. _____ Thinking is not my idea of fun.</p> <p>4. _____ I would rather do something that requires a little thought than something that is sure to challenge my thinking abilities.</p> <p>5. _____ I try to anticipate and avoid situations where there is likely chance I will have to think in depth about something.</p> <p>6. _____ I find satisfaction in deliberating hard and for long hours.</p> | <p>7. _____ I prefer to think about small, daily projects to long-term ones.</p> <p>8. _____ I like tasks that require little thought once I've learned them.</p> <p>9. _____ The idea of relying on thought to make my way to the top appeals to me.</p> <p>10. _____ I really enjoy a task that involves coming up with new solutions to problems.</p> <p>11. _____ Learning new ways to think doesn't excite me very much.</p> <p>12. _____ I prefer my life to be filled with puzzles that I must solve.</p> <p>13. _____ The notion of thinking abstractly is appealing to me.</p> |
|--|---|

14. _____ I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
15. _____ I feel relief rather than satisfaction after completing a task that required a lot of mental effort.
16. _____ It's enough for me that something gets the job done; I don't care how or why it works.
17. _____ I usually end up deliberating about issues even when they do not affect me personally.

APPENDIX I

Preference for Consistency

For the next several questions, please choose a number between 1 and 5 and write it next to each statement to indicate how much you agree with that statement.

1	2	3	4	5
Strongly disagree				Strongly agree

1. _____ I prefer to be around people whose reactions I can anticipate
2. _____ It is important to me that my actions are consistent with my beliefs.
3. _____ Even if my attitudes and actions seemed consistent with one another to me, it would bother me if they did not seem consistent in the eyes of others.
4. _____ It is important to me that those who know me can predict what I will do.
5. _____ I want to be described by others as a stable, predictable person.
6. _____ Admirable people are consistent and predictable.
7. _____ The appearance of consistency is an important part of the image I present to the world.
8. _____ It bothers me when someone I depend on is unpredictable.
9. _____ I don't like to appear as if I am inconsistent.
10. _____ I get uncomfortable when I find my behavior contradicts my beliefs.
11. _____ An important requirement for any friend of mine is personal consistency
12. _____ I typically prefer things to be the same.
13. _____ I dislike people who are constantly changing their opinions.
14. _____ I want my close friends to be predictable.
15. _____ It is important to me that others view me as a stable person
16. _____ I make an effort to appear consistent to others.
17. _____ I am uncomfortable holding two beliefs that are inconsistent.

18. _____ It doesn't bother me much if my actions are inconsistent.*

APPENDIX J

Texas Tech Community Collective Self-Esteem Scale

We would like you to consider your memberships in the Texas Tech community and respond to the following statements on the basis of how you feel about your membership in the community. There are no right or wrong answers to any of these statements; we are interested in your honest reactions and opinions. Please read each statement carefully.

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

- | | |
|---|--|
| <p>1. ____ I am a worthy member of the Texas Tech community.</p> <p>2. ____ I often regret that I belong to the Texas Tech community.</p> <p>3. ____ Overall, Texas Tech community is considered good by others.</p> <p>4. ____ Overall, being a member of the Texas Tech community have very little to do with how I feel about myself.</p> <p>5. ____ I feel I don't have much to offer to the Texas Tech community.</p> <p>6. ____ In general, I'm glad to be a member of the Texas Tech community.</p> <p>7. ____ Most people consider Texas Tech community to be more ineffective than other Texas Tech community.</p> | <p>8. ____ The Texas Tech community is an important reflection of who I am.</p> <p>9. ____ I am a cooperative participant in the Texas Tech community.</p> <p>10. ____ Overall, I often feel that the Texas Tech community of which I am a member is not worthwhile.</p> <p>11. ____ In general, others respect the Texas Tech community.</p> <p>12. ____ The Texas Tech community is unimportant to my sense of what kind of a person I am.</p> <p>13. ____ I often feel I'm a useless member of my Texas Tech community.</p> <p>14. ____ I feel good about belonging to the Texas Tech community.</p> <p>15. ____ In general, others think that the Texas Tech community is unworthy.</p> <p>16. ____ In general, belonging to Texas Tech community is an important part of myself image</p> |
|---|--|

APPENDIX K

Unipolar Attitude Questionnaire

One of the roles of the TTU Community Opinion Office is to serve as a “suggestion box,” where members of the TTU community, including faculty, staff, students, and parents can voice their concerns about issues facing TTU. Many of the concerns lodged with the Community Opinion Office are shared by virtually no one other than the person who lodged them. For instance, one parent suggested last year that the campus be entirely closed to cars and trucks to give it the feel of an old European university. Subsequent polling indicated that virtually no else found this to be a good idea, let alone a feasible idea. On other occasions, concerns lodged with the Community Opinion Office turn out to have widespread appeal. Five years ago, a staff member suggested that the university could save money by giving dormitory residents the option of not having a landline telephone in their dorm rooms. Polling revealed that virtually everyone agreed with that basic idea, the Housing Department developed a comprehensive plan, and its implementation saved \$800,000 in its first year alone.

One way that the TTU Community Opinion Office measures public opinion is by partnering with the Psychology Department to collect data from Introductory Psychology students. Recently, the TTU Community Opinion Office conducted the first part of a two part information gathering procedures to investigate these issues mentioned above. This web-survey is the second part of that two part process.

Please take a moment to consider your position on each of the items below.

1. _____ Sex Education Seminar / Comprehensive exams

Concentrating only on the positive aspect of the following items, ignoring any negative aspects, please choose a number between 1 and 4 and write it next to each statement to indicate how **NEGATIVELY** you rate each of the following items.

1	2	3	4
Not at all NEGATIVELY			Extremely NEGATIVELY

1. ____ Sex Education Seminar / Comprehensive exams

Concentrating only on the negative aspect of the following items, ignoring any positive aspects, please choose a number between 1 and 4 and write it next to each statement to indicate how negatively you rate each of the following items.

1	2	3	4
Not at all negatively			Extremely negatively

1. Overall, do you support or oppose Sex Education Seminar / Comprehensive exams?

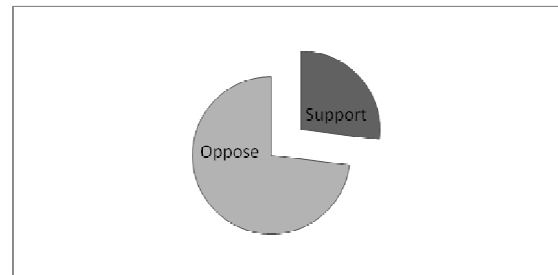
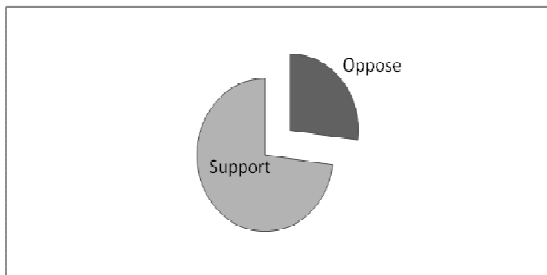
- Support
- Oppose

APPENDIX L

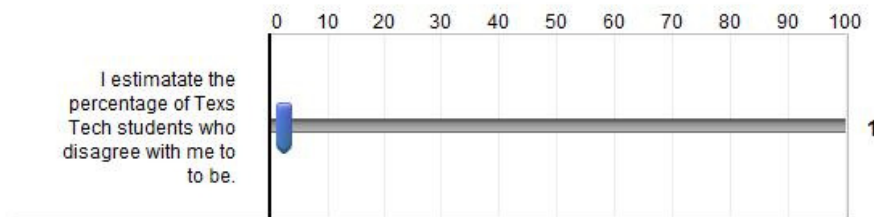
CONSENSUS MANIPULATION

We conducted a survey earlier this semester asking 212 TTU students their attitudes toward a variety of issues. We'd like to share with you some of the information from that survey.

