ABSTRACT

Title:	A Goal Systemic Analysis of Cognitive Dissonance Phenomena
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Cognitive dissonance phenomena were examined from a perspective of goal systems theory (Kruglanski, Shah, Fishbach, Friedman, Chun, & Sleeth-Keppler, 2002). The goal-systemic analysis challenges revisions to Festinger's (1957) original formulation that narrow the scope of dissonance theory by asserting the necessity of cognitive contents specifically related to the self-concept (Aronson, 1992; Cooper & Fazio, 1984; Steele, 1988) for dissonance arousal. The goal-systemic analysis, however, attempts to go beyond the original formulation (Festinger, 1957) in identifying the critical inconsistency in dissonance arousal as occurring between a goal representation and any information that conveys frustration of the goal. Hence, goal activation patterns are assumed to play a critical role in dissonance phenomena. To the extent that one is actively committed to a goal, hindrances arouse dissonance while inhibition of that goal decreases the degree of dissonance arousal. Two experiments were conducted to put these notions to an empirical test. Experiment 1 examined the role of goal activation patterns in cognitive dissonance phenomena

through the employment of a priming procedure. In a study conducted within the induced compliance paradigm participants generated counterattitudinal arguments. This experiment demonstrated that priming participants with the goal of honesty increased dissonance induced attitude change, while dissonance effects were attenuated by priming a competing goal (i.e. compliance). Direct evidence was not found, however, that this effect was mediated by the degree of active commitment to the honesty goal. Experiment 2 tested the assumption that the implication of the self-concept and free choice are necessary for dissonance phenomena to occur. In the free choice paradigm dissonance effects were obtained, as evidenced by the spreading of alternatives effect, in the absence of choice when participants were primed with a goal not related to the self-concept. This effect, however, was primarily driven by the upgrading of the received alternative without evidence of the downgrading of the not received alternative. Further implications for cognitive dissonance theory are briefly discussed.

A GOAL SYSTEMIC ANALYSIS OF COGNITIVE DISSONANCE PHENOMENA

By

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Dedication

To the memories of Eleanor Sanders, Esther Crawford, Annie L. Board, and Joey X. Johnson, all of whom made this journey possible, but unfortunately are not here to celebrate its completion.

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Chapter 1: Theoretical Rationale

The purpose of this dissertation is to examine cognitive dissonance phenomena from a perspective of goal systems theory (Kruglanski, Shah, Fishbach, Chun, Sleeth-Keppler, 2002; Shah & Kruglanski, 2002; 2003; Shah, Kruglanski & Friedman, 2002; Fishbach, Friedman & Kruglanski, 2003). This approach is closer in spirit to Festinger's (1957) original formulation that a person holding any two psychologically inconsistent cognitions would experience dissonance than to its subsequent major revisions, (those by Aronson,1992; Cooper & Fazio ,1984; or Steele, 1988) which emphasize the contents of specific cognitions having to do with the self-concept, or self-esteem. Like Festinger's (1957) formulation, the present one too is *content free* in that it does not emphasize contents of specific cognitions. Beyond this commonality with the original formulation, the present analysis goes beyond Festinger's (1957) original formulation in two major ways. (1) It identifies the critical cognitive inconsistency as one occurring between a *goal representation* and a behavior or event inconsistent with the goal. (2) It draws on the cognitive approach to motivation embodied in goal systems theory (e.g. Kruglanski et al., 2002) to elaborate the process whereby dissonance-driven attitude change may take place. Such process will be investigated via fine-grained priming techniques designed to tap goal-activation patterns assumed to mediate cognitive change in situations where dissonance reduction may be expected to occur.

The present dissertation is structured as follows. First, a brief discussion of dissonance theory is given highlighting two major dissonance paradigms (namely, the "induced compliance" and the "free choice" paradigms) to be empirically investigated

from the present conceptual perspective. Subsequently, the three major revisions of dissonance theory (namely Aronson's (1992), Cooper and Fazio's (1984) and Steele's (1988)) are briefly reviewed emphasizing their content-related elements at variance with the present proposal. Finally, two experimental studies are conducted to put the present goal-systemic analysis to an empirical test.

Theory of Cognitive Dissonance

The theory of cognitive dissonance (Festinger, 1957) has been often regarded as the most important and influential theory in the history of social psychology (cf. Jones, 1985). According to Festinger (1957) cognitions that are relevant to each other can be either *consonant* or *dissonant*. According to Festinger, "two elements are in dissonant relationship if, considering these two alone, the obverse of one element would follow from the other. To state it a bit more formally, x and y are dissonant if not-x follows from y" (Festinger, 1957, p.13). The presence of dissonance is assumed to cause psychological discomfort that the individual is motivated to reduce.

The magnitude of dissonance is thought to depend on the *dissonance ratio*, that is, on the proportion of dissonant cognitions among all of one's active cognitions, weighted by these cognitions importance. In other words, the magnitude of dissonance equals the number of dissonant cognitions divided by the number of consonant plus dissonant cognitions, weighted by the importance of the cognitions involved. From this it follows that dissonance can be reduced by: (1) the removal of dissonant cognitions, (2) the addition of consonant cognitions, (3) by reducing the perceived importance of dissonant cognitions, or (4) by increasing the perceived importance of consonant cognitions.

A common example used in illustrating the concept of dissonance involves the cigarette smoker. For a smoker, the knowledge that smoking is bad for one's health is dissonant with the cognition that he or she engages in this activity nevertheless. How can such dissonance be reduced? There appear to be several options of doing so. For instance, our smoker could simply alter his or her behavior, and quit smoking. This behavior would remove the dissonant cognition that one is doing something which is bad for one's health. As most smokers would attest, however, this particular option may be notoriously difficult to carry out. Perhaps an easier way of reducing dissonance might be by taking the cognitive rather than the behavioral route, e.g. by changing the belief that smoking is bad for one's health. This too would remove the dissonant cognition that what one does is bad for one's health. Alternatively, the smoker could remind her or himself of the benefits of smoking, such as sporting a care-free, devil-may-care attitude, or enjoying the benefits of relaxation and tension-reduction that smoking may foster. The latter tactic amounts to the addition of cognitions consonant with the act of smoking. As yet another possibility, the smoker may reduce dissonance by reminding him or herself that the dangers of smoking are truly mild as compared to the dangers of unprotected sex, or the use of narcotics. This represents dissonance-reduction via lowering the importance of the dissonant cognitions. Finally, our smoker could conclude that the benefits of smoking (acquiring a devil-may-care image, relaxation) are very important. This would reduce dissonance by increasing the importance of consonant cognitions.

Note that in the discussion thus far, there is no mention of the contents of cognitions that may constitute the dissonant or the consonant elements considered by

the individual. Inevitably, however, in translating the theoretical notions operationally in various dissonance experiments - - specific contents had to be defined. As shown subsequently, such contents were then re-infused into the theory and assumed to be of a critical theoretical importance in the various revisions of dissonance theory. These developments narrowed the scope of Festinger's (1957) original formulation and tied it to specific cognitive contents (i.e. those related to the self-concept). We now turn to describe two major experimental paradigms wherein such contents played a major role, namely the "induced compliance" and the "free choice" paradigms.

The "induced compliance" paradigm.

One of the earliest and most influential of cognitive dissonance studies was conducted by Festinger and Carlsmith (1959) in what Festinger termed the *forced compliance* paradigm, but is now more commonly referred to as the *induced compliance* paradigm. This study tested the counterintuitive prediction that the smaller the reward one receives for engaging in a counterattitudinal behavior, the greater the change in attitude towards consistency with the behavior. Participants in this study performed a boring task and were induced for either a small ($1.00) or a large ($20.00) reward to tell another student (actually, an experimenter's confederate) that the boring task they had just completed actually was "fun, exciting and enjoyable". The main dependent variable in this study was the degree to which participants rated the task as enjoyable under these circumstances. According to dissonance theory, participants in the $1.00 condition should do so more than their counterparts in the $20.00 condition. That is because in the $1.00 condition participants should experience dissonance engendered by the knowledge that one's

behavior, stating that the task was interesting, is inconsistent with their attitude towards the task. Further, that participants will receive $1 is not sufficient to justify the action. The magnitude of dissonance should be considerably less in the $20.00 condition owing to the consonant cognition that one received a substantial monetary reward, or sufficient external justification, for making the untruthful statement. The findings of Festinger and Carlsmith (1957) confirmed the dissonance theory prediction that participants in the $1.00 condition rated the (boring) task they had performed significantly more enjoyable than did the $20.00 participants. Note that while originally the Festinger and Carlsmith (1959) study was intended as an illustration of Festinger's (1957) original content-free notions concerning dissonance-- subsequent interpreters (Aronson, 1992; Cooper and Fazio, 1984; Steele, 1988) extracted from it certain elements not present in the original formulation that they now viewed as critical to the arousal of dissonance, notably cognitions representing a *threat to one's self-concept* (Aronson, 1968; Steele, 1988), related to *personal responsibility* for *aversive consequences* (Cooper and Fazio, 1984).

