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VIGILANCE OR TOLERANCE?: AMBIVALENCE AND ATTITUDE ACCESSIBILITY IN RESPONSE TO TERRORIST THREATS

by

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Abstract

VIGILANCE OR TOLERANCE? : AMBIVALENCE AND ATTITUDE ACCESSIBILITY IN RESPONSE TO TERRORIST THREATS

by

Julie Tison

Adviser: Professor Glen Hass

This research explored the cognitive processes underlying the Response Amplification Effect (RAE), which is ambivalent people's tendency to judge the object of their ambivalence (typically, a stigmatized other) more extremely than a comparable control target. Being in a state of ambivalence is known to be uncomfortable. This discomfort may be dealt with by implementing changes in the accessibility level of attitudinal elements. It is suggested that cognitions compatible with the side of the ambivalence made salient by the current situation will be super-activated and that incompatible elements will be sub-activated, thus leading to amplified reactions congruent with the current context. In a first study, conducted soon after the September 11th 2001 Al-Qaeda-led terrorist attacks on U.S. soil, attitudes toward people of Middle Eastern/Arab origin were assessed. Participants completed a personality survey followed by exposure to two vignettes in which men believed to be of Middle Eastern origin were described as behaving in an ambiguous manner (i.e. their behavior could be interpreted as threatening or not threatening). Participants' interpretation of the situation, along with the degree of conflict experienced, were assessed. Results revealed that many individuals in the sample felt

conflicted between being tolerant and/or vigilant toward members of the target group. The second experiment followed the same procedures as the first with the addition of a vignette priming either tolerance or vigilance concerns. This text served as a priming context for a subsequent lexical decision task in which participants' response time to categorize items as words or nonwords was measured. Some of the words were compatible with tolerance concerns; others were compatible with vigilance concerns. It was expected that ambivalent individuals would show increased accessibility of words congruent with the prime along with inhibition of items incompatible with the prime. Non-ambivalent subjects' reaction times were expected to reflect their dominant attitude and not be strongly affected by the prime. No difference in accessibility level was found across priming conditions nor was any difference found between ambivalent, tolerance-, and vigilance-oriented participants. A critical review of previous accounts of the RAE as well as implications of the current findings are also discussed.

Acknowledgements

This has been a difficult and extremely isolating process. I made it through thanks to an incredibly supportive network of friends, professors, and relatives. In the end, I did it thanks to two of my most "famous" (or perhaps infamous and might I add inherited...) traits: I am both pig-headed (*merci, maman* – it was essential to take this to the end) and a dreamer (*merci, papa* – I just had to give it a try). These are two of the many factors that kept me hanging on even when I couldn't see a trace of light. What forced me out of the darkness was the constant presence of my friends, both here in NYC and in Montreal ("the Great White North"). I couldn't let them down.

I first want to thank my friend Maria – thanks for letting me know that I wasn't completely nuts these last few months and for making sure I knew that insanity is actually pretty normal sometimes (on occasions, you just have to stop making sense...). Maria was always there to believe in me and encourage me. She's one of the few who actually managed to truly convince me that I really could do it. 'Guess she was right... Thanks for the trust – that means more to me than anything else could. 'Nuf said, we don't do well with sentimentality and I'm getting thirsty (Who's working tonight?).

At least a million "thank you"s go to my lab mate (or was it cell mate?) of many years, Neil. Neil is the best, even though he talks too much...! We've followed each other for many, many years and always got along without a hitch... The end (no, not that one) is finally here. I definitely would not have made it without his help and his advice. I learned more from Neil than from anyone else, he was my "junior mentor" and a good friend. It was reassuring to know we were in the same boat and

that we didn't sink in spite of the storms brewing in our paths. We made it, bruises and all, but we made it... It was great to have somebody there to bitch with (very cathartic!). We made a great team and there's gonna be one hell of a party when it's all over...

Many thanks to Simon for all the long hours and the late nights (including those with Maria and Marty). I could always count on Simon. Although his advice was usually odd (it's Simon after all), he always listened. I figured out a lot of things from talking to him. Thanks for always being there. I'm still not sure if you're the smartest or craziest of us all – either way I hope you never change. The world just wouldn't be the same without Simon ("he's Simon" – as if that explained it all...).

The rest of the bunch, the runaways and the long-suffering, so many people came and went (Michael, Warren, Jeff, Steve, Andre). Special thanks to Marty, Teresa, and Lucy. Now you know, it is possible to get out without selling your soul to the Devil (not the NJ ones, Marty). Be aware however that selling your soul probably speeds up the process – it's a personal choice... Thanks for all the laughter (an absolute must), the encouragement, thanks for simply being there. Don't ever let me turn into one of those "Dr. Jackasses" that we all know (if I do, please beat me up with all you've got). Thanks guys – in spite of all the aggravation, it was fun thanks to you. I would not have been bearable without you there.

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Okay, time for the big fish: Glen. Where to start? At times he drove me completely mad – everyone in the office could attest to this – I probably spent more time looking (and/or waiting) for him than actually speaking to him. I often said that waiting for Glen was like waiting for Godot... That said, when we did get a chance to talk, Glen made Mt. Everest look like a mere hill. Every time I went to him with a problem, I came out with a solution or two or ten (and sometimes with 5 more problems...). He helped me "stick with it" when I was ready to pack up and leave and threatened to go to law school instead (3 or 4 times...). Glen found the words to calm me down when I was in a panic (5 or 6 times...) and always knew how to put things

in perspective. One sentence still resonates in my mind. Many years ago, he told me "you're much better than you think you are". My answer was something like this: "I've heard that before but it doesn't change anything, I don't buy it". Here's a secret: I think I believe it now... Thank you.

The Montreal crew, needless to say, played a huge part in this. They've known me all (or at least half) my life. My parents Michel and Louise, of course, were always there in so many ways: providing moral support, paying my taxes (those hefty Canadian taxes)... I know it wasn't easy for them to see/let me go. The confidence they had in me was limitless. My father, particularly, made me realize that the dream (his and mine) was within reach, just a little higher, just a little farther...*Ça y est, on y est!* Thanks for being so proud of me. I want to thank them both for having given me the tools and opportunities to find out what I was capable of. Thanks for supporting my crazy dreams (*ma folie des grandeurs*). Thanks for letting go, for giving some "slack", for letting me be me (even if you didn't approve or couldn't understand what I did).

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punch and every bruise. In the last moments, Michel told me "*Pètes-leur en une dans les Chicklets*" – I did. Now if only the Canadiens could win the Stanley Cup...

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around in spite of all the insanity (he'd say the same about me, a lot of the craziness came from his end!). Thanks for all the encouragement, thanks for always knowing how I feel (and knowing what to do/say to make it all better), thanks for understanding me when I make no sense (not that I would ever do that...). Thanks for saying just the right thing when I called in a panic at 3 a.m. Thank you for believing in me. Thanks for being there. I hope I get a chance to do the same for you – it's your turn now... "To you with failing hands we throw the torch; Be yours to hold it high" (Lt. Col. John McCrae, Canadian Army, *In Flanders Field)*

Special thoughts go to those to whom I didn't get a chance to say goodbye: our friend Flo Williams and my uncle Louis-Philippe Lemieux. We all miss you.

This is dedicated to the victims of terrorism everywhere and to all New Yorkers for showing so much strength and determination in the aftermath of 9-11.

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Chapter 1: Overview

The purpose of this project is to explore the cognitive processes associated with feelings of ambivalence, which can be defined as concurrent positive and negative feelings toward a certain object/person. Being unsure of one's feelings toward a target is generally accompanied by feelings of discomfort. Most people have at some point in their lives felt the uneasiness associated with being of two minds and the pressure that often accompanies decision-making under such circumstances. This unpleasant experience is felt even more strongly when one is not simply indecisive but rather has strong *opposing* feelings about a person or object. Indeed, in some instances, people have been known to simultaneously experience favorable and unfavorable feelings regarding an issue. For example, the current debate over stem cell research has sparked a wave of controversy as well as intensely conflicted feelings. One may feel that the knowledge gained from such research would be invaluable and yet also be wary about potential uses of such technological advances.

1.1 What is Ambivalence Anyway?

Ambivalence is a psychological state characterized by the coexistence of positive and negative feelings. Specifically, a person feels conflicted about a particular attitude object, be it another person, group, situation, political position, decision, etc. This condition tends to be associated with indecision, discomfort, and some degree of tension. The particular situation is sometimes fairly trivial, such as deciding which theater seats to purchase, but can also have crucial consequences, for instance deciding whether or not to accept a position in a new institution. The more significant the outcomes, the more tension will result from those ambivalent feelings.

Thus, behind the benefit of objectivity that lies in the ability to see both sides of an issue hides the unpleasant cost of confusion and agitation. This undesirable consequence should be warded off by the workings of the attitude system, however. attitudes do not always operate under idealized stipulations. Attitudes are that part of the cognitive system responsible for providing a quick summary of one's feelings and beliefs about a particular object. Those summaries are believed to be stored in memory and their main function is to provide a fast and relatively effortless way of sizing up and thus interacting with the environment.

1.1.2 When Attitudes Fail

Attitudes represent the knowledge, beliefs, and feelings one has about things, stored along with behavioral inclinations particular to those objects. What makes attitudes a unique part of memory structure is the affective component attached to each. In addition to containing what one knows about an object, attitudes also include feelings one has about this object. Attitudes are readily accessible in memory and are believed, when they are strongly held, to provide an automatic evaluation of an object. They thus serve to maximize the efficiency of information processing by allowing one to get an almost immediate affective and behavioral reaction to an object without needing to carefully consider every aspect of it. This ultimate purpose, however, does not apply to the case of ambivalence, which can be seen as a failure of the psychological attitude system. Feelings of ambivalence occur when competing evaluations are offered by the attitude system, leading to inconsistency and unstable reactions. Ambivalent attitudes are strongly held and thus important to the individual, and yet, they do not provide the person with the clear evaluation that is the *raison*

d'être of attitudes. Indeed, if attitudes do not provide an evaluation, they are nothing more than concepts stored in memory. In that sense, a state of ambivalence can be perceived as attitudes failing at their information processing function.

1.2 Ambivalence and Its Effects

Being ambivalent has the obvious consequence of making the categorization process (e.g. good/bad, like/dislike) rather challenging, leading to difficulty with regards to choosing an appropriate path of action. Underlying this latent uncertainty is discomfort, negative arousal, tension, etc (Hass, Katz, Rizzo, Bailey, & Moore, 1992). Ambivalence is thus not a state that is pleasant or desirable and is generally met with torment and distress. In addition to its influence on mood, ambivalence has been found to affect behavior (Katz, 1981) as well as information processing (Jonas, Diehl, & Brömer, 1997; Maio, Bell, & Esses, 1996). One important effect in this area of research is the finding that people who have ambivalent feelings toward a certain person (generally, one possessing some kind of social stigma) sometimes show a tendency to judge that person in an extreme fashion (negatively or positively, depending on the relevant context). For instance, a stigmatized person performing a socially desirable act would be judged more positively than a non-stigmatized person performing the same act; conversely, ambivalent individuals tend to perceive a stigmatized person performing an undesirable act more negatively than a comparable non-stigmatized target. Those who do not have mixed feeling seem to be less affected by the present situation and have reactions that tend to be more stable.

This tendency toward extreme reactions has been coined "response amplification". Some proposals have been put forth to account for this effect, but

important shortcomings are present in these theories. The models currently available fail to consider a number of facts and a careful review of the existing research will show that the proposed theories have not always been tested in a sufficiently rigorous manner.

1.3 Goals of the Research

One of the goals of the present research is to fill in some of the gaps left behind by prior inquiries and to submit the notion of response amplification to a more stringent test. The main goal, however, is to test a revised formulation of the problem by focusing on changes in accessibility levels that are believed to be the starting point of those polarized reactions. The purpose of this research is therefore to explore the cognitive changes believed to be at the root of the response amplification effect. Up until now, limited attention has been given to the cognitive processes underlying the effect. The argument made in this report is that the phenomenon is partly a function of differing accessibility levels among elements composing ambivalent attitudes. The present suggestion is that changes in degree of accessibility are a joint function of motivational and structural factors. Specifically, we argue that ambivalent individuals are motivated to reduce internal conflict and that this conflict reduction is accomplished by implementing changes in the structure of attitudes.

The present report begins with a brief description of the nature of attitudes and their function, with special attention being devoted to certain aspects of attitude structure that allow for the existence of conflict (i.e. simultaneous activation of opposing elements, i.e. ambivalence). Ambivalence, its particularities and associated factors will be discussed, followed by a description of the response amplification

effect and its various accounts. We will then focus on the proposed role of accessibility in the effect, discussing the factors affecting the degree of accessibility of attitudinal elements. The point will be made that attitudes are best viewed as components of memory structure and that effects typically associated with semantic memory similarly affect the accessibility of attitudes. We will attempt to apply recent findings in memory research to the idea that internal conflict (i.e. ambivalence) may be dealt with by modifying the structure of attitudes.

The present position is that joint effects of social and cognitive factors are at the source of the effect known as response amplification. In previous reports (e.g. Hass et al., 1992; Katz, 1981; Katz & Hass, 1988), the cognitive aspect of the issue has been mentioned merely *en passant*, without much further elaboration regarding its nature and workings. Scientists in the field are thus aware of the role played by cognitive factors but so far have only hinted at what those factors might be. Some (e.g. Bargh, Chaiken, Govender, & Pratto, 1992; Cacioppo, Gardner, & Berntson, 1999; Downing, Judd, & Brauer, 1992; Fazio, 1989) have suggested that cognitive changes occur in the structure of attitudes but exactly what brings about these changes is a puzzle that has yet remained unsolved and that has never been directly tested. The goal of the present research is therefore to fill in an important gap in the literature by providing evidence about some of the cognitive processes underlying social events.

Chapter 2: Attitudes and Ambivalence

This section begins with a brief description of attitudes and their function, following which the concept of ambivalence will be carefully reviewed. We will then enter the main part of this chapter whose goal is to describe the response amplification effect and some its current accounts. Katz (1981) can be seen as the instigator of research in this particular area of ambivalence. Katz' account (1981, Katz & Hass, 1988) proposed the extreme reaction showed by ambivalent individual is caused by an inherent threat to self-regard and that this threat results from possessing conflicted feelings. Any one-sided information will invariably contradict some part of the attitude and the resulting discomfort is believed to lead the ambivalent person to overemphasize the importance of the current context as a sort of compensation for that uncertainty.

Even though data has provided support for part of the theory, there has, as of yet, not been any substantial evidence that self-regard (or any related threat) plays any role in the effect. In the last ten years, a simpler and more straightforward suggestion has been made to explain the phenomenon. Bell & Esses (1997) suggest that priming is at the core of the effect. Again some evidence supports this idea but the research carried out has some potentially significant flaws and alternative explanations of the effect are not ruled out by the existing data. Moreover, the priming idea does not, by itself, account for the effect unless some sort of inhibitory mechanism is also involved. Some of these issues will be reviewed in this section. It will also be seen that, in addition to the shortcomings of existing empirical endeavors, the robustness of the response amplification effect can be called into question.

Many have failed to replicate the effect and even in cases where it is found, it seems to be somewhat weak and rather fickle. This fact has lead some of the leaders in this domain to list a number of conditions that must be met for the effect to appear (Hass, Katz, Rizzo, Bailey, & Eisenstadt, 1991 – to be reviewed in a later section). In spite of these limitations, it is important to note that the mere fact that ambivalence exists has important implications for the concept of attitudes. The watchful observer will have noticed that, historically, attitude theory has not paid much attention to ambivalence. In a way, ambivalence has been treated as the black sheep of the attitude system, that is, as something known to exist but that "puts to shame" the ideal workings of the attitudinal system. Fortunately, recent developments in attitude theory have given a deserved place to conflicted evaluations (e.g. Cacioppo & Berntson, 1994).

2.1 The Nature of Attitudes

Attitudes are best thought of as memory representations of an association between an object and one's evaluation of that object (Cacioppo & Berntson, 1994; Fazio, 1989; Fazio, Sanbonmatsu, Powell & Kardes, 1986; Ostrom, Skowronski, & Nowak, 1994; Pratnakis, 1989). At its best, this representation can be used to guide behavior and to increase the efficiency of information processing by giving the individual a quick and relatively effortless way of categorizing objects and events (Bargh, 1996; Chen & Bargh, 1999). Multiple decisions are made on a daily basis, some of which will have long-lasting and defining consequences (such as accepting a new job), some others that will be fairly common and inconsequential (such as choosing a pair of socks). Behind every decision, however hackneyed it may be, lie a

cascade of thoughts and alternatives. Still, several of life's decisions seem to be made effortlessly, many of them being carried out automatically (Bargh, 1996), without even realizing a choice has been made.

People have an amazing ability to understand the world and choose adequate paths of action, even though they are constantly being bombarded by information. Even more impressive is the fact that individuals are generally able to do so in a split second in spite of the endless flow of stimulation saturating the senses. We are somehow able to select and further process pertinent input and quickly reject irrelevant or interfering material, apparently without overwhelming the capacities of the cognitive system. Quickly evaluating an object or situation along positive or negative lines thus allows one to opt for an adequate response. For instance, judging an event as hostile or dangerous should result in a motivation to avoid such a situation, whereas one should be motivated to approach a hospitable environment. Getting the general impression of a situation is therefore an important function of the affect system (Cacioppo et al., 1999). Cacioppo et al. argue that, although the behavior resulting from the assessment conducted by the affect system is generally constrained to bivalent tendencies (approach vs. avoidance), the underlying evaluative processes are best construed as falling along separable dimensions. The antecedents of behavioral inclinations (i.e. evaluative processes) are therefore not bipolar in nature.

2.1.1 The Attitudinal Evaluative Process

Cacioppo (Cacioppo & Berntson, 1994; Cacioppo & Berntson, 1999; Cacioppo et al., 1999) posits that at least two evaluative channels are involved in

computing attitudes. One of those channels is responsible for the processing of threatening (negative) information, while the other processes positive (appetitive) input. The combined outputs of those assessment processors are then used to compute general behavioral predispositions toward the appraised stimulus. It should be noted that a high degree of positivity does not entail the absence of negative affect. Actually, a given stimulus input may have similar *or* different effects on the positive and negative dimensions. Cacioppo and his colleagues discuss three possible modes of evaluative activation. A stimulus can have opposing effects on the evaluative dimensions, for example increasing activation on the positive vector and decreasing activation on the negative vector, thus providing clear behavioral guidance (in this case, approach). Conversely, a stimulus could have similar effects (increasing or decreasing activation) on both positivity and negativity, resulting in inherently unstable behavioral tendencies. Finally, the stimulus could affect one dimension only, leaving the other to remain stable.

This formulation illustrates the complexity and the depth of analysis involved in a process that seems to take place somewhat fluently. The underlying concept is that evaluations form the core of attitude theory. An attitude should be thought of as an evaluation of an object that is based on knowledge, beliefs, and experiences one has had with that object. This attitude can then be used to classify a target as desirable or undesirable. This process may taint subsequent interpretation and inferences made about the attitude object. Indeed people usually rely on their current knowledge to arrange incoming information in a manner consistent with the existing attitude (Fiske & Taylor, 1991). Attitudes can be used to help maintain an optimal level of cognitive

consistency through processes such as selective attention or selective interpretation of input. Some have also suggested that individuals seek out information consistent with their beliefs and expectations, especially following strong behavioral commitment to a position (Chaiken & Stangor, 1987; Pratnakis, 1989). Moreover, individuals feel an inherent drive to reduce internal discrepancies (Fiske & Taylor, 1991) as such conflicts impede categorization, leading to discomfort and uncertainty in dealing with the attitude object.

Feelings of ambivalence will result whenever attitudes contain inconsistencies along the evaluative dimension, for instance in a case where an attitude object has some very positive qualities along with some less desirable qualities. For example, a person may think of physician-assisted suicide as a viable solution to constant pain and suffering, while at the same time believing that no one has the right to take one's own life. Similarly, one may feel that animal experimentation is an important and valuable tool for research while simultaneously believing that humans have no right to use animals for their own welfare. Having such conflicted attitudes about an object/topic makes the categorization process all the more difficult and may result in inconsistent behavioral choices.

2.2 Ambivalence: What It Is, What It Is Not

We have seen that ambivalence is characterized by the coexistence of positive and negative feelings. Precisely, ambivalence can be defined as a state in which one has *opposing* affective reactions to a single object (Hass et al., 1992). An ambivalent person thus experiences simultaneous like and dislike (Maio et al., 1996) and has difficulty getting a clear evaluation of the attitude object. Inconsistencies in the

structure of attitudes can take many forms. One common misconception is to equate ambivalence to indifference. Indifference is a condition in which an individual has no strong preference and does not show any strong like or dislike for an attitude object. Indifference is a state of neutrality associated with low levels of affect and lacks the notion of conflict that is so crucial to ambivalence. Indifference is actually quite the opposite of ambivalence. Whereas indifference is a lack of strong emotional reaction or preference, ambivalence originates from feelings that are both *extreme* (strong) and *conflicted* (i.e. both positive and negative dimensions are highly activated, see Hass & Eisenstadt, 1993). Ambivalence thus consists of intense conflicted emotional reactions to a single attitude object. An ambivalent person will feel strong opposing forces toward an object that s/he considers of great importance.