The "Support" portion of the pie chart illustrates the percentage of TTU students who supported senior comprehensive exams (mandatory sex education seminar during freshman orientation). The "Oppose" portion illustrates the percentage who opposed it.



Please give us your best estimate of the percentage TTU students who *DISAGREE* with you?



APPENDIX M

AMBIVALENCE QUESTIONNAIRE

Ambivalence is defined as having both positive and negative thoughts and feelings about an object. Please tell us the extent to which you are conflicted, indecisive and have mixed reactions to a mandatory sex education seminar during freshman orientation (senior comprehensive exams).

Conflicted

	1	2	3	4	5	6	7	8
I feel no conflict at all								I feel maximum conflict

_____ Mandatory sex education seminar during freshman orientation (senior comprehensive exams)

Indecisive

	1	2	3	4	5	6	7	8
I feel no indecision at all								I feel maximum indecisive

_____ Mandatory sex education seminar during freshman orientation (senior comprehensive exams)

Mixed Reactions

	1	2	3	4	5	6	7	8
I feel no indecision at all								I feel maximum indecisive

_____ Mandatory sex education seminar during freshman orientation (senior comprehensive exams)

APPENDIX N

ANAGRAMS TASK

We would like you to take some time and solve these anagram puzzles. Another group of researchers in the psychology department has asked us to collect some preliminary data on anagrams for a future study. Please take your time in solving these anagrams.

Anagrams are words or phrase that when the letters are rearranged spell another word. For example, NO CALF (6) can be re-arranged to spell FALCON. The number in the parentheses indicates the number of letters in the anagram and the word.

See if you can solve these anagrams. Provide your answer in the space below the anagram.

1. Ant Heaps (8)
2. One Pig (6)
3. Emanate (7)
4. Owl Laws (7)
5. Cop Outs (7)
6. Keep a rat (8)
7. Lone Egg Deal (6, 5) two words
8. Tip up shampoo (12)
9. Nip Hold (7)
10. A mall (5)
11. Paroled (7)
12. Fig Fear (7)

APPENDIX O

ATTITUDE QUESTIONNAIRE

Concentrating only on the positive aspect of the following items, ignoring any negative aspects, please choose a number between 1 and 4 and write it next to each item to indicate how **NEGATIVELY** you rate each of the following items.

1. Given the health risks of secondhand smoke, some have called for a campus-wide ban on smoking. How **NEGATIVELY** do you rate a campus wide ban on smoking?

1	2	3	4
Not at all NEGATIVELY	Mildly NEGATIVELY	Somewhat NEGATIVELY	Extremely NEGATIVELY

2. In light of school shootings on college campuses over the past few years, some would like the use of the “guns up” hand signal to be discouraged. How **NEGATIVELY** do you rate the discouragement of the use of the "guns up" hand signal? (*see above scale*)
3. In light of concerns that sex education in Texas high schools is inadequate and the incidence of sexually transmitted diseases and unwanted pregnancies at TTU, some would like freshman orientation to include a sex education component. How **NEGATIVELY** do you rate adding a sex education component to freshman orientation? (*see above scale*)
4. For the last several years, there has been a “fall break” one Monday in mid-October. With Thanksgiving just around the corner and the end of the fall semester being so crammed, some students would rather start the semester one day later and do away with the fall break. How **NEGATIVELY** do you rate eliminating the fall break? (*see above scale*)
5. It has become clear that laptop computers are essential for success in college, but many students can’t afford them and others come to school with old laptops with limited capabilities. To remedy this problem, some would like to negotiate a contract with HP, Dell, or another major computer manufacturer so that all incoming undergraduates purchase a new, high-quality, but inexpensive laptop when they arrive on campus. Based on similar experiences at other colleges, the negotiated priced would be 50% of retail price, so the computers would probably cost about \$400. How **NEGATIVELY** do you rate such a requirement? (*see above scale*)

6. Given past incidents of hazing during rush week; Texas Tech is considering banning the incorporation of any new fraternities and sororities. How NEGATIVELY do you rate such a ban on new fraternities and sororities? (*see above scale*)

7. Unlike many of the universities that Texas Tech is trying to compete with, Texas Tech has no uniform set of academic standards and no means of testing whether graduating seniors are prepared to enter the workforce or graduate study. Other colleges have successfully determined students' academic preparation by implementing senior comprehensive exams. Prior to graduating, seniors at these colleges must pass a 3-hr exam covering material that they have learned while taking the required courses in their major. Universities who have implemented senior comprehensive exams have seen their graduates enjoy higher starting salaries and greater success at getting into graduate and professional programs. In light of these data, some have called for the implementation of senior comprehensive exams at Texas Tech. (*See above scale*)

Concentrating only on the negative aspect of the following items, ignoring any positive aspects, please choose a number between 1 and 4 and write it next to each statement to indicate how negatively you rate each of the following items.

1. Given the health risks of secondhand smoke, some have called for a campus-wide ban on smoking. How NEGATIVELY do you rate a campus wide ban on smoking?

1	2	3	4
Not at all negatively	Mildly negatively	Somewhat negatively	Extremely negatively

2. In light of school shootings on college campuses over the past few years, some would like the use of the “guns up” hand signal to be discouraged. How NEGATIVELY do you rate the discouragement of the use of the "guns up" hand signal? (*see above scale*)
 3. In light of concerns that sex education in Texas high schools is inadequate and the incidence of sexually transmitted diseases and unwanted pregnancies at TTU, some would like freshman orientation to include a sex education component. How NEGATIVELY do you rate adding a sex education component to freshman orientation? (*see above scale*)
 4. For the last several years, there has been a “fall break” one Monday in mid-October. With Thanksgiving just around the corner and the end of the fall

semester being so crammed, some students would rather start the semester one day later and do away with the fall break. How NEGATIVELY do you rate eliminating the fall break? (*see above scale*)

5. It has become clear that laptop computers are essential for success in college, but many students can't afford them and others come to school with old laptops with limited capabilities. To remedy this problem, some would like to negotiate a contract with HP, Dell, or another major computer manufacturer so that all incoming undergraduates purchase a new, high-quality, but inexpensive laptop when they arrive on campus. Based on similar experiences at other colleges, the negotiated priced would be 50% of retail price, so the computers would probably cost about \$400. How NEGATIVELY do you rate such a requirement? (*see above scale*)
6. Given past incidents of hazing during rush week; Texas Tech is considering banning the incorporation of any new fraternities and sororities. How NEGATIVELY do you rate such a ban on new fraternities and sororities? (*see above scale*)

Unlike many of the universities that Texas Tech is trying to compete with, Texas Tech has no uniform set of academic standards and no means of testing whether graduating seniors are prepared to enter the workforce or graduate study. Other colleges have successfully determined students' academic preparation by implementing senior comprehensive exams. Prior to graduating, seniors at these colleges must pass a 3-hr exam covering material that they have learned while taking the required courses in their major. Universities who have implemented senior comprehensive exams have seen their graduates enjoy higher starting salaries and greater success at getting into graduate and professional programs. In light of these data, some have called for the implementation of senior comprehensive exams at Texas Tech. How NEGATIVELY do you rate the implementation of comprehensive exams? (*See above scale*)

APPENDIX P

MAIN STUDY DEBRIEFING

Debriefing Statement

Social psychologists have been interested in conformity for several decades. There are a number of explanations for why people conform to group norms and standards.