The "free-choice" paradigm.

The *free choice* paradigm has been employed in cognitive dissonance research to examine the implications of cognitive dissonance theory for situations involving choice. According to Festinger, when one makes a choice the positive aspects of the chosen alternative (and the negative aspects of the unchosen alternative) are consonant with the choice behavior. Conversely, the positive aspects of the unchosen alternative (and the negative aspects of the chosen alternative) are dissonant with the choice behavior. Therefore, choosing between two alternatives may produce

dissonance and a consequent motivation to reduce dissonance. In choice situations dissonance may be reduced by making the chosen alternative more desirable and the unchosen alternative less desirable. This is referred to as the *spreading of alternatives*, as two alternatives that may have been close in desirability before a decision had been made become further apart in desirability after a decision has been made.

In a study by Brehm (1956) participants, female students at the University of Minnesota, were presented with eight products and told that one of the products would be awarded to each participant as a token of appreciation for her participation in the study. Participants first rated the attractiveness of each of the eight products. In a critical experimental condition, they were then given a choice between two products that were close in desirability. After making the choice participants were asked to read research reports concerning four of the products. After reading the reports, participants were asked to re-rate the desirability of the products. The findings indicated that participants changed their evaluations of the products and became more positive about the chosen alternative and less positive about the rejected product (the *spreading of alternatives* effect). According to Brehm (1956) this reflects the process of reducing the post decisional dissonance aroused by the negative aspects of the chosen alternative and the positive aspects of the rejected alternative.

A further interpretation of these findings offered by Steele, Spencer, and Lynch (1993) argued that dissonance is aroused because the negative consequences of the choice are a threat to one's self-concept as a competent decision maker. To resolve the dissonance in this situation, there occurs the post decisional spreading of

alternatives. The chosen alternative becomes more attractive, while the unchosen alternative becomes less attractive, in the interest of protecting one's self image as a judicious decider. Again the subsequent interpretations of early dissonance experiments (the classic study by Brehm, 1956 in this instance), isolated certain elements of the experimental situation (like choice, or self-image) and defined them as critical to the arousal of dissonance (Aronson, 1968; Cooper & Fazio, 1984; Steele, 1988) even though these didn't figure in Festinger's (1957) original, content-free, formulation.

Revisions of Dissonance Theory

As Festinger stated, "If a theory is at all testable, it will not remain unchanged. It has to change (Appendix B, Harmon-Jones and Mills, 1999, p. 383)." Festinger's theory of cognitive dissonance has certainly been one of the most tested theories in the history of psychology and, indeed, it has undergone numerous changes over the past 35 years. As emphasized earlier, such changes involved the refocusing of the theory on certain content-elements of demonstrable importance in *specific* dissonance experiments (Kruglanski & Klar, 1987; Kruglanski, 1989) and made them into *generally* important elements critical to the state of dissonance as such. In the following section, I examine three such major revisions of dissonance theory referred to earlier, namely Cooper and Fazio's (1984) Aversive Consequences revision, Aronson's (1992) self consistency formulation, and Steele's (1988) self-affirmation formulation.

Aversive consequences

Cooper and Fazio's (1984) aversive consequences revision states that the attitude change found in dissonance experiments stems from people's desire to avoid feeling personally responsible for the production of aversive consequences. In other words, this formulation states that such a feeling is necessary and sufficient for the production of dissonance. An intriguing contention of Cooper and Fazio's (1984) assertion is that, contrary to Festinger's (1957) original formulation cognitive inconsistency is *neither* necessary *nor* sufficient to produce dissonance and dissonance reduction. By contrast, feeling personally responsible for foreseeable, aversive consequences was deemed *both* necessary *and* sufficient. According to this formulation, participants in the Festinger and Carlsmith (1959) experiment, for example, changed their attitudes precisely in order to avoid feeling personally responsible for producing the aversive consequence of having others participate in a boring study due to the misleading statements they made to these individuals.

An experiment by Cooper and Worchel (1970) is often cited as important evidence for the aversive consequences formulation. This experiment constituted an extended replication of the Festinger and Carlsmith (1959) study, with the additional variable of consequences accruing to the counterattitudinal behavior. In the *aversive consequences* condition, the confederate appeared to be convinced that the study was interesting. In the *no-aversive consequences* condition, by contrast, the confederate appeared not to be convinced. Consistent with Cooper and Worchel's (1970) predictions, only participants who believed that they had been effectively deceitful showed dissonance induced attitude change. In the Cooper and Fazio (1984) view

then, the judgment that one was responsible for aversive consequences represents the cognitive contents critical to dissonance phenomena in general.

Self-consistency

Another revision of cognitive dissonance theory was Aronson's (1992) self-consistency formulation whereby dissonance is assumed to be aroused when an inconsistency exists between one's behavior and one's self-concept. Aronson assumed that people generally have positive self-concepts that portray them as competent, moral, and able. When engaging in behaviors inconsistent with such a positive self-concept, such as deceiving someone into thinking that a boring task is interesting, or advocating a counter-attitudinal position- - we experience dissonance. In other words, when engaging in an activity that makes us feel foolish, immoral, or incompetent, we experience dissonance which we attempt to reduce through some process of self-justification.

The self-consistency revision agrees with the original formulation of dissonance theory (Festinger, 1957) as far as the effects of inconsistency are concerned. However, where the original formulation asserted that inconsistency between any two cognitive elements could be dissonance arousing, the self-consistency revision asserts that there needs to exist a specific type of cognitive inconsistency, namely inconsistency with the self-concept for dissonance to be experienced. According to this view, the self-concept acts as a standard, and performance of activities inconsistent with that standard is dissonance arousing.

In contrast to Cooper and Fazio's (1984) framework, Aronson's self-consistency revision argues that the production of aversive consequences to others is not necessary for dissonance arousal. It argues, instead, that acts inconsistent with the self-concept are dissonance arousing even if the dissonant act had positive consequences. Evidence for this contention was furnished by an experiment of Aronson, Fried, and Stone (1991). Their study induced male college students to make arguments advocating the use of condoms. In one condition, participants were told that their arguments would be video-recorded for use with high school students. In another condition, participants rehearsed the arguments without being videotaped. The experiment also involved a hypocrisy manipulation. Half the participants were reminded of instances when they themselves had failed to use condoms, while the other half were not so reminded. The main phenomenon of interest was the degree to which participants reported their intention to use condoms in the future. The finding was that the only participants who reduced dissonance by reporting a greater intention to use condoms in the future were the students who both made the video and had been reminded of their past failures to abide by their own advice. Aronson's (1999) argument was that there should not have been the production of aversive consequences because the students had actually done something that benefited the high school students, but they had been made to feel like hypocrites. Therefore, dissonance reduction was necessary because the hypocritical act was inconsistent with participants' self-conception as moral individuals, but not because of their feeling responsible for the production of aversive consequences to others.

It is worth noting that Cooper (1999) has since broadened his definition of aversive consequences to include any outcome that the actor, rather than the target of the act, perceived as aversive. Accordingly, aversive consequences are not limited to situations wherein one generates aversive consequences for others. On this definition, hypocrisy, for example, would qualify as an aversive consequence, if it countered the actor's value of sincerity, thus explaining the results of Aronson et al. (1991) in Cooper and Fazio's (1984) terms. At any rate, the "personal responsibility" part seems common to both the Aronson (1992) and the Cooper and Fazio (1984) formulations as does the implied damage to one's self-concept accruing from the specific cognitive contents whereby one is responsible for a negative outcome of whatever kind.

Self- affirmation

According to Steele's (1988) self-affirmation theory, dissonance effects are not the result of cognitive inconsistency, inconsistency between behavior and the self-concept, or the perceived personal responsibility for producing foreseeable, aversive consequences. Rather, self-affirmation theory posits that people possess a self-affirmation drive such that our thoughts and actions are guided by a strong motivation to maintain our moral and adaptive integrity (Steele, 1988). As we are not motivated by cognitive consistency per se our motivation to restore a global sense of self-worth can be satisfied in ways that are rather unrelated to the dissonant act (Steele & Lui, 1983). According to this view, global self-worth can be restored by any behavior that affirms it.

