

REASSESSING THE ROLE OF ANXIETY IN INFORMATION SEEKING

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Previous research of the theory of Affective Intelligence holds that anxiety in individuals causes learning behavior. If people are anxious they will actively seek new information. This new information gathered while anxious will cause each individual person to cease acting habitually and begin acting in a manner in line with rational choice models. This thesis addresses three hypotheses; (1) that people who feel anxiety engage in greater information seeking behavior and (2) when people feel anxious they will use information sources that are readily available and efficient to use and (3) anxious individuals will turnout to vote more often than those who are not anxious. I began with the replication of the original research methods of Marcus and MacKuen (1993) and Marcus, Neuman and MacKuen (2000). I then tested hypothesis 1 using new measurements of anxiety in order to address the concerns originally posited by Ladd and Lenz (2008) and Valentino et al. (2008). My final test of hypothesis 1 used revised measurements of anxiety and information derived from 2000-2002 NES Panel data, much in the same manner as Marcus, Neuman and MacKuen (2000). I then tested hypothesis 2 using the same 2000-2002 NES Panel data and an information source change variable. I tested my final hypothesis using pooled NES data from 1984, 1988 and 2000. My findings suggest that as Affective Intelligence predicts, people who feel anxious do tend to seek information. Moreover, when anxious, people will use readily available and efficient information sources. My final finding suggests that although people tend to seek information when anxious this does not necessarily translate into greater participation. Finally, I conclude that the theory of Affective Intelligence is generally correct, but, further research using methods that can better demonstrate the causal direction needs to be undertaken to fully validate Affective Intelligence and more testing of the effect of anxiety on political participation is necessary.

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CHAPTER 1

INTRODUCTION

A substantial body of work seeking to explain political participation exists (Verba, 1967; Popkin, 1991; Rosenstone and Hansen, 1993; Verba et al., 1995). A majority of this behavior research argues within a rational choice model (Marcus, Neuman and MacKuen, 2000). The basic rational choice argument concerning participation is that people when making political decisions, such as for whom to vote, whether or not to engage in a protest, which candidate money should be donated to, etc., use a cost-benefit analysis. A rational person will make the decision that provides her the largest utility, and if an activity does not provide increased utility she will not engage in the action.

One of the largest criticisms of the rational choice perspective is that it assumes human beings are simple calculating machines devoid of emotion (Grafstein, 1997). There seems to be a divide between rational choice theory and emotion; voting is an activity which must be undertaken by individuals who have emotions, however, most research into the behavior of voting ignores emotion. This divide, although on the surface appears to be massive, is actually easily bridged. It is possible that emotion is as important to rational behavior as cognition (Marcus, Neuman and MacKuen, 2000; Valentino et al., 2008). Marcus, Neuman and MacKuen's (2000) research theorized that the emotion of anxiety may actually cause people to seek information and thus, act more rationally.

First Question Overview

This thesis will seek to answer three questions. First, what impact does anxiety have on information seeking behavior? To answer this question, I replicate Marcus, Neuman and

MacKuen's (2000) findings. They originally found that when an individual feels anxious he stops acting habitually and seeks new information (Marcus and MacKuen, 1993; Marcus, Neuman and MacKuen, 2000). Although I expect to produce similar findings, this study will strengthen our understanding of the relationship between anxiety and information by replicating their original findings, by addressing the criticisms of the theory of Affective Intelligence and by using a dataset that incorporates the events of September 11, 2001 as a natural experiment in anxiety.

Overview of the Criticisms of Affective Intelligence

Marcus, Neuman and MacKuen's (2000) study is limited because of what Valentino et al. (2008) argue to be anxiety measurement problems. They argue that anxiety does not actually encompass both fear and anger as Marcus, Neuman and MacKuen (2000) argued, but only fear. Angry people tend to have information to begin with, and thus tend to act rather than seek information. Fearful people tend to seek information, which is more in line with the predictions of Affective Intelligence. Therefore, anger should not be considered the same as fear.

Marcus, Neuman and MacKuen's (2000) study is further limited due to what Ladd and Lenz (2008) call Affect Transfer and Endogenous Affect. Their argument is more of a methodological criticism than a theoretical one. Ladd and Lenz (2008) argue that because Marcus, Neuman and MacKuen (2000) use candidate evaluations of the candidate of the party with which the respondent to the survey identifies (such as, do you, a Democrat, fear candidate Democrat) to measure anxiety their tests are actually tapping into a direct connection between emotions (anxiety and enthusiasm) and candidate evaluations, as opposed to the indirect connection that Marcus, Neuman and MacKuen (2000) theorized. If a person says they are afraid or angry with the candidate from their own party they will most likely not vote for that

candidate and thus appear to be breaking from habit. Moreover, they postulate that preexisting candidate evaluations affect people's emotional responses. If a person already dislikes a candidate for any reason they are more likely to say that that candidate causes him to be anxious. Ladd and Lenz's (2008) criticisms suggest that it is not the indirect effect of anxiety upon party identification, policy preferences and candidate personal qualities that causes people to break from habit and seek information, as Affective Intelligence holds, but the direct effect of Affect Transfer and Endogenous Affect that matters (Ladd and Lenz, 2008).

Finally, Marcus, Neuman and MacKuen's (2000), did not test the hypothesis that anxiety increases information seeking properly. Firstly, they tested the impact of anxiety at a given point in time on the information mass and information accuracy at a given point in time. This of course does not tell us that people who are anxious seek more information. Anxious individuals may actually just be starting with a greater mass and greater accuracy of information. Secondly, they tested the impact of anxiety at a given point in time on the change in information seeking behavior from one point in time to another. However, they did not test the change in anxiety's effect upon information seeking but simply the impact of anxiety at a given point in time on the change in information seeking. This leads to a problem. Since the measure of information is over time, the measure of anxiety must be over time as well rather than at a particular given point.

Replications and Revisions to Marcus, Neuman and MacKuen (2000)

I will replicate Marcus, Neuman and MacKuen's (2000) cross-sectional tests of 1980-1996 using cross-sectional data from 2000 and 2004. Marcus, Neuman and MacKuen's (2000) cross-sectional test, although it does not address the hypothesis concerning increased information seeking specifically, much can be inferred from this test and it is still useful. Most importantly,

these replications can reinforce Marcus, Neuman and MacKuen's (2000) findings that people who are anxious do tend to have more information that is more accurate. What cannot be said from these replications is that anxiety increases information seeking behavior.

In order to show that anxiety increases information seeking, a revision of Marcus, Neuman and MacKuen's (2000) original work is necessary. In their original tests they ran a test using 1980 panel data. Their dependent variable was change in information seeking behavior, but their independent variable was anxiety as at fixed point in time. This presents a problem and must be fixed. Therefore, using panel data from 2000 to 2002 I revised their original test by using an independent variable of anxiety change over time as well as a dependent variable of information seeking change. Further, I correct for Valentino et al.'s (2008) criticisms by removing anger as a type of anxiety and also correct for Affect Transfer and Endogenous Affect by changing the measure of anxiety from candidate evaluations. These changes address all the major criticisms of Marcus, Neuman and MacKuen (2000) and improve the tests so that the hypothesis that people who are anxious seek more information can be proven.

September 11

A further development of this thesis is including the events of September 11, 2001 in my dataset. These events provide a natural anxiety experiment. By using 2000 to 2002 panel data I am including events that caused high levels of anxiety across a broad spectrum of people. Therefore, there is little selection bias in who feels anxiety. It is not limited to those who are highly informed or educated. It is easy to imagine that September 11, 2001 caused large groups of people throughout the United States to experience increases in anxiety. Due to the high levels of anxiety that a major terrorist attack such as those that occurred on September 11, 2001 the findings of this thesis will be much more generalizable.

Second and Third Question Overview

The second question of this thesis concerns the behavior of anxious individuals who seek information. Marcus, Neuman and MacKuen (2000) never examine where anxious individuals seek information. Do individuals seek out information from specific information sources when anxious? I argue that individuals will use readily available and efficient information sources when anxious

The third and final question is; does anxiety cause an increase in voter turnout. Marcus, Neuman and MacKuen (2000) alluded to the fact that anxiety might account for the participation paradox because it allows people to have information that is necessary to make electoral decisions. Political participation is said to be a paradox because the costs of participating are higher than the benefits received. Of the costs information gathering is one of the largest. This means that if anxiety causes people to seek information, they will be informed when the time comes to participate in politics, thus allowing for greater participation even though it seems that it is irrational. I argue that when anxious individuals will vote at a greater rate than those who do not feel anxiety.

Thesis Organization

To answer these questions this thesis will begin with a literature review. This literature review focuses primarily on the previous literature explaining voter behavior and decisions. The literature review will touch upon rational choice theory and the participation paradox, because according to the theory of Affective Intelligence, anxiety may influence rational behavior through information seeking. The role of anxiety in politics may help explain, through information seeking, why rational choice theory has had such difficulty explaining why people vote. The literature review will also discuss the previously proposed explanations of the

participation paradox and finally give a brief overview of how anxiety fits into rational choice theory and the participation paradox.

The theory of this thesis, which will elaborate upon anxiety's role in rational choice theory, will be very similar to that first put forth by Marcus, Neuman and MacKuen (2000). Based upon the theory of Affective Intelligence I will hypothesize, as Marcus, Neuman and MacKuen (2000) did, that anxious individuals will seek out information. I will then derive two more hypotheses from Marcus, Neuman and MacKuen (2000). The first of these new hypotheses is that people will seek information from sources that are readily available and efficient, such as discussion, newspapers or the internet, which are easily obtained and allow for purposive searches. The second new hypothesis is that people who feel anxiety will turnout to vote more than those who do not feel anxious.

Using the 2000 and 2004 American National Election Surveys (ANES) cross-sections studies I will replicate Marcus, Neuman and MacKuen's (2000) results. I will then revise Marcus, Neuman and MacKuen's (2000) findings while I address many of the criticisms concerning Marcus, Neuman and MacKuen's original models using the 2000-2002 NES Panel Study. My revisions to Marcus, Neuman and MacKuen's (2000) findings will be based upon criticisms of their original tests and theory and will be tested using the 2000-2002 ANES Panel Study and OLS regression. I hope to show that after becoming anxious, people turn to specific information sources and that people who are anxious turnout at a greater rate to vote than those who are not anxious.

Why Study Anxiety?

Studying anxiety's effect upon information seeking behavior is important because it can lend insight into why people act seemingly irrationally in situations such as voting. According to

the theory of Affective Intelligence, anxiety will cause people to seek information in order to alleviate their anxiety. Therefore, if people feel anxiety about politics, they will be inclined to seek information concerning politics. This information can then be used in making voting decisions. Since people will already have political information one of the major costs of voting will be decreased. If one of the major costs of voting is decreased, people will be more inclined to vote. Anxiety helps explain why people vote despite the inherent irrationality associated with the action.

Normatively speaking, studying political anxiety is important because it may be a desirable circumstance for the proper functioning of a democracy. Anxiety can increase voter turnout. It is a common belief in modern American society that all adults should exercise their rights. If anxiety can increase interest and voter turnout, democracy will be more likely to function in the manner it is currently conceived. Knowledge of how anxiety affects the average American can help us to better understand why people vote and more normatively improve democracy by encouraging greater voter turnout.

Finally, studying political anxiety is necessary to show that emotion and cognition are not mutually exclusive. This thesis will hopefully show that emotions must be accounted for even in terms of rational choice. They are explanatory and useful to the study of political behavior.

By applying Marcus, Neuman and MacKuen's (2000) theory of Affective Intelligence to rational choice I hope to explain the participation paradox; that is, why people vote when it is, according to rational choice theory, inherently irrational. A cursory understanding of rational choice and the participation paradox is necessary in order to see how the theory of Affective Intelligence, in particular anxiety, applies to voting behavior and the decision to vote. This will hopefully give a better understanding of what causes people to choose to vote, normatively, give

us the knowledge necessary to encourage greater democratic participation, and encourage the inclusion of emotion in future voting studies.

CHAPTER 2

LITERATURE REVIEW

This literature review will begin with a brief overview of rational choice theory. Rational choice theory is important to understanding voting behavior because it is the dominant paradigm used in explaining political participation and has been the subject of much controversy in explaining why people vote since it is theoretically irrational. I will discuss the major tenets concerning traditional rational choice theory, such as utility maximization and minimization of costs. A discussion of the problem of imperfect information will follow in which I will explain what Simon (1976) called procedural rationality.

The participation paradox will be examined next. I will discuss why rational choice theory holds that it is irrational to vote. A discussion of theories that explain why people still vote even though it is considered irrational will follow. Finally, I will discuss how anxiety fits into the previous research concerning rational choice theory and the participation paradox.

Rational Choice Theory

Voting is very often explained through rational choice theory. Rational choice theory is a theory of political action derived from economic theory concerned with competition for scarce resources (Downs, 1957; Green and Shapiro, 1994). Although it is often simplified, rational choice theory is quite extensive (Green and Shapiro, 1994). In order to understand voting behavior, one will first need to fully understand the rational choice perspective.

Traditional rational choice theory predicts utility maximization, the seeking of one's goals or objectives in the most efficient way possible (Olson, 1965). In other words, behavior is rational when it is "appropriate to the achievement of given goals within the limits imposed by

given conditions and constraints” (Simon, 1976, 130). All that matters to the individual is her goals and achieving those goals at the most minimal cost (Simon, 1976). The goals or objectives of the individual do not have to be rational, only the path taken to achieve those goals or objectives must be rational. That is to say, utility maximization is only concerned with the means used to achieve an objective not the objective itself (Riker, 1990).

Traditional rational behavior assumes only one possible course of action (Simon, 1976, 131). To paraphrase Simon’s (1976) example, we can suppose that a person is charged with the task of minimizing the cost of a nutritionally adequate diet. She must find a way to supply all people with the correct nutrients at the lowest costs possible. She can use as Simon (1976, 131) writes “straightforward linear-programming” to solve this problem. According to traditional rational choice theory, only one rational solution, the least costly and most nutritious, is possible (Simon, 1976).