Sometime we disagree with people who are important to us and such disagreement can lead us to change our minds. The purpose of this study is to explore why this happens. We suspect that disagreeing with other people leads us to feel tense, and that we reduce those feelings of tension by conforming with the group. Furthermore, we suggest that this is particularly true for people for whom the group is really important.

In order to get a genuine reaction from you, not all aspects of the study were revealed to you during the experiment. We were deceptive on the following items:

We told you that members of the TTU community have raised the issues included in the attitude survey and that the survey is being conducted in partnership with the TTU Community Opinion Office. To our knowledge, no such concerns have been registered with any office at Texas Tech. We made the issue up for this experiment. Second, there is no TTU Community Opinion Office.

We also told you that the questionnaires you responded to at the beginning of the study were being collected by the Psychology department for the Office of Institutional research. This also is not true. While there is an office dedicated to institutional research for Texas Tech University, we made it up that we were collecting data on their behalf.

Additionally, were deceptive about the percentage of other TTU students who disagreed or agreed with you from the previous survey, the data you saw was bogus.

All of this deception is necessary to study the psychology of conformity. By definition, people are usually in the majority. To get around this, it is necessary to lead some people to believe that they are actually in the minority. In addition, it is necessary to use issues that people find meaningful because being in the minority usually only bothers us when we are in the minority on things that we care about

Lastly, the anagram task was also bogus. The task was used as a distraction to keep you busy long enough for you to forget your previous ratings of <attitude object>. Even though your answers were recorded, they are not relevant to the study and will not be graded, corrected, analyzed, used as an example in the final write-up of the study or made use of in any other possible way.

Finally, we would like to thank you for your participation and invite you to contact us if you have any further questions, comments or concerns. You may reach the primary investigator of this study, Dr. Jeff Larsen at jeff.larsen@ttu.edu.

APPENDIX Q

EXTENDED LITERATURE REVIEW

This review is concerned with the construct of ambivalence and how it has evolved in the attitude literature. Because ambivalence is a construct so closely related to cognitive consistency, this review first examines the two most closely related theories of cognitive inconsistency, cognitive dissonance and balance theory (Heider, 1946). Because balance theory is more closely related to the research in this document, there is a more detailed account of the theory and the research investigating its key premises.

A brief discussion of the introduction of the ambivalence construct in the attitudes literature followed by the relevant research is included here as well. Some of the methods for measuring and calculating ambivalence are also discussed. Because this research project focused on feelings of subject ambivalence and the inter-personal antecedents to ambivalence, the focus of the document will be on those research reports that are most relevant to that topic.

In addition, the overarching theoretical framework is social identity theory. Therefore, a discussion of the theory, its origins and related research within this tradition are also discussed. The section on social identity theory will report on the literature from social identity researchers who have re-conceptualized the theory of planned behavior within the social identity tradition, the influence of identity concerns in the formation of attitudes, attitude change and persuasion.

Two Theories

Cognitive dissonance theory asserts that when people experience inconsistent thoughts or their thoughts and subsequent behaviors are inconsistent, they experience psychological discomfort (Festinger, 1957). The theory places an emphasis on consistent thoughts and behavior that are internal to the individual. Much of the research on cognitive dissonance theory tended to study the physiological arousal state associated with dissonance (Elliot & Devine, 1994). Balance theory (Heider, 1946), on the other hand, emphasizes harmony and balance among social relationships. The theory's key premise is that people experience feelings of stress and tension when they discover that one or more of their interpersonal relationships are in a state of imbalance. Additionally, balance theory also specifically involves a third component, which is an object of evaluation into the relationship creating relationship triads. In other words, states of imbalance occur when an individual realizes that his or her evaluation of some object (may also be an abstract concept) is in conflict with that of someone they like. For this reason, balance theory was chosen as one of the primary theoretical frameworks of this research project. A more detailed accounting of balance theory is presented here and a brief overview of cognitive dissonance theory is included.

Cognitive dissonance theory and Subjective Ambivalence.

Carl Festinger first proposed cognitive dissonance theory in his book "A Theory of Cognitive Dissonance," published in 1954. The overarching premise of the theory is that "the individual strives toward consistency within himself" (Festinger, 1957, p. 1). Festinger defined dissonance as an unpleasant psychological state that occurs when people realize they hold inconsistent cognitions, or when they recognize that their

thoughts are inconsistent with their behavior. The classic example of a person who is aware of the health risks associated with smoking and smokes anyway comes to mind.

He advanced two hypotheses about dissonance (Festinger, 1957). He posited that dissonance is an uncomfortable state that people are motivated to reduce. He goes on to argue that dissonance is a drive state that is similar to hunger. Thus, dissonance is not just a psychological state of discomfort (a distinction from balance theory) but it is also a physiological state of discomfort. Therefore, Festinger's (1957) second hypothesis is that as people are motivated to reduce hunger, they are similarly motivated to reduce dissonance and avoid situations and information that may cause or increase states of dissonance.

Over the past several decades, cognitive dissonance theory (1957) has inspired a tremendous amount of research exploring the theory's key premises. Today, this research has splintered into two different approaches to dissonance theory (Jonas, Broemer, & Diehl, 2000a). One of these approaches is the more traditional investigations of dissonance. This approach emphasizes the inconsistencies related to the self and personal responsibility for unfavorable outcomes (cf. Eagly & Chaiken, 1993; Harmon-Jones & Mills, 1999; Petty, Wegener, & Farbrigar, 1997; Aronson, 1969; Stone, Aronson, Craine, Winslow, & Fried, 1994; Cooper & Fazio, 1984). The other approach emphasizes self-affirmation (Steel, 1988). This approach investigates how being in a state of dissonance is a threat to the individual's self-concept. More specifically, this approach examines the threat to the self-concept from dissonance that has been aroused by behaviors that are inconsistent and behavior that is inconsistent with the self-concept (Steel, 1988).

As noted earlier, Festinger (1957) compared states of dissonance to physiological states of arousal. Consequently, most of the dissonance research has focused on this

(Brehm & Cohen, 1962; Pallak & Pittman, 1972), and less attention has been given to the psychological state of discomfort associated with dissonance (Elliot & Devine, 1994).

There is one investigation, however, that focused on the psychological state of discomfort associated with dissonance. Elliot and Devine (1994) focused exclusively on demonstrating that a psychological state of discomfort is associated with dissonance, and therefore, dissonance is not simply a physiological state of discomfort. In two experiments, they used the induced-compliance paradigm and self-reported measures of dissonance. From both of these experiments, Elliot and Devine (1994) found evidence of this state of psychological discomfort and demonstrated that people do engage in strategies, such as attitude change, to reduce this psychological discomfort. This finding suggests that cognitive dissonance and balance theory are similar theories regarding states of discomfort induced by inconsistencies in both inter - and intra – personal experiences, cognitions, and behavior.

Festinger (1957) himself recognized that external sources of dissonance are also possible. Cultural mores and disagreement with important others can also be a source of cognitive dissonance. In regard to the antecedents of dissonance and its similarity to balance theory Festinger (1957) wrote:

“It may be of value to mention two whose formulation is closest to my own. Heider ... If one replaces the word “balanced” with “consonant” and “imbalanced” with “dissonance” this statement by Heider can be seen to indicate the same process with which our discussion up to now has dealt” (Festinger, 1957, p. 7-8).