Steele's (1988) view of dissonance arousal and reduction further differs from Aronson's (1992) self-consistency revision in that the self is posited to constitute a *resource* as opposed to a *standard*. Consequently, these two perspectives differ in their perspective on the role of self-esteem in dissonance phenomena. According to the self-consistency revision, individuals with high (vs. low) self-esteem should be more likely to experience dissonance (or experience a higher magnitude of dissonance) because they have a higher standard with which to compare their actions. According to the self-affirmation perspective, by contrast, individuals with a high self-esteem should be less likely to experience dissonance (or experience a lesser magnitude of dissonance) because if they commit a dissonant act, they have more of a resource which can be recruited in maintaining or restoring their global sense of self-worth. Steele, Spencer, and Lynch (1993) found evidence for this proposition in an experiment employing the free-choice paradigm. In this experiment, participants with high self-esteem rationalized their decisions less than participants with low self-esteem. Though Steele's (1988) self-affirmation formulation differs in important ways from both Aronson's (1992) and Cooper and Fazio's (1984) revised versions of dissonance theory, from the present perspective these three revisions share an important commonality having to do with the self-concept as a pivotal variable in dissonance phenomena. As noted earlier, this emphasis differs from Festinger's (1957) original version of dissonance theory that didn't accord the self-concept a comparable importance; nor does the present approach inspired by goal systems theory (Kruglanski et al., 2002). In what follows, the latter framework is briefly

described to subsequently consider what novel insights it may afford into understanding dissonance phenomena.

A Goal-Systemic Perspective

Overview of goal-systems theory.

Goal systems theory adopts a cognitive approach to motivation (Kruglanski, 1996 a,b). It proposes that our goal structures have a cognitive aspect and thus they share many similarities with other cognitive structures. Specifically, goal systems are posited to be similar to cognitive structures in the ways in which they are acquired, activated, and changed and to be distinguished from other cognitive structures only in their contents. Specifically, goal systems have *motivational* contents with specific implications for thought, affect and action that differ from non-motivational cognitive contents. For instance the concept of a *goal* implies a striving for its attainment, and the experience of frustration upon its non-attainment. By contrast, non motivational constructs such as sky, table, or apple do not have similar implications.

Interconnectedness.

The term *goal system* refers to cognitive structures consisting of *interconnected* elements. These elements are mental representations of various goals, of their attainment means, as well as hindrances or barriers on the way to goal attainment. In other words goals represent desirable end states to which one has some degree of commitment, and these goals are attached to means, or actions instrumental to their attainment. The interconnections within a goal system can be *facilitative* or

inhibitory. A facilitative connection between elements implies that one element will be cognitively activated by another. Typically, means have a facilitative connection to goals they are meant to serve. Indeed, prior research (Shah & Kruglanski, 2003) has demonstrated that the presentation of means cognitively activates, or primes, their associated goals. Furthermore, hindrances, too, are facilitatively associated with the goals which attainment they undermine. Along these lines, Fishbach, Friedman, and Kruglanski (2003) demonstrated that "temptations", e.g. tasty but fattening foods—activate the overarching goal of dieting with respect to which they constitute a hindrance.

Inhibitory connections characterize relations between competing goals, for instance. To borrow an example from the stereotyping literature, self enhancement goals may increase stereotyping as one derogates an outgroup member to establish the superiority of the ingroup, thereby enhancing the self-concept (Tajfel & Turner, 1979). If one has the goal of being non-prejudiced, then these goals would be in competition and have an inhibitory connection. The occurrence and degree to which one goal would inhibit another is a function of the relative *subjective utility* (SU) of the two goals each weighted by its *degree of activation* (A) at a given moment. Subjective Utility is defined as a multiplicative function of the valence attached to a given goal times its expectancy of attainment. Activation refers to the accessibility of a goal construct in memory at a given time (cf. Higgins, 1996). The product A x SU, referred to as *active commitment* determines the proportion of (attentional and energetic) resources the individual would invest in a given goal. It is assumed (Kruglanski, Shah, Fishbach, Friedman, Chun & Sleeth-Keppler, 2002) that the total

amount of such resources at any given moment is limited. Thus, the greater the product A_1 x SU_1 for Goal G_1 relative to the product A_2 x SU_2 for Goal G_2 the greater the investment of resources in the first versus the second goal. The withdrawal of resources will manifest itself in (1) inhibition of the goal representation, indexed e.g. by slower response times on a lexical decision task as well as (2) lesser perceived importance of the goal. In this vein, Shah and Kruglanski (2002) have shown that the activation of a new goal with a relatively high degree of commitment exerts a "goal pull" effect on a previously active focal goal, manifested by reduced activation of the latter goal and its lessened perceived importance.

Along with other motivational theories (for a review see Kruglanski, 1996) goal systems theory assumes also that goal-attainment gives rise to a positive affect and that thwarting of a goal pursuit, that is encountering a barrier or a hindrance gives rise to a negative affect experienced as aversive arousal (Festinger, 1957). The magnitude of such affect will depend on the individual's active commitment to the goal. I further assume that the negative affect will set in motion active attempts to reduce it by removing the sense of hindrance, or thwarting.

Goal-systemic analysis of dissonance phenomena.

An important question often raised with regard to the theory of cognitive dissonance concerns the precise nature of the inconsistency that this theory assumes (Kruglanski & Klar, 1987). According to the present analysis, such inconsistency refers to a discrepancy between a desired state, that is a goal representation, and some current state. Any information that conveys a thwarting or frustration of the goal is "dissonant" by the present analysis, and is assumed to engender a state of negative

affective arousal and to prompt activities (on cognitive or behavioral levels) designed to lower it by altering in some way the cognition that one's goal is indeed frustrated. From the present perspective, dissonance reduction processes (Festinger, 1957) are, specifically, such attempts at removing the sense of goal frustration.

The foregoing, goal-systemic, analysis of dissonance phenomena has several implications. One implication concerns the critical role played in dissonance phenomena of *goal activation* patterns. Thus, I assume that the degree to which a goal frustrated by a given behavior or event is cognitively activated at a given moment will determine the degree to which individuals will experience aversive affect, and the extent to which they will attempt to reduce it. Consistent with the theoretic notions described above such goal activation should depend on the degree to which the relevant goal representation is primed by external events, and also on the individuals' momentarily active commitment to competing goals.

The second implication derives from the fact that the goal-systemic analysis of dissonance phenomena does not distinguish between different goal contents, and does not single out the self-concept as critical to dissonance arousal. An implication of this analysis is that dissonance type phenomena can occur without the perception of a free choice in exercising a given behavior, or of having a personal responsibility for a given outcome. The three experimental studies that follow submit these notions to an empirical test. A preliminary study was first conducted within the induced compliance paradigm, addressing the goal activation aspect of our analysis. This study was followed up with second study, also conducted within the induced compliance paradigm, which attempted to address shortcomings of the preliminary

study. The third study, conducted within the free choice paradigm, addressed the content free aspect of the present analysis related to the prediction that the frustration of some actively committed goals will give rise to dissonance type phenomena even in the absence of a free choice.

Chapter 2: Preliminary Study Method

Goal-Systemic Effects in "Induced-Compliance" Paradigm

Consider the Festinger and Carlsmith (1959) classic experiment in which participants induced to lie for an enticement of $1.00 (vs. $20.00) that a boring task which they just completed actually was fun and interesting reported subsequently a more positive attitude toward that task than did those who received $20. In goal-systemic terms, the act of lying is inconsistent with the goal of honesty; it constitutes a hindrance to this goal, hence it should activate it (Fishbach et al., 2002). This confrontation between the honesty goal and the act of lying, should occasion aversive affect and motivate an attempt to reduce it, via a positive attitude change toward the task. But why should the aversive affect be stronger in case of the $1.00 inducement than in case of the $20.00? According to the goal-systemic analysis, the greater monetary value of the $20.00 (vs. the $1.00) inducement effects a *greater active commitment* to the monetary goal. This should "pull" away resources from the "honesty" goal reducing the active commitment to this goal, and the associated negative affect. Consequently, the lesser experienced frustration of the honesty goal should result in lesser attempts to remove it, and lesser attitude change toward the task.