2.2.1 Is Ambivalence Nothing More Than Another Name for Dissonance?

Although the concepts of ambivalence and cognitive dissonance (Festinger, 1957; Cooper & Fazio, 1984) share a focus on conflicting portions of attitudes, they are two distinct concepts, each associated with its own set of effects. The crucial distinction is found in the nature of that conflict. In the case of cognitive dissonance, one's attitude is definite and there is no questioning of one's beliefs. The typical dissonance situation is one in which people are pressed into taking action that goes against their attitudes. Inconsistencies between different components of attitudes are at the core of dissonance theory whereas ambivalence is characterized by opposing *affective* reactions toward an attitude object. Thus in cognitive dissonance, one's feelings (attitude) are clearly defined and not at all ambiguous. In ambivalence, the affective reaction itself is conflicted as it holds both positive and negative elements.

Thus, in one case (ambivalence) the conflict is purely at the affective level and in the other (dissonance) the conflict is between distinct components (e.g. cognitive and behavioral) of the attitude.

2.2.2 Conflicted Evaluations

The conflict in ambivalence may lead someone to feel pulled apart between approach and avoidance. It should be noted that ambivalence requires the positive and negative dimensions to be independent components of attitudes that can be (but need not and often are not) simultaneously activated (Bell, Esses and Maio, 1996; Cacioppo & Berntson, 1994; Cacioppo et al., 1999; Hass & Eisenstadt, 1993; Jonas et al., 1997; Katz & Hass, 1988; Petty, Wegener, & Fabrigar, 1997; Priester & Petty, 1996). Since it is possible to concurrently hold positive and negative opinions about a single attitude object, it is best to think of positivity and negativity as two separate and independent dimensions. The existence of ambivalence shows that holding a highly positive position toward an object does not entail the absence of negative feelings. It is indeed possible for someone to both favor and oppose a certain issue at the same time. Given this fact, it is perhaps more adequate to represent attitudes as a set of unipolar dimensions (from zero to extremely negative and from zero to extremely positive), rather than as one bipolar dimension (from very negative to very positive). The degree of conflict (i.e. ambivalence) will be at its highest when the positive and negative dimensions are highly activated simultaneously (Cacioppo & Berntson, 1994; Cacioppo et al., 1999), that is, the greater and more similar the opposing forces, the greater the ambivalence (Scott – in Hass & Eisenstadt, 1993; also Priester & Petty, 1996).

Such conflicts are likely to arise whenever there are inconsistencies between different sources of information. Since attitudes are typically derived from many different types of information, discrepancies among those sources (e.g. cognitive, behavioral, and affective) are not rare. Thus, attitudes are based on a set of beliefs and cognitions that are not necessarily consistent with one another (Fiske & Taylor, 1991; Hass & Eisenstadt, 1993) and the feelings expressed toward an attitude object will likely be a function of the cluster of cognitions activated at any specific point in time (Hass, 1981; Tourangeau, Rasinski, & D'Andrade, 1991; Zanna & Rempel, 1988). Ambivalent attitudes are especially likely to be unstable in their expression and are poor predictors of behavior since the range of acceptable positions is fairly large (Cacioppo et al., 1999; Hass & Eisenstadt, 1993).

2.3 Early Research on Ambivalence

A significant portion of the research on ambivalence has focused on people's reactions to members of stigmatized groups. For instance, Gergen and Jones (1963) found that participants showed extreme reactions to an individual described as "mentally ill". Subjects were found to experience either positive or negative responses to the target depending on whether the stigmatized person's behavior had positive or negative consequences for the rater. Similarly, Dienstbier (1970) reported that an African-American target was judged more favorably than a comparable White target when both were described in a positive way, but the opposite pattern appeared when both stimulus persons were given negative traits. One should note, however, that even though this pattern of responses was consistent, the differences between the two target persons were rather small (Katz, 1981).

These early studies suggested that, in some cases, polarization might occur when the target is a member of a stigmatized group. Katz (1981) reasoned that the presence of conflicted feelings might be a cause of those extreme judgments. One of his underlying assumptions is that stigma is associated with feelings of ambivalence for a large proportion of the population. In particular, it is suggested that people have both feelings of sympathy as well as aversion toward stigmatized individuals. Katz proposed that exposure to stigma elicits a certain degree of threat and apprehension, which may lead to a desire to avoid such individuals. He further argued that these negative feelings could be accompanied by reactions of sympathy and respect for one perceived as disadvantaged. Katz reports supporting evidence from a number of studies in which Black individuals displaying positive traits were generally evaluated more favorably and were more likely to be helped than a comparable White target. This pattern was often reversed when the targets were portrayed in a negative way (similar results were obtained with disabled targets - see Katz, 1981).

The fact that a stigmatized target's immediate behavior has a strong impact on judgment was interpreted as evidence of a "split" in the subject's attitude, where one side of that attitude was heavily relied on in judgment whereas the opposite side was suppressed and thus played a minor role in affecting the overall rating of the target (this notion will be discussed in more detail below). The starting point of Katz' account is that when faced with a stigmatized person, "an actor may perceive himself as having friendly feelings for a more-or-less discredited, unworthy other, or as having aversive feelings about someone less fortunate than himself" (Katz, 1981, p. 24). This conflict is believed to threaten one's favorable self-regard, i.e. the

perception of the self as both "humane" and "discerning", and to be associated with tension that can be further dealt with by defending one's current position and rejecting the discredited portion of the attitude, presumably giving rise to the response amplification phenomenon.

2.3 The Response Amplification Effect (RAE)

Given the above discussion, it will not surprise the reader to find out that most of the recent ambivalence research has also focused on reactions to outgroup (stigmatized) members, in particular, African-Americans (Katz, 1981; Katz & Hass, 1988; Hass et al., 1991; Hass et al., 1992), and Natives (Bell and Esses, 1997; Maio, Esses & Bell, 1994; Maio et al., 1996). The same perplexing finding is found in these studies as well, with ambivalent participants showing a tendency to judge stigmatized others more extremely than comparable non-stigmatized targets. For example, a stigmatized person performing a socially undesirable act may be perceived in a more negative fashion than a non-stigmatized person performing the same behavior. Similarly, ambivalent subjects tend to perceive a stigmatized person involved in a socially desirable situation in a more positive way than a non-stigmatized person involved in the same situation.

This polarization in judgment is indeed surprising since one might expect that, given the presence of both positive and negative feelings, ambivalent individuals may react more moderately than participants who have a clearly defined attitude toward the target. Therefore, the presence of amplified reactions seems to be at odds with basic common sense. Still, a number of possible explanations exist that can account for the RAE. The two models to be reviewed put feelings of ambivalence at the center

of the effect but focus on different consequences that those conflicted feelings may have on the individual. The first model (a fuller description of Katz' formulation) emphasizes the importance of social and affective factors in dealing with ambivalence whereas the second concentrates on the cognitive consequences of ambivalence. These ideas will be presently reviewed along with a report and assessment of relevant data.

2.4.1 Threat to Self-Regard Hypothesis

The starting point of the "threat to self-regard" formulation is that, when considering stigmatized others, a certain degree of racial bias is quite common and people's attitudes toward members of stigmatized groups tend to have both positive and negative dimensions. Katz (1981) proposed that making ambivalence salient leads to emotional tension and discomfort since ambivalent subjects wish to see themselves as "humane, yet discerning" toward others. The "humane" portion of the self-concept may lead one to perceive the stigmatized person in a positive light, as someone who has had to battle the injustices of an unfair society; while the "discerning" part would lead to a more critical stance and be associated with more negative feelings so as to not give credit to someone who might be undeserving. In this sense, being made conscious of the presence of both positive and negative elements in one's attitude structure might threaten one's favorable self-image. People have to face the possibility that they might possess some level of (unjustified) bias (be it positive or negative) toward members of stigmatized groups, thus resulting in emotional tension. Efforts at reducing this tension are thought to give rise to the response amplification effect sometimes observed.

Generally, people want to maintain a self-image of tolerance, open-mindedness and fair-mindedness (Katz, 1981; Katz & Hass, 1988). This task is made difficult when one must come to terms with conflicted feelings. When judging a member of a stigmatized group, a person may have both feelings of *sympathy* for an individual who has overcome the demands of an unfriendly society as well as feelings of *aversion* for an outgroup member who is also perceived as deviating from societal norms. The dimension of the attitude (positive or negative) that dominates judgment is likely to be a function of the situational variables present at the time. A situation in which a member of a stigmatized group behaves in a socially reprehensible manner is likely to discredit the feelings of sympathy one may have had. Conversely, an episode in which an outgroup member behaves in a socially desirable way will likely discredit the negative feelings one may have had. In the latter case, a person made aware of his/her ambivalent feelings may feel guilty of ever having unjustified negative opinions and subsequently compensate for them by amplifying their positive rating of the stigmatized person. When the stigmatized person behaves in an undesirable way, the ambivalent individual does not wish to give credit to someone they feel is undeserving and as a result, may amplify their negative rating of the target (Katz & Hass, 1988). It is therefore believed that the rater's self-image will be restored by emphasizing whichever portion of the self that is congruent with the immediate situation.

2.4.1.1 On the role of ambivalence

Hass et al. (1991) showed that African-American confederates portrayed in a positive way indeed received higher ratings than comparable White persons. White

subjects were put into teams and participated in a game of trivia in which each group had a team captain who was responsible for selecting and reading the questions to the team members. The team captain was in fact a confederate and was, in half of the cases, an African-American male undergraduate (a Caucasian male undergraduate was the captain in the other cases). In the "success" condition, the captain picked easy questions, read them clearly and generally played a large role in the success of his team. In the "failure" condition, the captain picked difficult questions, wasted time, and made irrelevant comments, thus playing a large role in the poor performance of his team. Once the game was over, members of the team were asked to rate their captain on a series of traits (ability, motivation, and social traits). Post-game ratings showed the expected pattern. The African-American confederate received significantly lower ratings than the Caucasian confederate in the "failure" condition and received generally higher ratings (although not significantly higher) than the Caucasian confederate in the "success" condition. There is therefore some evidence of response amplification when participants rate stigmatized others.

It should be noted that in this study (as well as the earlier ones like Gergen & Jones, 1963; Dienstbier, 1970, and Katz, 1981), ambivalence was not measured but rather assumed to have been present. It was presumed that a large enough contingent of ambivalent individuals would be sampled and drive the effect. Thus it cannot be stated with certainty that internal conflict is truly the key to the response amplification phenomenon. Hass et al's (1991) second study looked more directly at the role of ambivalence and its effect on arousal. This study followed procedures identical to the first one, with the addition of an ambivalence measure. The

assumption was that ambivalent subjects would have a higher need to justify their action (amplified ratings) because of increased tension due to their mixed feelings. Predictions suggested that ambivalent participants' ratings would be amplified in the positive direction in the success condition but would be polarized toward the negative end in the failure condition. Hass et al. thus expected to find a positive correlation between ambivalent feelings and ratings in the "success" condition (i.e. high degree of ambivalence associated with high ratings) and a negative correlation between ambivalence and ratings in the "failure" condition (high ambivalence associated with low ratings). Support for these predictions was found in the "success" condition but only weak support was found in the "failure" condition (the relationship was in the right direction albeit non-significant). This second study therefore provided modest support for the role of ambivalence in the response amplification effect.

However, it should be recalled that, according to the threat to self-regard model, ambivalence is only one part of the equation. The precise argument is that making ambivalence salient (thus threatening self-regard) leads to increased tension and it is the effort exerted at reducing this tension that is believed to lead to response amplification. The effect is thus described as being mediated by the emotional tension aroused by the subjects' conflicted feelings. The above discussion suggests that ambivalence may play a role in the RAE. The idea that emotional tension/discomfort may be the mediating factor between ambivalence and polarized reactions was also explored (Hass et al., 1992).

2.4.1.2 On the role of arousal

The goal of Hass et al.'s (1992) study was to examine the proposed link between ambivalence and emotional discomfort. White subjects were exposed to a neutral task or to a tape relating to a recent violent racial episode. In the latter, people in the affected community were heard making both favorable and unfavorable comments about African-Americans, thus making racial controversy and ambivalence salient. Subjects who were exposed to the controversial material (the "salience" condition) showed an increase in negative mood and an overall lower mood score than did subjects exposed to the neutral material (the control condition). Furthermore, a positive correlation was found between ambivalence and negative mood score in the salience condition. The control condition revealed no relationship between ambivalent feelings and mood. The authors concluded that, as suggested by Katz (1981), negative affect increases as ambivalent feelings are made salient. It thus appears as though Pro- and Anti-Black sentiments are seen as incompatible and that their simultaneous presence leads to emotional tension.

2.4.1.3 Evaluation of the model

Although the threat to self-regard formulation seems to be supported by research, most of the reported evidence is indirect. The idea that one may feel threatened by having assigned negative traits to someone deserving praise does make sense as this behavior raises the possibility of one having prejudicial attitudes. However, the credence of the threat to self-regard argument seems fairly weak when a stigmatized individual behaves in a negative way. Indeed, why would anyone feel remorseful about having had positive thoughts about someone? Katz (1981) argued

that assigning positive traits to someone who is undeserving threatens the "discerning" part of the self-concept, but this seems to be a bit of a stretch. Although the role that social factors may play in the RAE will not be denied, the evidence so far reported is not all that convincing. Also one must admit that threat to self-regard is a fairly vague concept and may not be truly relevant (or even necessary) in explaining the response amplification effect. Negative affect in and of itself does not constitute evidence of a threat to self-concept. Indeed, the mere presence of inconsistent cognitions and uncertainty has long been believed to be associated with discomfort and negative arousal (see Fiske & Taylor, 1991). It is therefore not clear whether or not threat to self-regard is an essential component of the RAE. Maybe more disturbing is the fact that the amplification effect itself is capricious, being revealed only some of the time and in very particular circumstances (a fact that we will come back to in later sections).

Even if we were to assume that the effect is a reliable one, the main objection to the self-regard hypothesis is that there is no direct evidence that "threat to self-regard" is indeed the mediator between ambivalence and polarized reactions (Bell & Esses, 1997; Hass et al., 1991). Moreover, to convincingly conclude on the role of ambivalence, it would be advisable to compare the behavior of ambivalent vs. non-ambivalent participants. This strategy would allow examination of the characteristics particular to ambivalent individuals, be they social, affective, or cognitive in nature. The cognitive realm is one that is likely to be of particular interest. If we accept the idea that attitudes are representations of the knowledge and feelings one has about an object, the fact that ambivalent people have entries on both positive and negative

evaluative dimensions is particularly interesting. Finding out how such cognitive processes may affect judgment and possibly mediate the amplification effect may be particularly valuable.

Even though sometimes overlooked, there have been some speculations about the role played by cognitive processes in the amplified reactions. One of Katz' (1981) most intriguing suggestions is that, in the face of ambivalence, individuals find themselves relying heavily on ("*enhancing*") current information and "*suppressing*" the other side of the attitude, such that behavior becomes polarized in either the negative or the positive direction. This process was argued to operate as a defense against conflict and uncertainty. Increasing reliance on one side of the attitude at the expense of the other should in fact reduce indecision, at least for a time. This suggestion hints not only that deeper cognitive processes may be at play in the RAE but also that such processes may be more directly associated with amplified reactions than the so-far-proposed social variables. The next model considered attempts to bridge the bridge the gap between social and cognitive factors, by focusing on the role that accessibility of information may play in the RAE.

2.4.2 Priming May Be the Key

The model proposed by Bell and Esses (1997) also takes the standpoint that feelings of ambivalence are a necessary component of the RAE. However, where Katz and Hass (1988) focused on social factors such as self-regard, Bell and Esses concentrate on the cognitive consequences of ambivalence. This interpretation of the effect is straightforward and described in purely cognitive terms. Response amplification is described as a simple priming effect in which current information

eases processing of similar and compatible data. Whichever information is more accessible in memory will likely be used in judgment. For example, observing a stigmatized person perform a socially undesirable act should make the negative dimension of one's attitude more accessible in memory and this ease of access may affect subsequent judgment.

The crucial characteristic of ambivalent attitudes is obviously their dual-sided nature. Possessing both positive and negative knowledge about an attitude object allows ambivalent individuals to have access to a large database. Bell and Esses (1997) proposed that since individuals with ambivalent attitudes have represented in memory positive as well as negative dimensions, both these dimensions are available to be primed. The context presented should then be the main factor determining which aspect of the attitude is most accessible. A positive act should prime the positive dimension and affect judgment in a positive way; a negative act should prime the negative dimension and influence subsequent judgment in a negative way. Since non-ambivalent individuals possess one dominant dimension (positive or negative), their evaluation of a stigmatized person should be more stable and should not be affected in both directions. For example, a person possessing a negative attitude should consistently give negative evaluations, regardless of the target's behavior. Therefore, in this particular account, motivational factors (e.g. restoring a positive self-image) are not considered and the effect is believed to be the result of purely cognitive processes.

To test their hypothesis, Bell and Esses (1997) had to isolate the cognitive factors from the possible influence of motivational issues (specifically those having to

do with conflict reduction/self-image restoration). Ambivalent feelings could not be made salient as that could give rise to a threat to self-regard and its associated emotional tension (Katz, 1981). Bell and Esses thus needed to create a situation in which they could compare the reactions of ambivalent and non-ambivalent people and yet, had to make sure that the ambivalent feelings (and tension) were not raised. A mood induction procedure was therefore used, as previous research has shown that mood can act as a prime. A negative mood renders negative (e.g. dark or unfavorable) thoughts more accessible, whereas a positive mood increases the accessibility of positive (e.g.. happy or favorable) thoughts. Bell and Esses predicted that ambivalent people's evaluations of a stigmatized group would be differentially affected by positive and negative mood, but that non-ambivalent subjects would not show a large difference between the two mood conditions.

2.4.2.1 Ambivalence toward First Nations peoples

Given that this study was done in Canada, which does not share the United States' history with the Black community, the First Nations (Native Canadians) were used as the target of ambivalent feelings (the 1990s were particularly turbulent in Canadian Politics with regards to the First Nations' concerns about protection of ancestral lands). Ambivalence toward Native Peoples was assessed (as part of a larger survey asking about many different ethnic groups) a week prior to the mood induction procedure. The second session (presented as a different study) had the subjects listen to a musical piece (mood induction) after which they were asked to fill out a survey assessing attitudes toward Native- and Anglo-Canadians (this research was carried in the province of Ontario, which is primarily populated by Anglophones) as well as

endorsement of social policies regarding the First Nations. The separation of the ambivalence measure and the mood manipulation in two separate sessions was believed to minimize the influence of tension associated with feelings of ambivalence.

It was expected that ambivalent individuals' attitudes toward the First Nations would be more strongly affected by the mood manipulation than attitude toward Anglo-Canadians. Resulting attitudes should be in line with the specific mood conditions, that is, more favorable in the positive mood condition and less favorable in the negative mood condition. The first test looking at the effect of mood on ambivalent subjects' reactions to Native- and Anglo-Canadians revealed to be non-significant, presumably due to a weak effect of the negative mood induction procedure. Bell and Esses then re-classified the participants based on their self-report of mood, such that those subjects scoring in the top third of the mood measure were labeled as the "positive mood" group and those scoring in the bottom third were grouped under the "negative mood" category. Following this maneuver, results showed that, for ambivalent individuals, attitudes toward Natives were more greatly affected by mood than attitudes toward (Anglo)-Canadians. Non-ambivalent subjects did not show this difference. The obtained results therefore show a relative response amplification effect (i.e. greater difference between mood states when the target is a stigmatized group) obtained without making ambivalence salient (thus limiting the influence of discomfort).

2.4.2.2 Evaluation of the model

Bell and Esses (1997) argue that the ambivalent group's change in attitude is due to the fact that ambivalent people accessed different dimensions of their attitude as a function of the mood prime. Non-ambivalent individuals did not show priming (even when the mood was congruent with their dominant attitude) suggesting that their attitudes may be more stable and resistant to change. Yet, one may wonder why non-ambivalent participants do not show priming. For example, an individual with a positive attitude toward Natives presumably possesses a set of positive thoughts relative to the group. Being primed by a positive mood should increase the accessibility of congruent thoughts and as a result, a momentary polarization should occur. It is not quite clear why priming would be observed for ambivalent subjects only. Since Bell and Esses' (1997) data shows that initial attitudes toward Natives did not significantly differ across groups ($\underline{M}$=70.15 for ambivalent group, $\underline{M}$=69.83 for non-ambivalent out of a maximum of 100), both groups had equivalent "room to move" following the priming procedure. If the polarization effect were due to simple priming, both non-ambivalent subjects whose dominant attitude is congruent with the prime and ambivalent subjects should show enhanced ratings. Bell and Esses argue that ambivalent individuals show a RAE because they possess dimensions congruent with the prime. However, non-ambivalent subjects holding strong univalent attitudes congruent with the prime also possess these same dimensions but somehow do not show as strong a priming effect.