To paraphrase, Festinger (1957) is suggesting that while there are differences between the two theories, cognitive dissonance and balance theories are very similar. One of the notable differences, however, is in the proposed antecedents to the drive states in each theory. Cognitive dissonance focuses primarily on the inter-personal antecedents of a state of dissonance. Balance theory, on the other hand emphasizes the intra-personal antecedents of a state of imbalance (Heider, 1949).

Balance Theory

Heider introduced balance theory in 1946 in his paper titled “Attitudes and Cognitive Organization.” His theory has been credited with placing attitudes in the social world (Zajonc, 1968). This is because the theory emphasizes the influence of interpersonal relationships on the attitudes of those involved; the theory provides a structure and dynamic to social perception that incorporates the principles of Gestalt psychology (Zajonc, 1968).

Balance theory posits (Heider, 1946) that people have a preference for agreement with others, especially people they like. Heider (1946) referred to this as a state of balance (cognitive balance). On the other hand, disagreement with people whom we like leads to a state of cognitive imbalance, a psychological state associated with stress and tension.

The theory is best understood as a network of transitive relationships (Eagly & Chaiken, 1993). That is, a given property of the relationship holds for all the elements in the relationship. In balance theory, the relation is a triad (a triangle) of three key elements (see figure 3). The triad is viewed from the perspective of the reference person (p) whose position is at the top (top point) of the triad (Eagly & Chaiken, 1993). The remaining two

points are labeled for the other person (x) in the triad and a non-human element (o). The triad is viewed from the perspective of the reference person, and it is him or her who experiences either state, balance or imbalance. For example, a balance state occurs when in all possible respects, the relationships among the elements are all positive or negative (Eagly & Chaiken, 1993). For example, p likes o and o like x and p likes x (visa-versa). In all, there are four possible triad configurations that represent a balanced state. One way to summarize these eight triads is to say that people are in a state of balance when they agree with people they like, disagree with people they don't like, but are in an imbalanced state when they agree with people they do not like (or an enemy) and disagree with people they do like (Eagly & Chaiken, 1993).

Heider (1946) argued that people seek to have balanced relationships and tended to avoid imbalanced relationships. Furthermore, he argued that when in a state of imbalance, people have a tendency to try and correct it and return to a balanced state. However, if a state of imbalance lingers for any length of time, people will experience stress and tension, a state of psychological discomfort. Consequently, imbalanced states are not stable and are vulnerable to different strategies, such as attitude change, to return to a balanced state.

One classic example of these processes is found in Newcomb's (1966) classic Bennington study. Newcomb's field study was inspired by balance theory and is a good example of how disagreements with valued others (other people) can eventually lead people to conform to attitudes and norms of people who are important to them (Eagly & Chaiken, 1996).

Sociologist Theodore Newcomb (1966) observed the students at Bennington College during the years 1935 to 1939. He recorded students' political ideology as they arrived at Bennington and again during and at the end of their studies at Bennington.

The Bennington college community, which was comprised of faculty, administrative staff, and the student body, was largely liberal in their political ideology. The community was very active in their support and opposition to the social issues of the time (Newcomb (1966)). Incoming students, on the other hand, tended to be more conservative in their political views. The inconsistency between their own political ideology and that of the college community created for these students an imbalanced state. Over time, these same students' attitudes and political views shifted toward that of the larger community and completely assimilated by the time these students reached their junior year.

From the Bennington study we can create one of Heider's triads (1946; Eagly & Chaiken, 1996). The incoming students represent the reference person (*p*), the existing members of the college community represent the other (*o*), and finally political ideology represents the non-human object (*x*). The triad is unstable because the reference persons (the incoming freshman) do not share the political ideology (*x*) of the other people at Bennington College (*o*). The state of imbalance was not quickly resolved and, therefore, lasted for some time. Consequently, these students changed their political views (cognitive restructuring in the form of attitude change) demonstrating a strategy to reduce the tension and stress brought on by disagreeing with people they like.

The Bennington studies represent an observational and qualitative investigation of the postulates of balance theory. An example of an empirical investigation is found in the work of Aronson and Cope (1968).

In their experiment, Aronson and Cope (1968) manipulated the treatment of participants by an experimenter who either treated them harshly or kindly. Later, participants would overhear the experimenter either being berated by his supervisor or being treated well by his supervisor. Just before the end of the experiment, participants were asked if they would be willing to help the professor who was overseeing the research project drum up non-university participants for the study. Participants were asked how many calls they would be willing to make. Once they responded to this request, they were handed a questionnaire that was an evaluation of the supervisor. Participants who offered to make more phone calls for the supervisor in those conditions in which the experimenter was kind to the participant and the supervisor was kind to the experimenter (kind, kind condition) and those participants in the condition in which the experimenter treated the participant harshly was later treated harshly by the supervisor (harsh, harsh condition), were also willing to make more phone calls than those participants in the harsh-kind, kind-hard conditions. In other words, people were more willing to help someone who was kind to someone they liked and harsh with someone they disliked.

We can infer from the Aronson and Cope (1968) study that we like people who like our friends or people who like the same people that we like, and that we like someone who dislikes the same people that we dislike; or that we dislike people who dislike our friends or people that we like (Aronson and Cope, 1968).

There are other empirical studies that tested the postulate of balance theory (Eagly & Chaiken, 1993; Krosnick, 1990; Ottati, Fishbein, & Middlestadt, 1988), but it was the work of Jordan (1953), Zajonc (1968) and Insko (1981, 1984) that expanded the theory itself.

Jordan (1953) is credited with providing a research paradigm for investigating the postulates in balance theory. He took each of the symbols for the elements in balance theory and created a statement for them, for example “I like o; I dislike x; O and P do not have a relationship” etc. He created a total of 68 statements that described the relationships among the elements. Participants were instructed to read each of the statements from the “I” perspective. That is, they were to take the position of the reference person in each of the statements. They were then instructed to rate the pleasantness of each of the statements on a 90 point scale. Jordan’s (1953) analysis indicated that among the eight triads, balanced triads were rated as more pleasant than imbalanced triads.

This research inspired others, such as Zajonc (1968) and Insko and colleagues to follow up on investigating the premises in balance theory. For example, Zajonc (1968) argued that the relationship between agreement and attraction has some bearing on balanced states because agreement and attraction are negatively correlated. He would go on to demonstrate that the effects of agreement, attraction, and balance on social perception did not support the propositions of balance theory (Zajonc, 1968). Zajonc’s work was highly influential because the implications to balance theory suggest that the effect of agreement alone accounts for the findings in Jordan’s earlier work (Jordan 1953)

and that the motive to maintain harmonious relationships is necessarily a conceptual rule among social relationships and social perception (Zajonc, 1968; Eagly & Chaiken, 1996).

In response to Zajonc (1968), Insko and colleagues investigated the possibility that attraction and agreement effects may not be inconsistent with balance theory after all. In two different research reports, Insko and colleagues investigated the agreement and attraction effects that Zajonc argued undermined the key premise of balance theory (Insko, Songer, & McGarvey, 1974; Insko & Adewole, 1979). In short, Insko, Songer, & McGarvey (1974) argued that agreement and attraction effects did not undermine balance theory after all, because people infer future contact among the *p* and *o* elements in the triads. This inference is what accounts for attractiveness ratings of the Jordan (1953) statements that Zajonc found (1968). For example, in three experiments Insko et al. (1974) found that the effects of positivity and agreement were not a threat to balance theory when future contact was factored into the analysis.