In order to arrive at the most rational decision, meaning the greatest benefits for the least cost, rational actors need ordered preferences. Rational choice theory requires the ability to rank one’s options (Gates and Hume, 1997). This does not mean that options must have numerical values attached. Nevertheless, an individual must know that he prefers one option to another or that two options are roughly equal as preferences to the individual. Moreover, preferences must possess transitivity (Gates and Hume, 1997; Green and Shapiro, 1994). That is to say if Option A is preferred to Option B and Option B is preferred to Option C then Option A is preferred to Option C.

Moreover, due to uncertainty rational choice theory places an emphasis upon maximization of expected utility over real utility (Green and Shapiro, 1994). Uncertainty means that individuals cannot know exactly what the future holds. Since people cannot know the future

they have to make assumptions concerning what will occur. They must then make their decisions based upon these assumptions. Rational choice theory thus holds that people calculate utility based on probabilities as opposed to definite information. Green and Shapiro (1994, 15) illustrate this point using an example of a farmer who must choose which crop to plant based on expectations of the weather not on knowledge of what weather will occur. The farmer cannot know for sure what the weather will be, so he must choose a crop based on what it most likely will be.

Imperfect Information and Rationality

Many conventional rational choice theories assume perfect information and perfect information processing, however, this assumption is unrealistic (Green and Shapiro, 1994). Perfect information refers to the assumption made in rational choice theory and game theory that people know the effects of all possible actions. This assumption is unrealistic for a number of reasons, such as a person's inability to process the large quantities of information needed to obtain perfect information and because information is costly to acquire (see Texiera, 1987). Therefore, McKelvey and Ordeshook (1987) argue that individuals make the best decisions they can, based upon imperfect information. Simon (1976) refers to this as procedural rationality.

Procedural rationality makes many of the same assumptions of traditional rationality. Those acting in a procedurally rational manner still seek to increase their utility, still order their preferences, and seek to achieve their ordered goals in the most efficient way available to the actor; however, procedural rationality does not require only one course of action. Procedural rationality means that behavior "is the outcome of appropriate deliberation" (Simon, 1976, 131). This means that an individual who wants to reach goal A may have more than one path to that goal because, due to uncertainty and incomplete information the most efficient path may not be

the clearest path. As long as a person puts thought into her actions rather than simply acting impulsively the action may be considered rational. Procedural rationality is much like traditional rationality except that it creates more realistic goals for actors, but it also assumes that actors will not engage in an activity that they realize is more costly than beneficial. If behavior is an “impulsive response to affective mechanisms” it is considered irrational (Simon, 1976, 131). Therefore, it is possible to have imperfect information and maintain rationality, as long as the individual has made an effort to make the most efficient decision based upon the information available. However, if the individual knows that an action will lose her utility and still engages in the action, she would be considered to be acting irrationally.

In the case of rational voting, if an individual votes and his utility will increase from voting, it is rational. If the act of voting loses the individual utility, traditional rationality holds that voting is irrational, procedural rationality holds that voting is irrational if the person expects they he will lose utility in voting.

The Participation Paradox

According to Downs (1957, 37), “all citizens are constantly receiving streams of benefits from government activities.” These benefits are defined as utility and thus people are receiving a utility income (Downs, 1957). Rational individuals are concerned with increasing this utility income through action (Downs, 1957). One type of action that people may seek to increase utility through is voting. However, in most cases abstention from voting is rational (Downs, 1957, Olson, 1965). The rational choice model, both traditional and procedural, requires people to be calculating in their decisions process (see Downs, 1957). If an individual does not think that government actions will change his utility, his action will not affect a government change that will in turn affect his utility, or if he believes others actions will supply him with the utility

he desires without any action on his part, the costs of voting will be greater than the benefits. The action of voting in any of these situations is highly irrational and the individual will not act (Downs, 1957; Olson, 1965).

Voting is a costly activity (Sigelman and Berry, 1982; Texiera, 1987). The costs, however, are not necessarily monetary, but may also be temporal. The monetary costs of participation can range from the cost of the gasoline needed to drive to a polling place, to taking time off from work to vote (both of these actions are also temporal costs, both driving and taking time off from work to vote take time). However, according to Sigelman and Berry (1982), the act of voting and the act of preparing to vote create temporal costs (in fact it is conceivable that all monetary costs are accompanied by temporal costs). The temporal costs of voting are much more subtle, but may in fact be more costly. Taking the time to read the newspaper everyday in order to inform oneself about candidates, or attending a meeting to learn the central issues to a campaign both constitute examples of temporal costs of participation. Any situation in which one must take time from one activity to engage in a political activity is a temporal cost. Thus, there are major monetary and temporal costs involved with both voting and preparing to vote. Of these two actions, preparing to vote appears to be more costly than actually voting (Texiera, 1987).

Of the costs included within preparing to vote, information gathering is one of the largest (Texiera, 1987; Bimber, 2001). People do not necessarily have readily available information concerning the distinctions between candidates and issues (Texiera, 1987). Often people have to engage in a massive information search in order to make a vote choice. Moreover, many people do not know where to find political information. When people do find the information they are looking for they then have to focus upon the information and often use large amounts of energy

in trying to understand the information. All of these actions take time away from other activities that people would rather engage in, thus increasing the costs of participation. The large costs associated with information gathering are quite prohibitive of voting. The costs of voting, of which information gathering is one of the largest, outweigh the benefits received from voting.

Since the costs far outweigh the benefits people receive from voting, they should not vote if they are acting rationally (Olson, 1965; Verba, 1967; Sigelman and Berry, 1982; Texiera, 1987). However, people still participate at a fairly high rate in the United States. The action of voting in spite of its inherent irrationality is known as the participation paradox (Green and Shapiro, 1994; Whiteley, 1995).

It is fairly obvious to most people that one person's vote is not going to make a difference in most elections. Therefore, even if we apply procedural rationality as opposed to traditional rationality it is quite irrational to vote, but large portions of the population still turnout to vote in elections. Why people vote in light of the action's irrationality is a major question of psephological study. Many scholars have attempted to explain the participation paradox with many different theoretical perspectives.

Theoretical Explanation of the Participation Paradox

This subsection will discuss the various solutions that have been posited to explain the participation paradox. Although the following solutions are not an exhaustive list, they are some of the most widely accepted and cited examples of theoretic explanations of the participation paradox. I will begin with a discussion of mobilization. Then I will discuss party identification as a shortcut. Finally, the idea of civic duty or the D term will be discussed.

Group Mobilization

One of the most widely accepted solutions to the participation paradox is that of group mobilization. Group mobilization refers to the idea that people belong to groups and organizations. These groups and organizations range from families to work places to unions to churches (Rosenstone and Hansen, 1993). These groups cause their members to vote more often than those who are not members of groups (Rosenstone and Hansen, 1993). This effect is known as group mobilization.

There are two types of group mobilization (Leighley, 1996). First, intentional mobilization involves groups pressuring members to participate and specifically participate in support of one particular candidate or issue (Rosenstone and Hansen, 1993). The best description of this process is as peer pressure.

Intentional mobilization creates a situation in which the benefits of voting increase past what one receives from the government. By voting an individual will receive acceptance from her peers (Rosenstone and Hansen, 1993). This acceptance is tantamount to a selective benefit. Thus, voting becomes a rational decision because social acceptance is a highly desirable benefit and the costs of voting are outweighed by the benefits.

The second form of mobilization is unintentional mobilization (Leighley, 1996). Unintentional mobilization results from organizations supplying individuals with the skills needed to vote (Pollock, 1982; Verba et al, 1993; Brady et al., 1995). By enabling members with the ability to make political decisions more easily, unintentional mobilization lowers the costs of voting (Leighley, 1996; Mansbridge, 1983; Pateman, 1970). Unintentional mobilization allows people to more efficiently seek information concerning candidates and issues, thus making the act of voting less costly and overcoming the irrationality of voting.

Although the group mobilization explanation appears to work on the surface, both types of mobilization have significant problems. Intentional mobilization does not necessarily have an impact upon all members of groups equally. Leighley (1996) argues that different people have different motivations for joining organizations; these different motivations limit the impact of intentional mobilization. People do not necessarily join a group for political reasons. For example, a man can join a softball team because he enjoys playing softball. Therefore, if his teammates try to pressure him into voting in a particular way, their attempts will be limited by his disregard for politics. However, if the rest of the team happens to talk about politics over lunch after the game he may gather and store information that can be vital in political decision making. Further, he may also learn how his fellow teammates learned the information which they were discussing. If people join a group more for the social camaraderie rather than outside benefits or rewards they are less affected by intentional mobilization because they simply will not be interested in becoming politically active (Leighley, 1996).

If an individual sees a group's interests as inconsistent with his own, such as a group having political interests whereas the individual does not, he is likely to leave the group (Rothenberg, 1988). To return to the previous example of a man joining a softball team because he enjoys playing softball, it is very possible that after a few weeks of being pressured to support a Democrat whereas he is a Republican he may very well leave the team. Moreover, if he does not have a political preference he may grow weary of the rest of the team constantly telling him to act in a particular manner. The mobilization impact of social pressure on group members will vary based upon the individual's reason for joining the organization in the first place (Leighley, 1996).

Unintentional mobilization also has problems associated with it. Although Leighley (1996) believes unintentional mobilization better explains group mobilization, it should not be expected to have such a large effect that the irrationality of voting is overcome. Having the skills to seek information so as to be able to engage in voting only lowers a portion of the costs of voting. Information seeking skills only allow a person to be better able to obtain information, but the time it takes to obtain information is still a prohibitive cost to voting, considering the few benefits received.

Both intentional and unintentional mobilization help explain how the irrationality of voting is overcome. Mobilization in any capacity supplies individuals with the information needed to make an informed and rational decision and the skills needed to gather more information, while intentional mobilization creates the benefit of social acceptance, thus lowering the costs and also increasing the benefits. However, neither intentional nor unintentional mobilization do explain the participation paradox fully, there are surely people who participate without being mobilized to do so, especially in light of the falling group membership rates in the United States. In order to further account for the participation paradox, other scholars have developed theories. One such of these theories is that developed most notably by Popkin (1991).

Party Identification as a Shortcut

Popkin (1991) argues that various heuristics or shortcuts are used by individuals in evaluating, obtaining and storing information in order to decrease the costs of participating. One such shortcut is using political party labels (Downs, 1957; Campbell et al., 1960; Hurwitz, 1984; Conover and Feldman, 1989; Popkin, 1991). In identifying with particular political parties people are supplied with information that is used in making decisions concerning participation

(Popkin, 1991). Parties publicize their ideologies, which are “differentiating stands’ between parties,” in order to inform individuals of differences between the parties or candidates without requiring the gathering of immense amounts of information (Popkin, 1991, 51). Party identification, because of its ability to deliver large amounts of information in a small and easily understood idea creates a decrease in information costs. The costs being lowered eases the burden of voting and thus increases the probably of an individual turning out.

There are two separate theories concerning the stability of party identification. The Michigan model argues that party identification is stable over a person’s life (Campbell et al., 1960; Green, 1990; Green and Palmquist, 1990, 1994; Schickler and Green, 1995; Miller and Shanks, 1996; Cowden and McDermott, 2000). The revisionist interpretation argues that people shift their party identification over time as parties shift their ideologies (Fiorina, 1981; Jackson, 1975). According to Fiorina (1981, 83), individuals create “a summary judgment” known as party identification based upon party “promises and performances over time.” As time passes from the original development of an individual’s party identification her party identification will change with her support for particular issues and stances (Fiorina, 1981). Although these two interpretations of party identification exist, they both agree that party identification is a shortcut to information gathering.

This explanation, much like the theories of mobilization, is quite easy to understand and seems to be a logical explanation of the participation paradox. However, it, like group mobilization, too is flawed. Using party identification as a shortcut works well for those who have a party identification, however, there are many voters who do not have a party identification. For those lacking a party identification, the shortcut to voting does not exist, and therefore, it is still irrational to vote. The use of party identification as a shortcut is an integral

piece of the puzzle explaining the participation paradox, but much like the mobilization literature, it does not explain everything.

Civic Duty or the D Term

One of the most widely known approaches used to explain the participation paradox is Riker and Ordeshook's (1973) addition of the D term into the voting calculus. The D term, or duty, it is argued, explains the participation paradox by supplying a selective psychological benefit (Green and Shapiro, 1994). This psychological benefit can be anything from pleasure for having done one's civic duty of voting to happiness caused by people watching while waiting in line to vote. Any pleasurable experience derived from the action of voting can be labeled the D term as long as it is not associated with benefits one receives from his preferred candidate winning an election. This D term has nothing to do with the outcome of the action of voting (Fowler, Baker and Dawes, 2008). Basically, the D term creates an extra benefit to participation that helps overcome the immense costs of voting and preparing to vote. The benefits derived are not simply benefits from government action, but rather a psychological benefit separate from what one receives from having a government that is ideologically similar to oneself.

Although this explanation is one of the most widely cited, it is severely flawed. The D term can be almost anything, it can be a feeling of civic duty, it can be pleasure derived from standing on lines and watching people, it can be pleasure derived from seeing people when lonely. The idea is theoretically empty and can represent almost anything; therefore it can never be falsified. If a theory cannot be falsified it is impossible to be proven correct as well. Therefore, this theory cannot be relied upon to explain the participation paradox.

The D term, like group mobilization and party identification shortcuts, does not explain the entire participation paradox. It explains why certain people participate. Group mobilization

and party identification also explain why certain people are voting. Clearly many of these groups overlap, and there are also a number of people who vote but do not fall into any of these groups. Explaining the action of voting is obviously reliant on a number of simultaneously working factors. This thesis seeks to add another piece to the engine that drives voting behavior.

Emotion and Voting Behavior

Emotion is often viewed as counter to rational behavior (Marcus, Neuman and MacKuen, 2000). Rational choice theory in particular has viewed emotionality as distinctly negative. Even in procedural rationality, “behavior tends to be described as ‘irrational’...when it represents impulsive response to *affective* (emphasis added) mechanisms...” (Simon, 1976, 131). However, emotions may be able to help explain why voting is actually a rational decision.