This pattern, though, could come simply as a function of how the groups were created. The fact that the participants were simply classified as ambivalent vs. non-

ambivalent may be part of the problem. In all probability, the non-ambivalent group was composed of both Pro-First Nations and Anti-First Nations individuals. If we accept for a moment that priming plays a role, the Anti group would presumably show priming in the negative mood condition (dimension congruent with their attitude) whereas the Pro group would show priming in the positive mood condition. Lumping these two groups together into one "non-ambivalent" group prevents this sort of comparison from taking place. This lack of a priming effect in the non-ambivalent group is possibly due to the fact that Pro- and Anti-Native participants' responses muffled each other's. The fact that attitudes toward Anglo-Canadians (assumed to be positive given that the participants belonged to that group) were not as strongly affected by the prime also suggests that something more than priming may be at play. If a positive mood makes positive thoughts more accessible, this should affect all subjects and their reactions to all targets. However with a stigmatized target, what is observed following encounter with a one-sided attitudinal event is an amplified reaction from ambivalent people that goes over and beyond the reactions of non-ambivalent individuals. This suggests that the responses observed in the case of stigmatized targets are the result of something more than simple priming. The reasoning that the RAE occurs in ambivalent people because both dimensions are available to be primed still stands but should be tested in a more systematic manner. Priming as an explanation of the RAE still seems like an alternative worthy of further consideration but it probably does not cover the whole story.

2.4.3 Overall Evaluation of Existing Proposals

The two proposals reviewed make logical sense but they both suffer from lack of strong empirical support. The priming account, for instance, is appealing given its simplicity, but the experiment carried out by Bell and Esses (1997) is not very convincing. For starters, they claim to be isolating the cognitive factors by not making ambivalence salient. Their reason for doing this is to minimize the role that emotional arousal may play in the effect. However, they resort to a *mood* manipulation as a priming condition. It is therefore not clear if the effect they obtained is due to priming per se or to motivational factors associated with changes in mood. It may well be that the mood state itself serves as a motivational factor in the polarization effect even when the mood state does not result from a threat to self-regard.

Bell and Esses (1997) also distinguish between the "strong" form of the RAE and the "relative" form of amplification. The strong RAE is the finding that, in a positive situation, ambivalent individuals will respond more positively to a stigmatized person than to a non-stigmatized one and in a negative situation, will respond more negatively to a stigmatized target than to a non-stigmatized target. Thus in the strong form of the RAE, the polarization occurs in both dimensions. In the "relative" form of the RAE, ambivalent participants show a "greater difference in responses to a socially desirable and undesirable member of the stigmatized group than in responses to a socially desirable and undesirable member of a nonstigmatized group" (Bell and Esses, p. 1064). The "relative form" thus allows one to conclude that RA has taken place as long as responses to the stigmatized target are stronger

(and not even necessarily significantly stronger) in one of the two directions. This is the finding that Bell and Esses have reported as significant, thus making any direct comparison to other studies (e.g. Hass et al, 1992) rather difficult. Although the relative form still suggests that ambivalent and non-ambivalent people react differently, the effect is not as strong nor as convincing as the "strong form" of the RAE. Yet, given the fairly low reliability of the strong form of the effect, relying on findings of relative response amplification may be justifiable.

The reports offered so far illustrate the fact that the response amplification effect only occurs under a fairly restricted set of circumstances. Hass et al. (1991) reported that the effect was more likely to be observed in situations that have personal relevance for the evaluator (e.g. Gergen & Jones, 1963; Gibbons, Stephan, Stephenson, & Petty, 1980; Hass et al., 1991), that are high in experimental realism (i.e. able to get participants truly involved in the task – e.g. Gergen & Jones, 1963; Gibbons et al., 1980; Hass et al., 1991), or that threaten subjects' self-concept by making them aware of their conflicted feelings. For example, studies in which evaluations were derived merely from a written description of a target the subject did not know nor would they ever meet (i.e. low personal relevance and weak involvement) did not show a significant polarization effect (Carver, Glass, Snyder, & Katz, 1977; Dienstbier, 1970; Linville & Jones, 1980). One exception to those conditions is the work of Bell and Esses (1997) in which the polarization effect was obtained following a simple mood manipulation. In that particular case, subjects were not made aware of their conflicted feelings and the change in mood was not a

function of inconsistency itself, but still the polarization effect (relative form) was observed.

The two reviewed models are interesting and provide major elements of the puzzle but some issues still remain unsolved. One important difference between the models if that they focus on different aspects of the problem. Whereas the threat to self-regard model emphasizes the affective and social factors implicated in the effect. the priming model focuses on the cognitive factors involved. Having such different models brings richness to the problem but there still are some missing pieces. Even though the threat to self-regard model does a good job describing the emotional and social factors potentially involved, there is no direct evidence that a threat to self-regard is involved at all. Also, no clear reference is made to the cognitive processes underlying the effect. Thus, the mechanism that actually triggers the amplification effect remains unclear. As for Bell and Esses' model, the notion that priming plays a role in the effect is attractive by its simplicity and commonsensical feel. However, even though they suggest that ease of access lies at the root of the effect, accessibility itself is never directly assessed. The data show that ambivalent subjects' judgment is more greatly affected by the prime however mere ratings represent but a poor measure of accessibility. It is probably best to consider both models, not as competing accounts, but really as complementary and in spite of some empirical shortcomings. Bell and Esses' suggestion that priming mediates the response amplification is very attractive. Looking at the cognitive factors possibly involved in polarized reactions is definitely an avenue worth pursuing.

Chapter 3: On The Role of Accessibility in Ambivalence – A Revised Model

Since there is limited evidence available to suggest that a threat to self-regard is even involved in polarized reactions, our efforts concentrated on the role that accessibility might play in the response amplification effect. It has been shown that being in a state of ambivalence is uncomfortable and it is presumably the desire to reduce that discomfort that leads ambivalent individuals to react differently than non-ambivalent folks (Hass et al., 1992). We propose that the best way to reduce that discomfort and indecision is by paying extra attention and by gathering as much information as possible about the situation, with the main goal of making an informed decision. Immediately available information should therefore be carefully evaluated and is likely to have a powerful impact on people's judgment, which is in fact what may be happening in the RAE. The priming account discussed earlier is consistent with this notion. We did however add one component to the priming idea.

The present model suggests that priming must be accompanied by a sub-activation of incompatible attitudinal elements so as to avoid the resurgence of ambivalent feelings. Ambivalent individuals are motivated to modify an attitude structure that fails to serve its purpose. Possessing conflicted feelings hinders the categorization process and ambivalent people find themselves reacting to an attitude object in inconsistent ways, their reaction being compatible with whichever portion of their attitude is activated at the time. Presumably, priming kicks in following ambivalent people's needs to re-arrange their schema toward consistency and coherence, working to render attitudes more stable and to avoid the simultaneous activation of the positive and negative dimensions of their attitude structure.

One way to avoid the rising conflict is to activate only one dimension of the attitude. This is possibly what happens in the polarization effect. Being presented with a one-sided argument/situation may result in making compatible aspects of the attitude more salient. Those congruent elements may then be activated and become easier to access (and thus more likely to be used in judgment) through a simple priming process. Making one dimension more prominent and more accessible will certainly help in reducing the tension associated with ambivalence. However, that alone may not be sufficient for there is nothing stopping incompatible information from trickling in and reinstating ambivalence. The best strategy may involve two concurrent steps. First is the priming effect already described, that is, increasing accessibility of attitudinal elements consistent with the currently available information/situation. Second, there is a possibility for a converse effect operating on incongruent elements. One way to avoid the rise in consciousness of conflicting elements would be to actively inhibit activation of cognitive elements incompatible with the information being processed.

3.1 Conflict and Accessibility

The data reviewed in the previous chapter suggest that ambivalent people are more strongly affected by the immediate situation (i.e. prime) than are non-ambivalent subjects. When witnessing a stigmatized person perform a negative act, ambivalent subjects tend to judge that person more negatively than a comparable non-stigmatized person; when faced with a target performing a desirable act, ambivalent people tend to judge that person more positively than a non-stigmatized target. This suggests that what is at play may be more than a typical priming effect and although

there is no evidence yet for an active suppression process in attitude research, evidence of inhibitory mechanisms in cognition (Anderson & Spellman, 1995; May, Kane, & Hasher, 1995; Milliken, Joordens, Merikle, & Seiffert, 1998; Tipper, 1985) suggest that it is indeed a possibility. Such mechanisms are believed to aid selection and retrieval of information from memory by limiting the cognitive search to mostly relevant items. For example, the quest for a particular piece of information may get quite messy if the activation were to spread not only to relevant elements but also to competing alternatives.

Anderson and Spellman (1995) argue that one of the functions of inhibitory processes is to increase both retrieval speed and accuracy by limiting the interfering effect of activated distractors. The activation of goal-relevant targets combined with the inhibition of competing distractors increases the probability that the desired target will be retrieved quickly while limiting the number of errors. Negative priming studies suggest that such a process takes place. These studies typically require participants to identify a target among a set of distractor stimuli. When a "to-be-ignored" stimulus is subsequently used as a target, participants usually show increased reaction time relative to neutral targets (Anderson & Spellman; May et al., 1995; Milliken et al., 1998, Tipper, 1985). Anderson and Spellman further revealed that the impairment is not limited to the distracting item itself but that the interference generalizes to stimuli that are merely similar (i.e. belonging to the same category, for example, red objects) to the original distractor. The role of inhibitory processes may therefore be to help current search (increasing both accuracy and processing speed) by lowering the activation level of competing/interfering responses (Anderson &

Spellman, 1995) as well as by preventing recently rejected information from becoming re-activated (May et al., 1995).

A parallel process may play a role in the response amplification effect. Excitatory links may render cognitive representations that are compatible with the current situation more easily accessible (through spreading activation/priming), while inhibitory processes may serve to keep competing/incompatible elements from being activated (possibly sub-activated). The combination of these two processes would reduce the probability of conflicting thoughts being simultaneously activated, therefore allowing one to make a judgment based mostly on information consistent with the current context. The present suggestion is that a super-activation of compatible elements coupled with a sub-activation of incompatible elements may be a sensible strategy and possibly the process at play in the response amplification effect. One crucial condition for the viability of this proposal is that attitudes be subject to accessibility manipulations. Since attitudes are best thought of as memory structures, processes that affect the ease of access of memory structures should similarly affect the structure of attitudes. This has in fact been shown to be the case.

3.1.1 Accessibility of Attitudes

The importance of attitudes as memory structures, especially their role in providing structure and significance to the world and in guiding decision-making, is a well-accepted notion. The *sine qua non* condition for attitudes to perform their function is that they be activated from memory. Fazio (1989) strongly argues that it is the level of accessibility of an attitude that determines its power and functionality (also Bargh et al., 1992). Indeed, it is not sufficient for an attitude to be merely

represented in memory. If it is to exert any kind of influence, an attitude must be also activated and used in judgment.

Some attitudes are "naturally" more accessible than others. Fazio et al. (1986; also Fazio, 1989; Fazio, Jackson, Dunton, & Williams, 1995) reported that some attitudes are spontaneously activated in the presence of the attitude object. Attitudes rated as extreme (positive or negative) are typically responded to faster and are better recalled than weaker attitudes (Judd & Kulik, 1980; Pratnakis, 1989). Accessibility is, however, not a fixed property of attitudes. A number of factors can affect ease of access, and therefore the likelihood that a given attitude will be used in subsequent judgment. It is generally assumed that whichever manipulations affect typical LTM structures (e.g. priming) will also affect the structure of attitudes (Judd, Drake, Downing, & Krosnick, 1991; Ostrom et al., 1994; Tourangeau et al., 1991).

For example, being repeatedly exposed to (or repeatedly expressing) a given attitude temporarily increases its accessibility (Downing et al., 1992; Fazio, 1989; Fazio, Powell, & Herr, 1983; Fiske & Taylor, 1991). Powell and Fazio (1984) showed that prior access to an attitude (through repeated expression) made subsequent attitudinal responses easier (operationalized as reaction time) regardless of the pre-existing strength of the object-evaluation association. In addition to repetition priming, attitude accessibility can also be affected by semantic priming. For example, Fazio et al. (1986) demonstrated that classification of an adjective as positive or negative was faster when a congruent attitude object was used as a prime (e.g. war-bad). Other reports show that when two related judgments are made consecutively, responses are typically faster and more extreme on the second item than on the first

item (Bargh et al., 1992, Fazio et al., 1986; Tourangeau & Rasinsky, 1988; Tourangeau et al., 1991).

Based on these findings, Judd et al. (1991) argue that activating a stored evaluation increases the likelihood of activation of other related (i.e. linked in memory) attitudes through a spreading activation process. This temporary increase in activation thus seems to affect both intensity (extremity of a response) and speed of processing (reaction time). One sensible possibility is that attitude intensity may partly be a function of ease of access. When judging an attitude object, individuals may pay attention to the ease with which the judgment is made and may interpret easy access as an intense affective reaction (Downing et al., 1992; Jacoby, Woloshyn, & Kelley, 1989; Judd et al., 1991; Ostrom et al., 1994; Petty et al., 1997). It thus seems clear that attitude accessibility can be momentarily modified by current events. Taken as a whole, these findings bring credence to the idea that ambivalent attitudes may be especially sensitive to such manipulations, especially when one considers the fact that conflicted attitude include elements along both the positive and negative dimensions.

3.2 Super-Activation and Sub-Activation

The fact that attitudinal responses are affected by contextual and environmental circumstances suggests that the activation of attitudes is not a static process. Indeed, various factors exist that can affect which portion of the structure gets activated. Attitudes are generally construed as comprising many clusters, each cluster being further made up of a number of arguments (Hass, 1981; Tourangeau et al., 1991). It is the combination of an individual's reactions to these elemental

components that gives an overall evaluation of that person's attitude and of the clusters that are part of this attitude. Drawing an analogy from the network model literature, such as McClelland and Rummelhart's (1985; also Rummelhart, McClelland, & the PDP Research Group, 1986) distributed model of memory, an attitude may be thought of as a set of interconnected nodes. Each node or unit has a starting activation level and is connected to many other nodes through a set of weighted links. The starting activation level of any given node is an indication of how accessible that particular node is. Possibly, elements important in determining a person's attitude would possess higher activation values than elements that are less psychologically salient.

Additionally, the activation signals traveling through the network are modulated by weights associated with the inter-element connections. Thus, a signal may be amplified or weakened to varying degrees depending on the nature of the connections between units. Since each element is connected to (and receives input from) many other units, its resulting activation level will be the result of the node's pre-existing activation combined with the weighted sum of the activation signals received from its connected nodes. The set of weights therefore plays a role in setting an element's activation level such that when the system is activated, the stronger (positive) weights would allow the corresponding elements to be among the first ones to reach threshold and thus be accessed. Procedures such as priming temporarily inflate the level of activation, resulting in easier access when the attitude object (or one of its connected elements) is (re)-introduced.

It should be noted that the connection weights can also have negative values serving to inhibit activation in parts of the system. The link between units that are simultaneously active and that respond in the same way will tend to be positive in nature, while the connection between units that respond differently will tend to be weakened (i.e. negative) (McClelland & Rummelhart, 1985; Rummelhart et al., 1986; Rummelhart & Norman, 1988). It has been proposed that incompatible elements might mutually inhibit one another whereas compatible concepts may be mutually excitatory (Rummelhart et al., 1986). This further suggests the existence of both a priming (through excitatory connections) and an "anti-priming" (through inhibitory connections) effect (Ostrom et al., 1994). The former is fairly common and unsurprising, but it may be somewhat harder to conceive of the latter.

Priming occurs when the activation of a concept spreads to neighboring units, thus making those compatible items more accessible. Anti-priming (also known as negative priming) can be observed when the links connecting two nodes are inhibitory. In such cases, activation of a concept might lead to reduced activation of a connected (but incompatible) node, hence rendering that second unit less accessible. For example, having recently accepted as true the statement "John is tall" (e.g. when John is surrounded by jockeys) would make it difficult to subsequently accept as true the statement "John is short" (e.g. if John is surrounded by basketball players). Those two statements are incompatible and cannot concurrently be held as true. Thus activation of the concept "John is tall" may very well lead to suppression of the belief that "John is short", and conflict can thus be avoided. Let us further explore this process with a brief review of negative priming research.

3.2.1 Negative Priming in Memory Research

Evidence supporting the existence of inhibitory mechanisms has shaken the traditional assumption that memory retrieval only involved the *search* for a target, possibly through activation of retrieval cues (Anderson & Spellman, 1995). Recent studies suggest that a more efficient kind of processing may actually be taking place in which long-term memory retrieval involves both enhanced processing of the desired information in conjunction with active inhibition of distractors interfering with information retrieval (see Anderson & Spellman; May et al., 1995; Tipper, 1985). This process is parallel to the one believed to take place in selective attention which involves increased activation of relevant information along with suppression of irrelevant information (Milliken et al., 1998).

Negative priming studies generally involve response to a target that has appeared as a distractor in previous trials. Participants typically show increased response latencies to previously rejected items. May et al. (1995) suggest that the representations of both target and distractor are activated but that the representation of the distractor is suppressed from response output. This suppression is believed to last for some time, leading to slower response times when a previously distracting item is later used as a target. It is further argued that one of the functions of inhibition is to prevent recently rejected items from becoming re-activated, such that goal-irrelevant information might not interfere with cognitive processing.

Anderson and Spellman's (1995) research suggests that a similar process is at play in memory retrieval. Subjects learned a set of category-exemplar pairs (such as "red-blood", "red-fire", "red-tomato", etc.) and were at a later point (called retrieval

practice) required to limit their answer to the category cue to only a subset of the learned exemplars (e.g. "blood" or "fire"). During retrieval practice, being presented with the category "red" activates a number of possible responses. Since only a subset of those responses is allowed (i.e. "blood" and "fire" in the present example), a selection must be made. Anderson and Spellman believe that the competing (i.e. forbidden) items (e.g. "tomato") are inhibited and thus harder to recall at a later phase. It was found that any learned exemplar interfering with practice retrieval (i.e. anything red, other than "blood" or "fire") had low recall rates regardless of the cue under which it was learned (e.g. "food-ketchup" or "food-strawberry" – both "red" items – had lower recall rates than "food-bread" or "food-crackers).

Thus, retrieval practice not only impaired the recall of items that were in direct competition (i.e. learned under the same category cue) with the practiced elements, but words that were merely similar (i.e. sharing features but learned under a different category) to the interfering competitors were also harder to access than neutral items (i.e. crackers or bread). It should be noted that this effect was still evident 20 minutes after the retrieval practice had taken place. Anderson and Spellman (1995) argue that memory retrieval may require active inhibition of competitors. Thus a truly efficient search may involve both increased activation of a target along with active suppression of competitors (Milliken et al., 1998).

This combined effect of excitatory and inhibitory mechanisms allows for more efficient information processing and better decision-making by highlighting the path to the appropriate response. Without such a system, one may see the concurrent activation of incompatible (competing) responses which would likely lead to general

discomfort, confusion, and indecision, which is specifically the type of reaction observed in ambivalence. When a person is in a state of ambivalence, his/her attitudes do not serve their guidance and categorization functions well anymore. Instead, they are likely to lead to tension, anxiety, and result in "agitated indecision" (Hass & Eisenstadt, 1993) once an individual is aware of having mixed feelings. The fact that inhibitory processes have been observed in studies of memory retrieval hints that a parallel process may be at play in the retrieval of attitudes as well. Possibly the activation of a concept inhibits activation of incompatible ones, making the latter less accessible and less likely to be used in subsequent attitude judgments (Ostrom et al., 1994).

3.2.2 Negative Priming in Ambivalence?

Where ambivalence is concerned, the starting point is an individual's awareness of an internal conflict regarding an object or event. The realization of possessing conflicting beliefs has been proposed to lead to negative affect (see Katz, 1981; Hass et al., 1992), which in turn results in a drive to reduce conflict. Studies of ambivalence typically expose participants to information that (although one-sided) is relevant to the issue. Ambivalent individuals are believed to be particularly motivated to process this information since it may help resolve the conflict. In addition to being motivated to process this newly offered evidence, ambivalent people are presumably well equipped to handle and make sense of this information since they already have similar concepts represented in memory (Bell & Esses, 1997; Maio et al., 1996). As one is processing this information, activation is likely to spread to compatible bits of knowledge, making them easier to access. This ease of access has been posited (Bell

& Esses) to lead to the response amplification effect sometimes observed following exposure to one-sided attitudinal events.