In addition, Cacioppo and Petty (1981) discovered support for Insko et al.'s findings (1974) that attractiveness was a separate relation among the elements in the triad, and, therefore, does not undermine the overall premises of balance theory. For example, both time and elaboration were found to influence the positivity ratings of the Jordan type statements (Jordan, 1953).

Although balance theory was initially based on a dimension of 'liking' other people and objects, the work by Zajonc (1968) and Cacioppo and Petty (1981) found evidence that the evaluative dimension underlying the relationships among triads can also be based on attraction and not just on agreement, thereby expanding balance theory beyond its original postulates. There is great deal more research and other findings

related to balance theory; however, those data are beyond the scope of this research project and are not presented in this discussion.

Brief history of the ambivalence construct

The study of attitudes dates back to the early twentieth century (Thomas and Zanaiecki 1918, 1920; Thurston, 1928) and has been central to the field of social psychology ever since (Allport, 1935). By the early 1990s, attitudes would be defined as internal psychological states that may be short or long lived evaluations of any object (Eagly & Chaiken, 1993).

Attitudes may vary in valence, which is the extent to which attitudes are mild, moderate or extreme in either a positive or negative direction (Eagly & Chaiken, 1993; Petty & Cacioppo, 1986; Petty & Wegener, 1998). Attitudes are conceptualized in terms of the tripartite model of attitudes, where the underlying evaluations are along affective, cognitive and behavioral dimensions (Eagly & Chaiken, 1993). Yet, the initial attitudes research examined attitudes as bi-polar structures (negative values on one side of zero and positive values on the other), that is positive or negative valence dimension (like, dislike; do, don't do; pro, con). For example, researchers used Thurston's (1928) bipolar scale, semantic differential (Osgood, Suci, & Tannenbaum, 1957), or Likert (1932) scale to measure peoples' attitudes.

Thurston's (Thurstone, 1928) scale was first constructed by asking a group of respondents to sort a series of belief statements along a bipolar continuum. In other words, the purpose is to sort them based on the extent to which the statement is at the positive or negative end of the specified dimension, for example, unfavorable to favorable ((Bohner & Wanke, 2002). The statements represent either end of the scale, for

example, “Euthanasia gives a person a chance to die with dignity” versus “Inducing death for merciful reasons is wrong” (Bohner & Wanke, 2002, p. 27).

The semantic differential, for example, asked respondents to select either a positive or negative option along a continuum for specified attitude object, such as lazy (-4) to industrious (+4), unlikeable (-4) to likeable (+4), and so on. Zero represents a neutral position. Participants were asked to only select one value of the scale for each item presented (Osgood, Suci, & Tannenbaum, 1957; Bohner & Wanke, 2002). The Likert (1932) scale is similar to the Thurston scale in that belief statements were presented to participants who were asked to indicate the extent to which they agreed or disagreed with each statement. Each statement is intended to be measuring an underlying construct, such as collective self-esteem (Luhtanen & Crocker, 1992), the need to belong (Baumeister & Leary, 1995), or a preference for consistency (Cialdini, Trost, & Newsom, 1995). Each of these scales offered participants the option to select 0 as a value, but what is less clear is the meaning of zero and how to interpret such a score.

Each of these instruments provides participants the option of selecting zero, or neutral or “neither” position on the scale. The problem is that a zero or neutral option did not provide for ambivalence. Anecdotally, people are familiar with the concept of feeling torn over an attitude object, or ‘weighing the pros and cons’ of decision. This left open the question about why people would choose a neutral position (e.g. Were they really neutral, as in indifferent, or were their evaluations equally positive and negative, ambivalent?) (Kaplan, 1972; Maio, Bell, & Esses, 1996; Priester & Petty, 1996; Thompson, Zanna, & Griffin, 1995).

The concept of attitudinal ambivalence construct was first introduced in the attitudes literature in the 1960s by Scott (1966, 1968, 1969). He was also the first to try to measure ambivalence. He defined ambivalence as “the degree to which objects are defined in terms of both desirable and undesirable attributes” (Scott, 1966, p.391). A more detailed description of his formula for calculating ambivalence is below. But first, it is helpful to unpack the phrase attitudinal ambivalence and make the distinction between objective and subjective ambivalence.

Two types of ambivalence

Objective ambivalence. More recently a distinction has been made between objective and subjective ambivalence. Objective ambivalence is the same as attitudinal ambivalence and describes the positive and negative evaluations of an attitude object (Priester & Petty, 1996). The two evaluations of objective ambivalence are not always equal. We may have a stronger positive than negative evaluation of an attitude object, and vice-versa. For example, the positive scores might be high, such as 5 on a zero to five scale and the negatives might be low, -2 on negative 5 to zero scale.

Subjective ambivalence. Subjective ambivalence refers to the state of psychological discomfort that people experience when they have both positive and negative evaluations of an attitude object (Priester & Petty, 1996). Subjective ambivalence is determined by the number of positive and negative reactions that people have toward an object. It is possible for people to experience more negative than positive reactions and vice-versa. For the sake of clarity, Priester and Petty (1996) referred to the most frequent reactions as the dominant reaction and the less frequent reaction as the conflicting reactions. So, for example, if an individual has more negative reactions, then

these reactions are the dominant reactions and the positive reactions would be the conflicting reactions. The magnitude of subjective ambivalence is determined by the fluctuation in dominant and conflicting reactions. In other words, as the reactions fluctuate they may come closer together or become further apart, more polarized. When a person's attitudes become polarized, both objective and subjective ambivalence decreases (Priester & Petty, 1996).

Measuring Ambivalence

While many models for measuring ambivalence have been critiqued by scholars for some conceptual flaw or another (Thompson, Zanna, and Griffin, 1995); however, I present some of the most commonly used models below. To understand each of these models, terms such as 'weaker ratings' and 'conflicting ratings' are interchangeable (see above).

Scott's Model.

Scott (1966, 1969, 1979) proposed the first model for measuring ambivalence. He proposed that intensity of ambivalence is equal to the weaker ratings squared and divided by the stronger ratings. $AMBIVALENCE = \frac{A_w^2}{A_s}$. He later proposed that ambivalence can be calculated by multiplying the weaker ratings by two add one and divide by the weaker evaluation plus the stronger, plus two ($AMBIVALENCE = \frac{2 \times A_w + 1}{A_w + A_s + 1}$).

One of the criticisms of Scott's (1966, 1969, 1979) models is that there is no theoretical basis for squaring the conflicting reaction (Beckler, 1994). Regarding Scott's second model, Beckler (1994) noted that the model does not make a distinction between equal intensity ratings. In other words, equal dominant and conflicting reactions that are higher in value are also higher in intensity. Reactions of positive 5, negative 5 are higher

in intensity than reactions of positive 3 and negative 3. In short, Scott's second model does not account for strong or weak ambivalent attitudes (Thompson, Zanna, and Griffin, 1995).

Kaplan's Model

Kaplan's (1972) seminal work on measuring ambivalence was to split the semantic differential into two unipolar scales. One scale was designed to capture respondents' positive reactions and the other was designed to capture their negative reactions. Respondents would be asked to consider only the positive or negative aspect of the specified attitude object and provide a rating on how positive or how negative these aspects are (Kaplan, 1972; Thompson, Zanna, and Griffin, 1995). Kaplan's measure is still broadly used among ambivalence researchers. However, his mathematical model for calculating ambivalence has been criticized because the equation Kaplan proposed does not account for polarized attitudes (Beckler, 1994; Thompson, Zanna, and Griffin, 1995).