Note that this analysis of the induced compliance situation is very different from Festinger and Carlsmith's (1959) dissonance-theoretic account. From the latter perspective, the $20.00 (vs. $1.00) incentive adds a cognition consonant with the act of lying "I have been paid a lot for making the false report" and that is the reason for

a reduced dissonance experienced in this condition. By contrast, the present goal-systemic perspective suggests that the critical mediators of the relation between the magnitude of incentive and attitude change is the relative active commitment to the goals of monetary reward versus honesty. Specifically, in the $ 20.00 condition, participants' active commitment to the reward goal, relative to the honesty goal may have been greater than in the $1.00 condition, and this difference may have mediated the differences in experienced negative affect and ultimately in task-attitudes reported by Festinger and Carlsmith (1959).

The purpose of this study will be to explore these possibilities using the inducement to comply with the experimenter's request in lieu of the monetary incentive manipulation used by Festinger and Carlsmith (1959). Research examining the manipulation of choice in dissonance studies has found that participants given high choice to advocate counterattitudinal positions are more likely to change their attitudes in the direction of the position advocated than participants given low choice. According to Festinger (Appendix B, Harmon-Jones & Mills, p. 383), "… in order for dissonance to be large enough to exist there has to be minimal pressure on the person to do what the person does. If there is too much pressure, there is too much justification for having done it and it is all consonant with having done it, there is no dissonance." Brehm and Cohen (p. 203, 1962), referring to participants' feelings of volition stated it thusly, "the degree of volition will frequently be positively correlated with the magnitude of dissonance as defined in terms of dissonant and consonant cognitions…." Referring specifically to the induced-compliance paradigm

Brehm and Cohen (p. 204, 1962) assert that, "…the greater the force that produces compliance, the less is the ratio of dissonant to consonant cognitions….."

Again, classical dissonance accounts do not mention shifts in the degree to which various goals are activated. According to those accounts, pressure adds a consonant cognition. By contrast, the present goal-systemic perspective suggests that the critical mediators of the relation between presence of choice and attitude change is the relative active commitment to the goals of compliance versus honesty. Specifically, in the low choice condition, participants' active commitment to the compliance goal, relative to the honesty goal may have been greater than in the low choice condition, and this difference may have mediated the differences in experienced negative affect and ultimately in task-attitudes reported by Festinger and Carlsmith (1959).

Participants and Design

Participants in the study were 54 (33 female and 21 male) undergraduate students at the University of Maryland in College Park[1]. Students took part in the experiment to earn extra credit for a course in Introductory Psychology.

The design of the study was a 2 (choice: low vs. high) x 3 (prime: honesty goal vs. compliance goal vs. no prime) between subjects factorial. Participants in a low or a high choice condition wrote counter attitudinal arguments in favor of comprehensive exams. After doing so, they were primed with the goal of honesty, the

[1] There were originally 58 participants. Three of these were deleted from the analysis because they did not check both boxes in the agreement form that manipulated low versus high choice. One more participant was excluded after reporting in the debriefing that she did know what "comprehensive exam" meant.

goal of compliance, or a neutral (non goal-related) prime. The degree to which these priming manipulations varied the accessibility of the corresponding goals was assessed via a stem completion task. Subsequently, participants' attitudes toward comprehensive exams were assessed in the context of an allegedly unrelated survey. I was interested in two sets of hypothesized findings: (1) the effects of the present independent variables on attitudes toward comprehensive exams; (2) the effects of the present independent variables on the relative accessibility of participants' compliance and honesty goals.

With regard to the first set of findings, it was predicted that (1) the neutral prime condition would replicate the typical finding in the induced compliance paradigm manifested in more positive attitudes toward comprehensive exams under high versus low choice. Of greater interest, (2) relative to the neutral prime, the compliance prime should generally lower the favorability of attitudes toward comprehensive exams, particularly in the high choice condition, because under low choice conditions such attitudes should be already rather negative in the neutral condition as well. (3) Relative to the neutral prime, the honesty prime should generally increase the favorability of attitudes toward comprehensive exams, and particularly so under low choice because in the high choice condition such attitudes should be already rather positive in the neutral condition as well. Also of theoretical interest, (4) across the experimental design, the favorability of attitudes toward comprehensive exams should be mediated by the relative accessibility of the honesty versus the compliance goals.

Regarding the second set of findings, I predicted that in the neutral prime condition (1) the honesty goal would be more accessible (as measured by the stem completion task) under the choice versus no choice condition, (2) by contrast, the compliance goal would be more accessible under no choice versus the choice condition. Furthermore, (3) the compliance goal prime (as compared to the neutral prime) would increase the accessibility of the compliance goal particularly under high choice, because under low choice the compliance goal should be highly accessible already in the neutral condition. (4) Relative to the no prime condition, the compliance prime would lower the accessibility of the honesty goal, because of the pulling away of resources from the honesty goal that activation of the compliance goal may effect (Shah & Kruglanski, 2002). Similarly, (5) the honesty goal prime (as compared to the neutral prime) will increase the accessibility of the honesty goal, particularly under low choice, because under high choice the honesty goal should be highly accessible and already in the neutral condition. (6) Relative to the no-prime condition, the honesty prime would lower the accessibility of the compliance goal, again due to the pulling away of resources from the compliance goal that activation of the honesty goal may effect (Shah & Kruglanski's (2002) "goal-pull" effect).

Procedure

Participants first took part in a typical induced compliance study where they were asked to list under high choice or low choice conditions (counter attitudinal) arguments in favor of the implementation of comprehensive exams. Their arguments, participants were informed, were part of the efforts by the Council of Student-Faculty Affairs to understand students' attitudes on this issue and might be used in an

information campaign planned by the administration in order to explain the need for implementing the exams. For the remainder of the time, participants were asked to take part in a memory experiment conducted by a team of cognitive psychologists. This task lasted for three minutes during which participants memorized a set of words. As detailed later, this part of the procedure incorporated our goal priming manipulation. Following that phase of the study, participants performed a filler task (drawing a map of campus) and completed a stem completion task designed to assess the accessibility of the compliance and honesty goals primed during the memorization part of the procedure. Next, participants were asked to complete a survey ostensibly from the Office of Institutional Research and Planning. This questionnaire contained items intended to measure participants' true attitude towards a tuition increase.

Manipulation of Independent Variables

Choice Manipulation

Participants were told that they would be participating in a survey being conducted by the Council of Student-Faculty Affairs. The survey was administered by a second experimenter presumably not connected with the memory study. This experimenter informed participants that the Board of Regents at the University of Maryland was considering the implementation of comprehensive exams as a graduation requirement but asked the Council for Student-Faculty Affairs to examine what reasons there are for and against comprehensive exams, in order to develop an effective information campaign in case comprehensive exams were decided upon. Participants were advised that their responses would be conveyed to the Council and to the Board of Regents. Participants were further informed that the Council desired

to understand the arguments relevant for both sides of the issue; therefore, the Council wanted students to list only one side, either supporting implementation or opposing implementation. They were told that the Council had already collected a sufficient number of arguments opposing implementation; thus, the Council was seeking arguments favoring implementation. Participants, therefore, were requested to list arguments in favor of comprehensive exams.[2]

Before listing the arguments, participants were required to read and sign an agreement contract. In the agreement contract, the explanation for the study was re-stated. In the high choice condition this explanation included the statement, "*I recognize that I will be given experimental credit regardless of whether or not I generated arguments. I sign it freely and voluntarily*." The contracts of low choice participants did not include such a statement. Further, high choice participants were required to check boxes in which they affirmed that they agreed of their free will to write arguments and to have them released to the council and the University Board of Regents. Participants in the low choice condition were only required to check a box affirming that they had read the explanation of the study.

Participants were then asked to take the next 8 minutes to generate the strongest, most forceful arguments supporting the implementation of comprehensive exams as a graduation requirement at the University of Maryland. After 8 minutes had passed, the experimenter collected the arguments, thanked participants for their participation, and exited the lab.

[2] Participants typically generated arguments related to learning (e.g. "Exams will ensure that you have learned the material."); evaluation (e.g. "Exams will provide another means to evaluate students."); and preparation (e.g. "Exams could be asset when applying for jobs or graduate programs.").