Evidence from memory research (Anderson & Spellman, 1995; May et al., 1995) suggests that efficient memory retrieval involves both excitatory and inhibitory processes. Excitatory connections serve to search for relevant information while inhibitory links are believed to reduce the activation of conflicting elements. It does not seem too far-fetched to suggest that the operations of the attitude system may work in a analogous manner. Research in the field of attitudes has provided support for the existence of excitatory links (e.g. repetition priming, semantic priming, etc.). The operations of excitatory mechanisms can be called upon to account for part of the amplification effect (through activation of compatible elements). However, if conflicting information were to enter consciousness during this process, conflict and its associated negative arousal could be re-established. An additional step can therefore be proposed. Since we argue that the prime motivation is to reduce conflict, decreasing the accessibility of incompatible elements is a desirable goal. The present suggestion is that inhibitory links also exist, such that elements conflicting with currently processed information should see their activation level lowered. If such is the case, conflicting concepts and beliefs should be less accessible. What we propose to test is whether the increased level of accessibility observed on compatible elements is accompanied by a parallel inhibition of interfering elements.

3.3 Concerns about the RAE

The earlier review of ambivalence research has revealed that the response amplification effect is not very stable. Some have not found evidence of it and most

of those who have only reported moderate success. For instance, Hass et al. (1991) reported a significant polarization in judgment ratings in the negative direction only (i.e. failure condition), but have found a significant correlation between ambivalence scores and ratings in the positive context only (i.e. success condition). Before them, Gibbons et al. (1980) reported polarized ratings mostly in the favorable direction, with only one of their four studies showing the effect in both the positive and negative directions. Similarly, Bell and Esses (1997) only reported findings of a relative form of the RAE. The data are therefore somewhat inconsistent but yet common enough to arouse interest. Even though polarization may not be as reliable as one would like, the circumstances under which it does occur share enough features to render it interesting. Anyone engaged in further studying the effect must therefore make sure that those characteristics (i.e. personal relevance, high experimental realism) are present in whichever situation is used.

The composition of the comparison groups used in previous studies is another possible contributor to the haziness surrounding the RAE. Many of the earlier studies (for e.g. Katz, 1981; Gibbons et al., 1980; Linville & Jones, 1980) simply assumed ambivalent feelings to have been present, thus making any comparison across "degrees" of ambivalence impossible. In later studies (e.g. Bell & Esses, 1997; Katz & Hass, 1988; Hass et al., 1991, 1992), the grouping into a single non-ambivalent category of what were possibly Anti- and Pro- individuals may have covered an important part of the process involved in the amplification effect. For example, comparing the responses of, say, the Anti-group to those of the Ambivalent group would allow one to see whether the changes shown by ambivalent individuals are

indeed more extreme than those shown by univalent participants. Before concluding that priming is the main factor involved (or that amplification is even taking place), one needs to make sure that ambivalent individuals are in fact *more* affected by the prime/context and that previous indication of an RAE was not a function of the non-ambivalent group's makeup.

3.4 Ambivalence, Accessibility, and the RAE: A Proposal

The current research involved a number of steps. The specific aim was to explore the cognitive processes underlying the response amplification effect. Since one major goal is to avoid conflict, we proposed that the best strategy involves two simultaneous processes: increased access of compatible elements along with sub-activation of incompatible elements (this possibility is clearly supported by memory research). Given that judgment is based on whatever information is most available in memory, the activation/inhibition strategy would result in ratings that are polarized in the direction compatible with the current (i.e. activated) context. So far, the RAE has only been tested through judgment ratings but what is suggested here is that these polarized reactions are caused by a change in accessibility of specific attitudinal elements. Therefore, since the present focus is on the cognitive processes underlying the RAE, this research used a cognitively based measure of accessibility (i.e. reaction time) in the place of judgment ratings.

The hope was to show that, after a one-sided prime, ambivalent subjects would show super-activation of elements compatible with the prime along with sub-activation of elements incompatible with the prime. In a context devoid of ambivalent feelings, accessibility should not be as strongly affected by the priming condition and

hence should more closely reflect subjects' pre-existing attitudes. After being exposed to a one-sided attitude prime, participants took part in a reaction time task (our measure of accessibility) in which they were asked to classify items (compatible and incompatible with the prime) into categories. After the presentation of the prime, elements of the subjects' attitude that are congruent with the prime should be activated and thus more accessible. Moreover, if the proposed inhibitory mechanisms are involved, incompatible elements of the attitude should be sub-activated. It was thus expected that, compared to non-ambivalent subjects, ambivalent individuals would show faster reaction times on compatible items and slower response times to incompatible items. Non-ambivalent participants were not expected to pay as much attention to the prime because they do not have as strong a need to search for information since their attitudes are already fairly stable. Thus the priming and anti-priming processes should be taking place in all subjects but the resulting effects should be more apparent in the ambivalent than in the non-ambivalent individuals, given that the former have higher motivation to process the information and have both the positive and negative dimensions represented in the attitude structure.

Since the response amplification effect is known to occur under a rather restricted set of circumstances, we judged it best not to stray too far from existing research and thus concentrated our efforts on attitudes toward stigmatized groups. Following Hass et al.'s (1991) recommendations, participants were exposed to a prime that has both personal relevance and potentially important consequences for them. We also needed to ensure that, even though no direct contact with the target of

ambivalence was possible, the situation would be personally involving for the participants.

3.4.1 Stigma and Personal Relevance: 09-11

Significant events sometimes take place that lead a certain group to be assigned a powerful stigma. On September 11th 2001, New Yorkers were stunned to see their majestic Twin Towers engulfed in flames after being successively hit by two commercial airliners, causing the death of more than three thousand people. Within minutes, a third plane crashed into the Pentagon in Washington, DC; a fourth plane, believed to be headed for the White House, crashed in a field outside of Pittsburgh, PA. The world stood in awe as these quintessential symbols of America crumbled, smoking up the blue morning sky. Within the span of a few hours, reports confirmed that members of a terrorist organization, known as Al-Qaeda, were behind the attacks.

The nineteen individuals responsible for hijacking the aircrafts were later identified as citizens from a number of Arab countries, including Saudi Arabia, Egypt, and the United Arab Emirates. These men were described as extremists, followers of a fundamentalist branch of the Islamic faith. Logic tells us that the individuals who committed those horrendous acts are not representative of Arabs or Muslims in general; yet, many people's attitudes toward members of these particular groups have undoubtedly been changed, perhaps forever. Powerful, compelling events such as these can thus lead one group to be assigned an equally powerful stigma.

The data from the studies described here were collected at the Brooklyn College campus, which stands roughly 6 miles from where the World Trade Center

once stood. Thus, in addition to being flooded by daily reports on the events, participants were also physically and psychologically close to the site. In the few days following the attacks, one simply needed to look out the window to see the lingering smoke and dust clouding up the sky. In the days and weeks following, the school buildings were evacuated on several occasions after bomb threats were received. Thus, individuals taking part in these experiments were involved in the most personal of ways and were very well aware of the potential consequences of such threats. Given the physical and psychological closeness, the primes used in the studies to follow are believed to meet the conditions of personal relevance and involvement.

3.4.2 The Conflict: Be Safe or Be Fair?

In the weeks following that fateful day, U.S. President George W. Bush and New York Mayor Rudolph Giuliani urged the American public to be both vigilant, yet tolerant. The American people were encouraged to keep an eye open for suspicious activity while warding off ostracism based on ethnic or religious affiliation. In the mind of many U.S. residents, Middle Easterners and Muslims had suddenly become a threat to both national and personal safety. Yet, as it openly encouraged tolerance, the government had taken unprecedented action to ensure safety. As a result of these drastic measures potential criminal acts might have been prevented but at the same time many irreproachable individuals had also been arrested and jailed simply based on their ethnic background. For instance, a medical student of Middle Eastern origin was arrested and jailed after it was reported that he had purchased five plane tickets for a transnational flight. The tickets in question were purchased for the man, his wife, and their three children. The purchase had

raised a red flag since all five family members shared their last name with two of the hijackers. Situations like these have created an inherent conflict between the desire to feel safe (i.e. vigilant) and the desire to appear fair and non-prejudiced (i.e. showing tolerance).

One's wish for safety may lead one to interpret an innocent situation as threatening, whereas one's endorsement of egalitarian values may lead one to feel guilty or uncomfortable about making such an interpretation. Situations of this kind are perfect examples of what ambivalent feelings are all about. We are in the presence of a compelling stigma, accompanied by intense personal relevance, especially in the heart of New York City where police presence and security checks act as constant reminders that life is not the same as it used to be. Anecdotally, many individuals have reported being aware of their conflicted feelings when in the presence of Arab or Muslim men, finding themselves both anxious and uncomfortable with their own anxiety, knowing full well that it is based on their newfound negative attitude.

3.5 Description of the Research

In the present experiments, participants were exposed to vivid vignettes designed to uncover the latent conflict (i.e. concern for both fairness and safety) and were asked to report the degree of ambivalence experienced. After having obtained subjects' ambivalence score, accessibility of fairness and safety concerns were assessed by measuring participants' reaction times to words associated with either issue (e.g. threat, tolerant, etc.). Subjects were split into 3 groups according to their dominant attitude (Ambivalent, Safety-, or Fairness-oriented). For ease of comparison

with previous studies, we will also refer to the safety-oriented group as "Anti" and to the fairness-oriented individuals as "Pro".

This grouping of subjects as Safe (Anti), Fair (Pro), or Ambivalent represents one major difference between the proposed research and existing studies. Most of the previous research has not used a measure of ambivalence but has rather assumed conflicted feelings to be present (for instance, Gibbons et al., 1980; Linville & Jones, 1980; Hass et al., 1991). In some cases, ambivalence was measured but the analyses typically compared the responses of ambivalent subjects to those of "non-ambivalent" participants, thus leaving open the question of how Pro and Anti subjects may differ from one another and from the ambivalent group. This extra comparison may be especially important for studying the underpinnings of the response amplification effect.

3.5.1 New Information Sought in this Research

Previous studies looking at judgment ratings of stigmatized people reported that ambivalent individuals show a greater difference across situations than do non-ambivalent participants (e.g. Hass et al. 1991; Bell & Esses, 1997). Since Pro and Anti subjects were combined as one "non-ambivalent" group, there is the possibility that combining Pro and Anti participants' responses may have masked a more complex pattern. It is possible that these two subgroups' responses have moderated one another, thus leading to a rather restrained judgment for that group. For instance, in a "pro" condition, Pro subjects may see their judgment amplified whereas the Anti subjects' rating may not be so greatly affected, thus averaging to an overall moderate change in rating for the non-ambivalent group.

The ambivalent group, however, is composed of participants who always agree (to some extent) with the context, regardless of its direction (pro or anti), and may be affected under both types of circumstances. This may be what is leading to a seemingly greater change in attitude when compared to the reactions of non-ambivalent participants. A more robust test of the RAE may involve comparing the responses of ambivalent subjects to those of univalent subjects on words compatible with the latter's attitude (i.e. compare the ambivalent group to the Fair group on the fair words and compare the ambivalent group to the Safe group on the safe words). This comparison would allow us to ensure that ambivalent people's change in access goes above and beyond the change shown by univalent subjects who also endorse the attitude.

In addition to the main priming study, a control condition was included in this research. Previous reports on attitude accessibility (Fazio et al., 1986; Fazio, 1989) show that strongly held attitudes tend to be highly accessible. In the case of ambivalence, it has been assumed that, since both dimensions are endorsed, both positive (pro/fair) and negative (anti/safe) attitudinal elements should be easily accessible to ambivalent individuals. This presumption has, however, never (to our knowledge) been directly tested. It is therefore judged important to gather information about accessibility in a neutral state because there are a number of possible mechanisms that could be involved in the RAE.

3.5.2 Possible Cognitive Processes

The main proposal, suggesting that a combination of inhibition and super-activation underlies the amplification effect, rests on the belief that both dimensions

of the attitude are easily accessible in a neutral context. However, any single one of the processes (inhibition or super-activation) may be sufficient for the occurrence of the polarized reactions. It could be that, following a prime, the incompatible dimension gets inhibited, thus leading ambivalent subjects to rely on only one dimension in judgment. If so, ambivalents' behavior would be similar to the behavior of univalent (and compatible) subjects. That is, in a Fair condition, ambivalent subjects may react just like Fair subjects; in a Safe condition, the ambivalent group may react just like the Safe group. Conversely, it is also conceivable that no inhibition is taking place and that the polarized responses result from increased accessibility of (and thus increased reliance on) compatible thoughts following priming.

The addition of a neutral condition allowed us to obtain a baseline measure of accessibility and further assurance that underlying attitudes are indeed reflected in the reaction time response pattern. Again, given the general belief that accessibility and endorsement go hand in hand, it was presumed that, at rest, ambivalent people would show reaction times similar to Fair individuals on the fair items and similar to Safe individuals on the safe items. Then again, there remains the intriguing possibility that the conflicting elements inhibit one another at rest. If so, ambivalent subjects should show lower accessibility than non-ambivalent participants across the board and the RAE may be due to a disengagement of some inhibitory mechanism in lieu of the proposed process. The addition of a three way split (Pro, Anti, and Ambivalent subjects) and of a neutral condition should allow us to consider these alternatives. The present research thus comprises two experiments, each including three sections: personality survey, reactions to current events, and information processing task.

3.5.3 The First Experiment

In Experiment 1, we explored the link between dominant attitude and chronic accessibility of safety and fairness concerns, without making any one dimension more important than the other. Participants first completed a series of personality scales, followed by exposure to two short narratives ("Reactions to Current Events"). The two vignettes were designed to emphasize the latent conflict, making both safety and fairness concerns equally salient. The last section of the experiment had the participants engage in a lexical decision task ("Information Processing Task"), which would allow assessment of baseline measures of accessibility of the two dimensions. In addition, individuals' reactions to the narratives were collected and used to compute overall attitudes and ambivalence scores. These scores were also relied on to verify whether or not response latencies reflect subjects' attitudes.

3.5.4 The Second Experiment

In the actual experimental session (Experiment 2), similar procedures were used with participants first completing a personality survey, followed by presentation of the two vignettes. As in Experiment 1, subjects' ambivalence level was assessed from their reported reactions to the narratives. For the second experiment, an additional step was incorporated in the "Reactions to Current Events" segment. Participants were asked to read a third text (presented as a newspaper article in order to enhance the realism of the situation) emphasizing either the safety or fairness dimension, and thus acting as a prime. Subsequently, the participants were requested to categorize words associated with either Fairness (e.g. unfair, tolerant) or Safety (e.g. risk, threat). It was expected that, compared to non-ambivalent individuals,

ambivalent subjects would show slower reaction times (i.e. inhibition) to words associated with the value dimension incompatible with the prime. For instance, after a Safety-oriented prime, ambivalent subjects were expected to show inhibition when categorizing words associated with Fairness and under a Fairness-oriented prime, ambivalent subjects should show inhibition to words related to Safety.

The performance of non-ambivalent subjects should reflect their dominant attitude and should not be as strongly affected by the prime as their ambivalent counterparts. For example, Fairness-oriented participants should respond faster to words linked to fairness and slower to those associated with the safety, regardless of prime. Conversely, subjects with a Safety focus should show faster reaction times to Safety stimuli than to Fairness stimuli (regardless of priming condition). The resulting design thus included two between-subjects manipulation: Safety or Fairness prime and subjects' dominant attitude -Pro, Anti, or Ambivalent- (individual difference). The words associated with the two values represent an additional (within-subjects) manipulation.

Chapter 4: Experiment 1, Dominant Attitude and Accessibility

In this experiment, we explored the link between dominant attitude and chronic accessibility of safety and tolerance concerns. Participants first completed a series of personality scales, followed by exposure to two short narratives ("Reactions to Current Events"). The two vignettes were designed to emphasize the latent conflict, thus making both dimensions equally salient. In the last section of the experiment, participants engaged in a lexical decision task ("information processing task"), which allowed assessment of baseline measures of accessibility of the two dimensions. In addition, individuals' reactions to the narratives were collected and used to compute overall ambivalence scores. These scores were relied on to verify whether response latencies adequately reflect subjects' attitudes.

4.1 Method

4.1.1 Participants

Sixty-nine Brooklyn College undergraduates participated in this experiment for partial fulfillment of an introductory psychology requirement. Over 90% of the participants were under the age of 26 (81% between 16 and 20 years of age). The sample tested included 45 women (65.2% of the sample) and 24 men (34.8%). Roughly 77% of the participants reported English as their best language (of those 66.7% had English as their first language). Other information regarding religion and ethnicity is presented in Table 4.1.

4.1.2 Materials

Four Computers with color monitors equipped with Superlab software & 6-button response box (Cedrus Corporation, 1997). The Personality survey includes a

Table 4.1a: Participants' Mean Age

Age	*n*	*Percentage of Sample*
16 to 20	56	81.2
21 to 25	7	10.1
26 to 30	2	2.9
31 to 35	2	2.9
36 to 40	1	1.4
40 and up	1	1.4
Total	69	100

Table 4.1b: Ethnicity

Ethnic Background	*n*	*Percent*
Asian- (American)	15	21.7
African- (American)	5	7.2
Arab- (American)	1	1.4
East Indian	1	1.4
Latino	5	7.2
West Indian	8	11.6
White/Caucasian	27	39.1
Other	7	10.1
Total	69	100

Table 4.1c: Participants' Religious Affiliation

Religion	*n*	*Percentage of Sample*
Atheist	0	0
Buddhist	1	1.4
Christian	10	14.5
Hindu	3	4.3
Islamic	1	1.4
Jewish/non-Orthodox	8	11.6
Jewish/Orthodox	9	13.0
None	13	18.8
Other	24	34.8
Total	69	100

Table 4.1d: Degree of Religiosity

How religious are you?	*n*	*Percentage*
Not at all/in name only	11	15.9
Slightly	15	21.7
Moderately	15	21.7
Quite a bit	16	23.2
Extremely	9	13
Completely	3	4.3
Total	69	100

Table 4.1e: Participants' subway experience

How often do you take the subway?	*n*	*Percent*
Less than once a year	4	5.8
Once or twice a year	6	8.7
Once every couple of months	7	10.1
Once or twice a month	11	15.9
Once a week	14	20.3
Three or more times a week	27	39.1
Total	69	100

Table 4.1f: Participants' flying experience

How often do you fly?	*N*	*Percent*
Never flown before	8	11.6
Less than once a year	37	53.6
About once a year	12	17.4
Two to three times a year	9	13
Four to six times a year	2	2.9
Six or more times a year	1	1
Total	69	100

neuroticism scale (McCrae & Costa, 1991 – see Appendix A), the short form of the need for cognition scale (Cacioppo, Petty, & Kao, 1984 – see Appendix B), and a need for closure scale (Webster & Kruglanski, 1996 – see Appendix C). Two brief stories describing ambiguous situations, one aboard a plane and one on a subway platform. Each vignette had a set of follow-up questions associated with it (see appendices D and E for the vignettes and their linked questions). A list of 74 items, including 10 words associated with fairness, 10 associated with safety, 20 neutral words matched with the safety and fairness words for length (number of syllables) and frequency (obtained from Kucera & Francis, 1967), and 34 pronounceable non-words constructed by changing 1 or 2 letters from real words (also matched for length- see Appendix F). The materials also include a demographics questionnaire (see Appendix G).

4.1.2.1 Ambivalence index

Since ambivalence is defined as the simultaneous activation of opposing drives (bivalent tension), it is important to have a measure that reflects this property. The method used to quantify ambivalence must therefore take into consideration the relative strength of the two opposing forces (i.e. pro/fair and anti/safe). Hass and Eisenstadt (1993) have identified the properties that an adequate ambivalence measure should have and have tested a number of indexes in an effort to identify which of the many available ones best fits with the theoretical guidelines.

The basic principle is that the measured degree of ambivalence should be a function of both the extremity and similarity of the component scores. The particular features that were looked for are as follows (for a detailed account, see Hass &

Eisenstadt, 1993): 1) While holding similarity (between Pro and Anti scores) constant, ambivalence should increase along with extremity, that is, as Pro and Anti scores increase, so should ambivalence. 2) For a given level of extremity, ambivalence should heighten as a function of similarity, thus the more similar the scores on the Pro and Anti components of the attitude are, the higher the ambivalence should be. Given these criteria, it was concluded that the best available measure can be formulated as such: ambivalence = W^2/S, where "W" represents the score on the weaker of the two component scores and "S", the stronger of the two component scores. This measure is therefore the one that will be used to assess ambivalence in the present research.