Kaplan's, (1972) model, $AMBIVALENCE = A_W + A_S - |A_W - A_S|$, does not account for attitude polarization. In short, the intensity of ambivalence does not change when holding the conflicting reaction constant and increasing the dominate reactions. (Beckler, 1994; Thompson et al., (1995). For example, if the conflicting rating is two, the same intensity of ambivalence is found, regardless of whether the dominate reaction is 3, 4, or 5, and so on (Thompson et al., 1995).

The Gradual Threshold Model.

The gradual threshold model (GTM) of ambivalence was proposed as an alternative and more accurate measure of ambivalence to the models that had been

proposed earlier (Priester & Petty, 1996). It incorporates some of the features of some of the earlier proposed models, and as Priester and Petty posit:

(a) ambivalence increases in a negatively accelerating manner as the number of conflicting reactions increases; (b) ambivalence is a negative function of the extent of dominant reactions when there are no conflicting reactions; and (c) as the number of conflicting reactions increases, the impact of dominant reactions on ambivalence gradually decreases such that at some level of conflicting reactions (i.e., the threshold), the number of dominant reactions no longer has a significant impact on subjective ambivalence. (Priester & Petty, 1996, p. 447)

Another way to express Priester and Petty's (1996) model is to say that there must be sufficient tension between dominant and conflicting reactions in order for people to experience subjective ambivalence. In other words, people may have some negative thoughts and reactions to an attitude object, but they mostly respond positively to the target object. In short, Priester and Petty (1996) argued that the mere reporting of both positive and negative reactions to an attitude object is not necessarily sufficient to produce feelings of subjective ambivalence. Their model is mathematically expressed as

$$AMBIVALENCE = SC^2 - D^2.$$

Why study subjective ambivalence?

Since Scott introduced ambivalence to social psychologists, it has been used to explain a range of attitudinal phenomena. It has been used to explain attitudes toward racial or ethnic groups (Bell & Esses, 1997; Katz, Cohen, & Glass, 1975; Katz, Glass, & Cohen, 1973), male attitudes toward women (Glick & Fiske, 1996), attitudes toward the

handicapped (Katz, Glass, Lucido, & Farber, 1977, 1979; Soder, 1990), attitudes toward drugs or alcohol (e.g., Colaiuta & Breed, 1974; Conner, Sherlock, & Orbell, 1998; Costello, Rice, & Schoenfeld, 1974), food choice (Conner, Povey, Sparks, James, & Shepherd, 1998; Grogan, Bell, & Conner, 1997), consumer behavior (Roster, & Richins, 2009), and organ donation (Parisi & Katz, 1986). In addition, research on attitudinal ambivalence continues to be employed in other psychological domains, such as subjective well-being (King, Richards, Stemmerich, 1998) or quality of relationships (Willson, Shuey, and Elder, 2006; Fingerma, et al., 2008).

Subjective ambivalence and race. One of the first to examine the influence of subjective ambivalence was Katz and his colleagues (1973, 1975). They examined the influence of subjective ambivalence on the complexity of the attitude of white people toward blacks. In two experiments, Katz, Glass and Cohen (1973) assigned white male participants the role of instructor in an experimental design similar to that of Milgram's (1963) study, only the confederates were either black or white. The key finding of the Katz et al. (1973) study was that black confederates were derogated to a much greater extent than white confederates. In a follow up study, Katz et al. (1973) first measured the extent to which participants either felt sympathetic or expressed racial attitudes toward blacks. People who scored highest on both of these measures tended to exhibit the highest levels derogation of the black confederate. In other words, among the participants, those who reported having ambivalent attitudes towards blacks were more likely to harshly evaluate the black confederate.

Ambivalence and information processing. Van Harreveld et al. (2004) and colleagues raised questions about how ambivalence influences information processing.

For example, Van Harreveld et al. (2004) asked whether it influences how long we attend to that information and Nordgren et al. (2006) asked whether ambivalence influences the information we chose to attend to.

Van Harreveld et al. (2004) demonstrated that ambivalence leads to an increase in thinking about the attributes of the attitude object being evaluated. In three studies, Van Harreveld et al. (2004) participants were asked to indicate their attitudes toward genetically modified food. Response latencies were used as the dependent measure, such that the longer the response latency, the longer the participant thought about genetically modified food. In all three studies, Van Harreveld et al. (2004) found that ambivalence resulted in shorter response times. They argue this idea because they believe people holding ambivalent attitudes have taken more time to integrate conflicting evaluations of the attitude object. Therefore, their attitudes are more easily accessible, resulting in shorter response times. Similar findings have also been reported by earlier investigations of ambivalence and information processing (Bromer, 1998; Jonas et al. 1997; Maio, Bell, and Esses, 1996). Other investigations of ambivalence and information processing have focused on whether ambivalence influences the information people pay attention to.

In two studies, Nordgren et al. (2006) found that for participants who attributed their feelings of discomfort to their ambivalent attitudes were more likely to report negative emotions and generate more one-sided thoughts about the attitude object (i.e. genetically modified food) than participants who attributed their tense mood to the placebo (a sugar pill). Nordgren et al. (2006) suggested that these finding indicate that people engage in strategies to reduce feelings of subjective ambivalence, in this case, information processing.

Subjective ambivalence and individual differences. Other researchers have been interested in the antecedents of subjective ambivalence. What, if any, are the personality traits and characteristics that determine the degree to which people experience subjective ambivalence? Some of the well known individual difference measures, such as the preference for cognitive consistency (Cialdini, Trost and Newsome, 1995) and the fear of invalidity have already been tested (Thompson & Zanna, 1995).

The fear of invalidity is characterized by a fear that one's decision was wrong or a fear of the consequences of a decision s/he has made (Thompson & Zanna, 1995). It is further characterized by indecisiveness and vacillating back and forth over relevant information. Thompson and Zanna (1995) found that people who are higher in their invalidity tend to experience higher levels of subjective ambivalence. In addition, the need for cognitive consistency and the simultaneous accessibility of conflicting cognitions (Newby-Clark, McGregor, & Zanna, 2002) have been linked to feelings of subjective ambivalence (Cialdini, Trost and Newsome, 1995).

To test the notion that a preference for consistency and simultaneous accessibility influence the degree to which people experience subjective ambivalence, Newby-Clark, McGregor and Zanna (2002) conducted three studies and found that people who are higher in their preference for cognitive consistency experienced more ambivalence and are thereby motivated to use distraction as a strategy to reduce feelings of ambivalence. Additionally, they found that simultaneous accessibility of inconsistent thoughts did moderate the relationship between objective and subjective ambivalence and that this effect was stronger for people who have a greater preference for consistency (Newby-Clark, McGregor, & Zanna, 2002).

Thus far, most of the antecedents of subjective ambivalence and the strategies employed to decrease these feelings have concentrated on processes within the individual. In 2001, Priester and Petty (2001) examined whether interpersonal relationship could be an antecedent of subjective ambivalence, as suggested by balance theory (*Heider, 1946*).

Inter-personal antecedents of subjective ambivalence. Recall that objective ambivalence is the antecedent to subjective ambivalence within the individual. Recently, Priester and Petty (2001) have suggested that there can be external-to-the-individual antecedents, specifically other people who are important to the individual. Priester and Petty (2001) argued that the reference groups and important others can also be a source for subjective ambivalence. Specifically, they argued that when individuals recognize that people important to them have a different attitude toward a target object than their own, (a perceived discrepancy) they experience subjective ambivalence.