Marcus, and MacKuen’s (1993; Marcus, Neuman and MacKuen, 2000) theory of Affective Intelligence argues that emotional systems control many cognitive functions, such as reliance upon habit and information seeking behavior. If an emotional system can cause a person to seek information that is useful to political participation and in particular voting, then the costs of voting are significantly lessened. This thesis seeks to show that this is in fact the case. This information combined with the above explanations of the participation paradox creates a clearer picture of why people vote despite the inherent irrationality of it.

CHAPTER 3

THEORY

This theory will first synopsise how emotion may help to solve the participation paradox. I will then use Marcus, Neuman and MacKuen's (2000) theory of Affective Intelligence to explain how feelings of anxiety can increase information seeking behavior. I will seek to clarify Marcus, Neuman and MacKuen's (2000) original theory while still maintaining all of its major arguments by refining the definition of anxiety. A hypothesis will then be posited that predicts that those who are anxious will seek more information.

I will then further develop the theory of Affective Intelligence in order to predict what information sources anxious individuals will use. The different types of information sources will be defined. Then, the theory will be elaborated upon to show that anxious people desire to seek information quickly. This section of the theory will end with a hypothesis predicting that people will seek information from readily available and efficient information sources.

The final section of the theory of this thesis will develop the connection between the participation paradox and anxiety. It will examine the lowered costs of participation as they pertain to anxiety. Finally, I will hypothesize that those who are anxious will vote more often than those who are not anxious.

Rational Choice and the Participation Paradox

As discussed above it is irrational to vote (Downs, 1957; Olson, 1965). A person will use a cost-benefit analysis and engage in the behavior that affords her the greatest overall gain. The costs of voting far outweigh the benefits received, thus it is irrational to vote. However, people still vote; this is known as the participation paradox.

The participation paradox is quite obvious in the voting calculus (Figure 1). Whereas P is the likelihood of participation, B is the benefit received from participation, L is the likelihood of impacting an election and C is the costs of participation (Downs, 1957). In order for voting to be a rational decision P must be a positive number. However, the BL is likely to be so small that it will not offset C (Margolis, 1977; Chamberlain and Rothschild, 1981; Green and Shapiro, 1994). The participation paradox is that people still vote in spite of its irrationality (Uhlener, 1989; Green and Shapiro, 1994).

As discussed above, many scholars have attempted to explain the participation paradox. The theory of Affective Intelligence may be useful in explaining the participation paradox by predicting a reduction in the costs of voting. Voting is a costly activity (Sigelman and Berry, 1982; Texiera, 1987). The costs, however, are not necessarily monetary, but also temporal (Sigelman and Berry, 1982). Most of these temporal costs lie in the preparation to vote (Texiera, 1987). Moreover, information gathering is one of the most costly preparatory activities (Texiera, 1987; Bimber, 2001).

If individuals are not voting because the costs outweigh the benefits (Olson, 1965; Verba, 1967; Sigelman and Berry, 1982; Texiera, 1987) then decreasing the costs of voting should increase voter participation on the whole. Costs of participation hinder voting; however, if the costs do not outweigh the benefits, voting participation should increase. If there is some reason that the costs of participation are actually lower than normally believed, the participation paradox would be explained. Anxiety may well be an important piece to understanding the participation paradox.

Anxiety and Information Seeking

As discussed above, information gathering is a major temporal cost of voting (Texiera, 1987; Bimber, 2001). Moreover, seeking information in order to make an informed political decision is irrational because the benefits that will be received from expending the resources to gather information are too small to offset the costs. However, if there was some reason for people to seek information other than to be an engaged and informed citizen, the costs of voting would be lowered because much of the information would have already been gathered. Findings concerning emotion, in particular anxiety, show that emotions may be closely tied to information seeking behavior, and therefore to voting behavior.

Traditional political science has often labeled emotion or affect, which will be used for the remainder of this thesis interchangeably with emotion, as having a negative impact upon rationality (Marcus, Neuman and MacKuen, 2000; Valentino et al., 2008). Although emotion is often viewed as negatively affecting rationality, emotion can actually have a positive effect upon decision-making (Marcus and MacKuen, 2001; Marcus, Neuman and MacKuen, 2000; Rahn, 2000; Valentino et al., 2008). Emotions are the first receivers of information (Kunst-Wilson and Zajonc, 1980; Rahn, 2000). As Marcus, Neuman and MacKuen (2000) argue, the emotional sections of the brain perceive information well before the conscious sections of the brain do (Rolls, 1999). The “emotional systems drive quite different neural processes, processes that have different consequences for the emotions we experience, for behavior, and for the way we make use of the faculties displayed in conscious awareness” (Marcus, Neuman and MacKuen, 2000, 39). Emotional states allow people to gather process and act upon information more quickly than the conscious systems of the brain can (Marcus, Neuman and MacKuen, 2000).

Marcus, Neuman and MacKuen (2000) argue that consciousness is secondary to emotion. Neurologically speaking, emotional systems perceive information well before conscious systems do (Marcus, Neuman and MacKuen, 2000). Understanding these emotional systems is thus important to understanding all human behavior (Rolls, 1999). Further, if the emotional system deems that a piece of information is important enough, it “will manifest as ‘feeling’” (Marcus, Neuman and MacKuen, 2000, 39). It is important to note that a feeling is inherently different than a mood (Marcus, Neuman and MacKuen, 2000). Moods are affective responses at the edge of consciousness, whereas emotions are distinctly conscious (Marcus, Neuman and MacKuen, 2000). Emotions are conscious responses to affective reactions and only appear when levels of anxiety or enthusiasm reach their highest levels.

According to Marcus, Neuman and MacKuen (2000), there are two emotional systems, one which causes people to act habitually and one which causes people to engage in new behavior. The system which causes habitual action is marked by feelings of enthusiasm. The emotional system which causes people to break from habit and engage in new behavior is marked by feelings of anxiety. Before I can further discuss these emotional systems, enthusiasm and anxiety must first be defined.

Definition of Enthusiasm and Anxiety

Enthusiasm is a positive affective response which encompasses any one, combination or all of the ten feelings of enthusiasm, interest, determination, excitement, inspiration, alertness, activity, strength, pride or attentiveness (Watson, et al., 1988; Gray, 1987). Anxiety, according to Marcus, Neuman and MacKuen (2000), is a specific affective response, which is built into our psyche through evolution. Further, they argue that anxiety encompasses a number of different emotions, which include feeling scared, afraid, upset, distressed, jittery, nervous, ashamed,

guilty, irritable and hostile (Marcus, Neuman and MacKuen, 2000; Watson et al., 1988; Gray, 1987).

It is also important to note that anxiety does not need to be based upon reality. If an individual stops and thinks about a novel or unusual situation occurring around him it may already be too late to react (Marcus, Neuman and MacKuen, 2000). Therefore, it is possible that affect tells him that something is not normal, even if it is, in order to preserve life. It is not important whether anxiety is based in reality or not, because in an anxious person's mind, the situation is possibly threatening. A person's perception of a situation as threatening makes it reality to that person. A threat does not have to be real in order for a person to fear it. Thus, anxiety can originate in a situation that is mere perception and not reality. Now that enthusiasm and anxiety have been defined, the theory of Affective Intelligence can be better elaborated upon.

Marcus, Neuman and MacKuen's (2000) Theory of Affective Intelligence

There are multiple sub-systems of the limbic region of the brain (Eccles, 1989; Fonberg, 1986). According to Marcus and MacKuen (2001) three sub-systems exist, the fight/flight system, the disposition system and the surveillance system. Anxiety is distinctive from the "fight or flight" mechanism which "deals with controlling innate responses to unconditioned punishment and nonreward. It does not deal with mediated, conditioned or secondary stimuli" (Marcus and MacKuen, 2001, 44). Marcus and MacKuen (2001, 44) argue that the "fight or flight" mechanism should be ignored because it "has limited application to politics." Therefore, for the study of politics the disposition system and the surveillance system are the substantively interesting systems. Both of these systems have various input and outputs. Further, each system

affects political behavior and learning in different ways (Deeryberry, 1991). The disposition system and the surveillance system each have unique effects upon emotions and habits. The disposition system, displayed in Figure 2, has three inputs, subconscious scripts, internal senses and external senses (Marcus, Neuman and MacKuen, 2000).

According to Marcus, Neuman and MacKuen (2000), each of these three inputs are necessary information sources for correct disposition system functioning. The disposition system's subconscious scripts are habitual routines (Marcus, Neuman and MacKuen, 2000). Thus, an individual's habits are inputs into the disposition system. Internal senses and external senses, which are also inputs into the disposition system, according to Marcus, Neuman and MacKuen (2000) are body feedback and environmental feedback respectively. Body feedback is, as Marcus, Neuman and MacKuen (2000, 47) write, "Information about the body, its position and status." Feelings such as pain or cold are types of information which could be considered body feedback. Environmental feedback refers to information concerning the environment around an individual. For example, the environment can be sunny or it can be dark. A sunny day may elicit a feeling of enthusiasm; however, a dark and overcast day may create a feeling of depression. As information is received by the disposition system from these three sources (habitual routines, body feedback and environmental feedback), the system makes a comparison between what is occurring and what is expected to occur (Marcus, Neuman and MacKuen, 2000). The disposition system controls the level of enthusiasm for an action depending on the alignment of expected outcome to a actual outcome. Looking back at Figure 2 one can see that if the expected occurrence is not the same as the actual occurrence the disposition system will show a "mismatch" and cause feelings of frustration and depression. However, if there is a "match" the disposition system will increase feelings of satisfaction and enthusiasm (Marcus,

Neuman and MacKuen, 2000). Thus, the disposition system reinforces certain behaviors with feelings of enthusiasm causing those behaviors to become “habitual” (Marcus, Neuman and MacKuen, 2000, 51). If a person is acting habitually (an input into the disposition system) and the environmental feedback (a disposition system input) says the environment is not conducive to her activity and body feedbacks (also disposition system input) inform her that the habitual routine is producing a painful outcome, she will feel a “mismatch” and thus feel frustration or depression.

The surveillance system “is a long-distance warning system with the task of providing a ‘heads up,’” (Marcus, Neuman and MacKuen, 2000, 56). Unlike the disposition system, the surveillance system, displayed in Figure 3, does not reinforce behaviors but causes the individual to cease behaving in a particular manner.

The surveillance system attempts to match the inputs of habitual routines and environmental feedback. If no match is found, the surveillance system produces feelings of anxiety (Marcus, Neuman and MacKuen, 2000, 57). That is to say, the surveillance system assesses whether the situation is safe enough for an individual to focus all of his attention upon the task (Marcus, Neuman and MacKuen, 2000, 56). Simply put, the surveillance system, when perceiving a “mismatch” between habits and the environment creates a feeling of anxiety which causes people to pay greater attention to their surroundings (Marcus, Neuman and MacKuen, 2000).

Further, one must note that the surveillance system is important in the workings of the cognitive process (Marcus, Neuman and MacKuen, 2000). When activated, the surveillance

system shifts attention away from a habitual task and causes learning behavior (Marcus, Neuman and MacKuen, 2000; Marcus and MacKuen, 1993). Marcus, Neuman and MacKuen (2000, 58)

state:

. . . Anxious people seem to demonstrate greater compliance than do calm people with the formal requirements of the rational choice model: explicit conscious consideration of the comparative utilities of available choices, investing in the best contemporary information and diminished motivation to use heuristic or habituated shortcuts.

Anxious individuals stop relying upon habits and seek information (Marcus and MacKuen, 1993; Marcus, Neuman and MacKuen, 2000). This means that when an individual is anxious concerning a candidate running for office or a particular issue she will seek more information and thus be able to act in line with the rational choice model by making informed decisions rather than relying upon habitual routines such as voting along one's party identification (Marcus, Neuman and MacKuen, 2000). This does not mean, however, that anxiety and enthusiasm are bipolar; it is possible to feel anxiety concerning a person or issue and still to feel enthusiastic about it.

The theory of Affective Intelligence is much different than the standard view of emotion. The standard view of emotions, the "valence" model, argues that affect is bipolar (Russell, 1979; for an overview of the "valence" model see Green, Goldman and Salovey, 1993). Thus, within the "valence" model as anxiety increases, enthusiasm decreases and vice versa. Marcus, Neuman and MacKuen (2000, 73) note as well, that, "when people start to 'like' a candidate [or an issue] they should simultaneously abandon their 'dislikes.'" This model appears to be one based in common sense. However, Bradburn (1969) first found that positive and negative affect were not significantly related. Further, Marcus, Neuman and MacKuen (2000) as well as some

social psychologists (Diener and Emmons, 1984) argue that the relationship between anxiety and enthusiasm is nearly non-existent.

Marcus, Neuman and MacKuen (2000, 74) found a “modest negative relationship” between anxiety and enthusiasm. However, in testing of the dynamics of anxiety and enthusiasm, Marcus, Neuman and MacKuen (2000) found no relationship between the two emotions. This means that the two systems (the disposition and surveillance systems), and the emotions which they control (enthusiasm and anxiety) are not bipolar opposites of one another but, instead, operate independently of one another. If they were correlated in the manner predicted by the valence system, one would expect a statistically significant negative relationship. This means that enthusiasm and anxiety are separate emotions that do not inherently influence one another.

Habitual routines, body feedback and environmental feedback are input into the disposition system (Marcus, Neuman and MacKuen, 2000). The disposition system “has pathways to those portions of the brain that manage the execution of previously learned behavior . . .” (Marcus, Neuman and MacKuen, 2000, 48). When a person feels enthusiastic about a politician for whom he voted, the disposition system is reinforcing the voting behavior which the voter partook in (Marcus, Neuman and MacKuen, 2000). Thus, that behavior becomes a habit because of the positive feelings associated with it. The behavior that has become a habit worked in the past and thus should work again in the future. Habits become almost “trait-like,” and people tend to rely upon them in situations that do not present novel circumstances (Marcus, Neuman and MacKuen, 2000, 51). However, the disposition system is not the only emotion system. As Marcus, Neuman and MacKuen (2000, 52) wrote:

Let us imagine that the only emotional subsystem available to us is the disposition system. In such a condition, most political behaviors would be driven by the political habits we acquire early in life.