4.1.3 Procedure

Each session included a maximum of four participants, each of which was assigned to an individual computer workstation after having received general verbal instructions. Upon entering the laboratory, the subjects were informed that the experiment was testing how different aspects of personality affect how people interpret different situations. In line with this information, they were first asked to complete a series of personality scales (neuroticism, need for closure, and need for cognition, presented in random order). Even though these scales were not associated with any of the hypotheses, they were included as part of the cover story and also as elements to be completed as the subjects became comfortable with the experimental setting. The neuroticism scale consists of 20 questions that were to be answered by responding "yes" or "no" (e.g. "Do you often feel life is very dull?", the complete scale is available in appendix A). For the other two scales, participants indicated the

degree to which each statement was representative of them using a six-point scale (1= not at all like me, 6= very much like me). The need for closure scale is made up of 24 items, categorized along the following dimensions: preference for order and structure, preference for predictability, decisiveness, discomfort with ambiguity, and shortsightedness (appendix C). The short version of the need for cognition includes 18 statements, such as "I enjoy solving problems" (appendix B). Each scale was presented in random order, one statement at a time. Subjects initiated the presentation of each statement by pressing a key and also indicated their answer by hitting a key on the response box. Participants were not given any time limit for answering the statements.

After completing the personality survey, participants took part in the "Reactions to Current Events" section. They were instructed to read carefully two brief stories "related to the recent terrorist attacks". Subjects were instructed to imagine themselves as part of the scene described in the vignettes. They were told to picture themselves as the main character in the story and to imagine it as vividly as possible. One story depicted two men (believed to be Muslims) getting on a plane and behaving in a way that could be interpreted as suspicious. The other narrative described a group of men (who "may be speaking Arabic") on a subway platform, also behaving in a manner that can be viewed as threatening. The stories were purposely built to be somewhat ambiguous, thus allowing for participants to come up with their own interpretation. In both stories, issues of fairness and safety were mentioned with the main character thinking that the men's behavior was suspicious but that he/she may be overreacting and being unnecessarily judgmental. Each of the

vignettes appeared in a black frame (on two successive screens) and was written in Arial font. The two stories appeared in random order and each was followed by a set of seven questions designed to assess the degree of conflict experienced by the participant.

Three questions probed the safety concerns of the subjects (e.g. "How suspicious of the men would you be?"), with each of those being followed by a question probing possible fairness concerns (e.g. "How prejudiced would you feel about being suspicious of the men?"). One last question asked subjects to indicate the degree to which they experience "conflict from feeling both nervous and intolerant" toward the men. Each of those questions was to be answered on a 6-point scale (1= not at all, 6= extremely). As in part I, progress through section II was self-paced and included no time limit for responses.

The third segment of the experiment had subjects engage in a lexical decision task consisting of 74 letter strings, presented one at a time. The task was to judge whether each presented item was a word or not. The subjects were instructed to answer as quickly as possible while keeping errors to a minimum. Thirty-four of the 74 trials were nonwords, 40 are real words (10 safety related, 10 fairness related, 20 neutral), all presented randomly. Before each trial, participants viewed a prompt instructing them to initiate the trial by pressing a key, along with a reminder of the response choices ("press 1 for word, 2 for nonword"). Two hundred and fifty milliseconds after the key press, a fixation cross ("+") appeared in the center of the screen for 500 milliseconds. An item immediately replaced the fixation cross and remained on the screen for a maximum of 3000 ms. Subjects indicated their response

by pressing the appropriate key on the button box, using their dominant hand, pressing the number 1 key to indicate "word" and the number 2 key for "nonword" responses. Failure to respond within the 3-second time frame resulted in an incorrect response. Feedback was offered after each response. After each correct answer, the words "correct response" appeared in blue for 750ms whereas the words "wrong response" (or "timed out") appeared in red for 1500ms after incorrect responses. The longer duration for the incorrect feedback was meant to give subjects extra motivation to pay close attention to the stimuli and respond within the allotted time limit. Demographic information was also collected from all subjects, including age, gender, ethnic and religious background as well as frequency of flying and subway riding.

4.2 Results

4.2.1 Expectations

Research reported by Bargh et al. (1992), Fazio (1989), Judd and Kulik (1980), and Pratnakis (1989) (to mention a few) has shown that strong attitudes are more easily accessible than those that aren't as strongly held. It is through this high degree of accessibility that attitudes perform their categorization function. Extreme attitudes are activated automatically and objects related to such attitudes tend to be responded to and to be categorized relatively fast. In this study, it was expected that participants with a strong Safety orientation would be able to categorize words related to safety fairly quickly and that participants with a strong Fairness orientation would perform likewise on words related to fairness. The predictions for ambivalent subjects were, however, not so clear. Since ambivalent individuals have extreme attitudes on both the Fairness and Safety dimensions, they should be able to quickly process

information related to both orientations. Yet, because of the inherent conflict, it is possible that the two dimensions inhibit one another, thus leading to slower overall reactions for ambivalent people.

The goal of this study was to see if there is a correspondence between reported attitudes and measured accessibility. If such a link exists, it was expected that individuals with a "Fair" attitude would show faster reaction times than subjects with a "Safe" attitude on the fairness-oriented words. On the safety-oriented words, the Safety group should show faster reaction times than the Fairness group. Given that they strongly endorse both dimensions, ambivalent participants were expected to be quick on both types of words, yet the possibility also exists that the two dimensions could muffle each other, leading to slower reaction times overall for the ambivalent group.

4.2.2 Attitude Assessment

4.2.2.1 Fairness and safety scores

Both the overall Fairness and Safety scores are based on participants' responses to six questions (three from each of the fairness and safety dimensions following each of the two vignettes). The Pearson correlations between the six Fairness items ranged from .08 to .55, with 11 of the 15 pairs (ranging from .24 to .55) being correlated at the .05 level or above. Cronbach's coefficient alpha for the Fairness scale was .76. The correlations between the six Safety items ranged from -.21 to .84. Apart from the single negative correlation (non-significant) all other pairs (from .35 to .84) were correlated at the .01 level. Cronbach's coefficient alpha for the Safety scale was .89.

A principal components analysis done on all 12 items resulted in a four-factor solution, accounting for 78% of the variance. Based on a loading criterion of .50 and above, all the Safety items loaded on only one factor (factor 1), and five of the six Fairness items loaded on factor 2. The only exception loaded negatively on factor 4 (this item had a loading of .44 on factor 2). The correlation between total Fairness and Safety score is .17, $p = .156$, further indicating that the two dimensions are essentially unrelated, which is desirable for the present purposes. The fact that the two dimensions are independent allows for individuals to be scoring high on only one of them (i.e. Fairness- or Safety-oriented), score high on both (i.e. ambivalent), or low on both (see Cacioppo & Berntson, 1994; Hass & Eisenstadt, 1993).

For each of the vignettes, we summed the responses to the set of six questions (three assessing safety concerns and three assessing fairness concerns) to obtain Fairness and Safety scores associated with each vignette. Pearson correlations on safety and fairness scores between the two vignettes were significant at the .01 level (.54 and .41, respectively). Overall Fairness and Safety attitude scores were obtained by summing participants' responses to the six questions associated with each dimension (three safety and three fairness questions associated with each of the two vignettes). Since each response is based on a six-point scale, the minimum score is 6 and the maximum score is 36. The mean Fairness score was $M = 16.81$ ($SD = 6.12$, range 6-31), the mean Safety score was $M = 22.28$ ($SD = 7.41$, range 6-36).

4.2.2.2 Assessing dominant attitude and ambivalence level

Ambivalence scores were obtained for each participant by inserting their mean Safety and mean Fairness scores in the Ambivalence index described by Hass and

Eisenstadt (1993). Thus, the formula *ambivalence* = W^2/S (where W represents the score on the weaker of the two component scores and S, the stronger of the two component scores) was used to assess ambivalence. Given that the minimum and maximum scores (6 and 36 respectively) on the Fairness and Safety Dimensions, possible ambivalence scores range from 1 to 36. The mean ambivalence score obtained in this study was $M = 11.75$ ($SD = 6.59$, range 1 to 28.03).

In addition to the safety and fairness questions that followed each vignette, participants were also asked to indicate the degree to which they experienced "conflict from feeling both nervous and intolerant" toward Arabs/Muslims. The Pearson correlation on reported conflict between the two vignettes was $r = .40$, $p < .01$. The sum of the responses to these two questions (one after each of the vignettes) represents what we will refer to as the "conflict" index (to distinguish it from the ambivalence index reported earlier). The possible scores on the conflict index range from 2 (minimum conflict – "not at all conflicted") to 12 (maximum conflict – "extremely conflicted"). The mean conflict score was $M = 5.9$ ($SD = 2.6$, range 2 to 12). The correlation between the self-reported conflict index and assessed level of ambivalence index was significant; $r = .46$, $p < .001$.

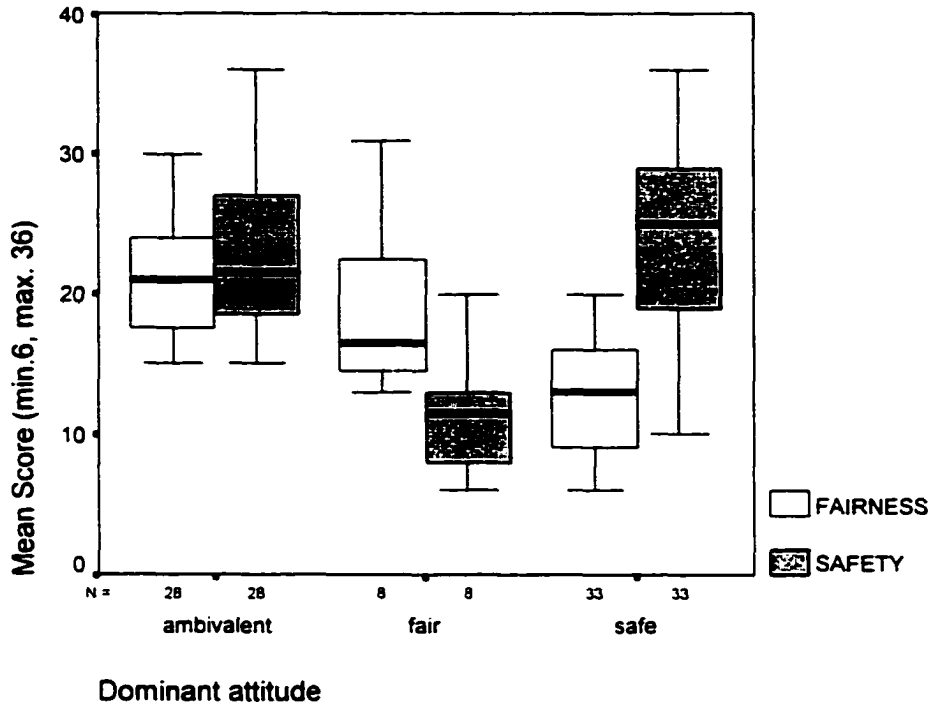
Participants scoring in the top 40% on the ambivalence index (ambivalence score ranging from 14.06 to 36) were classified as ambivalent, those in the bottom 60% (ambivalence score ranged from 1 to 13.79) were classified as either fair or safe, according to which of the Fairness or Safety score was highest. Based on these criteria, 28 individuals fell in the "ambivalent" group, 33 in the "safe" group, and only 8 were classified as "fair". The mean Safety score was $M = 23.14$ ($SD = 5.76$)

for the ambivalent group, $M = 24.18$ ($SD = 7.1$) for the safe group, and $M = 11.38$ ($SD = 4.41$) for the fair group. The mean Fairness scores were $M = 21.21$ ($SD = 4.09$), $M = 12.58$ ($SD = 4.47$), and $M = 18.88$ ($SD = 6.40$) for the ambivalent, safe, and fair groups, respectively. Safety and Fairness attitude scores are also represented graphically in Figure 4.1.

4.2.3 Accessibility and Attitude

The main goal of this study is to explore the link between attitude and accessibility of elements of the said attitude. Level of accessibility is assessed via the reactions times obtained in the lexical decision task. Participants were presented with words associated with both attitude dimensions, as well as neutral words and nonwords. Previous research (e.g. Bargh et al., 1992, Fazio, 1989) has shown a link to exist between attitude and accessibility. We thus expected individuals in the Fairness group to show faster reaction times then participants in the Safety group on the fairness-related words. On the safety-related words, the opposite pattern was predicted, with the Safety oriented group expected to respond faster than the Fairness group. Yet, our main interest is in the reactions of ambivalent individuals. It is possible that they would be relatively fast on both dimensions since both fairness and safety concerns are endorsed. However, the possibility also exists that, given the inherent conflict, the two dimensions inhibit each other, thus leading to lowered accessibility and overall slower reaction times for the ambivalent group. Reactions to words from both categories (fairness and safety) were analyzed separately. Data reported here are based on correct responses only.

Figure 4.1: Mean Fairness and Safety Scores by Dominant Attitude



4.2.3.1 Fairness words

The mean reaction time (RT) on the fair words was $M = 661.32$ msec ($SD = 169.06$) for the Fairness group ($n = 8$); for the Safety group ($n = 33$), the mean RT was $M = 714.01$ msec ($SD = 178.01$); and the Ambivalent group ($n = 28$) had a mean RT $M = 761.31$msec ($SD = 177.00$). Overall accuracy was similar across groups, with the Fair group showing an average accuracy of 92.5% ($SD = 11.65$) while the Safety and Ambivalent groups group averaged 89.39% correct ($SD = 10.88$) and 88.57% ($SD = 11.77$), respectively. No significant differences in accuracy were found ($F < 1$). Overall reaction times and accuracy rates, including the above along with data for neutral words (matched for length and frequency with the fairness-related words) and nonwords are reported in Tables 4.2 (reaction times) and 4.3 (accuracy). A one-way ANOVA was conducted and revealed no significant difference in reaction time across the three groups, $F(2, 66) = 1.17$, $p = .32$. Given the non-significance of the overall F, none of the intended pair-wise comparisons were pursued. Given the high degree of variability in the data, logarithmic transformations were applied but resulted in equally inconclusive results. $F(2, 66) = 1.43$, $p = .25$.

For the sake of comparison with previous ambivalence studies (and given the limited number of subjects in the fair group), data from the Fairness and Safety groups were combined into a "non-ambivalent" group. The mean RT obtained was $M = 703.73$ ($SD = 175.50$) for the non-ambivalent. Results of the independent t-test (comparing the Ambivalent and newly created Non-ambivalent groups) did not reveal any difference, $t(67) = 1.334$, $p = .19$. We can thus safely conclude that no differences in accessibility level exist between the groups.

Table 4.2 Mean Reaction Times (msec) by Word Type and Dominant Attitude

		Dominant Attitude			
		Ambivalent $n = 28$	*Fair* $n = 8$	*Safe* $n = 33$	*Total* $n = 69$
Wordtype					
Fair	*RT*	761.31	661.32	714.01	727.10
	SD	(177.00)	(169.06)	(178.01)	(177.11)
Control-Fair	*RT*	779.92	638.70	756.57	752.38
	SD	(165.01)	(119.57)	(217.75)	(190.89)
Safe	*RT*	733.27	615.53	690.06	698.95
	SD	(156.02)	(105.63)	(173.82)	(162.40)
Control-Safe	*RT*	719.70	636.97	692.06	696.89
	SD	(136.65)	(111.74)	(170.92)	(151.97)
Nonwords	*RT*	841.32	717.60	799.14	698.95
	SD	(143.54)	(152.05)	(180.90)	(162.40)

Note: Control-Fair words are matched for length and frequency with the Fair words. Control-Safe words are matched for length and frequency with the Safe words.

Table 4.3 Mean Accuracy (percent correct) by Word Type and Dominant Attitude

		Dominant Attitude			
		Ambivalent $n = 28$	*Fair* $n = 8$	*Safe* $n = 33$	*Total* $n = 69$
Wordtype					
Fair	*Acc*	88.57	92.5	89.39	89.42
	SD	(11.77)	(11.65)	(10.88)	(11.23)
Control-Fair	*Acc*	86.43	92.5	88.18	87.97
	SD	(14.20)	(10.35)	(13.34)	(13.35)
Safe	*Acc*	88.93	86.25	87.27	87.83
	SD	(9.56)	(15.98)	(11.53)	(11.23)
Control-Safe	*Acc*	93.57	93.75	93.64	93.62
	SD	(11.29)	(10.61)	(93.64)	(13.58)
Nonwords	*Acc*	82.04	80.51	84.58	83.08
	SD	(14.10)	(18.46)	(12.01)	(13.58)

Note: Control-Fair words are matched for length and frequency with the Fair words; Control-Safe words are matched for length and frequency with the Safe words. The notation "Acc" represents the percentage of correct responses for each of the word categories.

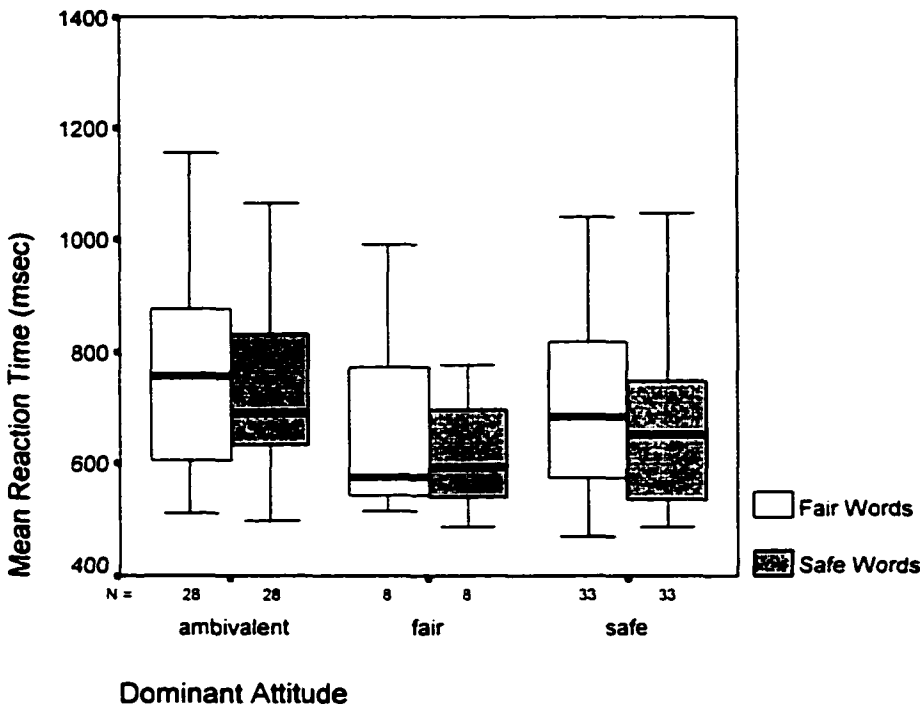
4.2.3.2 Safety words

The Safety-oriented group (n = 33) had a mean reaction of M = 690.06 msec (SD = 173.82) on safety-related words. The fair group (n = 8) averaged M = 615.53 msec (SD = 105.63) and the ambivalent group's (n = 28) mean RT was M = 733.27 (SD = 156.02). Accuracy rates for the Safety words were also consistent across groups: the Safe group's mean accuracy was 87.37% correct (SD = 11.53), the Fair group was correct 86.25% of the time (SD = 15.98) and the Ambivalent groups averaged 88.93% correct (SD = 9.56). These accuracy rates did not significantly differ across groups (F < 1). These data are presented in Table 4.2 (reaction times) and 4.3 (accuracy) along with the results for fair words, nonwords and control words (neutral words matched for length and frequency with the safety words).

Results of the one-way ANOVA showed that no significant differences in reaction times existed between the groups, F (2, 66) = 1.77, p = .18. Planned contrasts revealed a marginally significant difference between the Ambivalent and Fair group, t (66) = 1.83, p = .07, with the ambivalent group showing slower RTs than the Fair group. If we assume that endorsement of a value leads to higher accessibility, this finding is the opposite of what would be expected. No other comparisons were significant. An ANOVA performed on the log transformations was similarly unsuccessful, F (2, 66) = 2.32, p = .11. Figure 4.2 represents a graph of mean reaction times (for both safety and fairness words) by dominant attitude.

Combining the reactions times from the Fair and Safe group to create a non-ambivalent group resulted in a mean RT of M = 675.53 msec (SD = 164. 37). Results

Figure 4.2: Mean Reaction Time by Word Type and Dominant Attitude



from the t-test comparing the ambivalent (M = 733.27 msec, SD = 156.02) to the non-ambivalent group were not significant, t (67) = 1.46, p = .15

4.2.3.3 Correlational data

Given the evident lack of relationship between the dominant attitude and accessibility, the author started wondering whether the absence of an effect might be due to the way in which the groups were created. Perhaps the Safe and Fair groups' attitudes were not extreme enough to be associated with easier access of compatible concepts. In order to get a more general view of the accessibility notion, correlational data were also obtained. If ease of access is at all related to dominant attitude, we should at least find a negative correlation between strength of attitude and response latency, that is, the more extreme one's attitude, the faster the RT should be to related items. The Pearson correlation between the fairness scores and mean reaction time on the fairness words was r = .001, p = .994, suggesting that there exists no relation between these two variables. The correlation between safety scores and mean RT on safety words was r = -.121, p = .318, which is only slightly less troublesome.