Priming Manipulation

The priming manipulation was modeled after a procedure used by Hertel and Fiedler (1994). Thirty adjectives were scattered unsystematically over a page. Participants were told that they would be given 3 minutes to study these words so that they could reproduce as many of them as possible at a later time. Participants were further informed that the words could be arranged in two meaningful categories that might be helpful in memorizing the list. The total set was comprised of 10 items forming a spatial category such as *high*, *circle*, and *concave*; 10 filler adjectives such as *wintry*, *tired*, and *bookish*; and 10 adjectives intended to bring about the priming effect. Participants primed with the honesty goal were given adjectives such as *truthful*, *honest*, *upright*, and *sincere*; and participants primed with the compliance goal were given adjectives such as *helpful*, *cooperative*, and *supportive*. Participants in the control condition received 5 color adjectives, such as *blue*, *indigo*, and *bronze*.

Measurement of Outcome Variables

Accessibility Measure

After performing a filler task that involved drawing a map of campus, participants completed a cued recall task in which they were given word stems and asked to complete the stems with the first word that came to mind. The stem-completion task (see Appendix A) served as a measure of accessibility of the honesty and compliance goals, proposed as mediator of the effects of the priming and choice manipulations on participants' attitudes toward the issue of comprehensive exams.

Attitude Measure

Finally, participants completed an ostensibly unrelated survey from the Office of Institutional Research and Planning. This survey inquired into general questions about the quality of their experience at the University of Maryland. Embedded in the questionnaire were questions asking about their attitude toward comprehensive exams. The critical question in the survey asked participants to rate the extent to which they agreed with the statement, "The University should implement comprehensive exams for Seniors." Responses were obtained on a 7-point scaled that ranged from strongly disagree (1) to strongly agree (7). Participants placed their responses in an envelope addressed to the Office of Institutional Research and Planning and were told that their responses would not be seen by experimenter. This concluded the experiments. Participants were thoroughly debriefed according to a procedure suggested by Mills (1976) and their questions, if any were answered.

Chapter 3: Preliminary Results

Outcome Measures

Attitude Measure

Participants' attitude toward the implementation of comprehensive exams was investigated using a 2 (choice: low vs. high) x 3 (prime: compliance vs. neutral vs. honesty) factorial ANOVA. The 2-way interaction was not significant F (2, 48) = .93, *ns*; however, there were trends in the data consistent with my predictions. High choice/neutral prime participants (M = 2.78) had a more favorable attitude toward comprehensive exams than low choice/neutral prime participants (M = 1.33). This pattern replicated the typical dissonance finding. High choice/neutral prime participants (M = 2.78) also had a more favorable attitude toward comprehensive exams than high choice/compliance prime participants (M = 1.44). This trend is consistent with the prediction that activation of the compliance goal should inhibit the honesty goal and attenuate the dissonant effect in high choice participants. Low choice/ honesty prime participants (M = 2.00) were more in favor of comprehensive exams than low choice/neutral prime participants (M = 1.33). This is also consistent with my predictions. The activation of the honesty goal in the low choice condition should be capable of producing the dissonance effect even with the absence of choice. The pattern of means is summarized in Table 1.

Accessibility

An examination of accessibility data also revealed trends consistent with my predictions. The accessibility measure was constructed by subtracting the number of stems that participants completed with compliance-related words from the number completed with honesty related words (accessibility = honesty - compliance). Hence, scores greater than zero indicate that a greater number of stems were completed with honesty related words, while scores less than zero are indicative of a greater number of stems completed with compliance related words. Accessibility was investigated using a 2 (choice: low vs. high) x 3 (prime: compliance vs. neutral vs. honesty) factorial ANOVA. Although the 2-way interaction was not significant $\underline{F}$ (2, 48) = .95, ns, the means, as shown in Table 2, were in the predicted direction. High choice/neutral prime participants completed more word stems ($\underline{M}$ = .78) with honesty related words than low choice/neutral prime participants ($\underline{M}$ = -.22). The honesty prime increased the relative accessibility of the honesty goal in the low choice condition ($\underline{M}$ = 1.67), while the compliance prime decreased the relative accessibility of the honesty goal in the high choice condition ($\underline{M}$ = -1.56). A significant main effect of prime, $\underline{F}$ (2, 48) = 18.91, $\underline{p}$ <.001, was obtained, such that participants primed with honesty completed more word stems with honesty related words ($\underline{M}$ = 2.50) than participants receiving the neutral prime ($\underline{M}$ = .28) or the compliance prime ($\underline{M}$ = -1.50).

Discussion

While there were trends in the data consistent with my hypotheses, there were not significant effects. As this study was intended as only a preliminary investigation

it was not carried through to its conclusion. Thus, it's reasonable to assume that the lack of statistical significance may be in part attributable to the low of number of participants in the study which would have limited the statistical power of the study.

A criticism of this study raised in the proposal meeting was that the pattern of findings for the accessibility data could have been due to semantic priming as opposed to differing goal activation effects. This was indeed a very sound criticism when one considers that the set of words participants received in the stem-completion task was identical to the words they had been previously presented as primes. Consequently, a second study was conducted in which the experimental procedure was slightly modified in an attempt to address this issue**.** In order to reduce the likelihood of participants being semantically primed, I used half of the target words from the previously described study as primes while using the other half of the target words as stimuli in the stem completion task. As a result the words presented as primes would be different than the words received in the stem-completion task.

Another modification of the study was that I was able to obtain a pretest measure of participants' attitudes toward comprehensive exams. The purpose of the pretest measure was two-fold. First, it allowed me to include only participants in the study who reported a negative attitude toward comprehensive exams. This afforded me the opportunity to ensure that all participants in the study were actually generating counter-attitudinal arguments when asked to list arguments in favor of comprehensive exams. This improved upon the preliminary study in which I relied on an untested assumption that undergraduate students would prefer not to take comprehensive exams as a graduation requirement. The second benefit was that I was allowed to use

the pretest measure as a covariate to further reduce error variability in the dependent measure. The collection of the pretest measure did not affect the experimental procedure as this data was collected during a separate mass testing session conducted at the beginning of the semester. There were no additional changes in procedure.

Chapter 4: Study 1 Method

Participants and Design

Participants in the study were 83 (55 female and 28 male) undergraduate students at the University of Maryland in College Park.[3] Students took part in the experiment to earn extra credit for a course in Introductory Psychology. Participants were pre-selected based on responses to an earlier questionnaire in which we measured attitudes towards the implementation of comprehensive exams. Participants reported on a 7 point scale in which response options ranged from strongly disagree (1) to strongly agree (7). Only students who responded between 1 (strongly disagree) and 3 (slightly disagree) were allowed to participate in the study.

Procedure

With the exception of the previously described adjustments to the priming manipulation and the stem completion task, the procedure for this study was identical to the procedure of the previous study.

[3] Eight-five participants were originally run. However, two of these were deleted from the analysis because they did not check both boxes in the agreement form that manipulated low versus high choice.

Chapter 5: Study 1 Results

Outcome Measures

Attitude Measure

Participants' attitude towards the implementation of comprehensive exams was the primary dependent measure in this experiment. In conducting this analysis, participants' pre-experimental attitude toward the implementation of comprehensive exams was statistically controlled for using an Analysis of Covariance (ANCOVA). This analysis was conducted using a 2 (choice: low vs. high) x 3 (prime: compliance vs. neutral vs. honesty) ANCOVA. The 2-way interaction of choice and prime was significant F (2, 76) = 3.12, $p < .05$. The data revealed that high choice/neutral prime participants (M = 2.95) had a more favorable attitude towards comprehensive exams than low choice/neutral prime participants (M = 1.35). This pattern replicates the typical dissonance finding. High choice/neutral prime participants (M = 2.95) were also more in favor of comprehensive exams than high choice/compliance prime participants (M = 1.66). This is consistent with my prediction that activation of the compliance goal should inhibit the honesty goal and attenuate the dissonant effect. Low choice/honesty prime participants (M = 1.58) were more in favor of comprehensive exams than low choice/neutral prime participants (M = 1.35). This is also consistent with my prediction that the activation of the honesty goal in the low choice condition should be capable of enhancing the dissonance effect. There was a significant main effect of choice, F (1, 76) = 17.06, $p < .001$ such that high choice

participants (M = 2.52) were more in favor of comprehensive exams than low choice participants (M = 1.47). There was also a marginally significant effect of prime, F (2, 76) = 4.12, p < .07. Participants primed with the compliance goal were less in favor of comprehensive exams (M = 1.58) than participants primed with either the honesty goal (M = 2.26) or participants receiving the neutral prime (M = 2.15). This pattern of results can be seen in Table 3.