People are much more attentive to “negative events” (Derryberry, 1991). Human beings, however, are not very adept at consciously identifying and interpreting stimuli (Kahneman et al., 1982). In order to protect against dangerous situations individuals’ surveillance systems are constantly seeking to identify novel or unusual situations (Marcus, Neuman and MacKuen, 2000). The inputs of the surveillance system, habitual routines and environmental feedback (see Figure 2) lead to outputs of feelings of relaxation/calm or anxiety/unease (Marcus, Neuman and MacKuen, 2000).

Once the surveillance system engages people feel anxiety and cease the action in which they are currently involved (Marcus, Neuman and MacKuen, 2000). The surveillance system causes individuals to stop acting in habitual manners which direct all of their attention towards one activity (Marcus, Neuman and MacKuen, 2000). The surveillance system then causes the individual to engage in learning behavior (Marcus, Neuman and MacKuen, 2000). Thus, when people feel anxiety they tend to seek information (Marcus and MacKuen, 1993; Marcus, Neuman and MacKuen, 2000; Valentino et al., 2008). For example, if an individual feels fear towards their congressman, the fearful individual will feel that the habitual action which resulted in the election of that congressman, voting one’s party identification for example, was not successful. The individual will therefore stop acting in that habitual manner and seek information in order to make a better decision concerning his next action. According to Marcus, Neuman and MacKuen (2000, 61), “When the electorate is anxious, a condition they find unpleasant and undesirable, politics would nevertheless be very much like that depicted by the rational choice description of making judgments.”

As discussed above enthusiasm causes a person to rely upon habits and anxiety causes a person to seek information (Marcus, Neuman and MacKuen, 2000; Marcus and MacKuen, 1993). Further, anxiety was defined as feelings of fear or anger towards a particular person or situation (Marcus, Neuman and MacKuen, 2000). Thus, one would expect that if an individual feels fearful or angry towards a situation he desires to seek information. Anxiety, therefore, helps overcome the participation paradox by creating an incentive to seek information other than desiring to make a vote choice and allowing individuals to behave as rational actors.

The feeling of anxiety is a signal to the anxious individual that his habits are not working correctly, because of the unpleasant feeling which anxiety carries. Therefore, anxious people rely upon habit less than non-anxious people (Marcus, Neuman and MacKuen, 2000). Anxiety also causes people to seek information so as to alleviate the unpleasant feeling associated with anxiety (Marcus, Neuman and MacKuen, 2000). Information can do this in two ways. It can inform a person that her anxiety is unwarranted, that is, the anxiety inducing event is not actually as bad as she originally believed, or it can inform a person about behaviors that can alleviate the anxiety. As discussed above, the participation paradox is that people are engaging in politics even though the costs of participation far outweigh the benefits received, however, anxiety increases the benefits received from information seeking, which is one of the most costly parts of political participation. Alleviating anxiety, which is done through information seeking, is a benefit in itself. Once information is sought the costs of participation are dramatically decreased. At this point, because information costs have been significantly reduced the major costs of voting are dramatically decreased. This allows the benefits of voting to approach the costs and help people vote but still act in a rational manner without relying upon shortcuts and habits.

This being said, it would be naive to assume that all events cause anxiety equally amongst all people. For example, the passage of a constitutional amendment that prohibits flag burning may cause anxiety amongst many free speech advocates but will not necessarily create anxiety for those who support such measures. According to Marcus, Neuman and MacKuen (2000, 63), “What makes people anxious depends on the habits they have acquired.”

Moreover, it seems unlikely that a person who feels anxiety over a small issue such as flag burning would not already be fairly well informed, thus diminishing the effects of anxiety. However, there are certain issues which will ostensibly make all individuals anxious. Marcus, Neuman and MacKuen (2000, 63) use the example of a nuclear war during the Cuban Missile Crisis, however, it seems that fear of a war after an occurrence such as that which occurred on September 11, 2001 would also cause widespread anxiety. Therefore, although anxiety is quite often an emotion that affects people on an individual basis based upon their individual beliefs; there are certain instances in which anxiety will be quite universal.

Criticisms of Affective Intelligence

Although Marcus, Neuman and MacKuen’s (2000) theory of Affective Intelligence appears to have a lot of support, there have been a few recent criticisms. The first criticism concerns the emotions which Marcus, Neuman and MacKuen’s (2000) define anxiety as. Valentino et al. (2008) argue that anger and fear are different emotions which Marcus, Neuman and MacKuen (2000) defined as feelings of anxiety and therefore may not all have the same impact upon information seeking. According to Valentino et al. (2008) anger and fear (as well as enthusiasm) elicit different reactions.

They find that anger can reduce the amount of time spent seeking information. Anger causes people to seek less information “especially on . . . the issue stands of the candidates”

(Valentino et al., 2008, 259). This is because anger and fear come from two different sources. People are more likely to be angry when they are more informed. Since anger occurs when a person is more certain of situations, they are more likely to react. This reaction thwarts further learning or information seeking behavior (Valentino et al., 2008). Anxiety, defined as fear, on the other hand, Valentino et al. (2008, 264) argue, “Carries the causal impact of threats on information seeking, as predicted.” This is because when fearful, people are more uncertain concerning their situations. Since they are uncertain, they cannot act until they have more information. This causes information seeking behavior.

This means that anxiety, as defined as Marcus, Neuman and MacKuen (2000) may be a conglomeration of a number of feelings that do not necessarily represent feelings of anxiety. Thus, as Valentino et al. (2008) found, anxiety is best defined as feelings of fear concerning a particular person or situation.

The second criticism concerns the causal links between anxiety and information seeking and a possible endogenous effect between Marcus, Neuman and MacKuen’s (2000) measures of anxiety and information. Although Marcus, Neuman and MacKuen (2000) posit the theoretical belief that anxiety causes shifts away from habitual shortcuts, to information seeking, it is a contested idea. Ladd and Lenz (2008) argue that Marcus, Neuman and MacKuen (2000) in testing may have actually shown what they call Transfer Affect and Endogenous Affect. They show that Marcus, Neuman and MacKuen (2000) in measuring anxiety use candidate evaluations of the candidate of the party with which the individual being surveyed identifies causes endogeneity. Ladd and Lenz (2008) argue that instead of Marcus, Neuman and MacKuen’s (2000) indirect effect, in which anxiety affects factors which affect candidate evaluations, it is more likely that anxiety is either directly affecting candidate evaluations or candidate evaluations

are directly affecting anxiety. That is people feel anxiety concerning a candidate and thus have a more negative view of the candidate or, people have a negative view of a candidate and this causes the person to feel anxiety. Their findings generally support the theory that anxiety directly affects candidate evaluations.

Although their findings show that the theory of Affective Intelligence is not supported without an endogenous measure of anxiety, they say “[Affective Intelligence] could still be salvaged, [but] doing so will require better measures of anxiety and better tests that are not biased by reverse causation” (Ladd and Lenz, 2008, 293). Therefore, this thesis argues that anxiety needs to be defined differently than Marcus, Neuman and MacKuen (2000) did.

Anxiety Newly Defined

Marcus, Neuman and MacKuen’s (2000) basic tenets seem to be strong theoretical arguments. However, in order to better test the theory, anxiety needs to be envisioned in a more accurate way. Therefore, based on Valentino et al.’s (2008) and Ladd and Lenz’s (2008) criticisms the definition of anxiety must be changed to more accurately depict what anxiety actually is.

As Valentino et al. (2008) showed, contrary to Marcus, Neuman and MacKuen (2000), fear and anger are not both feelings of anxiety. They argue that fear causes information seeking behavior, whereas anger arises from a feeling of certitude. They further argue that fear is a better measure of anxiety than anger (Valentino et al., 2008). When a person is angry, she already possess a fairly large amount of information. Seeking out new information will not necessarily alleviate anger. Angry people are much more likely to act than to seek information. Fearful people on the other hand do not have as much information and thus do not want to act, but seek information (Valentino, et al., 2008). Anxiety then is not anyone of the 10 emotions mentioned

earlier, these are much too varied and broad. Anxiety can only be measured as fear and not anger.

Moreover, in order to address Ladd and Lenz's (2008) criticisms, anxiety must be envisioned in a way so as not to allow for Affect Transfer or Endogenous Affect. The best way to do this is to view anxiety not as anxiety concerning candidates but anxiety concerning situations. So rather than a person feeling anxiety concerning candidate A, anxiety is a person feeling fear of a situation that is happening or that they believe is likely to happen.

Anxiety then is not anyone of the 10 emotions mentioned earlier, and it is not directed towards individuals. It is, rather, fear concerning certain situations. Enthusiasm on the other hand can still be defined as Marcus, Neuman and MacKuen (2000) have.

Hypothesis 1

The theory of Affective Intelligence is actually quite simple. It specifies that there are two separate subsystems of the limbic region of the brain. The disposition system controls feelings of enthusiasm while the surveillance system controls feelings of anxiety. Enthusiasm induces habitual behavior. When an individual feels enthusiastic about a political candidate or issue she tends to rely upon her habits. However, when an individual feels anxiety about a particular candidate or issues she tends to break from her habitual routines and seek new information. Therefore, when a person feels anxiety they should display information seeking behavior.

Hypothesis 1: People who are anxious will display greater information seeking behavior than those who are not anxious.

Anxiety and Information Sources

This section seeks to answer the question of what information sources people will use when they feel anxious. The theory of dual affective sub-systems only goes so far as to predict that individuals will seek information when anxious. It does not specify *where* people will seek information when anxious. The information source is equally as important as learning new information. According to Beck et al. (2002) information sources are shrouded in a social and informational context that guides an individual's political choices. Certain sources provide cues, such as partisan cues, whereas other sources provide other types of information such as substantive information concerning the implication of a particular bill or a candidate's stance on a certain issue (Beck et al., 2002). The choice of information source will significantly influence future political behavior.

I will first define the different types of information sources that are available for usage. A theory will then be built predicting what sources of information will be used when a person becomes anxious. This theory will culminate with the hypothesis that people will use readily available, and efficient and unbiased information sources more when they feel anxious.

Types of Information Sources

There are a number of different information sources. One information source is interpersonal discussion networks (Huckfeldt and Sprague, 1995). Interpersonal discussion networks usually consist of people with whom a close personal relationship exists, however, this can also include people who are not necessarily intimately connected but are in regular contact with the decision maker (Mutz and Mondak, 1998).

A second type of information source is the mass media. The mass media includes information outlets such as radio, television, newspapers, magazines and, more recently, internet

(Beck et al., 2002). Quite often, these mass media outlets are unbiased but appear to the biased observer to be so in the opposite direction of the observer's own bias (Beck et al., 2002).

The final type of information source is groups or organizations, which include political parties as well as other types of organization that often proselytize political beliefs to members (Beck et al., 2002). Some examples of groups or organizations that are information sources are labor unions, veterans' organizations, business associations and religious groups (Beck et al., 2002).

Although this list is certainly not an exhaustive list of information sources it is difficult to imagine an information source that does not fall into one of these three categories. Therefore, for the purpose of this thesis, these three categories will be treated as the only types of information sources an individual can reference for political information.

Predicting Information Source Usage

The surveillance system was developed, evolutionarily speaking to give people the ability to respond quickly to threatening stimuli (Marcus, Neuman and MacKuen, 2000). As Marcus, Neuman and MacKuen (2000) wrote, "If our forebears in the jungle had to give a lot of thought to animal classification typologies upon hearing a nearby lion's roar, we might not be here discussing the dynamics of political judgment." In order to protect themselves our ancestors had to quickly respond subconsciously to any stimuli that might be a danger to them.

The surveillance system is designed to identify any novel circumstance (Marcus, Neuman and MacKuen, 2000). As discussed above, when a novel circumstance is identified, anxiety is created and people engage in information seeking behavior. This newly learned information is then used to further assess the danger of the situation and alleviate the anxiety (Marcus, Neuman and MacKuen, 2000).

The surveillance system turns our attention away from the task at hand and focuses all of our attention upon the immediate threat (Marcus, Neuman and MacKuen, 2000). This means that when anxious we try to immediately seek information concerning our anxiety. We do this because anxiety is an unpleasant feeling, and alleviation of that feeling is a driving force behind information gathering (Marcus, Neuman and MacKuen, 2000). It makes perfect sense that we want to address the unpleasant feeling of anxiety before we continue attending to any other activity.

What does this mean for information source usage? If people seek to attend to anxiety by seeking information as soon as possible, those information sources that are readily available and allow for purposive searches (efficient) should be used more than difficult to obtain and inefficient sources when a person feels anxiety. That is to say if a person feels anxiety about a war at 1 in the afternoon on a weekday while he is at work, he may read the newspaper scanning for any articles concerning the war, but he will not wait to go home and watch the network news. Television does not allow for efficiency (Bimber, 2001). The newspaper is a more efficient way of receiving information then waiting to get home to watch the network news, which might not even report on the situation that he feels anxious about.

Availability and efficiency should dictate which information sources are used when anxious, however, there are certainly information sources that one can receive at about the same speed and efficiency, take for example, reading a newspaper and discussion politics with family and friends. If we take for example, the man who is at work and begins to feel anxiety concerning a war; he can find a newspaper and look through all of the stories looking for one that addresses his anxiety, but he can also go up to one of his co-workers/friends and begin a conversation about his concerns and receive information that way. At this point when the

availability and efficiency of two sources are equal, the anxious individual should seek a broad array of political views. When a person is anxious they are starting from scratch in terms of information. They are no longer relying upon habit (Marcus, Neuman and MacKuen, 2000) and thus need as much information representing differing views as possible in order to make decisions that alleviate anxiety.

According to Mutz and Martin (2001), different types of media provide more or less biased information. People tend to have homogenous interpersonal groups (Huckfeldt and Sprague, 1995). Interpersonal groups are often chosen because of like-mindedness (Mutz and Martin, 2001). This means that information coming from discussion will tend to be biased towards the individual's existing point of view. Moreover, Mutz and Martin (2001) find that the news media (especially in the United States) represent cross-cutting political views. The media is much more balanced in their reporting than interpersonal discussion. Mutz and Martin (2001) also find that most people believe they are being exposed to more dissimilar views through the news media than through interpersonal relationships. Since anxiety forces us to use "new, untried solutions," (Marcus, Neuman and MacKuen, 2000, 60), anxious individuals should seek to expose themselves to dissimilar views rather than similar views. This means that when two information sources are equally readily available and efficient the deciding factor between the two sources will be the perception of dissimilar views.