Worse yet, further analyses revealed that not one of the ten words' accessibility levels was associated with attitude strength. Correlations between level of fairness and each of the 10 fairness words revealed no relationship even close to significance; correlations between safety score and each one of the 10 safety words resulted in an equally disturbing pattern of results (see Table 4.4 for complete results).

Table 4.4: Correlations between Fairness/Safety Scores and Related Words

Fairness Score			*Safety Score*		
Fair words	*r*	*p*	*Safe words*	*r*	*p*
equal	-.047	.711	*aggress*	-.232	.130
justice	.008	.953	*fear*	-.073	.555
unfair	.053	.674	*risk*	.041	.742
tolerant	-.032	.804	*threat*	-.024	.850
decent	-.025	.847	*alert*	-.092	.478
bigot	-.081	.584	*danger*	.183	.135
racist	.024	.860	*safety*	-.136	.280
prejudice	-.105	.413	*terrorist*	-.195	.117
biased	.067	.594	*peril*	-.008	.961
wrong	-.018	.889	*violent*	-.162	.200

Note: The words listed represent to two categories of items that were used in the lexical decision task

4.3 Discussion

4.3.1 Accessibility

This study did not produce the expected results. No link was found between dominant attitude and accessibility. Fazio (1989) reports that accessibility is a function of the strength of the attitudes and that attitudes that are not strong will not elicit automatic activation of relevant concepts. It is therefore possible that our participants' attitudes toward fairness and safety were not quite strong enough to lead to the high degree of accessibility expected.

Also, to some degree, the attitudes studied in this research were ad-hoc attitudes, i.e. they might have been created on the spot and may not have been an inherent part of participants' existing attitude system. In a way, our sample was forced to ponder these issues perhaps with more insistence than is found outside the laboratory. The point is not that Fairness and Safety concerns do not exist – they undoubtedly do- but their formation may be either too recent or too constrained to a particular context to affect accessibility of more general issues. We assessed attitudes specifically in the context of the September 11th events, yet measured participants' reaction times to words presented in isolation, that is, without the help of a supporting framework. If what are here referred to as "safety" and "fairness" words are processed outside of context, participants may have simply recognized them as "word" or "nonword" without processing their meaning. If so, the fact that the items were related to the previous vignettes may have gone unnoticed. However, participants' comments during the debriefing session made it clear that they noticed that "some" of the words were related to the previous part of the experiment.

Another factor to consider is the fact that in presenting the vignettes, care was taken to equally emphasize both fairness and safety concerns. The reason for doing this was so that participants' reactions would not be manipulated by the presented information and that they would respond to the follow-up questions in an unbiased way. The scope of reported attitudes suggests that the strategy was successful in this purpose but it may have backfired in some other ways. It is possible that newly developed attitudes are more subject to influence and that giving participants two-sided information lead to a sort of "diffusion" of attitude. If so, both safety and fairness dimensions may have been equally available (i.e. activated) to all subjects at the time of the information-processing portion of the experiment, thus leading to no difference in accessibility. The explicit attitude measure (i.e. responses to post-vignette questions) may not have been affected by the two-sided nature of the narratives, yet accessibility, an implicit measure, may indeed have been more seriously influenced by the presentation of both sides of the issue.

4.3.2 Attitudes

Participants' reactions to the vignettes indicates that they were more concerned about the men's behavior than about being fair to the men (the Safety score was significantly higher than the Fairness score, $t\,(68) = 5.18$, $p < .0001$). Still, a fair level of conflict was reported between feeling nervous and intolerant. The mean conflict score reported was a 5.9 out of a possible maximum of 12 on the conflict index. This pattern of attitudes is well reflected in the size of the three groups, with the vast majority of the sample falling in the "safe" category (48% of participants) and ambivalent category (41.5%), whereas the "fair" group represented but a small

11.5% of the participants. Given the close proximity in both time and space to the main site of the terrorist attacks, this reaction is not all that surprising.

As an interesting addition to the collected data, it should be noted that many participants have recalled anecdotes of such internal conflict. For example, one person reported feeling anxious when seeing a Muslim man carrying a cello case on the subway, thinking about what one could carry in such a package, yet also feeling guilty about having such unfriendly thoughts. Stories of this sort were the rule more than the exception during the debriefing sessions. Even the vignette depicting a situation in a plane (as well as a large part of this research) was inspired by events experienced by the author roughly a month after the attacks. It is thus with confidence that we propose that ambivalence is indeed an important (if recently developed) element of American attitude toward people of Arab origin or Islamic faith.

Considered together with measured attitude, these accounts bolster the notion that ambivalence is uncomfortable, and that conflicted individuals are motivated to reduce this distressing uncertainty. In spite of the un-encouraging results obtained in this first study, we still expect ambivalent individuals to react differently than non-ambivalent people when faced with one-sided information. Emphasizing one dimension of the ambivalence should still lead to increased reliance on that dimension when comes time for choosing a path of action. Although decision- making is not directly considered in the present research, it is argued that increased reliance on one attitudinal dimension is associated with increased accessibility of elements compatible with this dimension. Therefore, presenting participants with a potentially conflicted yet clearly one-sided situation should lead to increased accessibility of

elements associated with this situation. This effect is expected to be even stronger for ambivalent individuals due to their increased motivation to process information that could reduce the magnitude of the conflict. Demonstrating this effect is the main objective of Experiment 2.

4.3.3 Conclusions

Examination of these data is unfortunately inconclusive. There were no found differences in accessibility of safety and tolerance concerns based on endorsement. Even though there were fairly clear-cut differences in subjects' attitudes toward the issue at hand, there were no apparent parallel differences in the degree of accessibility of the safety and fairness concepts. Even more troubling is the fact there was not even a hint of a correlation between subjects' attitude score and their response latencies to the corresponding elements. Although not at all surprising, the fact that so few participants were classified as "fair" did not help this inquiry. Conclusions can hardly be drawn based on data obtained from only eight subjects. As far as ambivalent people go, they do not seem to be any different from their non-ambivalent counterparts in accessibility levels. The one thing we have learned is that New Yorkers' attitudes are still strongly leaning toward safety some three months after the attacks.

Chapter 5: Experiment 2, Choosing Sides: Priming and Accessibility

The second experiment explored the cognitive nature of the response amplification effect. The method used was essentially identical to the one used in the first experiment, with the addition of a priming condition. As in the first experiment, subjects first filled out a personality survey, following which the two short narratives were read. Participants' reactions to the narratives were collected and used as a basis for classification in the ambivalent, fair, or safe categories. What distinguishes this experiment from the previous one was the presence of a third narrative designed to prime one dimension of the conflict. For the sake of clarity, the primes will be referred to as "vigilance-" (i.e. safety-) oriented and "tolerance-" (i.e. fairness-) oriented. The labels "fairness" and "safety" will be reserved for reference to the participants' dominant orientation.

Subjects were presented with either a tolerance-oriented or a vigilance-oriented prime. The prime was presented as a newspaper article and the situation described was identical in both conditions. It is only the conclusion of the events that differed across versions and that led one side of the ambivalence (i.e. tolerance or vigilance) to be more strongly activated. In the tolerance prime, innocent men are arrested and jailed because of "suspicious activity" whose interpretation is strongly tainted due to their ethnic background. In the vigilance prime, men are again arrested and jailed, only this time their intentions were less than charitable as a great quantity of explosives were found in their possession.

5.1 Method

5.1.1 Participants

One hundred and eighty Brooklyn College undergraduates participated in this experiment for partial fulfillment of a requirement for introductory psychology. Nine participants were eliminated from the analyses since their overall attitudes (they were deemed "undecided") did not allow for categorization into one of the three main categories (ambivalent, fair, or safe). Details regarding this procedure will be presented in the results section. Roughly 92% of the participants were between the ages of 16 and 25 (80% of those were between 16 and 20 years old). The sample included 119 female (69.6%) and 52 male (30.4%) participants. Eighty three percent of the subjects identified English as the best language (64.9% had English as a first language). Additional demographic information is presented in Table 5.1. Participants were randomly assigned to one of two priming conditions (tolerance or vigilance).

5.1.2 Materials

The materials were identical to those used in the first experiment with the addition of one text in the "Reactions to Current Events" portion. Two short texts, presented as newspaper articles, were used as primes. Both texts depict identical events, however the ending differs greatly. The article describes events in an unmentioned New Jersey town where a gas station attendant alerted authorities about "suspicious activity" carried out by (Middle Eastern) customers. One of the stories is constructed to emphasize tolerance (i.e. fairness) and ends with the arrest and imprisonment of innocent men whereas the other text emphasizes vigilance (i.e.

Table 5.1a: Participants' Mean Age

Age	*n*	*Percentage of Sample*
16 to 20	137	80.1
21 to 25	20	11.7
26 to 30	5	2.9
31 to 35	4	2.3
36 to 40	2	1.2
40 and up	3	1.8
Total	171	100

Table 5.1b: Ethnicity

Ethnic Background	*n*	*Percent*
Asian- (American)	18	10.5
African- (American)	12	7.0
Arab- (American)	2	1.2
East Indian	0	0
Latino	13	7.6
West Indian	23	13.5
White/Caucasian	75	43.9
Other	28	16.4
Total	171	100

Table 5.1c: Participants' Religious Affiliation

Religion	*n*	*Percentage of Sample*
Atheist	4	2.3
Buddhist	5	2.9
Christian	59	34.5
Hindu	1	0.6
Islamic	12	7.0
Jewish/non-Orthodox	20	11.7
Jewish/Orthodox	43	25.1
None	11	6.4
Other	16	9.4
Total	171	100

Table 5.1d: Degree of Religiosity

How religious are you?	*n*	*Percentage*
Not at all/in name only	24	14.0
Slightly	34	19.9
Moderately	45	26.3
Quite a bit	25	14.6
Extremely	30	17.5
Completely	13	7.6
Total	171	100

Table 5.1e: Participants' subway experience

How often do you take the subway?	*n*	*Percent*
Less than once a year	3	1.8
Once or twice a year	12	7.0
Once every couple of months	21	12.3
Once or twice a month	31	18.1
Once a week	25	14.6
Three or more times a week	79	46.2
Total	171	100

Table 4.1f: Participants' flying experience

How often do you fly?	*N*	*Percent*
Never flown before	15	8.8
Less than once a year	89	52.0
About once a year	34	19.9
Two to three times a year	28	16.4
Four to six times a year	3	1.8
Six or more times a year	2	1.2
Total	171	100

safety) and concludes with the arrest of questionable characters, later charged with illegal possession of explosives. The events described are exactly the same in both versions. The last paragraph, describing the outcome, is the only one to differ across the two primes. The article appears in Times New Roman font (to make it distinct from the previous texts) with all names of people and places blacked out to increase credibility (see appendix H for the tolerance prime and appendix I for the vigilance prime).

5.1.3 Procedure

The procedure was identical to the one that used in Experiment 1 except for the addition of a prime in the second segment ("Reactions to Current Events"). After the participants read the two vignettes and responded to their associated questions, they were instructed to carefully read a third text (described as a "reprint of a newspaper article"). To further enhance the emotional appeal of the prime, participants were asked to think about the implications that the events described might have on the people involved. A bogus newspaper article was used to draw attention to one dimension of the ambivalence. Two different articles were used, one emphasizing tolerance, the other emphasizing vigilance. Subjects were randomly assigned to one of these two conditions. Following the prime, the subjects took part in the accessibility portion of the experiment where, as in Experiment 1, they were presented with a series of words and nonwords and asked to judge the lexical status (word or nonword) of each item as quickly as possible. The procedures followed in this third section were identical to those described in the first study and the words presented were also the same as those used in study 1 (i.e. associated with the

concepts of safety and fairness). Demographic information was also collected from the participants once they completed the lexical decision task. Participants were fully debriefed and thanked for their participation.

5.2 Results

5.2.1 Expectations

As in Study 1, subjects' dominant attitude was first assessed through the ambivalence index. Subjects scoring in the upper third were classified as ambivalent, and those in the bottom two thirds were classified as either Fairness- or Safety-oriented, according to which of those two scores is highest.

It was predicted that the two non-ambivalent groups would not be greatly affected by the prime and that their reaction times (RT) to the words should reflect their dominant attitude, especially after being presented with a prime that is compatible with their beliefs. Fairness-oriented subjects should categorize fairness words faster than Safety-oriented subjects and, conversely, Safety-oriented subjects should have an easier time categorizing safety words (i.e. what they agree with) than the Fairness-oriented group. Inhibition was expected to be present whenever ambivalent participants were involved. Ambivalent subjects' reaction time to the words should be a function of the priming condition. Under the Tolerance prime, ambivalent people should categorize the compatible (fair) words relatively fast but should show inhibition on those same words (now being incompatible) under the Vigilance prime. The reverse pattern should appear with safety words in that ambivalent subjects should react to those words relatively fast in the Vigilance

condition but should show slower reaction times to those same words in the Tolerance condition.

5.2.2 Attitude Assessment

As in Experiment One, participants' overall attitudes were based on their responses to the six post-vignette questions. Given that those questions were presented before the prime, the procedures followed by the subjects up to that point were identical to those of Study One. Since it was shown in the first experiment that these measures were reliable, dominant attitude was here determined in the exact same manner and based on the exact same questions as in the previous study.

5.2.2.1 Fairness and safety scores

For each of the vignettes, we summed the responses to the set of six questions (three assessing safety concerns and three assessed fairness concerns) to obtain Fairness and Safety scores associated with each vignette. Pearson correlations on safety and fairness scores between the two vignettes were significant at the .01 level (.50 and .55, respectively). Overall Fairness and Safety attitude scores were obtained by summing participants' responses to the six questions associated with each dimension (three safety and three fairness questions associated with each of the two vignettes). Since each response is based on a six-point scale, the minimum score is 6 and the maximum score is 36. The mean Fairness score was $M = 16.15$ ($SD = 6.11$, range 6-34), the mean Safety score was $M = 21.46$ ($SD = 7.19$, range 6-36).

5.2.2.2 Dominant attitude and ambivalence level

We repeated the procedure used in Study 1 to assess dominant attitude and degree of ambivalence. Ambivalence scores were obtained for each participant by

inserting their mean Safety and mean Fairness scores in the Ambivalence index described by Hass and Eisenstadt (1993). Thus, the formula *ambivalence* = W^2/S (where W represents the score on the weakest of the two component scores and S, the strongest of the two component scores) was used to assess ambivalence. Given the minimum and maximum scores (6 and 36 respectively) on the Fairness and Safety Dimensions, possible ambivalence scores range from 1 to 36. The mean ambivalence score obtained in this study was $M = 11.18$ ($SD = 6.20$, range 1 to 28.03).

In addition to the safety and fairness questions that followed each vignette, participants were also asked to indicate the degree to which they experienced "conflict from feeling both nervous and intolerant" toward Arabs/Muslims. The Pearson correlation on reported conflict between the two vignettes was $r = .54$, $p < .01$. The sum of the responses to these two questions (one after each of the vignettes) represents "conflict" index. The possible scores on the conflict index range from 2 (minimum conflict – "not at all conflicted") to 12 (maximum conflict – "extremely conflicted"). The mean conflict score was $M = 5.27$ ($SD = 2.6$, range 2 to 12). The correlation between the self-reported conflict index and assessed level of ambivalence index was significant; $r = .37$, $p < .001$.

We classified participants as ambivalent-, fairness-, or safety-oriented using the same criteria that were used in Experiment 1. Subjects who had an ambivalence score of 14.06 or above were labeled "ambivalent"; those below this score were categorized as "fair" or "safe" according to which of these two scores was highest. Based on this criterion, 32.8% (n=59) of the participants fell into the ambivalent group, 9.4% (n=17) were classified as fair, and 52.8% (n=95) were labeled as "safe".

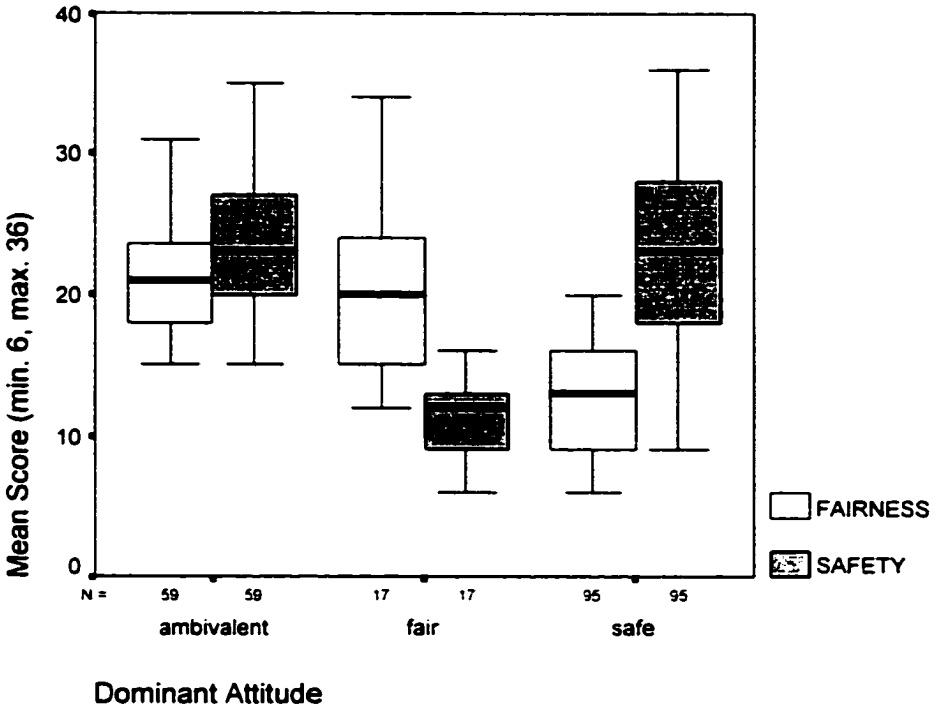
Nine of the participants (5%) did not have a dominant attitude (i.e. fairness score was equal to the safety score) and failed to score above the predetermined criterion to be classified as ambivalent (i.e. their ambivalence score was lower than 14.06). They were thus labeled as undecided and were dropped from the analyses. The usable sample thus consisted of 171 participants.

The average ambivalence scores for the three remaining groups were M = 18.26 (SD = 3.90, range 14.06 to 28.03) for the ambivalent group, M=6.68 (SD = 3.42, range 1.44 to 12.07) for the fair group, and M = 7.65 (SD = 3.64, range 1 to 13.76) for the safe group. The mean safety scores were M = 23.59 (SD = 4.75, range 15 to 35) for the Ambivalent group, M = 10.82 (SD = 3.07, range 6 to 16) for the Fair group, and M = 23.06 (SD = 6.70, range 9 to 36) for the Safe group. The fairness scores were M = 21.53 (SD = 4.22, range 15 to 32) for the Ambivalent category, M = 20.46 (SD = 6.51, range 12 to 34) for the Fair group and M = 12.57 (SD = 3.83, range 6 to 20) for the Safe group. A graphical representation of those various scores is offered in Figure 5.1.

5.2.3 The Effect of Prime on Accessibility

Data obtained in Study One revealed that the Ambivalent, Safety, and Fairness groups did not differ in terms of how accessible the various concepts were. The main goal of Experiment 2 was to explore the possibility that ambivalent individuals' polarized judgments may be caused by a change in accessibility resulting from the presentation of a prime. To reiterate the current predictions, it was expected that ambivalent individuals would deal with their conflicted feelings by increasing

Figure 5.1: Mean Fairness and Safety Scores by Dominant Attitude



reliance on the dimension of the attitude consistent with the current situation (i.e. the prime) and by inhibiting information incompatible with the prime. We therefore expected that, when comparing responses across priming conditions, the ambivalent group would show slower reaction time to the words incompatible with the prime. All data reported here are based on correct responses only. Participants were randomly assigned to one of the two priming conditions. The Tolerance prime included a total of 83 participants, 31 of which were in the Ambivalent group, 7 in the Fair group, and 45 in the Safety group. Twenty-eight ambivalent participants were assigned to the Tolerance prime, along with 10 Fair and 50 Safe participants, for a total of 88 subjects.

5.2.3.1 Fairness dimension

Data from the 3 (attitude: Fair, Safe, Ambivalent) x 2 (prime: Tolerance, Vigilance) between-subjects design were analyzed through a 2-way analysis of variance. An interaction was expected showing the prime to have a different effect depending on participant's dominant attitude. Specifically, planned comparisons should reveal that ambivalent subjects show greater reaction time (i.e. inhibition) in the Vigilance prime compared to Fairness-oriented participants and a greater difference in reaction time to the same words across primes than do non-ambivalent subjects.