In four studies, Priester and Petty (2001) examined whether a perceived discrepancy between oneself and liked others, dislike others, parents or other Ohio State students determines whether people will experience subjective ambivalence over a target attitudinal object. Studies one and two are most relevant to the project outlined in the introduction of this document because the studies involve multiple others. For example, study one examined the ambivalence caused by a perceived discrepancy between individuals and their parents. In study two, the significant others were identified as other Ohio State students. In this study, Priester and Petty (2001) used a focus group comprised of other Ohio State students in their scenario, and manipulated whether the focus group supported or did not support the proposed legislation for in-state tuition support. Both

studies one and two confirmed the hypothesis that a perceived discrepancy with important others is an antecedent of subjective ambivalence.

If the Priester and Petty (2001) studies were to be re-conceptualized within a social identity framework, then the important/positive others in the Priester and Petty (2001) studies would represent the target individual's in-group. This raises questions about how social identity concerns may lead people to experience feelings of subjective ambivalence when they discover they do not agree with a majority of other in-group members. Therefore, social identity and self-categorization theory is the second theoretical framework for the research described earlier in this document.

Social identity & self-categorization theories

Social identity theory is a theory of group behavior and was originally proposed by Henri Tajfel in 1981. The theory is often misreported as a theory about racism, prejudice, and inter-group discrimination. While the theory does attempt to explain these phenomena, a more accurate description of the theory is to say that it is a theory of inter-group relationships.

Brief History & Origins

Group research can be traced back to the 1870s, when Wilhelm II of Germany was faced with a growing industrialized society and a need for an educated work force. In short, reforming the education system in Germany raised a debate over the merits of homework over classroom study (Jahoda, 2007). A small group of psychologists and educators studied the problem and found that studying with other students improved academic performance (as cited in Jahoda, 2007).

This small German study found the same social facilitation effects before Triplett did in his 1898 study. Based on these findings, the Germans concluded that group work was superior to individual work. But group research remained stagnant until after World War II. The war inspired many classic studies on group behavior, including social norms (Sherif, 1936), conformity (Asch, 1956) and obedience (Milgram 1963). The war also inspired psychologists to investigate other group processes such as prejudice and discrimination. These investigations of group processes led to such theories as authoritarian personality (Adorno et al., 1950; Berkowitz, 1960; Tajfel & Turner, 1986) and frustration-aggression theory.

What these theories all have in common is their focus on the processes that are internal to the individual. They view the group processes from the perspective of the individual acting as an individual within the group (Sherif, 1966). It would not be until Sherif's (1966) publication of "In Common Predicament" that the notion of a group identity would be introduced to the field of social psychology. He argued that when people are brought together with a common goal or who have in common a shared struggle, they form a unit that has a unique identity (Sherif, 1966). Sherif did not expand further on the notion of a group identity other than to argue that group identity becomes stronger with the group's activities.

Tajfel and Turner (1986) would later argue that group identity plays a crucial role in the activities of groups and their members. Their focus is on the intra-group phenomena of identity formation, maintenance, and the unique effect that in-group identification can have on group members' attitudes and their intra- and inter- group behavior (Tajfel & Turner, 1986). Initially, Tajfel introduced (Tajfel, 1981) social

identity theory, and Turner would later add self-categorization theory (Tajfel & Turner, 1986). The two theories are closely aligned and today, most researchers refer to them as one theory: social identity and self-categorization theory.

According to social identity theory, a group is considered to be a group when a social category is imposed on the group by external sources, e. g., football fans, men, women, and university students, (Tajfel, 1981). Second, a group is considered a group when individuals categorize themselves as members of a social category (Tajfel, 1981).

Three Assumptions and Three principles

The theory has three assumptions and three theoretical principles (Tajfel, 1981). The first assumption is that people are motivated to maintain a positive self-concept and maintain or enhance their self-esteem. Second, that group membership contributes to the self-concept, and that such social identities have both positive and negative evaluations.

These evaluations of the group are held by group members and non-members alike.

Third, based on social comparison theory (Festinger, 1954), people also make social comparisons between the group(s) they belong to with groups that they do not belong to, i.e. out-groups, (Tajfel, 1981). From these assumptions come three principles; first,

people strive to have and maintain a positive social identity. Second, negative social comparisons to other social groups are integral to a positive social identity, and three, if a positive social identity cannot be maintained, people will either leave the present group or try to make their group more negatively distinct (Tajfel, 1981).

Self-Categorization theory

Self-categorization theory is primarily concerned with the self-concept (Tajfel & Turner, 1986). The theory argues that in addition to having a self-concept that defines the

self as a unique individual, the self-concept also contains a social or group identity. That is, people recognize their membership in political groups, student groups, and racial and ethnic groups. People are capable of such self-categorization processes because within the individual's memory is all the information that defines the group's identity. A social identity and all the information that defines that identity are stored within a prototype of the typical group member. Consider the typical sports fan, who for example, is a fan of the San Francisco 49ers (SF 49ers) football team. The typical fan owns various 49er gears, hats, t-shirts, jerseys, flags, and so on, and attends or watches games on a regular basis. The knowledge of a SF 49er fan is stored in memory, and people know the norms and stereotypes associated with being a SF 49er fan. In the proper social context, the group prototype is activated in memory and is now the acting identity within the self-concept (Tajfel & Turner, 1986). It is the identity as a SF 49er fan that directs the individual's attitudes and behavior within that social context. They cheer for the 49ers and sneer at the opponent, buy 49er gear, and throw 49er football parties on game day, etc.

Moderating effects of group identity.

Group identification has also been found to influence social phenomena such as attitudes, conformity to group norms, and attitude change (Abrams, Wetherell, Cochrane, Hogg, 1990; Hogg, 2001). The review below tends toward a narrow scope of the literature within the social identity tradition, focusing on research on attitudes, and attitude change and persuasion and more recent research investigating subjective ambivalence within the social identity tradition.

Attitudes in the social identity tradition.

The theory of ³planned behavior asserts that there are three factors that contribute to an individual's decision to act, their attitudes, subjective norm, and perceived behavioral control (Ajzen, 1991). However, Ajzen (1991) conducted nineteen tests of the theory of planned behavior and found that subjective norms contributed to a person's intention to act in only half of his studies. He concluded that personal factors were more likely to influence behavior than social factors.

On the other hand, researchers of social identity and self-categorization theory found evidence to the contrary (Hogg, Terry and White, 2000). By re-conceptualizing the theory of planned behavior within the social identity tradition, three possible explanations for why subjective norms did not contribute more to a person's intention to act in Ajzen's (1991) test of the theory have emerged.

Hogg, Terry and White (2000) have suggested that Ajzen's (1991) research failed to place people in the proper social context. Because subjective norms are additive, people need to be placed in the proper context so that those social norms are activated and guide behavior. In other words, people may shift between their individual identity and social identities depending on the social context. People comply with group norms and standards of behavior when the group identity is activated. When the group identity is not activated, individual processes are more likely to account for behavior. Therefore, without the necessary triggers in the social environment to activate the group identity, it is more likely that individual processes account for behavior over group identity during Ajzen's experiments (Ajzen, 1991). In addition, Hogg et al. (1993) point out that the

³ The theory of planned behavior is based on the theory of reasoned action. For diagrams of each theory see figures 4 and 5.

theory of planned behavior considers attitudes and norms to be unrelated constructs and have argued that this is problematic because from the social identity perspective, attitudes can be norms. For example, it is normative for SF 49er fans to negatively evaluate the Oakland Raiders football team and the team's fans.

Social identity theorists Terry and Hogg (1996) have re-conceptualized the theory of planned behavior within a social identity framework. By doing so, Terry and Hogg (1996) demonstrate how people perceive a group norm to influence their intention to act. Specifically, they found that participants who had a strong identification with the group had a stronger intention to act.