When deciding between equally quick and efficient information sources, they seek to expose themselves to views that are dissimilar to those they normally hold. In terms of information sources, discussion and newspapers are quicker and more efficient than television news viewership. Newspapers are readily available to most people and easily skimmed until a person arrives at a story that addresses her anxiety. Discussion is also readily available, and

efficient. A person can easily approach a friend, family member or co-worker and bring up an anxiety inducing event. National television network news on the other hand is not readily available and even when a person is watching the network news, a story concerning the situation which he is anxious about may not be covered, but he will have to sit through an entire program to know that that situation will not be covered. Therefore, network news is inefficient even if it were readily available. Simply put:

Hypothesis 2: When anxiety increases use of readily available and efficient information sources will increase. Use of other sources may increase, decrease or stay the same.

Anxiety and Voter Turnout

As discussed above, information is a major cost participation (Texiera, 1987; Bimber, 2001). The above theory predicts that people, when anxious, will seek more information. Moreover, the theory predicts that people will use newspapers and discussion more often when they are anxious. Therefore, anxious individuals have greater amounts of information on average controlling for education, habitual attention, etc.

These higher levels of information become a driving force in political participation. Since people are driven by anxiety to seek information, the costs of information seeking in order to participate are decreased. Basically, people have more political information when the time comes to participate. This means that of the two costs of voting, the act of preparing to vote is decreased significantly. Since preparing to vote is the most costly action involved with voting (Texiera, 1987), the costs of voting are significantly decreased. If the costs of voting decrease due to anxiety, one would expect the voter turnout amongst anxious individuals to increase. The

rational for this prediction is the same as that for shortcuts and unintentional group mobilization. Anxiety creates a situation where the costs of voting are outweighed by the benefits.

Moreover, one should expect to see higher voter turnout amongst anxious people because as Marcus, Neuman and MacKuen (2000) predicted, they desire to alleviate their anxiety. As stated above, there are two ways in which anxiety can be alleviated. People can either find information that causes them to realize that their anxiety is unfounded, or they can use that information to make a decision concerning what actions will alleviate the anxiety. If a person seeks information when anxious and does not find that the anxiety is unfounded, they will be forced to take action. If the anxiety is politically based, anxious people will increase engagement in politics in order to address the anxiety and alleviate it. This increased engagement should include greater rates of voter participation. Therefore:

Hypothesis 3: *People who feel anxious will turnout at a greater rate than those who are not anxious.*

CHAPTER 4

RESEARCH DESIGN

The research design of this paper will layout the variables and tests used to test each of the above three hypotheses. I will begin with discussion of hypothesis 1 and progress in order through hypothesis 3. This paper's hypotheses are being tested using a number of American National Election Study (NES) datasets.

Marcus, Neuman and MacKuen's (2000) Models

Marcus, Neuman and MacKuen (2000) included many models in their study. For the purposes of this thesis only 2 of these models are important and only 1 will be replicated. Marcus, Neuman and MacKuen's (2000) first important model, and the one replicated in this thesis, showed that those who were anxious had a higher amount of information and more accurate information. The second model Marcus, Neuman and MacKuen (2000) tested, which is not replicated in this thesis, showed that those who felt anxious at a given point in time tended to increase their media attention over time.

MNM's First Model

In this model anxiety was measured using candidate evaluations of the candidate who is running for president from the party with which the survey respondent identifies. Anxiety was either feeling angry towards that candidate or feeling fearful of that candidate. It was also coded as a dummy variable; a person who feels angry with or afraid of the candidate from the party with which they identify is coded as a 1, those who do not is a 0. Marcus, Neuman and MacKuen's (2000) findings can be viewed in Appendix A.

They used two dependent variables, information mass and information accuracy. Information mass is a summation of the likes and dislikes a person can name about the two candidates and the two parties. The information accuracy measure was a percentage of how many issues a person could place the Democrat to the left of the Republican. These two dependent variables were regressed using OLS regressions against anxiety. Marcus, Neuman and MacKune (2000) found that anxiety lead to greater information mass and accuracy, whereas enthusiasm only led to greater information mass.

MNM's Second Model

The second important model that Marcus, Neuman and MacKuen (2000) ran was not important because of its findings but because of its changes in methods (see Appendix B). This model used June-October 1980 Panel data to show that anxiety caused an increase in media attention. The dependent variable was the change in attention to 4 media sources between June 1980 and October 1980. This is important to this thesis because it sets the precedent for using panel data to test the hypothesis concerning information seeking.

This model, however, is severely flawed. The independent variable, as well as all of the control variables are recorded at a fixed point in time. This does not hold any explanatory power for increased media attention. Measuring anxiety at a fixed point tells us that at a given moment a person was anxious and that those who felt anxious at that moment increased media attention between June and October 1980. However, Marcus, Neuman and MacKuen (2000) never stated when anxiety was measured in this survey, at the beginning or the end. If anxiety was measured in October 1980 it is impossible to tell if anxiety increased from June to October. If anxiety did not increase, one should not expect media attention to increase. If anxiety was noted in June 1980 it is possible that anxiety decreased between June and October 1980. This would mean that

anxiety is actually inversely related to media attention. Because of these problems this test is not replicated, but revised.

Hypothesis 1

This section of the research design will discuss the variables and tests used to test hypothesis 1, that when they become anxious, individuals will seek information. The testing of hypothesis 1 was administered in 2 ways. The first test is a replication of Marcus, Neuman and MacKuen's (2000) original test of this hypothesis. The second test is designed to correct for the criticisms of Marcus, Neuman and MacKuen's (2000) original anxiety measure using panel data.

Replication of MNM

This subsection will discuss the testing of the replication of Marcus, Neuman and MacKuen's (2000) test. I will first discuss the dataset used. Then I will discuss each variable and how they are derived. Finally, I will explain the methods used to recreate this test.

Datasets

Hypothesis 1, people who feel anxiety will exhibit information seeking behavior, is first tested using 2000 and 2004 cross-sectional NES data. This is being done in order replicate Marcus, Neuman and MacKuen's (2000) results, in which pooled cross-sectional data from 1980-1996 was used.

Independent Variables

I used the same coding of anxiety for the first test of hypothesis 1 as Marcus, Neuman and MacKuen (2000), because it is a replication of Marcus, Neuman and MacKuen's (2000) first test of this hypothesis. An individual is coded as anxious if they feel fear or anger towards the candidate from the party with which they self-identify. Therefore, a person who identifies as a

Democrat will be considered anxious if they have felt fear or anger towards Al Gore or John Kerry, and a Republican is anxious if they felt fear or anger towards George W. Bush.

Dependent Variables

The replication of Marcus, Neuman and MacKuen (2000) actually contains two dependent variables. The first measure in the first test was one of information mass. This was simply the amount of information a person has about the two candidates and the two parties. This means the highest a person could receive is a 40 and the lowest they could receive is a 0. In order to get this measure, the number of likes and dislikes concerning each candidate and party were summed. The idea behind this is that the more likes and dislikes a person can name the more information they will have.

The second dependent variable in the first test of the first hypothesis was a measure of information accuracy. This is simply the percentage of the number of issues a person can place the Democratic candidate to the left of the Republican candidate on a range of issues that were particular to that election. Just as Marcus, Neuman and MacKuen (2000, 88) did, guessing was corrected for by “subtracting as ‘wrong’ answers that place the Republican to the left, and score as zero those in which the candidates are placed identically or in which the respondent says ‘Don’t know.’” Information accuracy is measured as closely as possible to the measurements of Marcus, Neuman and MacKuen (2000) however, the questions are not identical to those asked from 1980-1996 (Marcus, Neuman and MacKuen’s, 2000, original dataset). They include questions concerning abortion, aid to African-Americans, gun control, balancing the environment and jobs and the role of women in society.

Control Variables

The first test of hypothesis 1, the replication of Marcus, Neuman and MacKuen's (2000) findings, uses the same control variables as they did enthusiasm, habitual attentiveness, education, and partisanship strength. These controls are measured as closely as possible to their measurements. Enthusiasm is a dummy variable, a person is coded as a 1 if he feels proud or hopeful of the candidate from the party with which he identifies, and a 0 if he does not feel either of these emotions. Education is coded on a six level scale, 6 being an advanced degree and normed to a 0-1 interval. Partisanship strength is a 0 through 3 scale, 0 being a complete independent and 3 being a strong supporter of either party. This is also normed to a 0-1 scale. The only difference between my methods and Marcus, Neuman and MacKuen's is that habitual attentiveness is measured on a 3 point scale in my replication as opposed to a 4 point scale. A 3 on the scale used in my test is roughly equivalent to a 4 on Marcus, Neuman and MacKuen's (2000) scale and represents high habitual attention. This scale is also normed to a 0-1 scale.

Methods

Two OLS regressions are run for the first test of hypothesis 1. Each dependent variable, information mass and information accuracy is regressed against anxiety measured as candidate evaluations at a fixed point in time, while controlling for the above mentioned control variables.

Why Run a Second Test?

The above test using cross-sectional data does not prove that people who are anxious seek information. It simply shows that those who are anxious at a given point in time have more information mass and more accurate information. It can be inferred from this that those who are anxious seek information; however, this cannot be said definitively. Those who are anxious may begin with more information that is more accurate.

It is important to show a change in information seeking to be able to say for certain that those who are anxious seek more information. Marcus, Neuman and MacKuen (2000) tried to do this; however, their independent variable was not the proper variable for the test. Therefore, a second test using panel data and a better measure of anxiety is necessary.

Hypothesis 1, Test 2

This section will explain the second test of hypothesis 1. I will discuss the dataset, variables and methods used to carry out this test. I will also discuss the criticisms of Marcus, Neuman and MacKuen's (2000) original tests.

Dataset

The second test of the first hypothesis, which was inspired by Marcus, Neuman and MacKuen's (2000) use of 1980 panel data will correct for the criticisms of their original tests. I will be using the 2000-2002 NES Panel Study. This dataset is the first 4 waves of the 5 wave 2000-2002-2004 NES Panel Study. In total there were 748 respondents to these 4 waves that occurred directly before and after the 2000 and 2002 elections. The measure of anxiety (independent variable) for this dataset is slightly idiosyncratic. There were two questions asked, one concerning fear of conventional war and one concerning fear of nuclear war. In 2000 not all respondent were asked both of these questions. They were only asked one or the other. This means that instead of the total N being 748 for both of these questions, the N's are cut in half. Further, the questions concerning anxiety are both asked prior to the election in both 2000 and 2002. Thus, people are answering the questions concerning their fear of war prior to knowing the outcomes of the elections.

Independent Variable

The independent variable for the second test of hypothesis 1 was developed using panel data. Marcus, Neuman and MacKuen (2000) ran a test using panel data to show that information seeking increased with anxiety (see Appendix B). Unfortunately, their independent variable, anxiety, was only measured once, as opposed to being measured as a change in anxiety. Very little can be inferred from this finding. People may have increased their information seeking by the end of the panel study as Marcus, Neuman and MacKuen (2000) found (see Appendix B), however, if anxiety did not change, it does not make sense that information seeking would increase between the two dates of the survey Marcus, Neuman and MacKuen (2000) used. Therefore, the second independent variable I use to test this hypothesis must measure change in anxiety level from the beginning of the survey to the end.

In order to fix the criticisms of Marcus, Neuman and MacKuen's (2000) anxiety measurements anxiety was measured using fear of conventional or nuclear war. This addresses both Valentino et al's (2008) and Ladd and Lenz's (2008) criticisms by using fear as opposed to anger and fear, and shifting away from candidate evaluations. This measure of anxiety is taken prior to the elections in both 2000 and 2002. People were asked if they are fearful of the United States becoming involved in a conventional or a nuclear war. Unfortunately, in 2000 half of the 748 respondents were asked if they feared the United States becoming involved in a conventional war and half of the respondents were asked if they feared the United States becoming involved in a nuclear war.

This being said, a person had three possible answers to either of these questions. They could answer "no," "slightly worried," and "very worried" (see Appendix C for the question and answers). They were coded with a 0 if they answered "no," a 1 if they were "slightly worried"

and a 2 if they were “very worried.” This coding was done for both 2000 and 2002. The answer they gave in 2000 was then subtracted from their answer in 2002. Thus, if a person had a positive number it means their anxiety level increased between 2000 and 2002. A 0 means there was no change in anxiety level and a negative number means their overall anxiety level decreased.

Dependent Variable

The dependent variable in test two of hypothesis 1 is change in information seeking. This is measured similarly to that of the Media Attention variable that Marcus, Neuman and MacKuen (2000) used for the test displayed in Appendix B. The difference is that Marcus, Neuman and MacKuen (2000) measured the change in newspaper readership, magazine readership, television viewership and radio listenership; the measure of information seeking change in this thesis is the change in newspaper readership, national network news viewership and discussion of politics with family and friends summed. This was done due to the data constraints of the 2000-2002 NES Panel Study.

The number of days per week a person says they read the newspaper, watched the nightly news and discussed politics in 2000 was added. This was done exactly the same for 2002. The difference between these two totals was then taken in order to find the change in information seeking. A positive number means that information seeking increased, a 0 means that information seeking stayed exactly the same between the two years and a negative number means that information seeking decreased.

Control Variables

The control variables for the second test had to be changed from those used in the replication. Marcus, Neuman and MacKuen’s (2000) control variables do not hold much

explanatory power for this model. They are, like the measure of anxiety, fixed points in time, and thus do not explain the change in information seeking. Therefore, three new control variables will be used, difference in competitiveness of the House of Representatives races between 2000 and 2002, difference in interest in politics between 2000 and 2002, difference in party identification between 2000 and 2002.

The change in House of Representatives competitiveness was derived as the change in the percentage of the vote of the winning candidate for the seat of the district in which the respondent lives. The difference in habitual attention is simply the difference in the level of interest in politics which was measured on a 3 point scale, 3 being very interested. The change in party identification is measured as the difference between self-reported party identification between 2000 and 2002 as measured on a 7 point scale.