The mean reaction times and accuracy rates to the six conditions are reported in Tables 5.2 and 5.3, respectively (those tables include data for the control words and the nonwords as well). The main comparison was between the responses of the Ambivalent and the Safe groups under the Vigilance (i.e. Safety prime) where the

Table 5.2: Mean Reaction Time (msec) by Prime and Attitude – Fair Words

		Dominant Attitude			
Word type		*Ambivalent*	*Fair*	*Safe*	*Total*
Fair Words					
Tolerance	*M*	681.48	648.19	715.44	696.99
	SD	(162.51)	(124.13)	(138.06)	(145.16)
	n	28	10	50	88
Vigilance	*M*	712.46	758.05	688.13	703.11
	SD	(135.05)	(170.02)	(114.05)	(127.20)
	n	31	7	45	83
Control-Fair					
Tolerance	*M*	707.36	643.05	759.77	729.83
	SD	(172.52)	(123.99)	(165.15)	(155.45)
	n	28	10	50	88
Vigilance	*M*	765.10	724.97	705.79	729.56
	SD	(168.44)	(168.58)	(127.62)	(148.29)
	n	31	7	45	83
Nonwords					
Tolerance	*M*	797.95	785.08	820.43	809.26
	SD	(185.67)	(140.04)	(165.74)	(168.46)
	n	28	10	50	88
Vigilance	*M*	866.26	846.34	791.38	823.98
	SD	(168.93)	(230.05)	(129.24)	(156.78)
	n	31	7	45	83

Note: Control-Fair words are neutral words matched for length and frequency with the Fair words

Table 5.3: Mean Accuracy (percent correct) by Prime and Attitude – Fair Words

		Dominant Attitude			
Word type		*Ambivalent*	*Fair*	*Safe*	*Total*
Fair Words					
Tolerance	*M*	90.36	100.00	93.2	93.07
	SD	(12.01)	(0.00)	(8.19)	(7.95)
	n	28	10	50	88
Vigilance	*M*	93.23	92.86	95.78	94.58
	SD	(7.48)	(9.51)	(6.90)	(7.38)
	n	31	7	45	83
Control-Fair					
Tolerance	*M*	87.14	95.00	93.00	91.36
	SD	(14.26)	(8.50)	(7.63)	(10.63)
	n	28	10	50	88
Vigilance	*M*	91.61	88.57	92.00	91.57
	SD	(8.20)	(12.15)	(8.42)	(8.62)
	n	31	7	45	83
Nonwords					
Tolerance	*M*	81.51	90.29	88.06	86.23
	SD	(17.30)	(9.10)	(9.00)	(12.57)
	n	28	10	50	88
Vigilance	*M*	85.10	86.13	87.78	86.64
	SD	(12.43)	(7.91)	(10.15)	(10.86)
	n	31	7	45	83

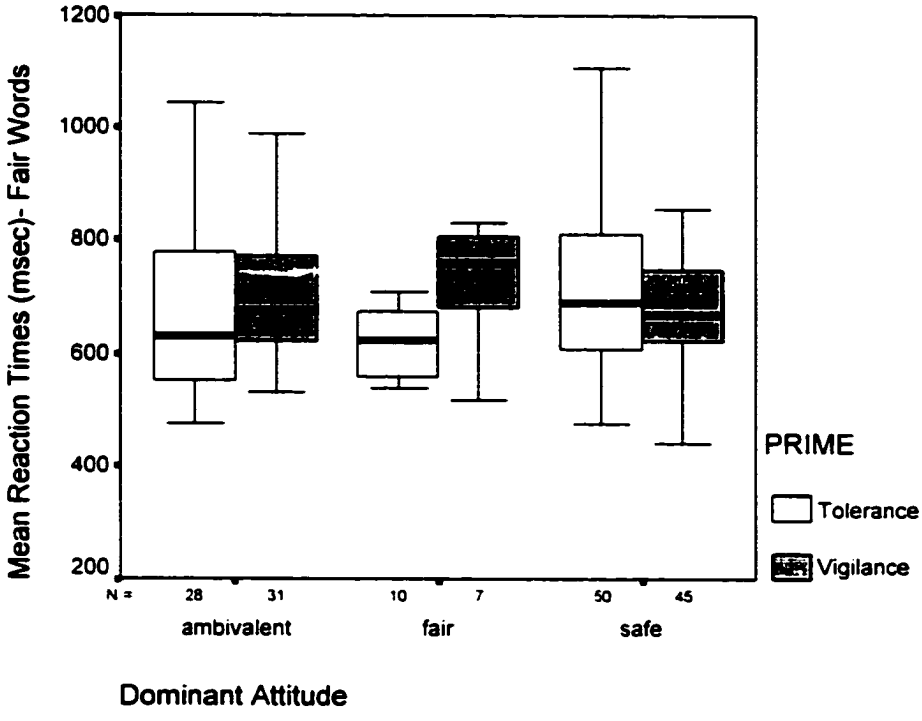
Note: Control-Fair words are neutral words matched for length and frequency with the Fair words

mean RTs were M= 712.46 (SD = 135.05) for the Ambivalent group and M = 688.13 (SD = 114.05) for the Safe group. A graph of overall reaction time by conditions is presented in Figure 5.2. The results of the 2-way ANOVA reported no significant differences, $F < 1$. The main effect of ambivalence was also non-significant ($F < 1$), as were the main effect of priming condition, F (1, 165) = 1.96, p = .164, and the interaction, F (2, 165) = 2.14, p = .12. Similar results were obtained when the dependent measure was exposed to a logarithmic transformation, with Fs <1 for the overall and main effects of ambivalence. The main effect of prime and the interaction were also non-significant, F (1, 165) = 2.31, $p > .05$ and F (2, 165) = 2.23, $p > .05$, respectively. Combining the Fair and Safe groups into one non-ambivalent group yielded even less impressive results, all Fs < 1. Given the absence of any significant effect, no further comparisons were computed.

5.2.3.2 Safety dimension

A comparable strategy was used for the Safety words, that is, the data from the 3 (attitude: Fair, Safe, Ambivalent) x 2 (prime: Tolerance, Vigilance) between-subjects design were analyzed through a 2-way analysis of variance. Parallel predictions were made with safety words, that is, an interaction showing a greater effect of prime for ambivalent subjects than for non-ambivalent subjects. In addition, planned comparisons were expected to show evidence of inhibition under the Tolerance prime for the ambivalent subjects (compared to the Safety-oriented participants). Also, compared to the two non-ambivalent groups, the ambivalent group was expected to show a greater difference in reaction time across priming conditions.

Figure 5.2: Fair Words – Mean Reaction Time by Condition



The mean reaction times and accuracy rates to the six conditions are reported in Tables 5.4 and 5.5, respectively. The main comparison was between the responses of the Ambivalent and the Fair groups under the Tolerance prime (i.e. Fairness prime). The mean reaction times were M= 672.89 (SD = 178.78) for the Ambivalent group and M = 679.87 (SD = 135.71) for the Fair group. A graph of overall reaction time by conditions is presented in Figure 5.3. The results of the 2-way ANOVA reported no significant differences, $F < 1$. The main effect of ambivalence was also non-significant, as were the main effect of priming condition, and the interaction, (all $Fs < 1$). Logarithmic transformations did not help our cause, all Fs < 1, except for the prime by ambivalence interaction which was also non-significant. F (2, 165) = 1.078, $p > .05$. As in the previous section, combining the Safe and Fair group into one non-ambivalent group did not change the overall conclusions. The overall F and the main effect of priming condition were Fs < 1, the main effect and interaction were also non-significant, F (1, 159) = 1.342 and F (1, 159) = 1.70, both ps > .05. Given the absence of any significant effect, no further comparisons were computed.

5.3 Discussion

5.3.1 Priming

The main goal of this experiment was to test the idea that ambivalent individuals deal with their conflicted feelings by processing related information and by further using this newly acquired information to reduce the degree of uncertainty. It was proposed that ambivalent people do this by increasing reliance on information presently available and by inhibiting bits of knowledge incompatible with currently

Table 5.4: Mean Reaction Time (msec) by Prime and Attitude – Safe Words

		Dominant Attitude			
Word type		*Ambivalent*	*Fair*	*Safe*	*Total*
Safe Words					
Tolerance	*M*	672.89	679.87	677.65	676.39
	SD	(178.68)	(135.71)	(148.05)	(155.45)
	n	28	10	50	88
Vigilance	*M*	704.09	704.95	646.60	672.99
	SD	(150.76)	(136.76)	(101.87)	(155.45)
	n	31	7	45	83
Control-Safe					
Tolerance	*M*	673.85	678.55	710.75	695.35
	SD	(144.37)	(158.14)	(142.15)	(144.06)
	n	28	10	50	88
Vigilance	*M*	704.70	712.92	654.12	695.35
	SD	(144.37)	(158.14)	(142.15)	(144.06)
	n	31	7	45	83
Nonwords					
Tolerance	*M*	797.95	785.08	820.43	809.26
	SD	(185.67)	(140.04)	(165.74)	(168.46)
	n	28	10	50	88
Vigilance	*M*	866.26	846.34	791.38	823.98
	SD	(168.93)	(230.05)	(129.24)	(156.78)
	n	31	7	45	83

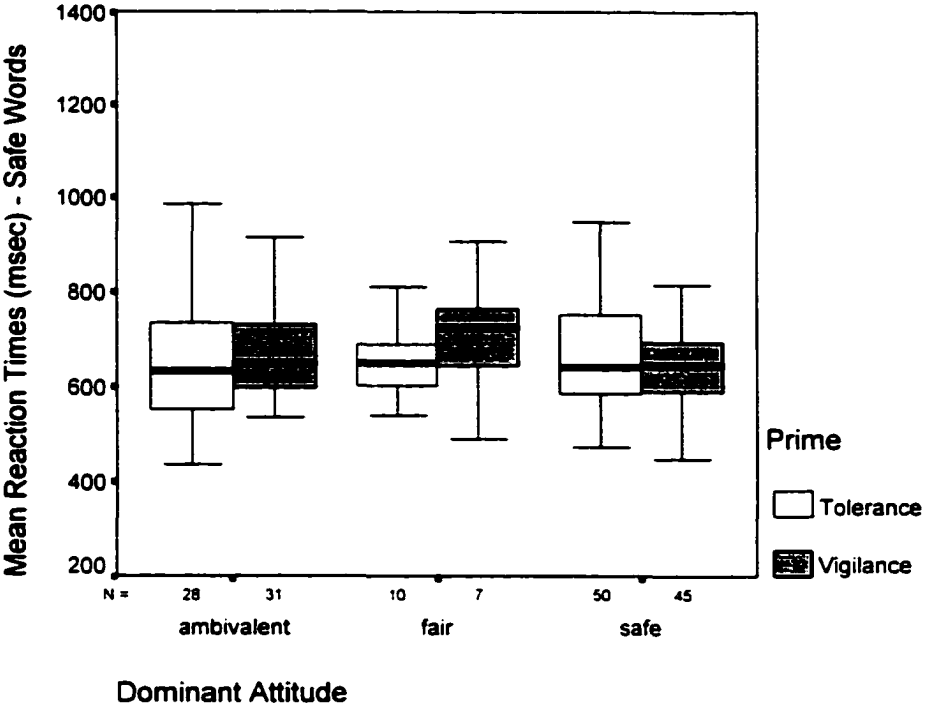
Note: Control-Safe words are neutral words matched for length and frequency with the Safe words.

Table 5.5: Mean Accuracy (percent correct) by Prime and Attitude – Safe Words

		Dominant Attitude			
Word type		*Ambivalent*	*Fair*	*Safe*	*Total*
Safe Words					
Tolerance	*M*	88.57	98.00	90.20	90.57
	SD	(10.08)	(4.22)	(7.69)	(8.62)
	n	28	10	50	88
Vigilance	*M*	90.00	90.00	91.11	90.60
	SD	(8.94)	(8.17)	(6.82)	(7.71)
	n	31	7	45	83
Control-Safe					
Tolerance	*M*	92.14	99.00	96.20	95.23
	SD	(11.34)	(3.16)	(6.35)	(8.30)
	n	28	10	50	88
Vigilance	*M*	93.87	94.29	96.89	90.60
	SD	(9.55)	(7.87)	(6.68)	(7.71)
	n	31	7	45	83
Nonwords					
Tolerance	*M*	81.51	90.29	88.06	86.23
	SD	(17.30)	(9.10)	(9.00)	(12.57)
	n	28	10	50	88
Vigilance	*M*	85.10	86.13	87.78	86.64
	SD	(12.43)	(7.91)	(10.15)	(10.86)
	n	31	7	45	83

Note: Control-Safe words are neutral words matched for length and frequency with the Safe words.

Figure 5.3: Safe Words- Mean Reaction Times by Condition



available data. We expected that ambivalent participants reaction times would be greatly affected by the presence of a prime, specifically, that they would show lowered reaction times to concepts compatible with the prime and inflated response latencies to items incompatible with the prime. The data reported here offers no support for this notion.

Even though the results from the first experiment showed that ambivalent and non-ambivalent participants did not differ in terms of accessibility levels of concepts related to the issues presented, we still had hope that adding a priming manipulation would create differences between the various groups by clearly putting the emphasis on one of the two dimensions of the attitude. This was not the case. Not only were there no differences between ambivalent and non-ambivalent subjects (Fairness- or Safety-oriented), worse still, the prime did not even seem to have any impact on ease of access for any of the subjects. It thus looks as though our prime was really no prime at all.

It is possible that the participants were not as involved in the prime as expected. Some of student participants reported that they did not believe the newspaper article to be real. Even though it was only a minority of subjects who actively reported their doubts, it is quite possible that there were enough "non-believers" to rule out any appearance of an effect. Yet, during the debriefing sessions, it was apparent that there were probably a larger proportion of participants who, in fact, believed in the deception (unless, of course, they were simply trying to indulge the experimenter...). In any case, the prime did not create the intended effect.

It was previously suggested (e.g. Hass et al., 1992) that, in order to create an amplification effect, the context must have some kind of affective appeal. This would not have occurred unless the participants really took the time to carefully read and internalize the implications of the events described. Overall, it is apparent that the subjects read through the prime fairly quickly (mean reading time was about 3 minutes for a 2 page text) and may therefore not have benefited from the true impact of the described events. Similarly to the situation described after the first experiment, unless the lexical decision task was performed with information from the previous section still in mind, the participants may not have processed the words in the context of safety and fairness. If the deeper meaning of the words was not processed (and unfortunately we have no means of verifying that), then the prime would indeed not have acted as a prime since the cognitive link between the newspaper reprint and following task would have vanished. Even more problematic is the possibility that the so-called safety and fairness words may not have been representative of their intended dimensions (more on that later).

5.3.2 Attitudes: Better Safe than Sorry…

Analogous to what was revealed in the first study, it does seem as though a sizeable proportion of sample does in fact value both safety and fairness and that these issues are often at odds with one another. About a third of our sample (32.8%) was considered to be ambivalent while roughly half (52.8%) emphasized safety above all. Along with the 9.4% of participants who fell in the Fair category, those numbers are comparable to what was observed in Study One. It thus looks as though, a few

months after the events, most people are still choosing to emphasize vigilance over tolerance.

Chapter 6: General Discussion and Conclusions

6.1 What Was Hoped For

6.1.2 Review of Main Proposal

The purpose of this project was to explore the cognitive processes underlying the response amplification effect. It was proposed that ambivalent individuals might use a dual strategy of activation/inhibition to deal with the discomfort associated with their conflicted feelings. This proposal was based mainly on the response amplification phenomenon, which suggests that being in a state of ambivalence leads to extreme reactions. It has been shown in the past that when faced with the object of their ambivalence (typically, outgroup members have been used as targets), people tend to rely heavily on immediately available information (e.g. Bell & Esses, 1997; Hass et al., 1991). For instance, situations in which a target behaves in a positive way has been associated with inflated positive judgments on the part of ambivalent subjects, whereas contexts in which the target behaves in an undesirable manner have been associated with negatively polarized judgments. Differences between the two types of situations were not as strong when the raters did not have ambivalent feelings toward the target.

Bell and Esses (1997) offered one attractive account for the RAE when they suggested that the amplified reactions of ambivalent individuals might be due to priming. It was proposed that since ambivalent people possess facts along two separate dimensions available in memory, both of these dimensions are available to be primed whereas people who are not ambivalent only possess representations along one dimension. Being limited to information along one dimension only would limit

the direction of priming to only one route. What was suggested in the present set of experiments is that, although priming may be enough for the appearance of the amplification effect, it alone would not provide an desirable strategy for dealing with the conflicted feelings.

Our proposal was that activation (i.e. priming) of attitudinal elements compatible with the current situation should be accompanied by concurrent inhibition of incompatible elements. This is the only strategy that would not only allow individuals to make use of newly arriving information but that would also block conflicting information from re-entry into consciousness. Priming accompanied by inhibition is the only strategy that would lead to a reduction in the amount of conflicting information available to the individual. If, as Katz (1981) suggested, one important goal for ambivalent individuals is to reduce the conflict and its associated indecision, the enhancement/suppression process we proposed should help attitudes serve their purpose (i.e. guide behavior and information processing) better by increasing stability (albeit momentarily).

6.1.2 What Was Done

In addition to testing the inhibition idea, a few changes were made to answer our critiques of previous studies. Since the claim was made that accessibility is at the root of the effect, reaction time was used as a dependent measure (previous studies had relied mostly on judgment ratings - e.g. Bell & Esses, 1997; Hass et al., 1991; Katz, 1981). We also had concerns about the composition of the groups in some of the existing studies. Some had simply assumed ambivalent feelings to be present (Gibbons et al., 1980; Hass et al., 1991; Linville & Jones, 1980) and when

ambivalence level was measured, the comparison group combined both "Pro" and "Anti" subjects (e.g. Bell & Esses). Our experiment made sure to analyze the data from the Fair (i.e. Pro) and Safe (i.e. Anti) groups separately since we were concerned that the responses from these two groups may annul one another.

Our precise expectations were that under a Safety prime, ambivalent subjects would show inhibition (i.e. increased reaction time) of the fairness-oriented words (compared to the Fair group) and that under a Fairness prime, they would show inhibition of the safety-oriented words (compared to the Safe group). Thus, as a comparison, we always used the group that, in theory, should also have had those words easily available in memory.

6.2 What Is

Given the questionable reliability of the RAE, it was clear that the challenge would be a tough one to face, yet hopes were still high. Unfortunately, as more time was spent looking at the data, these naive expectations were quickly crushed. We had hoped for clear and definite conclusions regarding ambivalence and its effect on accessibility of cognitive structures. Unfortunately, the data obtained do not permit any strong claims in this regard. Not only did we not find any support for inhibition, we did not even find any hint of a priming effect.

In hindsight, the lack of evidence for inhibition may not be that surprising. Our argument regarding inhibition was strongly based on the concept of negative priming reported in memory research. It has lately come to my attention that in most of the studies reporting negative priming, participants were *explicitly* asked to limit their responses to a subset of alternatives (e.g. Anderson & Spellman, 1995). In the

present situation, it was presumed that this process would kick in automatically, which may not be the case. Perhaps asking participants to actively focus on one dimension only would have resulted in different outcomes.

Obviously though, the more problematic finding (or lack thereof) is the absence of any priming. That inhibition not be found is one thing, that priming not be present is a much bigger problem. At this point, it is not clear if the participants did not pay attention to the prime or if the text was not powerful enough to create any changes in accessibility. Perhaps also the manner in which the task was carried out is to blame for the inconclusiveness of this research.

6.2.1 Problems

Matters always have a way of getting more intelligible after the fact. In hindsight, it is easy to see that we may have gone wrong in a number of ways. Let us examine just a few of these possibilities.

6.2.1.1 Safety and Fairness Words

One obvious problem with the research is that what were referred to as "safety" and "fairness" words appeared to not have been related to these issues at all. At the very least, they did not correlate with our attitudinal measures of fairness and safety (see Table 4.4). Even though, at face value, the words seem related to the issues of fairness and safety, there does not appear to be a cognitive link between them. It is possible (but given the meaning of the words, this seems unlikely) that the words used did not accurately represent the issues of fairness and safety. If the words are indeed unrelated to the issues, then it is no surprise that priming did not occur. Other speculations include the idea that perhaps the words were processed outside the

context of the prime. It is possible that too much time had elapsed between the presentation of the prime and the beginning of the information-processing task. Simply reading the instructions may have taken the participants' minds off the prime, thus eliminating any association between the prime and the target words.

6.2.1.2 Attitude Accessibility

This research locked in on the idea of priming based on a slew of data showing that attitudes are subject to accessibility manipulations (e.g. Bargh et al., 1992; Fazio et al., 1986, Fazio, 1989; Tourangeau & Rasinski, 1988). Fazio is one of the main advocates behind the idea that, in order to have any kind of influence on judgment, an attitude must first be activated, and that the stronger the attitude, the easier it is to access. Perhaps the fairness and safety attitudes were not quite strong enough to influence judgment and affect reaction times. Even if the attitudes were strong enough to exert any influence on judgment, perhaps they were no more activated by the time the lexical decision task had started.