Terry, Hogg, and White (1999) conducted a field study designed to test the premises in the theory of planned behavior on people's intention to participate in household recycling. They also examined the influence of individual processes in peoples' past experiences with household recycling. The data was collected on two occasions, two weeks apart. In the first phase of the study, participants were asked to report their intentions to engage in household recycling. Phase two of the study asked participants to report their actual household recycling behavior. The field study replicated the earlier lab experiments in that it also demonstrated group effects on behavior. In this study, the relevant in-group for participants consisted of their friends and neighbors in the community. Participants who identified strongly with their friends and neighbors were more likely to engage in household recycling when it was normative to do so (Terry, Hogg, & White, 1999).

The findings were replicated in another field study among farmers (Fielding, Terry, Masser, & Hogg, 2007). During the first phase of this study, farmers were asked to

report their attitude and their intentions to perform sustainable agricultural practices. The extent to which the farmers identified with other farmers was also measured during the first phase of the study. In addition, participants were asked to give their perception of the inter-group relationship between rural and urban communities and group norms. In the second phase of the study, the farmers were asked to report the extent to which they did perform sustainable agricultural practices. The study found that when the group's norms were more supportive of sustainable agricultural practices, those farmers who were strongly identified with the group were more likely to engage in such practices (Fielding, Terry, Masser, & Hogg, 2007).

Wellen, Hogg, and Terry, (1998) conducted a study during which they manipulated the extent to which identity was salient for participants. In addition, Wellen et al. manipulated norm consistency. In other words, participants either learned that their own attitude toward cleaning up litter on campus was congruent with the attitude of a relevant in-group or not. Wellen, Hogg and Terry (1998) then measured the extent to which participants cleaned up litter while waiting for the second phase of the experiment to begin. They found that participants who were in the high identity salience and norm congruent condition were more likely to pick up litter. They also found that when identity salience was replaced with the level of group identification, the same pattern of results emerged. In other words, the extent to which people identify with a group determines whether they follow group norms or not, but conformity to group norms only occurs when that group's identity has been activated by something in the social environment (Wellen, Hogg, & Terry, 1998).

These findings suggest that Ajzen's earlier results (1991) that nullified the influence of subjective norms failed to provide the proper social context and social cues to activate the right group identity and norms associated with the behavior.

Persuasion and attitude change.

Some social identity researchers have also examined attitude change and persuasion within a social identity framework. Specifically, research in this area has emphasized people's reactions to the group identification of the source of a persuasive message (Mackie, 1987, Mackie, Gasardo-Conaco, & Skelly, 1992; Mackie, Worth, & Asuncion, 1990).

Mackie et al. (1992) investigated the influence of the group identity of a source of a persuasive message by exposing participants to messages given by either an in-group source or an out-group source. The group identity of the source was known to the participants either before or after the presentation of the message. For the participants who knew the group identity of the source of the message before the presentation, in-group sources were more persuasive and participants were more likely to change their attitude (Mackie, Gasardo-Conaco, & Skelly, 1992; Mackie, Worth, & Asuncion, 1990).

Mackie and colleagues (Mackie, 1987; Mackie & Queller, 2000) have also examined the information processing of people exposed to persuasive messages from in-group and out-group sources and from in-group minority and majority sources.

Generally, the findings suggest that people elaborate more on messages from majority in-group sources (Mackie, 1987). However, this finding was reversed for participants viewing consensus information. In experiment four, Mackie (1984) found that participants reviewing information from a majority in-group source were more likely

to use heuristic information processing. In other words they viewed the in-group majority as a cue and did not elaborate on the information presented in the message.

Identity effects, dissonance, and subjective ambivalence.

As mentioned above, it is possible for people to experience feelings of subjective ambivalence when they disagree with other people (Priester & Petty, 2001). However, subjective ambivalence has not been widely studied within the social identity tradition. However, some work on examining cognitive dissonance and vicarious dissonance within a social identity framework has been reported (Norton, Monin, Cooper and Hogg, 2003). Specifically, researchers have investigated the relationship between vicarious dissonance and attitude change. Vicarious dissonance is a state of psychological tension that is similar to feelings of subjective ambivalence and cognitive dissonance (Cooper, & Hogg, 2007).

People experience vicarious dissonance when they observe another person acting in a way that is inconsistent with a previous behavior (Cooper, & Hogg, 2007). For example, in some social situations, people may express an attitude toward an attitude object that is inconsistent with an earlier expressions of attitude toward the same object.

Norton, Monin, Cooper and Hogg (2003) conducted three studies using the induced compliance paradigm. During these studies, participants listened to a pre-recorded conversation between two confederates. One of the confederates was identified as the experimenter and the other was identified as another participant from an earlier experimental session. This ‘participant’ was also identified as sharing a group membership with the target participant or as an out-group member. The recorded conversation involved tuition increases and how the Dean needed a recorded speech.

The 'experimenter' is heard asking the participant for her attitude on the issue. The 'participant' states that she would be against tuition increases. In the low choice condition, the participant (on the tape) is told by the experimenter that she will have to make the speech supporting tuition increases. In contrast, during the high choice condition the 'experimenter' is heard giving the 'participant' a choice to give the speech or not. Those target participants who heard an in-group member give the speech by choice experienced higher levels of vicarious dissonance.

In their second and third studies, Norton et al. (2003) found similar effects. In study two, participants reported higher levels of vicarious dissonance and reported attitude change when they knew the speaker was giving a counter attitudinal speech by choice. This condition was sufficient to not only induce feelings of vicarious dissonance, but also resulted in attitude change among target participants. Study three found similar results and demonstrated that attitude change is one strategy that people use to reduce feelings of vicarious dissonance (Norton et al., 2003).

Similarly, Cooper and Mackie (1983) investigated dissonance reduction strategies. They were interested in examining whether group identification influences the strategies that people use to reduce dissonance. They selected participants from student groups that favored Ronald Reagan during the 1980 general election (Reagan was the republican nominee for president). In one condition, participants were either asked or directed to write a counter-attitudinal essay that was directly related to their group's identity. Similarly, participants in the other condition were either asked or directed to write an essay that was also counter attitudinal, but not directly related to their group's identity. In order to reduce the dissonance associated with writing the essay, those

participants who willingly wrote the essay that directly related to the group's identity reduced dissonance by attributing their discomfort to a rival out-group (Cooper & Mackie, 1983)

Conclusion

This review has examined some of the literature in the various areas of social psychology related to the dissertation project proposed in this document. Some attention has been given to three theories in social psychology: balance theory, cognitive dissonance theory, and social identity theory. The emphasis in this literature review has been on each of these theoretical frameworks that focus on interpersonal relationships. Specifically, it has concentrated on the research that has emphasized interpersonal relationships as sources of psychological discomfort and social influence.

Balance (Heider, 1946) and cognitive dissonance theory (Festinger, 1957), suggest that people may experience psychological discomfort when they recognize that they have a disagreement with other people. The research within these theoretical traditions has been able to demonstrate the key premises of each of these two theories (See Eagly & Chaiken, 1993).

Social identity theory and the research within this tradition have demonstrated that group identity is a moderating influence on a variety of social phenomena, in this instance, conformity to group norms and attitudes (for a review see, Turner, 1999). It is logical then, that social identity concerns would also moderate the extent to which our interpersonal relationships elicit feelings of psychological discomfort. Therefore, this project is an attempt to integrate the current knowledge in these areas into a single, new model of conformity.