The difference in House competitiveness was included because if a race is more competitive in one year or another a person should be more inclined to seek information concerning that race in the year of more competition. Difference in habitual attention to politics is included because if a person is more interested in politics in one year or the other they should be more inclined to seek information in that year. Finally, difference in party identification is included because a change in party identification should be accompanied by more uncertainty and thus cause more information seeking.

Education level in 2002 was included as a control. The higher a person's education the more they should seek information. Since education level did not change between 2000 and 2002, a change in education level variable would have no variance. Therefore, in order to control for education the education level of the respondent in 2002 was included as a control variable.

Methods

Two OLS regressions were run for the second test of hypothesis 1. The change in information seeking between 2000 and 2002 was regressed against the change in level of anxiety, measured as the change in the fear of conventional or nuclear war between 2000 and 2002. Two OLS regressions had to be run because anxiety was measured in two separate ways, fear of conventional war and fear of nuclear war. The above mentioned control variables were regressed as well.

Hypothesis 2

This section of the research design will discuss the dataset, independent, dependent and control variables used to test hypothesis 2, as well as the testing method.

Dataset

Hypothesis 2, that individual's will seek information from readily available and efficient sources, is tested using the same 2000-2002 NES Panel data as used for the second test of hypothesis 1. This is done in order to show the change in specific information sources over time.

Independent Variable

The measurement of difference in level of anxiety is again used as the independent variable. It is measured exactly as it was in the second test of hypothesis 1. It is the difference in anxiety level (fear of conventional or nuclear war) between 2000 and 2002. This variable ranged from 2 to -2. A person who was not anxious in 2000 but very anxious in 2002 was coded as a 2. A person who was very anxious in 2000 but not anxious in 2002 was coded as a -2. All other people feel somewhere in the middle. If a person's level of anxiety did not change they received a 0 and if a person's level of anxiety changed slightly they received a 1 or -1 depending upon the direction of the change.

Dependent Variable

The dependent variable was changed to be the change in attention to each individual information sources, newspaper, television and discussion separately. Using the number of days per week a person self-reported reading the newspaper, watching the nightly news and discussing politics, in 2000 and 2002. The number of days per week a person reported reading the newspaper in 2000 was subtracted from the number of days per week a person reported reading the newspaper in 2002. This gives the change in reading of the newspaper between 2000 and 2002. This was done exactly the same for discussion of politics and watching the nightly news. A positive number for any of these variables means that the person tended to use that information source more in 2002 than in 2000. A 0 means that that person did not change their usage of that source between 2000 and 2002. A negative number means the person used that source less frequently in 2002 than in 2000. These variables range from 7 to -7. Unlike in the second test of hypothesis 1 for this test, the information sources were not summed but tested separately. This allows us to see the changes in each individual information source.

Control Variables

The control variables are the same as those used for the last test of hypothesis 1. They are change in enthusiasm, change in habitual attentiveness, change in House of Representatives competitiveness, change in party identification and the education level in 2002.

Methods

Two multi-variate regressions were run in order to determine if people will use readily available and efficient information sources when they become more anxious. Two regressions were run again for the same reason as they were in the second test of hypothesis 2; anxiety was measured in two separate ways, conventional war and nuclear war. We should expect to see

newspaper readership and discussion of politics with family and friends to increase with anxiety. Network television viewership may increase, decrease or stay the same.

Hypothesis 3

Hypothesis 3, those who feel anxiety will vote at a higher rate than those who do not, is tested much differently than hypothesis 1 or 2. This section of this thesis will discuss the datasets, variables and methods used to test hypothesis 3.

Dataset

In order to test this hypothesis, I pooled NES data from 1984, 1988 and 2000 because these were the presidential election years in which questions of fear of conventional and nuclear war were asked. The pooling of the data was done in order to gain a larger sample size than if I simply used the 2000 NES. I excluded non-presidential elections because this is a study of turnout and turnout invariably is lower during non-presidential years.

Independent Variable

The independent variable was not change in anxiety as it was for the second test of the first hypothesis and for the second hypothesis. Instead it was measured as the fear of the United States becoming involved in a conventional or nuclear war at a particular point in time. A person who claimed to be very anxious concerning the outbreak of nuclear war was coded as a 2, someone who was not concerned at all was coded as a 0, those in between were coded as a 1.

This was done because I am interested in showing the relationship between anxiety and voting. The change in anxiety should not matter in terms of voting. If a person feels anxious at the time of the election she should have a great probability of voting.

Dependent Variable

The dependent variable, voter turnout, was measured as self-reported voting. A person who said she voted in the November election of the year of the survey was coded as a 1, a person who said she did not vote in that election was coded as a 0, making the dependent variable dichotomous. This measure of turnout presents a slight problem in that close to 85% of people in those three years reported voting, which obviously means either they are over reporting or there is a bias in the survey. However, this is the best measure for turnout available using NES data.

Control Variables

The control variables for this test were the normal controls used in tests of voter turnout, education level, income, age, sex, race and party identification. These according to Wolfinger and Rosenstone (1980) are the most explanatory variables for voter turnout studies.

Methods

A logit regression was used to test this hypothesis due to its dichotomous nature. Voter turnout was regressed against anxiety. This hypothesis will be confirmed if a positive and statistically significant relationship exists between anxiety and turnout.

CHAPTER 5

RESULTS AND ANALYSIS

This chapter discusses the findings of the tests of the hypotheses. Further, I discuss the meaning behind these findings. I progress in an orderly fashion beginning with the tests of hypothesis 1, which predicts anxiety will cause greater information seeking. This chapter then progresses to the tests of hypothesis 2, that when anxious people will seek information from readily available and efficient information sources. Finally this chapter will end with the tests of hypothesis 3, that anxious people will tend to vote more than non-anxious people.

Does Anxiety Cause Information Seeking?

The retest of hypothesis 1 using Marcus, Neuman and MacKuen's (2000) research design showed results very similar to Marcus, Neuman and MacKuen's (2000). As Table 1 and Table 2 show, like Marcus, Neuman and MacKuen's (2000) original test, anxiety, as measured by candidate evaluations of the candidates of a person's self-identified party, had a significant and positive relationship with the information mass variable. Anxiety does not show a statistically significant relationship with information accuracy, however, it is approaching significance. Further, the inability to measure habitual attention as Marcus, Neuman and MacKuen (2000) did hamper this replication. Finally, it is important to note that enthusiasm becomes statistically insignificant just as Marcus, Neuman and MacKuen (2000) found.

Although these results recreate Marcus, Neuman and MacKuen's (2000) results fairly well, they do not prove hypothesis 1. These results show that those who feel afraid or angry with the candidate of their self-identified party tend to have larger amounts of information, and are

better able to place Democrats to the left of Republicans on a number of issues. However, the hypothesis predicts that an anxious person will seek more information, not that an anxious person will have a greater amount of information than non-anxious people. Moreover, this test includes anger in the anxiety measure and allows for Affect Transfer and Endogenous Affect. Therefore, this test tells us very little about hypothesis 1. This data, however, is not useless; it suggests that those who are anxious have a great mass of information and are more politically sophisticated.

In order to better test the relationship between anxiety and information seeking, I used 2000-2002 NES panel data. I used a variable for information seeking change similar to that of Marcus, Neuman and MacKuen (2000; see Appendix B) as the dependent variable. This variable was the sum of the change in the number of days per week a person read the newspaper, watched the national network news and discussed politics with family and friends. In addressing the criticisms of Ladd and Lenz (2008) and Valentino et al. (2008) I also used a new measure of anxiety, the change in fear of nuclear or conventional war, as the independent variable. Table 3 shows that an increase in fear of conventional war from 2000 to 2002 does not correspond to an increase in information seeking behavior and in fact displays a negative relationship. However, when measuring anxiety using fear of nuclear war, the coefficient becomes positive and the relationship becomes statistically significant (see Table 3).

These findings must be viewed in the context of the world at the time of the survey. When the second half of the 2000-2002 NES Panel Survey was taken, the United States was already involved in a conventional war in Afghanistan, and had been involved for a while. The many citizens may have thought that the war was going well from the perspective of the United States. Therefore, fear of conventional war was not a major threat, whereas, nuclear war, may have seemed like a much greater threat to all people. In late 2002, when the second half of the 2000-2002 NES Panel Survey was taken, there had been much talk of weapons of mass destruction, including nuclear weapons in the hands of terrorists and rogue states.

Furthermore, anxiety notwithstanding, the difference in information seeking should actually be expected to decrease from 2000 to 2002. This is due to the fact that 2000 was a presidential election and 2002 was not. One should expect to see interest in the election, and thus information seeking should be greater during 2000. This factor may in itself explain why conventional war was negative and statistically insignificant. However, this factor make it even more of a surprise to see that fear of nuclear war caused such a dramatic increase in information seeking behavior. The habitual attention variable used as a control in the above test controlled for this factor slightly, however, the only way to completely control for this factor is to test the difference between two presidential years, two non-presidential years, a panel study that is all in one year, or with experimentation. These results of this test are mixed, it appears that as anxiety increases, information seeking may well increase, however, this cannot be stated definitively. It is my opinion that the results of all the tests of hypothesis 1 make a very strong case for this hypothesis as confirmed.

What Information Sources Do Anxious People Use?

Hypothesis 2, people who have an increased fear of anxiety will seek information from readily available and efficient information sources, is supported by the evidence. As can be seen in Table 4, increased fear of conventional war had no effect upon the information sources people used. Newspaper readership and discussion of politics are also negatively correlated with change in fear of conventional war, whereas nightly news viewership is positively correlated, however, All three types of information sources had insignificant relationships with change in fear of conventional war. Increased fear of nuclear war, however, showed a statistically significant and positive correlations with increasing information seeking from newspapers and discussion of politics, whereas network news viewership had a negative but statistically insignificant relationship with fear of nuclear war (see Table 5).

This result was expected since newspapers and discussion are readily available at almost all times. Moreover, both newspapers and discussion are very efficient sources of information as opposed to television (Bimber, 2001). A person can easily look through a newspaper for an article focusing upon the issue that that individual feels anxious about. Discussion is just as efficient. It is incredibly easy to approach a person and begin a conversation about an anxiety inducing event, thus addressing the anxiety quickly.

This finding confirms hypothesis 2. It can be said with confidence that anxious people seek information from readily available and efficient sources. This means that one would expect internet usage to increase with anxiety as well; however, the data was not available to test internet usage. Further testing of this hypothesis needs to be done as well. An interesting corollary to this hypothesis might be testing to see what sources of information are used more in relation to other sources. That is to say, does discussion increase more than internet usage, and

does internet usage increase more than newspaper readership, and does newspaper readership increase more than radio listenership and does radio listenership increase more than television viewership.

Are Anxious Individuals More Likely to Vote?

Hypothesis 3, that those who are anxious will turnout to vote at a greater rate, is unconfirmed. In fact, the test of hypothesis 3 is completely opposite of what was expected. Table 6 shows that anxiety was negatively correlated (and statistically significant) with whether a person votes. Those who felt anxious were disinclined to vote. This finding is insignificant for fear of conventional war, which was dropped due to insignificance; however, it is highly significant for fear of nuclear war. Those who feel more anxious actually have a propensity to vote less than those who do not feel anxious. This finding is especially troublesome considering the grossly overstated voter turnout figures, around 85%, reported in the 1984, 1988 and 2000 NES.

These findings seem to be accurate. The direction and significance for the control variables of Education and Income, which was measured based upon not raw income but the percentile of income a person falls into in comparison to those from the same year¹, are correct. Those with higher education and higher income tend to vote more than those with lower educations and lower incomes.

¹ This was done to correct for inflated incomes in 2000 in comparison to 1984 and 1988.

The theory of this thesis argues that those who have anxiety have greater information than those who are not anxious. Also, those who have information have decreased costs of participation, thus they will participate more than those who have less information. If A equals B and B equals C then A must equal C. The findings of this thesis have shown (Tables 1 through 5) that anxious individuals have more information than not anxious individuals and that those whose anxiety increases also increase their information seeking. Many studies have shown that information leads to greater political participation, including voting (Bimber, 2001; Aldrich 1993; Rosenstone and Hansen, 1989; Wolfinger and Rosenstone, 1980; Verba, Schlozman and Brady 1995; Brady and Tetlock, 1991). If the findings of this thesis and these studies are correct then why does A equal B, B equal C but A does not equal C; what has gone awry?

The answers to this question may lie in a number of explanations. Firstly, it is possible that information does not lead directly political participation but it must be interpreted first (Bimber, 2001; Huckfeldt and Sprague, 1995). This argument is basically that people can have large amounts of information but lack the ability to incorporate this information into a view that allows them to understand the political information they have acquired. It is certainly possible that anxiety does not influence the ability to interpret information; it simply stimulates the gathering of information. If this explanation is correct, however, it would seem that those who are anxious should not participate any more or less than those who are not anxious. This is not the case. The findings in Table 6 show that those who are anxious vote much less than those who are not anxious.

A second possible explanation is political ambivalence. Political ambivalence is different than political apathy, it applies to the idea that a person has so much information they have

difficulty choosing between two options rather than just not caring. Ambivalence contains the same effect as apathy, but for a much different reason.

The possibility that anxious individuals are politically ambivalent is an attractive explanation. Heterogeneous messages tend to create ambivalence and subdue political participation (Huckfeldt, Mendez and Osborn; 2004). If one remembers Table 4, those who feel anxious tend to seek information from discussion and newspapers more often. Mutz and Martin (2001) find that discussion of politics with family and friends is quite often very biased towards one candidate or another, whereas newspapers are often seen by individuals as representing dissimilar views. If use of these two information sources increases, it is not far-fetched that anxious individuals are receiving very varied information concerning candidates. This means that anxious individuals may actually feel political ambivalence, which in turn will lead to lower voter turnout.

Summary of Findings

This section of this thesis will seek to explain the above findings in a more succinct way. I will discuss the findings and some of the possible explanations as to what these findings mean. I will first discuss the findings concerning hypothesis 1 and progress in order to hypothesis 3.