It should also be noted that most of the studies showing priming effects with regards to attitude have used "immediate" primes. In other words, the attitude object was presented immediately before the target. For example, Fazio et al. (1986) presented pairs like "war-bad" in which the speed of response to the second word was measured. Thus, in most studies looking at attitude accessibility, the target words was immediately preceded by the prime, thus making the association between the two terms quite direct. In the present case, it was decided not to use such a strategy for fear of being too obvious (we would have hardly tricked anyone with word pairs such

as "bomb-threat" or "innocent-unfair"). In this sense, our measure of accessibility was much more subtle and implicit than the ones previously used.

6.2.1.3 Back to the RAE

Previous demonstrations of the RAE have shown judgment ratings to be amplified in a situation of ambivalence. In these studies, participants were instructed to assign ratings to an individual or a group after being presented with a situation in which the target was behaving favorably or not. These studies (for instance, Bell & Esses, 1997; Hass et al., 1991; Katz, 1981) thus also required participants to exert a reaction that was deliberate and explicit. Moreover, judgment ratings demand that individuals evaluate a person. There was therefore a clear connection between the situation the subjects were exposed to and the dependent measure. For example, Hass et al. (1991) had participants rate a person that was directly responsible for their team's success or failure. This is very different from the strategy used in the current research. The dependent measure used here was much more detached from the previous situation. Participants were not informed that any relation existed between the two parts of the experiment. They were simply presented with the items and asked to judge whether they were words or not. Therefore, not only were the words used not descriptive of a person (i.e. very different from judgment ratings), they were seemingly unrelated to the previous portion of the experiment. Therefore, by trying to get at a direct and implicit measure of accessibility, we may have gained subtlety but may have lost crucial participants' involvement.

6.3 Concluding Remarks

Katz (1981) was the one who suggested that, in the face of conflicted feelings, an individual is likely to experience a threat to self-esteem. He further proposed that one possible defensive reaction might involve "the suppression of one side of the ambivalence equation and enhancement of the other side, so that overt treatment of the attitudinal object becomes either extremely positive or negative" (p.10). Although not exactly reliable, the notion of "enhancement" has been supported through various response amplification studies (for example, Katz, 1981; Hass et al., 1991; Hass et al.,1992) where it was shown that personally relevant situations that threaten one's self-concept are associated with polarized judgments of stigmatized individuals. However, the "suppression" side of the problem had only been assumed to be present and had never been directly tested until now. The enhancement/suppression idea has been suggested to be associated with priming and/or changes in accessibility but ease of access per se had not been directly assessed either (Bell & Esses, 1997; Jonas et al., 1997; Katz & Hass, 1988; Tourangeau et al., 1991). Thus in addition to seeking support for the notion of inhibition, we were seeking to polish the cognitive claims behind ambivalence effects by using reaction time, a much more direct measure of accessibility than judgment ratings. The research proposed to seek long-awaited answers to questions that have haunted psychology for many years. Regrettably, we find ourselves facing many new questions without having satisfactorily answered those we were seeking to answer.

We had hoped to provide evidence supporting the presence of inhibitory processes and as such fill in an important gap in the ambivalence literature. Providing

evidence that components of attitude structure undergo predictable changes in accessibility as a function of context is undoubtedly a matter of great interest. Had it been successful, the research reported here would have made an important contribution to the field of psychology. Yet, in spite of its shortcomings, potentially valuable information is to be gained from this endeavor. We have pursued in a new trend through the integration of various areas within psychology. I truly believe that this strategy will give rise to a better and more complete understanding of the workings of the mind. Despite the disappointing results, one of the most appealing features of this research lies in its interesting blend of social and cognitive psychology, and as such this projects fits in nicely with the impending state of the field. Further pursuits in the observations of the dialectical influences between social and cognitive processes will undoubtedly prove valuable not just for social psychology but for cognitive research as well.

Moreover, although it was not our main objective, the data collected in these experiments provide information about how individuals are dealing with potentially threatening situations in the aftermath of the September 11th tragedy. We now know that in spite of our best efforts, most of us seem inclined to err on the side of safety at the cost of being unfair to others. Such information has potential to become highly valuable in the near future as researchers start looking at the impact of those events on issues such as intergroup relations, prejudice, attitudes, etc. Thus, the fact that we used, not only current, but especially defining events as our main manipulation can only magnify the importance and relevance of this research.

Appendix A: Neuroticism Scale

Please read each of the following statement and determine whether it is representative of you or not. Indicate your answer by pressing the appropriate key on the button box. If the statement is characteristic of you, press the #1 key; if it is uncharacteristic of you (i.e. not like you) , press the #2 key. There are no right or wrong answer, and no trick questions. Work quickly and do not think too long about the exact meaning of the question.

1. Does your mood often go up and down?
2. Do you ever feel "just miserable" for no reason?
3. Do you often worry about things you should not have done or said?
4. Are you an irritable person?
5. Are your feelings easily hurt?
6. Do you often feel fed-up?
7. Are you often troubled about feelings of guilt?
8. Would you call yourself a nervous person?
9. Are you a worrier?
10. Do you worry about awful things that might happen?
11. Would you call yourself tense or "highly strung"?
12. Do you worry about yourself?
13. Do you suffer from sleeplessness?
14. Have you felt listless and tired for no reason?
15. Do you ever feel life is very dull?
16. Do you worry a lot about your looks?
17. Have you ever wished you were dead?
18. Do you worry long after an embarrassing experience?
19. Do you ever feel lonely?
20. Are you touchy about certain things?

Appendix B: Need for Cognition Scale

For each of the following statements, please indicate to what extent you agree with the statement. For example, if you strongly disagree (i.e. the statement is not at all like you), you should press the #1 key; but if you strongly agree (i.e. the statement is very much like you), you should press the #6 key. Of course, the statement may be neither like or unlike you; if so, please use one of the numbers in the middle of the scale that best describes you.

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

17. It's enough for me that something gets the job done; I don't care how or why it works.

18. I usually end up deliberating about issues even when they do not affect me personally.

Appendix C: Need for Closure Scale

This scale assesses your preference for certain types of situations. Please read each statement carefully and decide how much you agree or disagree with it. Indicate your answer by pressing the corresponding key on the button box. For example, if you strongly disagree with the statement, you would press the #1 key, but if you disagree with it only a little, you would press the #3 key.

1. I find that a well-ordered life with regular hours suits my temperament.
2. My personal space is usually messy and disorganized.
3. I believe that orderliness and organization are among the most important characteristics of a good student.
4. I find that establishing a consistent routine enables me to enjoy life more.
5. I enjoy having a clear and structured mode of life.
6. I don't like situations that are uncertain.
7. I like to have friends who are unpredictable.
8. I enjoy the uncertainty of going into a new situation without knowing what might happen.
9. I dislike unpredictable situations.
10. I don't like to go into a situation without knowing what I can expect from it.
11. When faced with a problem I usually see the one best decision very quickly.
12. I usually make important decisions quickly and confidently.
13. I would describe myself as indecisive.
14. I tend to struggle with most decisions.
15. When trying to solve a problem I often see so many possible options that it's confusing.
16. I dislike it when a person's statement could mean many different things.
17. It's annoying to listen to someone who cannot seem to make up his or her mind.
18. I feel uncomfortable when someone's meaning or intention is unclear to me.
19. In most social conflicts, I can easily see which side is right and which is wrong.
20. Even after I've made up my mind about something, I'm always eager to consider a different opinion.
21. When considering most conflict situations, I can usually see how both sides could be right.

22. When thinking about a problem, I consider as many different opinions on the issue as possible.
23. I always see many different solutions to problems I face.
24. I do not usually consult many different opinions before forming my own view.

Appendix D: Vignettes Relating to Current Events – Plane Version

Imagine you are getting on a plane for a flight from New York to San Francisco. Your identification and boarding pass are being checked by airport staff, and you are allowed to walk onto the aircraft. You make your way to your seat. You sit down and make yourself comfortable, eagerly awaiting departure. To kill time, you chat with the person sitting next to you and you glance at the other passengers. Everything seems under control and you start to relax. You take a book out of your bag and decide that, since it is a long flight, it would be more convenient to put your luggage and coat in the overhead compartment. As you do so, a tall man brushes against you. The man keeps on walking, barely taking note of you. You look up at him and the man accompanying him and notice that they both look like they might be of Middle Eastern origin. His companion also walks by you and both men take their seats in the next row. The second man has his right arm in a cast and seems to be having a bit of trouble opening the storage compartment. You look at his injured arm and start thinking that a cast might be a good place to conceal something. Then again, perhaps you're being overly dramatic. You wouldn't want people to think that way about you if you were in a cast. You briefly look down at the tall man and see that he has a copy of the Koran on his lap. He looks up at you and says something to his travel companion, but you can't quite make it out. Even though you don't want to pre-judge them and you know that there is no real reason for you to worry you just can't help thinking that their behavior is somewhat unsettling.

Plane Vignette: Follow-up Questions

A. How suspicious of the men would you be?
   1) not at all suspicious
   2) slightly suspicious
   3) moderately suspicious
   4) suspicious
   5) very suspicious
   6) extremely suspicious

B. How discriminatory would you feel about being suspicious of the men?
   1) not at all discriminatory
   2) slightly discriminatory
   3) moderately discriminatory
   4) discriminatory
   5) very discriminatory
   6) extremely discriminatory

C. How anxious would the men's behavior make you feel?
   1) not at all anxious
   2) slightly anxious
   3) moderately anxious
   4) anxious
   5) very anxious
   6) extremely anxious

D. How unfair would you feel about being anxious about the men?
   1) not at all unfair
   2) slightly unfair
   3) moderately unfair
   4) unfair
   5) very unfair
   6) extremely unfair

E. How uncomfortable would the men's attitude make you feel?
   1) not at all uncomfortable
   2) slightly uncomfortable
   3) moderately uncomfortable
   4) uncomfortable
   5) very uncomfortable
   6) extremely uncomfortable

F. How biased would you feel about being uncomfortable around the men?
   1) not at all biased
   2) slightly biased
   3) moderately biased
   4) biased
   5) very biased
   6) extremely biased

G. Indicate the degree to which you experience conflict from feeling both nervous and intolerant toward Muslims?
   1) not at all conflicted
   2) slightly conflicted
   3) moderately conflicted
   4) conflicted
   5) very conflicted
   6) extremely conflicted

Appendix E: Vignettes Relating to Current Events – Subway Version

It is Tuesday morning, you are on your way to the subway station. You go through the turnstile and step onto the crowded platform. It is still fairly early, so the train station is packed with commuters, as it generally is this time of day. You look over to see if a train is coming, but there is none in sight. There is a group of men sitting on a nearby bench. You can hear them talking softly, yet impatiently. You cannot understand what they are saying since they are speaking some foreign language. It may be Arabic, you can't tell for sure. Their conversation is getting louder and louder and there is no doubt in your mind that there is a sense of urgency in their tone of voice. You're wondering what it's all about. One of the men seems to assume the role of leader and attempts to resolve the conflict. He talks to the rest of the group in a pressing manner. He looks at his watch, utters a forceful command, and all the men quickly make their way out of the train station. You watch them rush by you and go up the stairway. Finding their actions a little odd, you look back at where they were sitting and notice a package wrapped in brown paper on the floor next to the bench. You get an uneasy feeling in the pit of your stomach. You know your reaction is not quite justified and you wonder if you would be feeling this way if the men not been Arabic. The package may not even be theirs, for all you know it may even be trash. Even if it is theirs, they may simply have forgotten it in their haste. Of course, it is also possible that they purposely left it in the crowded station. You are wondering whether you should pick up the parcel and catch up with them or just run away.

Subway Vignette: Follow-up Questions

A. How suspicious of the men would you be?
   1) not at all suspicious
   2) slightly suspicious
   3) moderately suspicious
   4) suspicious
   5) very suspicious
   6) extremely suspicious

B. How discriminatory would you feel about being suspicious of the men?
   1) not at all discriminatory
   2) slightly discriminatory
   3) moderately discriminatory
   4) discriminatory
   5) very discriminatory
   6) extremely discriminatory

C. How anxious would the men's behavior make you feel?
   1) not at all anxious
   2) slightly anxious
   3) moderately anxious
   4) anxious
   5) very anxious
   6) extremely anxious

D. How unfair would you feel about being anxious about the men?
   1) not at all unfair
   2) slightly unfair
   3) moderately unfair
   4) unfair
   5) very unfair
   6) extremely unfair

E. How uncomfortable would the men's attitude make you feel?
   1) not at all uncomfortable
   2) slightly uncomfortable
   3) moderately uncomfortable
   4) uncomfortable
   5) very uncomfortable
   6) extremely uncomfortable

F. How biased would you feel about being uncomfortable around the men?
   1) not at all biased
   2) slightly biased
   3) moderately biased
   4) biased
   5) very biased
   6) extremely biased

G. Indicate the degree to which you experience conflict from feeling both nervous and intolerant toward Arabs?
   1) not at all conflicted
   2) slightly conflicted
   3) moderately conflicted
   4) conflicted
   5) very conflicted
   6) extremely conflicted

Appendix F: Word/Nonword List

Type	Word	Frequency	Control	Nonword1	Nonword2
Fairness1	Equal	90	Dinner	Hally	Lyste
Fairness 2	Justice	114	Design	Buppet	Demice
Fairness 3	Unfair	13	Static	Fronic	Sannut
Safety1	Aggress	12	Neglect	"	"
Fairness 4	Tolerant	9	Deposit	Monious	Nachor
Fairness 5	Decent	20	Awake	Reople	Acode
Fairness 6	Bigot	1	Tonic	Frade	Malor
Fairness 7	Racist	1	Suitor	"	"
Fairness 8	Prejudice	11	Interpret	Roalation	Divocle
Fairness 9	Biased	8	Relish	Siddle	Telmet
Fairness 10	Wrong	129	Piece	Staut	Wrole
Safety2	Fear	127	Note	Blea	Bist
Safety3	Risk	54	Seat	Ovil	Mide
Safety4	Threat	42	Smooth	Relly	Prode
Safety5	Alert	33	Owner	"	"
Safety6	Danger	70	Factor	Garin	Muder
Safety7	Safety	47	Dollar	Volely	Sottle
Safety8	Terrorist	1	Material	Otusion	Vactory
Safety9	Peril	8	Rumor	Skade	Novet
Safety10	Violent	33	Museum	Blayer	addice

Appendix G: Demographics

A. How old are you?
1. between 16 and 20
2. between 21 and 25
3. between 26 and 30
4. between 31 and 35
5. between 36 and 40
6. over 40

B. What is your gender?
1. Female
2. Male

C. What is your ethnic background?
1. Asian/Asian-American
2. African/African-American
3. Arab/Arab-American
4. East Indian
5. Latino/Hispanic
6. Native-American
7. White/Non-Hispanic
8. Other

D. What religion best describes you?
1. Atheist
2. Buddhist
3. Catholic/Christian/Protestant
4. Hindu
5. Islamic/Muslim
6. Jewish – non-Orhodox
7. Jewish Orthodox
8. No religious affiliation
9. Other

E. How religious are you?
1. Not at all/in name only
2. Slightly
3. Moderately
4. Quite a bit
5. Very
6. Extremely

F. How often do you fly?
1. I have never flown before.
2. Less than once a year
3. Once a year
4. Two to three times a year
5. Four to six times a year
6. Six times a year or more

G. How often do you take the subway?
1. Less than once a year
2. Once or twice a year
3. Once every couple of months
4. Once or twice a month
5. About once a week
6. More than three times every week

Appendix H: Prime – Tolerance Version

_____, NJ - The quiet town of _____, NJ was unusually bustling with tension on the night of October 12th. Squad cars from the local police department as well as a swarm of cars from the State Police were called into a _____ gas station after the night attendant had alerted the authorities of suspicious activity on the station's property. The attendant, J. H. (name withheld at his own request) had been in the 3rd hour of his 10 hour shift when a gray Toyota pulled up next to one of the gas pumps.

As is customary at this full service station, Mr. H. exited from his booth and walked over to the car to offer his assistance. As J.H. leaned over to the driver's side window, a stout man got out of the passenger side of the car and, in a strongly accented voice, curtly informed the attendant that he would "take care of it". When J.H. offered to check the oil, the stout man mumbled something, following which a second individual exited from the back seat of the car. The attendant was then asked to stand aside and not interfere. "That guy who came out from the backseat, he was big. I mean real big, like 6'3" or something and I could tell he wasn't <expletive> joking", Mr. H. told us, "he went to open the

trunk and I saw weird stuff back there. Stuff that looked like wires and maybe a detonator. I mean, I really got freaked out".

The attendant reports that, in light of the September 11th events, his first instinct was to alert the authorities but, worried about his own safety, he judged it best to wait for them to leave before taking any action. Mr. H. went on to describe the situation: "I was standing maybe 20 feet away from them and I could hear the driver talking on a cell phone in some weird language. Let me tell you that it didn't make me feel any better. Don't get me wrong, I got nothing against foreigners, I don't judge people based on race. Hell, my own father was an immigrant, but I had a real bad feeling about those guys and I don't care if people call me a racist, I just had to do something." Mr. H. says that the men paid him, got back in the car and sped off, not bothering to wait for their change. The gas station worker called 911 as soon as he stepped back into his booth. Within minutes, the Toyota was stopped a few miles north and the quiet neighborhood was suddenly drowned in the sound of sirens and the sight of flashing red lights.

The men were immediately arrested and jailed for more than a week (two of the men had expired visas) even though there was nothing in that trunk that could suggest any sort of link to terrorism. The "wires"

were in fact pieces of rope and the "detonator" was nothing more than an air pump. Furthermore, it turns out that the driver had been on the phone with his sister who was informing him that his wife was about to give birth to their first child, hence the reason behind their hurry. Upon hearing this, J.H., the embarrassed gas station attendant, told us that he felt terribly guilty about the whole incident. He also revealed that his only hesitation in calling was that he probably would not have reacted so strongly had the men not been Arabic. He then added "Because of me, that poor guy didn't get to see his newborn baby for at least a week. All they were trying to do was get to the hospital on time. I feel like such a dope, accusing these guys just because of what they looked like. I've been really unfair to them, they didn't do anything wrong. Talk about being un-American...".

Appendix I: Prime – Vigilance Version

_____, NJ - The quiet town of _____, NJ was unusually bustling with tension on the night of October 12th. Squad cars from the local police department as well as a swarm of cars from the State Police were called into a _____ gas station after the night attendant had alerted the authorities of suspicious activity on the station's property. The attendant, J. H. (name withheld to protect his identity) had been in the 3rd hour of his 10 hour shift when a gray Toyota pulled up next to one of the gas pumps.

As is customary at this full service station, Mr. H. exited from his booth and walked over to the car to offer his assistance. As J.H. leaned over to the driver's side window, a stout man got out of the passenger side of the car and, in a strongly accented voice, curtly informed the attendant that he would "take care of it". When J.H. offered to check the oil, the stout man mumbled something, following which a second individual exited from the back seat of the car. The attendant was then asked to stand aside and not interfere. "That guy who came out from the backseat, he was big. I mean real big, like 6'3" or something and I could tell he wasn't <expletive> joking", Mr. H. told us, "he went to open the

trunk and I saw weird stuff back there. Stuff that looked like wires and maybe a detonator. I mean, I really got freaked out".

The attendant reports that, in light of the September 11th events, his first instinct was to alert the authorities but, worried about his own safety, he judged it best to wait for them to leave before taking any action. Mr. H. went on to describe the situation: "I was standing maybe 20 feet away from them and I could hear the driver talking on a cell phone in some weird language. Let me tell you that it didn't make me feel any better. Don't get me wrong, I got nothing against foreigners, I don't judge people based on race. Hell, my own father was an immigrant, but I had a real bad feeling about those guys and I don't care if people call me a racist, I just had to do something." Mr. H. says that the men paid him, got back in the car and sped off, not bothering to wait for their change. The gas station worker called 911 as soon as he stepped back into his booth. Within minutes, the Toyota was stopped a few miles north and the quiet neighborhood was suddenly drowned in the sound of sirens and the sight of flashing red lights.

The men were arrested and later charged with possession of illegal explosives and described a lethal plot that, if successful, would have caused the loss of probably hundreds more lives. For reasons of security,

the authorities did not reveal the details of the scheme to the press but we have been informed that the men had enough explosives to cause "considerable damage". Upon hearing this, J.H., the hero of the night, told us that his only hesitation in calling was that he probably would not have reacted so strongly had the men not been Arabic. He then added "but I couldn't chance it, it was too weird. Everyone's got to be on their guards. I hope that my story shows people that they have to keep their eyes open and that they have to report anything weird. When American lives are at stake, I'm not gonna take chances and let a wacko go free".

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