Accessibility

Although the attitude measure provided support for the goal systemic analysis, the examination of the accessibility data did not provide further support. The stem-completion task did not detect differences in the relative accessibility of the honesty goal versus the compliance goal. As in the preliminary study, this measure was constructed by subtracting the number of stems completed with compliance related words from the number of stems completed with honesty related words (accessibility = honesty - compliance). A 2 (choice: low vs. high) x 3 (prime: compliance vs. neutral vs. honesty) factorial ANOVA did not yield significant results F (2, 75) = .36, ns. See Table 4 for summary.

An examination of the accessibility of the honesty goal, alone, did not reveal patterns of findings consistent with the predictions. The accessibility of the honesty goal was investigated using a 2 (choice: low vs. high) x 3 (prime: compliance vs. neutral vs. honesty) ANOVA. The 2-way interaction was not significant F (2, 75) =.50, ns. There was, however, a significant main effect of prime F (2, 75) = 2.97, p < .05. Participants given the honesty primed (M = 2.37) completed significantly more

stems with honesty-related words than participants in the neutral prime condition ($\underline{M}$ = 1.67).

Discussion

An experiment conducted using the "induced compliance" paradigm provided partial support for the goal-systemic analysis of cognitive dissonance phenomena. The experiment was conducted to put to an empirical test the hypothesis that activation of an honesty goal would increase dissonance effects, while activation of a competing goal (i.e. compliance) would attenuate dissonance effects. The typical dissonance effect was indeed reversed in this study through the employment of priming procedures. Low choice participants showed increased dissonance induced attitude change when primed with the honesty goal, while high choice participants showed decreased dissonance induced attitude change when primed with the compliance goal. Unfortunately, I did not find direct evidence that these outcomes were mediated by active commitment to the goal of honesty relative to the goal of compliance. It is possible that the stem completion task employed was not sensitive enough to detect differences in the accessibility of the goals assumed to be relevant. Nonetheless, this study was effective in shedding some light on the cognitive mechanisms underlying dissonance phenomena through examination of the critical role of goal activation patterns.

This study, however, did not address the content – free notion of the goal – systemic analysis. It could be argued from a self-affirmation perspective (Steele, 1988), for example, that the honesty prime in this study reduced self-worth for

participants (by reminding them of their dishonesty), while the compliance-prime reduced dissonance, or restored self-worth, by reminding participants that they had been compliant or helpful. The very nature of the induced-compliance paradigm makes it difficult to remove implications for the self-concept, as the defining feature of the paradigm involves an inducement to engage in some action counter to one's beliefs or attitudes. It's a reasonable assumption that engaging in such an activity will lead one to feel dishonest or hypocritical. For this reason the content – free aspect of the goal - systemic analysis could be better investigated through the use of a paradigm in which self-concept related goals aren't an essential feature of the paradigm, itself. One such paradigm could be the previously described free-choice paradigm. In a second study I attempted to explore dissonance effects in a situation in which implications for the self-concept or self-worth could be minimized.

The goal-systemic analysis of dissonance phenomena does not assign a special status to self-concept (or self-esteem) related goals, and is assumed to apply to all goals regardless of contents. Accordingly, the exercise of free choice that heretofore has been viewed as a necessary condition for the arousal of dissonance (cf. Linder, Cooper, and Jones, 1967) is presently viewed as necessary for the experience of dissonance only as concerns various self-concept related goals. The exercise of free choice is viewed as irrelevant to dissonance aroused by a frustration of non self - related goals.

It may be useful, however, to provide a brief sketch of how choice and the self-concept have generally come to be accepted as necessary for dissonance arousal. Festinger and Carlsmith's (1959) boring task study had a profound effect on the field

of social psychology due not only to the counterintuitive empirical findings, but also due to its inventive methodology. While there was great interest in dissonance theory in general, there was also a great focus on understanding the findings of that particular study. Consequently, many of the now classic studies in dissonance research can be directly traced to addressing different theoretical accounts and alternative explanations of Festinger and Carlsmith's (1959) findings. One such example is the study conducted by Linder et al. (1967) often cited as evidence of the necessity of choice. Linder et al. (1967) demonstrated that low incentive leads to attitude change only when an individual remains free to decide against compliance, or free to choose. However, tracing the lineage of this study provides a useful illustration of how content-related elements commonly associated with a particular paradigm (i.e. the induced-compliance paradigm) were assumed critical for the occurrence of dissonance effects in general.

After Cohen (1962) replicated the findings of Festinger and Carlsmith (1959) in a study in which Yale students were induced to write (counterattitudinal) essays in favor of the New Haven police, Rosenberg (1965) proposed an alternative explanation for the findings of those experiments. He suggested that high incentive participants, for whom the rewards may have seemed excessive, interpreted the experiment as a test of their integrity. Therefore, participants in the high incentive condition might have assumed that they would be viewed more favorably by the experimenter if they resisted influence in the face of a bribe to report a positive attitude. When Rosenberg (1965) removed evaluation concerns a reinforcement effect was found, and attitude change was positively related to incentive.

In an attempt to reconcile the discrepant findings within the induced-compliance literature, Linder et al. (1967) argued that the effects of incentive would depend upon the presence or absence of the freedom to comply with the experimenter's request. They argued that the Rosenberg (1965) procedure made it difficult for participants to refuse to comply, and that this lead to a reinforcement effect. Linder et al. (1967) manipulated choice and found that if participants felt free not to comply a dissonance effect was found, but that there was a reinforcement effect when freedom was reduced. This study was important in establishing the importance of choice for dissonance arousal. It is very important, however, to recall that Linder et al. (1967) specifically intended to resolve discrepant findings *within* the induced compliance literature. However, the implications regarding the importance of choice were subsequently generalized to dissonance theory in general.

Similarly, those supporting a self-concept interpretation of dissonance often focused heavily upon studies conducted in the induced compliance paradigm in drawing this conclusion (Cooper and Fazio, 1984; Aronson, 1992; Steele and Lui, 1983). Each of the three revisions reviewed in this dissertation (Cooper and Fazio, 1984; Aronson, 1992; Steele and Lui, 1983) focused their analysis on findings in the induced compliance paradigm, and much of the debate among these theorists has focused also on the induced-compliance paradigm. In considering findings in the induced compliance paradigm, alone, the self concept does indeed appear to play a critical role. Within this particular paradigm participants are often made to feel dishonest or immoral, and these feelings have clear relevance for the self-concept.

However, proponents of the self-concept revisions don't make clear in their argument the unique qualities of self-concept related concerns which would lead those concerns *alone* to lead to dissonance effects. For example, Aronson's self-concept revision is in agreement with Festinger's (1957) original statement regarding the importance of inconsistency for the occurrence of dissonance. However, when suggesting that dissonance "depends on the specific cognitive elements that constitute the individual's self-concept (Thibodeau & Aronson, p.591, 1992)", it is not clearly articulated theoretically why this should be the case. More specifically, it's not made clear in terms of Festinger's (1957) original theoretical proposition. In terms of Festinger's (1957) original statement, dissonance is a function of the ratio of dissonant cognitions to total cognitions weighted by importance. Therefore, one is lead to ask if it is an assumption of the self-concept revisionists that self-concept related cognitions are distinguished as uniquely *important* among all other cognitions, and consequently, uniquely capable of arousing dissonance effects?

To briefly summarize, theoretical debates regarding dissonance effects were often conducted within the perhaps narrow confines of the induced-compliance paradigm. This focus on the induced-compliance paradigm has had implications for assumptions about the necessity of both free choice and the self-concept. When operating within a paradigm defined by inducing participants to make statements or engage in behaviors counter to their actual beliefs and attitudes, then one's self-concept as an honest person or a person with integrity may be implicated. Further, self-concept and free choice are closely linked. When self-concept concerns arise the issue of free choice has special relevance for reasons that have been articulated by

researchers who posit the necessity of choice (i.e. personal responsibility). Also, when one makes a choice the self-concept may be implicated as this is relevant to our (self-concept related) goal of being good decision makers. However, the goal systemic analysis does not make the assumption that dissonance phenomena only occur when choices are made (and consequently the self-concept is implicated); or that the implication of the self-concept is a precondition (which may increase the relevance of whether or not one perceives the presence of choice). This aspect of the goal-systemic analysis was explored in Study 2.