Summation of the Findings of Hypothesis Concerning Information Seeking

This thesis has a number of findings. Beginning with the replication of Marcus, Neuman and MacKuen's (2000) cross-sectional tests, one begins to see differences between Marcus, Neuman and MacKuen's (2000) study and my own. I was not able to show that those who are anxious in fact have more accurate information. Further, the tests using 2000-2002 NES Panel data show mixed results. When measuring anxiety using only fear and without using candidate evaluations, one finds that increased fear of nuclear causes more information seeking.

This could be for a number of reasons including, but not limited to the comparison in the data between a presidential year and a non-presidential year. The level of anxiety may also play an important role in these findings. Further research on this topic could show that increased fear of nuclear war caused increased information seeking because fear of nuclear war creates a greater feeling of anxiety. Further research must be undertaken in order to fully understand the ramifications of these findings. What should be taken away from this finding is that emotion, in particular anxiety, is not an extraneous variable that can be written off. Further research into the role of emotion into political decision making is necessary in order to design more explanatory models of political behavior.

Summation of the Findings of Hypothesis Concerning Information Source Usage

These findings suggest that when people's anxiety increased they tend to increase their usage of newspapers and discussion, however, viewership of the nightly news does not increase. The theory specifies that use of readily available and efficient information sources will increase with increases in anxiety, and we see that with increases in anxiety newspaper readership and discussion of politics increase. This finding is suggestive that information certain information sources do increase with increased anxiety, however, there may be more explanations for this finding. It is possible that anxiety is only affecting those people who read newspapers or discuss politics. These findings do not show that people are switching from television viewership to discussion and newspaper readership. What should be taken away from this finding is that anxiety does not cause information seeking across all types of information sources. Television viewership does not increase with anxiety, whereas newspaper readership and discussion of politics does. This opens the door for further research into information sources and anxiety. Any further research on this area needs to be firmly grounded in the media literature as well as the

psychology literature concerning anxiety, and must address the idea of change from one information source to another.

Summation of the Findings of Hypothesis Concerning Voter Turnout

The findings of the test of hypothesis 3, show that anxiety causes people to actually vote less than those who are not anxious. This was contrary to my theory and hypothesis. Even though my theory and hypothesis were by all accounts of these findings, incorrect, these findings are still important to our understanding of emotion and voter decisions. These findings show that emotions, in particular anxiety, have a major effect upon the decision to vote. Even if anxiety depresses turnout this finding is important for further studies of both rational choice and voter turnout. This knowledge can be used in studying everything from the war-time elections to the effect of negative advertising. Further, this finding begs the question, are there any emotions which stimulate voter turnout. The most important piece of knowledge to take away from these findings is that emotions matter in terms of voter decisions.

CHAPTER 6

DISCUSSION

This section of this thesis will discuss the overall ramifications of the above findings. I will first discuss the findings as a whole. It is necessary to look at how all the findings of this thesis fit together into one piece. After this I will discuss further research possibilities that may be undertaken.

The Whole Picture

The findings presented in this thesis are substantive, far-reaching and important. First, I refined Marcus, Neuman and MacKuen's (2000) original work on anxiety and I find that anxiety causes people to seek information. Marcus, Neuman and MacKuen (2000) found that anxious people tended to have more information and more accurate information, however, their test of increased information seeking was flawed. In replicating their findings, I found that anxious people do have a greater mass of information, however, the accuracy of that information is in question. The most important finding concerning the first hypothesis, that as anxiety increase information seeking behavior also increases, is my revision of their panel data test.

I find that fear of nuclear war causes people to seek more information, whereas fear of conventional war does not. This finding is important because it lends support to the hypothesis that anxiety causes information seeking, but further, it exposes much of the nuance that has yet to be explored in this fairly new theory. This revision fixes the criticisms that have arisen concerning Marcus, Neuman and MacKuen's (2000) original work and have also included the natural experiment that was caused by the events of September 11, 2001. The findings of this thesis, because of the addressed criticisms and the natural experiment, appear to be more

accurate than the original tests run by Marcus, Neuman and MacKuen (2000). This thesis should lend more credence to the theory of Affective Intelligence and hopefully convince its skeptics that despite the original criticisms, the theory still holds up.

Further, the mixed results concerning fear of conventional war and fear of nuclear war should not detract from the finding that fear of nuclear war caused greater information seeking behavior. These results must be discussed understanding that the theory of Affective Intelligence is a new and not fully understood theory. These mixed results tell us that this theory is at some level accurate but much more nuanced than previously believed. This thesis highlights the fact that anxiety does cause information seeking behavior to increase, but it may not work the same in all cases. The above results show that greater theorizing and testing must be done in order to fully understand what anxiety is, from where it generates, and how different types of anxiety affect behavior.

The results concerning the first hypothesis of this thesis address the criticisms of the theory of Affective Intelligence and thus bolster the argument that anxiety does cause greater information seeking. However, they also highlight the need for more developed theorizing and more refined measures of anxiety. Although these findings are not completely concrete, this research may lead to incorporation of anxiety into future political behavior models.

The second hypothesis of this thesis, that when anxiety increases, people seek information from readily available and efficient information sources, was found to be somewhat accurate. People who had increase of anxiety tended to increase their usage of newspapers and discussion of politics. However, these findings are not as straightforward as they appear. Firstly, these findings do not show that people are changing information sources from television to newspaper or discussion, but that as people get anxious newspaper readership and discussion

of politics increases. These findings could simply show that only those people who use newspapers and discuss politics increase their information seeking when anxious.

It is possible to infer from the above findings that when anxiety increases, people increase their use of readily available and efficient information sources, however, it cannot be said with complete confidence. These findings, however, do again show that the theory of Affective Intelligence is much more nuanced than that theorized in Marcus, Neuman and MacKuen (2000) and above. The above findings suggest that increased anxiety does not simply mean increased information seeking, but that usage of certain types of sources increase with increased anxiety. Before anxiety can fully be incorporated into future models of political behavior further research into the types of information sources that increase in usage when anxiety increases must be done. Once this further research is done it may well be possible to incorporate anxiety into models that explain why people engage in politics.

Finally, even though the above findings suggest that those who have increased levels of anxiety engage in increased information seeking, the tests of hypothesis 3, that people who are anxious will be more likely to vote than non-anxious individuals, show that anxious people actually vote less than those who do not feel anxious. This finding shows that anxiety does not simply cause one behavior, the stimulation of information seeking, but significantly affects other behaviors as well, in particular it may depress political action. It is important to note that rationally speaking, this should not occur. If people are making simple cost-benefit analyses anxiety should have no effect upon the decision to vote. However, as can be seen above, emotion is causing people to not vote. This finding can be used to improve upon our understanding of voter turnout. It can be applied to research from the effect of war on the public to the effect of negative advertising.

Further Research

All of the above findings punctuate the need for much more research on anxiety. First and foremost, anxiety must be conceptualized better. This thesis shows that anxiety is not simply a question of worry or fear but also what causes that fear. The findings that increased fear of nuclear war causes information seeking whereas increase fear of conventional war does not must be further explored. Through better defining of anxiety, better conceptualization of anxiety and better operationalization of anxiety these findings can be clarified. In particular a closer look at levels of anxiety may be fruitful. There are many levels of anxiety and in the future anxiety must be conceptualized as having many different levels. Even this study only uses 3 levels of anxiety, however, it is certainly possible for two people to both say they feel very anxious but one of those two people to feel significantly more anxious than the other.

Secondly, development of the theory of information source usage when anxious is necessary. As said above the findings of this thesis suggest that anxiety does not affect all information sources equally. Further development of a theory must be undertaken and this finding must be explored before anxiety can be used to explain any mass political behavior. If, as theorized above, anxiety is causing people to seek information from newspapers and discussion this will certainly have an effect upon the people's political behavior because as Beck et al. (2002) argued, information sources matter. If there is some other reason for newspaper readership and discussion of politics to increase when anxiety increases, this could well affect political behavior. If, for example, anxiety is only affecting those who read the newspaper or discuss politics as their habitual sources, this must be known before anxiety can be incorporated into political behavior models. Obviously, more research must be done into this finding, and I believe this finding may in fact prove quite fruitful in the future.

Thirdly, answering the question of why anxiety causes people to participate less is imperative. Information should stimulate participation. My findings suggest that people, when anxious, are encouraged to seek information. I postulated that this would allow for greater participation. Since the findings do not support this hypothesis, it is necessary to closely examine why anxiety is causing people to vote less than non-anxious individuals. In particular the question must be asked, why is anxiety encouraging the gathering of information but discouraging the usage of this information?

Fourthly, future researchers may wish to focus their efforts upon the genesis of anxiety, that is, from where does anxiety originate. Obviously anxiety does not just appear. There must be a factor that encourages the growth of anxiety. Research into this area may help us better understand who suffers from anxiety. Understanding who suffers from anxiety can better help us incorporate anxiety into future models of political behavior. For example, if a modicum of information is necessary for anxiety to take hold, than it would seem that only those who are at least somewhat informed will feel anxiety, and this may well temper its effects.

Finally, all the work concerning anxiety and information seeking to this point has postulated a linear relationship between anxiety and information seeking. It seems likely that the relationship between anxiety and information seeking is not in fact a linear one, but in fact curvilinear. It is not difficult to imagine that at a given level of anxiety people stop seeking information and become somewhat paralyzed. This idea must be explored in greater depth. If this is in fact the case than this knowledge can be used to better integrate anxiety in political behavior models.

Experimentation may in fact be the best way to further the study of the theory of Affective Intelligence. Using experimentation it is possible to expose people to different types

and levels of anxiety. Further, experimental tests can be done over a short time period so the immediate effects of anxiety can be viewed. Finally, experimentation will give researchers greater traction in their studies because they will not be relying upon self-reported media usage.

Even though this much more research is necessary, I am confident in saying that anxiety does create information seeking behavior amongst sources that are readily available and efficient. The strong theoretical foundations of the theory of Affective Intelligence along with my findings as well as those originally put forth by Marcus, Neuman and MacKuen (2000) support the first two hypotheses of this thesis. I am also confident in the findings that show people are less likely to vote when they are anxious. This finding however, does not diminish the importance of anxiety. In fact, it further bolsters the argument that emotion, and in particular anxiety, is as important to political behavior as cognition.

Figure 1. Participation Calculus

$$P=BL+C$$

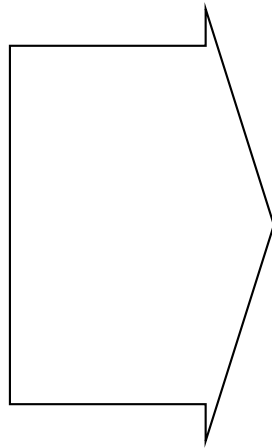
Figure 2: The Disposition System (Marcus, Neuman and MacKuen, 2000, 47)

Inputs:

**Subconscious
Scripts:**
Habitual
Routine

**Internal
Senses:**
Body
Feedback

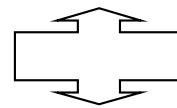
**External
Senses:**
Environmental
Feedback



**Disposition
System**

Outputs:

Emotions
of
Satisfaction
and
Enthusiasm



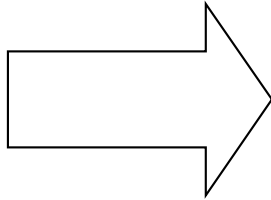
Emotions
of
Frustration
and
Depression

Figure 3: The Surveillance System (Marcus, Neuman and MacKuen, 2000, 57)

Inputs:

**Subconscious
Scripts:**
Habitual
Routines

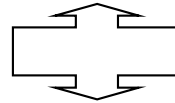
**External
Senses:**
Environmental
Feedback



**Surveillance
System**

Outputs:

Emotions
of
Relaxation
and Calm



Emotions
of Anxiety
and
Unease

Table 1. Knowledge as a Function of Candidate Evaluation Anxiety; 2000 and 2004; Marcus, Neuman and MacKuen (2000) retest

	Original Test	Replication
	Information Mass	Information Mass
Total anxiety	.09**	.07*
Total enthusiasm	.04**	.32**
Habitual political attention	.12**	.58**
Education	.14**	.73**
Strength of Partisanship	.04**	.16**
Constant	-.02	-.03
Adjusted R-squared	0.29	0.24
RMSE	.13	.24
Total N	7075	1711

*p<.05 for one-tailed hypothesis test

** p<.05 for two-tailed hypothesis test

Note: Marcus, Neuman and MacKuen (2000) do not report their significance levels, but instead report those variables that are statistically insignificant. I will report my levels of significance

Table 2. Knowledge as a Function of Candidate Evaluation Anxiety; 2000 and 2004; Marcus, Neuman and MacKuen (2000) retest

	Original Test	Replication
	Information Accuracy	Information Accuracy
Total anxiety	.13**	.02 ^a
Total enthusiasm	.00	.01
Habitual political attention	.09**	0.08**
Education	.22**	0.10**
Strength of Partisanship	.06**	0.09**
Constant	.00**	.55**
Adjusted R-squared	.11	.04
RMSE	.27	.27
Total N	5882	1326

^ap is approaching significance in a one-tailed hypothesis test

** p<.05 for two-tailed hypothesis tests

Table 3. Information Seeking as a Function of Increased Fear of Conventional War; 2000-2002

	Conventional War (SE)	Nuclear War (SE)
Fear of War	-0.10 (.29)	0.59** (.19)
House competition difference	-0.01 (.01)	0.01 (.01)
Habitual attention difference	1.42** (.35)	1.18** (.30)
Party ID difference	-0.08 (.28)	-0.37* (.22)
Education in 2002	-0.13 (.16)	-0.06 (.13)
Constant	-0.08 (.80)	-0.52 (.72)
Adjusted R-squared	0.05	0.04
RMSE	4.46	4.41
Total N	339	437

*p<.10 for two-tailed hypothesis test

**p<.05 for two-tailed hypothesis test

Note: Coefficients are reported above with standard errors in parentheses.