Chapter 6: Study 2 Method

Goal-Systemic Effects in "Free Choice" Paradigm

The second experiment also involved a goal-priming and a free-choice manipulation. This time, however, these were varied in a free-choice paradigm rather than in the induced compliance paradigm. The main purpose of this study was to investigate the idea that the presence of a free choice constitutes a necessary condition for dissonance effects only where maintenance of a positive self-concept represents an individual's important goal to which he or she is actively committed. Discrepancy from an actively committed goal that does not involve the self-concept will give rise to dissonance reduction phenomena irrespective of the presence or absence of free choice. In this sense, the present study investigated the content-free aspect of the goal-systemic analysis consistent with Festinger's (1957) original formulation but differing from the subsequent revisions of dissonance theory (Aronson, 1992; Cooper & Fazio, 1984; Steele, 1988).

A major finding in the free-choice paradigm was the "spreading apart" effect of the choice alternatives following a freely undertaken decision between alternatives assumed to induce the state of cognitive dissonance (Brehm, 1956). The present research assumes that the dissonance-induced "spreading of alternatives" will occur in the absence of choice to increase the sense that the individual's received outcome is congruent with this person's active and important goal. In this experiment, a goal

representation was introduced that was unrelated to one's self-concept (i.e. one's goals of appearing moral or competent). An individual then received an outcome for which certain aspects, i.e., the negative aspects of the chosen alternative and the positive aspects of the rejected alternative, could be viewed as incongruent with that goal. Under these conditions I expected a cognitive change to take place that would minimize the accessibility of these incongruent aspects and reduce their weight in determining the individual's overall satisfaction with the outcome. Ultimately then, I expected that a re-evaluation of the alternatives would take place such that the alternative that the participant received would be evaluated more positively, and the alternative that she or he did not receive would be evaluated more negatively than was the case before this particular outcome took place.

Method

Participants and Design

Participants in this study were 78 female University of Maryland undergraduates who took part in the study to earn extra credit in one of their psychology courses[4]. The design was a 2 (Choice: choice vs. no choice) x 3 (Prime: decision-making vs. fitness vs. no-prime) factorial ANOVA. Participants were primed with either the goal of *good decision making*, with the goal of *fitness*, or with a *neutral prime*. Next, participants were presented with 10 fitness classes and asked to rate their desirability. They also ranked the activities according to their personal preference. They were then either *given a choice* between their 3rd - and 4th - ranked

[4] Eighty participants were originally run, but two were excluded for reporting suspicions during the debriefing.

activity or, they were *given* their 3rd- ranked activity as a bonus gift. Finally, participants re-rated the desirability of all the 10 fitness classes.

I assumed that as compared to the neutral prime condition, priming the decision making goal would increase the effect of choice on (1) the spreading apart of the two alternatives in terms of their desirability such that under choice (versus no choice) the chosen alternative would be rated as more desirable as compared to the original rating and the rejected alternative as less desirable as compared to the original rating.

I assumed further that as compared to the neutral prime condition the fitness prime would eliminate the effect of choice (2) on the re-rating of the two alternatives such that irrespective of choice there would be a spreading apart effect with the received alternative being rated as more desirable and the non-received alternative as less desirable compared to the original rating.

Procedure

The procedure was similar to that used in earlier free choice experiments (e.g. Brehm, 1956; Steele, et al. 1993). Participants participated in this study ostensibly as part of market research examining fitness preferences.

Priming manipulation

Participants responded to a general background questionnaire ostensibly in order to allow the experimenter to determine their "life style" profile. The goal priming manipulation was embedded in this questionnaire. In the decision making goal condition, participants were asked to list three reasons why decision making skills were important in life. In the fitness condition, they were asked to list three

reasons why fitness was important in life. In the neutral control condition, they described three animals that they like the most.

Evaluating the to be chosen or to be received alternatives

At this point, participants were given a brochure describing with 10 different fitness activities. They were asked to (1) rate, on an unnumbered 12-point scale, each in terms of its desirability, and (2) rank order them in order of their personal preferences.

Manipulating the choice variable

Participants in the choice condition were presented with a coupon to attend their 3rd- and 4th- ranked alternatives and asked to choose one as a token of appreciation for their participation in the study. In the no choice condition, participants were given their 3rd- ranked alternative ostensibly as a token of appreciation for their participation in the study.

The re-rating task

Participants were presented again with all 10 activities and asked once again to rate their perceived desirability. The re-rating task was identical to the task in which participants made their initial ratings. This concluded the experiment. Participants were thoroughly debriefed, and their questions, if any were fully answered.

Chapter 7: Study 2 Results

Outcome Measures

Spreading of Alternatives

The primary dependent measure in studies employing the free choice paradigm is the spreading of alternatives, computed by subtracting the change in the rating of the not received alternative from the change in the rating of the received alternative (spreading = $\Delta_{\text{received}} - \Delta_{\text{rejected}}$). There was a significant two-way interaction in the spreading of alternatives, F (2, 75) = 3.88, $p < .05$. High choice/neutral prime participants (M = .67) showed significantly more spreading than no choice/neutral prime participants (M = -1.00). This replicated the classic dissonance effect. Consistent with my predictions, no choice/fitness prime participants (M = .38) showed more spreading than no choice/neutral prime (M = -1.00) and no choice/decision prime participants (M = -1. 07). Also, high choice/decision prime participants (M = .77) showed significantly more spreading than no choice/decision making prime participants (M = -1.07). Overall, high choice/decision prime participants showed the most substantial spreading, which is consistent with my analysis. These results are presented in Table 5.

Although this pattern of data provides some support for my hypothesis, some aspects of the data merit closer attention. Although the pattern of means obtained in examining the spreading of alternatives was in the predicted direction, little evidence was found that participants downgraded the not received alternative. For this reason I

undertook separate analyses examining re-ratings of the received and not received alternatives, apart from the spread of alternatives.

Received Alternative

There was a significant two-way interaction in the re-rating of the received alternative, F (2, 75) = 3.67, $p < .05$. No choice/fitness prime participants upgraded the received alternative (M = .77) more than no choice/decision prime participants (M = - .85). No choice/fitness prime participants (M = .77) also upgraded significantly more than no choice/neutral prime participants (M = -.75). Both of these outcomes are consistent with my predictions that activation of the fitness goal should lead to a more positive evaluation of the received alternative even in the absence of choice. However, in the high choice/fitness prime condition liking decreases (M = -.17), though not significantly.

Participants who received the decision prime and no choice actually downgraded the received activity (M = -.85). In fact, there is significant spreading in the direction of the not received alternative, t (13) = -2.16, $p < .05$. Although I would not have predicted this result, it may be a plausible assumption that these participants, primed with the decision making goal, reacted negatively to not having the freedom to actually make a decision. This finding is consistent with the idea in past dissonance research that participants are concerned with being good decision makers. Participants in the high choice/decision making prime condition showed the most substantial upgrading of the received alternative (M = 1.00). These participants significantly upgraded the received fitness activity, t (13) = 2.08, $p < .05$, which is consistent with my analysis. These results are presented in Table 6.

Not Received Alternative

Surprisingly, there was a tendency to increase the rating of the not received activity for all groups except the high choice/neutral prime participants (see Table 7). None of the groups, however, showed statistically significant increases.

Discussion

This study attempted to test the content-free notion of the goal systemic analysis of cognitive dissonance theory. The implication for contents is that an increase in liking can occur without choice, but only if choosing itself is not a goal. If receiving a fitness activity is itself a goal then motivational bias (of the kind dissonance theory discussed) can occur without a choice. For the most part, however, the action is on the received and not the not-received alternative. Perhaps participants' focus on the received alternative inhibits the not-received alternative (Shah, Fishbach, & Kruglanski, 2002). This may hold especially true in the no choice condition. Although these participants were presented with two alternatives before being given one, there may not have been sufficient motivation to weigh the merits of each. For this reason we may not have sufficiently captured those situations in which individuals have knowledge of a range of possible outcomes, and thoroughly consider those outcomes, even though they lack control over the outcome that ultimately occurs. Nevertheless, this study provided partial support for my hypothesis.

Chapter 8: General Discussion

The purpose of this dissertation was to carry out a goal systemic analysis of cognitive dissonance theory in an attempt to examine the molecular elements involved in dissonance arousal. I attempted to elaborate on Festinger's (1957) original formulation by taking a fine-grained approach in order to examine the precise nature of the cognitive elements which lead to dissonance arousal, as well as the critical inconsistency. I proposed that the relevant cognitive elements were those with motivational contents, or from a goal systems perspective, goal representations. Further, the critical inconsistency is that which exist between a goal representation and any information that conveys frustration of the goal. This perspective suggests that dissonance will be experienced when an actively committed goal is confronted with the real or expected possibility of its frustration. Accordingly, the degree to which the goal in question is subjectively important to the individual as well as the degree to which it is cognitively active at a particular moment (jointly defining the concept of active commitment) should determine the degree of cognitive dissonance. Viewed in these terms, the magnitude of dissonance should be affected not only by characteristics of a given focal goal but also by characteristics of other, currently active, goals that may determine the amount of resources and activation accorded to the focal goal.

Some support was found for these hypotheses. I was able to reverse typical dissonance effects found in the induced-compliance paradigm through the employment of priming procedures. Participants who wrote counterattitudinal arguments under low choice showed increased dissonance induced attitude change when primed with an honesty goal (versus a neutral prime), while participants who wrote the arguments under

high choice showed less dissonance induced attitude change when primed with a compliance goal (versus a neutral prime). In other words, the tendency for there to be less attitude change under low choice was reversed by priming the honesty goal, and the tendency to exhibit more attitude change under high choice was reversed by priming a compliance goal. Presumably, the goal of honestly expressing one's views was more active for those participants primed with the honesty goal, even when given low choice, leading to more dissonance induced attitude change. On the other hand, the honesty goal was at least momentarily inhibited for participants who received the compliance prime. As a result these participants showed less dissonance induced attitude change.

Although these results were suggestive, I failed to find more direct support for the proposed mediation of dissonance effects through an attempt to measure the accessibility of the goals that were assumed to be relevant. Perhaps the employment of a more sensitive measure, such as a lexical decision task, would more effectively detect differing goal activation effects if they indeed exist. Given the encouraging results found regarding the attitude measure, this would seem to an avenue worth pursuing in future research.

An important implication of the goal-systemic analysis also tested was that dissonance arousal and the resulting efforts to reduce dissonance should be manifest irrespective of differing goal contents, and not limited solely to contents related to the self-concept. Some support was found through an experiment employing the free choice paradigm. Using the free choice paradigm I attempted to mitigate implications for participants' self-concept by priming participants with a fitness goal or, in this context, of getting the best fitness activity. Participants with a fitness goal who received no choice

showed more spreading than participants who had a goal of being good decision makers or those given a neutral prime. That provides some support for the contention that dissonance effects can be elicited in the absence of choice, when self-concept concerns are less relevant. Also, participants primed with a goal of being good decision makers showed the most substantial spreading when they were actually able to make a decision. This is also consistent with my analysis.

Future Directions

Another important implication of a goal-systemic analysis relates to the affective response to dissonance arousal. In previous versions of dissonance theory a major consequence of cognitive dissonance is a state of aversive physiological arousal (Festinger, 1957, Zanna & Cooper, 1974). Such a state presumably is qualitatively similar across different dissonance situations and does not vary as function of the contents of the specific cognitions assumed to be dissonant with one another. By contrast, in the present analysis the nature of the experience in different dissonant situation may vary qualitatively depending on the nature of the goal being frustrated. Relevant in this context is Higgins (e.g., 1997) distinction between *promotion* and *prevention* goals. A prevention goal represents an objective of fulfilling one's felt duty or obligation. Its frustration is known to lead to feelings of *agitation* and *anxiety*. By contrast, a promotion goal is related to the fulfillment of one's ideals, and its frustration is known to lead to feeling of *sadness* and *dejection*. If the goal-systemic analysis is correct, a "dissonant state" arising from the frustration of a prevention goal is likely to be experienced in a very different way from a "dissonant state" arising from the frustration of a promotion goal. Furthermore, note that in Higgins' (1997) theory frustration of a prevention goal is

reducible exclusively through alteration of the specific frustrating cognition, because the security needs underlying prevention concerns allow no “crack” in one’s “armor” to exist. By contrast, frustration of promotion goals is assumed to be more flexible and to be realizable via a variety of *substitutable* avenues (Higgins, 1997). In other words, according to the present analysis the modes of dissonance reduction may differ considerably depending on the type of goal which frustration created the state of dissonance to begin with. Such implications of the goal-systemic analysis of dissonance phenomena could be fruitfully pursued in further research.

Beyond the theoretical implications articulated in this dissertation, the goal-systemic approach also has practical implications. An important area in which there may be implications has to do with behavioral interventions of the sort implemented in the area of public health. For example, in research on effective HIV/AIDS preventions, two of the factors that are considered important are that targets of the intervention receive clear strategies for how to practice safer sex, and also, that the intervention is conducted in several sessions over a period of weeks (Darbes, Kennedy, Peersman, Zohrabyan, & Rutherford, 2002). In terms of the goal-systemic analysis one interpretation of this might be that the provision of clearly communicated strategies increases the perceived attainability of the goal of following safer practices, thereby increasing the subjective utility of the goal (Kruglanski et al, 2002). Further, the goal may become more accessible, or active commitment may be increased, by the fact that the intervention takes place in multiple sessions over a period of time (Higgins, 2000).

Table 1

Means for Attitude towards Exams as a Function of Choice and Prime in Preliminary Experiment

	Prime		
Choice	Compliance	Neutral	Honesty
Low	1.22	1.33	2.00
High	1.44	2.78	3.00

Note. Higher numbers indicate more favorable attitude towards comprehensive exams.

Table 2

Means for Relative Accessibility of Honesty Goal as a Function of Choice and Prime in Preliminary Experiment

	Prime		
Choice	Compliance	Neutral	Honesty
Low	-1.44	-.22	1.67
High	-1.56	.78	3.33

Note. Higher numbers indicate higher relative accessibility of the honesty goal (compared to compliance goal).

Table 3

Adjusted Means for Attitude towards Exams as a Function of Choice and Prime in Experiment 1

	Prime		
Choice	Compliance	Neutral	Honesty
Low	1.50_a	1.35_a	1.58_a
High	1.66_a	2.95_b	2.94_b

Note. Higher numbers indicate more favorable attitude towards comprehensive exams. (Means with different subscripts differ at $p < .05$, Least Significant Difference test.)

Table 4

Means for Relative Accessibility of Honesty Goal as a Function of Choice and Prime in Experiment 1

	Prime		
Choice	Compliance	Neutral	Honesty
Low	.93	.14	1.00
High	.85	.38	.54

Note. Higher numbers indicate higher relative accessibility of the honesty goal (compared to compliance goal).

Table 5

Spread of Alternatives as a Function of Choice and Prime in Experiment 2

	Prime		
Choice	Fitness	Neutral	Decision
Absent	$.31_{ab}$	-1.00_{a}	-1.07_{a}
Present	$-.58_{ab}$	$.67_{b}$	$.77_{b}$

Note. Means with different subscripts differ at $p < .05$, Least Significant Difference test.

Table 6

Changing in Ratings for Received Activity as a Function of Choice and Prime in Experiment 2

	Prime		
Choice	Fitness	Neutral	Decision
Absent	$.77_{a}$	$-.75_{b}$	$-.85_{b}$
Present	$-.17_{ab}$	$-.08_{ab}$	1.00_{a}

Note. Means with different subscripts differ at $p < .05$, Least Significant Difference test.

Table 7

Changing in Ratings for Not Received Activity as a Function of Choice and Prime in Experiment 2

	Prime		
Choice	Fitness	Neutral	Decision
Absent	.46	.25	.23
Present	.42	-.75	.23

Appendix A

INSTRUCTIONS: Please complete each of the following word stems with the <u>first</u> word that comes to mind. For example, the word stem "app____" could be completed by forming "apple, appendix, application, etc."

upr_____	**spi**_____	**vio**_____
ass_____	**sil**_____	**anc**_____
sto_____	**por**_____	**agr**_____
swi_____	**fol**_____	**tab**_____
cig_____	**wil**_____	**thu**_____
con_____	**tig**_____	**san**_____
umb_____	**bro**_____	**dut**_____
att_____	**tor**_____	**whi**_____
pum_____	**tem**_____	**lav**_____
win_____	**zeb**_____	**chu**_____
sno_____	**pit**_____	**tra**_____
esc_____	**hon**_____	**mar**_____
pli_____	**cro**_____	**bla**_____
tru_____	**but**_____	**int**_____
hou_____	**rab**_____	**pen**_____
rev_____	**rul**_____	**sai**_____
rel_____	**sym**_____	**tom**_____
bot_____	**scr**_____	**ban**_____
bro_____	**pre**_____	**xyl**_____
vir_____	**shi**_____	**arr**_____

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