Table 4. Information Seeking from Different Information Sources as a Function of Increased Fear of Conventional War; 2000-2002

	Newspaper (SE)	Discussion (SE)	Television (SE)
Fear of conventional war difference	-0.09 (.13)	-0.04 (.17)	0.03 (.17)
House competition difference	0.00 (.005)	-0.01* (.007)	0.01 (.006)
Habitual attention difference	0.06 (.16)	0.81** (.21)	0.55** (.20)
Party ID difference	-0.03 (.13)	0.16 (.17)	-0.21 (.16)
Education in 2002	-0.01 (.07)	-0.17* (.09)	0.05 (.09)
Constant	0.03 (.37)	-0.26 (.49)	0.15 (.47)
Adjusted R-squared	0.03	0.06	0.03
RMSE	2.03	2.70	2.59
Total N	339	339	339

*p<.10 for two-tailed hypothesis test

**p<.05 for two-tailed hypothesis test

Note: Coefficients are reported above with standard errors in parentheses.

Table 5. Information Seeking from Different Information Sources as a Function of Increased Fear of Nuclear War; 2000-2002

	Newspaper (SE)	Discussion (SE)	Television (SE)
Fear of nuclear war difference	0.29** (.15)	0.35** (.17)	-0.05 (.16)
House competition difference	-0.01 (.005)	0.00 (.006)	0.01 (.006)
Habitual attention difference	0.07 (.15)	0.68** (.18)	0.42** (.17)
Party ID difference	-0.26** (.11)	-0.12 (.13)	0.01 (.12)
Education in 2002	0.07 (.07)	-0.06 (.08)	-0.07 (.08)
Constant	-0.21 (.37)	-1.01** (.43)	0.71* (.41)
Adjusted R-squared	0.02	0.02	0.05
RMSE	2.24	2.48	2.64
Total N	437	437	437

*p<.10 for two-tailed hypothesis test

**p<.05 for two-tailed hypothesis test

Note: Coefficients are reported above with standard errors in parentheses.

Table 6. Voter Turnout as a Function of Fear of Nuclear War

	Coefficient	Standard Error
Fear of nuclear war	-.33**	.09
Education	.40**	.05
Income	.54**	.15
Age	.03**	.005
Race	-.01	.20
Sex	-.23	.15
Party ID	-.04	.03
Constant	-1.15	.40
Total N	1743	

**p<.05 for two-tailed hypothesis test

APPENDIX A

MARCUS, NEUMAN AND MACKUEN'S (2000) FIRST TEST OF HYPOTHESIS 1

"

	Information Mass	Information Accuracy
Total anxiety	.09	.13
Total enthusiasm	.04	.00 ^{ns}
Habitual political attention	.12	.09
Education	.14	.22
Strength of Partisanship	.04	.06
Constant	-.02 ^{ns}	.00 ^{ns}
Adjusted R-squared	.29	.11
RMSE	.13	.27
Total N	7075	5882

Source: ANES 1980-96 election studies

Note: Each column represents a separate regression. All coefficients are statistically discernible from zero unless marked "ns." Marcus, Neuman and MacKuen (2000) never reported their standard errors or p-values.

APPENDIX B

MARCUS, NEUMAN AND MACKUEN'S (2000) TEST USING PANEL DATA

	Media Attention
Total anxiety	.14
Total enthusiasm	.04 ^{ns}
Habitual political attention	.14
Education	.12
Strength of Partisanship	.04
Dependent Variable in June	-.53
Constant	-.14
Adjusted R-squared	.22
RMSE	.20
Total N	707

Source: ANES June-October 1980 panel study

Note: Each column represents a separate regression. All coefficients are statistically discernible from zero unless marked “ns.” Marcus, Neuman and MacKuen (2000) never reported their standard errors or p-values.

APPENDIX C
QUESTIONS USED TO DERIVE MEASUREMENTS

Candidate Evaluation Anxiety/Enthusiasm 2000:

“(Think about [Al Gore/George W. Bush]) Has Al Gore/George W. Bush (because of the person he is, or because of something he has done) – ever made you feel:

ANGRY
HOPEFUL
AFRAID
PROUD

Candidate Evaluation Anxiety/Enthusiasm 2004:

“(Think about [George W. Bush/John Kerry]) Has George W. Bush/John Kerry (because of the person he is, or because of something he has done) – ever made you feel:

ANGRY
HOPEFUL
AFRAID
PROUD

Conventional War Anxiety 2000/2002

“How worried are you about our country getting into a conventional war at this time, one in which nuclear weapons are not used? Are you very worried, somewhat worried, or not worried at all?”

Nuclear War Anxiety 2000/2002

“How worried are you about our country getting into a nuclear war at this time? Are you very worried, somewhat worried, or not worried at all?”

Information Mass 2000/2004

Up to 5 likes and dislikes were allowed for each question.

“Is there anything in particular that you like about the Democratic Party/Republican Party? (What is it?)

“Is there anything in particular that you don’t like about the Democratic Party/Republican Party? (What is it?)

“Is there anything in particular about Al Gore/John Kerry/George W. Bush that might make you want to vote for him? (What is it?)

“Is there anything in particular about Al Gore/John Kerry/George W. Bush that might make you want to vote against him? (What is it?)

Information Accuracy 2000/2004

Interviews were done either Face-to-Face or over the phone

FTF: “Where would you place Al Gore/John Kerry/George W. Bush (on this issue?)

Phone:

“What about Al Gore/John Kerry/George W. Bush? (Do you think he feels that government should make every effort to improve the social and economic position of blacks, or that government should not make any special effort to help blacks because they should help themselves?)

“What about Al Gore/John Kerry/George W. Bush (on abortion)? Which opinion best agrees with his views?”

“What about Al Gore/John Kerry/George W. Bush? Do you think he thinks it is important to protect the environment even if it costs some jobs, OR that protecting the environment is not as important as maintaining jobs and our standard of living?”

“Where would you place Al Gore/John Kerry/George W. Bush? Do you think he would like to make it more difficult for people to buy a gun, make it easier for people to buy a gun, or keep these rules about the same as they are now? A lot easier/more difficult or somewhat easier/more difficult?”

“What about Al Gore/John Kerry/George W. Bush? Do you think he feels that women should have an equal role with men in running business, industry and government, or that a woman’s place is in the home?”

Information Seeking Behavior 2000/2002

“How many days in the past week did you read a daily newspaper/watch the national network news on TV/discuss politics with family or friends?”

Education 2000/2004

“What is the highest grade of school or year of college you have completed? Did you get a high school diploma or pass a high school equivalency test? What is the highest degree that you have earned?”

Habitual Attention 2000/2002/2004

“Some people don’t pay much attention to political campaigns. How about you? Would you say that you were very much interested, somewhat interested, not much interested in following the political campaigns this year?”

Strength of Partisanship 2000/2004

“Generally speaking, do you think of yourself as a Republican, a Democrat, an Independent, or what? Would you call yourself a strong Democrat/Republican or a not very strong Democrat/Republican? Do you think of yourself as closer to the Republican Party or to the Democratic Party?”

Presidential Approval 2000/2002

“Do you approve or disapprove of the way Bill Clinton/George W. Bush is handling his job as president?”

APPENDIX D
DERIVATION OF HOUSE COMPETITION VARIABLE

'''

The variable of House of Representatives competitiveness was derived by subtracting the percentage of the vote the winning candidate for the House received in the individual's Congressional District in 2000 from that of 2002.

REFERENCES

- Aldrich, John H. "Rational Choice and Turnout." American Journal of Political Science. 37: 246-278.
- Beck, Paul Allen, Russell J. Dalton, Steven Greene, Robert Huckfeldt. 2002. "The Social Calculus of Voting: Interpersonal, Media, and Organizational Influences on Presidential Choices." American Political Science Review. 96:57-73.
- Bimber, Bruce. 2001. "Information and Political Engagement in American: The Search for Effects of Information Technology at the Individual Level." Political Research Quarterly. 54:53-67.
- Bradburn, Norman M. 1969. The Structure of Psychological Well-Being. Chicago: Aldine.
- Brady, Henry E., Sidney Verba, and Kay Lehman Schlozman. 1995. "Beyond SES: A Resource Model of Political Participation." American Political Science Review. 89:271-294.
- Buchanan, James M. and Gordon Tullock. 1962. The Calculus of Consent. Ann Arbor: University of Michigan Press.
- Campbell, Angus, Philip E. Converse, Warren E. Miller, and Donald E. Stokes. 1960. The American Voter. Chicago: University of Chicago Press.
- Chamberlain, Gary and Michael Rothschild. 1981. "A Note on the Probability of Casting a Decisive Vote." Journal of Economic Theory. 25:152-162.
- Conover, Pamela, and Stanley Feldman. 1989. "Candidate Perceptions in an Ambiguous World: Campaigns, Cues and Inference Processes." American Journal of Political Science. 33:917-940.
- Cowden, Jonathan A., and Rose M. McDermott. 2000. "Short-Term Forces and Partisanship." Political Behavior. 22:197-222.
- Derryberry, Douglas. 1991. "The Immediate Effects of Positive and Negative Feedback Signals." Journal of Personal and Social Psychology. 61:267-278.
- Diener, Ed and Robert A. Emmons. 1984. "The Independence of Positive and Negative Affect." Journal of Personal and Social Psychology. 47:1105-1117.
- Downs, Anthony. 1957. An Economic Theory of Democracy. Boston: Addison-Wesley.
- Eccles, John. 1989. Evolution of the Brain: Creation of the Self. London: Routledge.
- Elster, Jon. 1986. Introduction. In Rational Choice, ed. Jon Elster. New York: New York University Press.

- Fiorina, Morris. 1981. Retrospective Voting in American National Elections. New Haven: Yale University Press.
- Fonberg, Elzbieta. 1986. "Amygdala, Emotions, Motivation and Depressive States." In Emotion: Theory, Research and Experience, ed. R. Plutchik and H. Kellerman. London: Academic
- Fowler, James H., Laura A. Baker and Christopher T. Dawes. 2008. "Genetic Variation in Political Participation." American Political Science Review, *forthcoming*.
- Gates, Scott and Brian D. Hume. 1997. Games, Information, and Politics: Applying Game Theoretic Models to Political Science. Ann Arbor: University of Michigan Press.
- Grafstein, Robert. 1997. "Comment." Journal of Politics. 59:1040-1047
- Gray, Jeffrey A. 1987. The Psychology of Fear and Stress. 2nd ed. Cambridge. Cambridge University Press.
- Green, Donald P. 1990. "The Effects of Measurement Error on Two-Stage Least-Square Estimates." Political Analysis. 2:57-74.
- Green, Donald P., and Bradley Palmquist. 1990. "Of Artifacts and Partisan Instability." American Journal of Political Science. 34:872-902.
- Green, Donald P., and Bradley Palmquist. 1994. "How Stable is Party Identification?" Political Behavior. 16:437-466.
- Green Donald P. and Ian Shapiro. 1994. Pathologies of Rational Choice Theory: A Critique of Application in Political Science. New Haven: Yale University Press.
- Green, Donald P., Goldman and Salovey. 1993. "Measurement Errors Masks Bipolarity in Affect Ratings." Journal of Personality and Social Psychology. 64:1029-1041.
- Huckfeldt, Robert B. and John Sprague. 1995. Citizens, Politics and Social Communication. New York: Cambridge University Press.
- Huckfeldt, Robert, Jeanette Morehouse Mendez and Tracy Osborn. 2004. "Disagreement, Ambivalence, and Engagement: The Political Consequences of Heterogeneous Networks." Political Psychology. 25:65-95.
- Hurwitz, Jon. 1984. "Social Stereotyping and the Concept of Party Identification." Political Psychology. 5:707-736.
- Jackson, John E. 1975. "Issues, Party Choices, and Presidential Votes." American Journal of Political Science. 19:161-185.

- Kahneman, Daniel, Paul Slovic and Amos Tversky. 1982. Judgment under Uncertainty: Heuristics and Biases. Cambridge: Cambridge University Press.
- Kunst-Wilson, William R. and Robert B. Zajonc. 1980. "Affect Discrimination of Stimuli Cannot Be Recognized." Science. 207:557-558.
- Ladd, Jonathan McDonald, and Gabriel S. Lenz. 2008. "Reassessing the Role of Anxiety in Vote Choice." Political Psychology. 29:275-296
- Leighley, Jan. 1996. "Group Membership and the Mobilization of Political Participation." Journal of Politics. 58:447-463.
- Mansbridge, Jane J. 1983. Beyond Adversary Democracy. Chicago: University of Chicago Press.
- Marcus, George E. and Michael B. MacKuen. 1993. "Anxiety, Enthusiasm and the Vote: The Emotional Underpinnings of Learning and Involvement During Presidential Campaigns." American Political Science Review. 87:672-685.
- Marcus, George E. and Michael B. MacKuen. 2001. "Emotions and Politics: The Dynamic Functions of Emotionality." In Citizens and Politics: Perspective from Political Psychology, ed. James H. Kuklinski. Cambridge, UK: Cambridge University Press.
- Marcus, George E., W. Russell Neuman and Michael MacKuen. 2000. Affective Intelligence and Political Judgment. Chicago: University of Chicago Press.
- Margolis, Howard. 1982. Selfishness, Altruism, and Rationality: A Theory of Social Choice. Chicago: University of Chicago Press.
- McKelvey, Richard D. and Peter C. Ordeshook. 1987. "Elections with Limited Information: A Multidimensional Model." Mathematical Social Science. 14:77-99.
- Miller, Warren E., and Merrill J. Shanks. 1996. The New American Voter. Cambridge, MA: Harvard University Press.
- Mueller, Dennis C. 1989. Public Choice II. Cambridge: Cambridge University Press.
- Mutz, Diana C. and Paul S. Martin. 2001. "Facilitating Communication Across Line of Political Difference: The Role of Mass Media." American Political Science Review. 95:97-114.
- Mutz, Diana C. and Jeffrey J. Mondak. 1998. "Democracy at Work: Contributions of the Work Place Toward a Public Sphere." Presented at the Annual Meeting of the Midwest Political Science Association in Chicago, IL.

- Olson, Mancur. 1965. The Logic of Collective Action. Cambridge, MA: Harvard University Press.
- Pateman, Carole. 1970. Participation and Democratic Theory. Cambridge, UK: Cambridge University Press.
- Pollock, Phillip H. 1982. "Organizations as Agents of Mobilization: How Does Group Activity Affect Political Participation?" American Journal of Political Science. 26:486-503.
- Popkin, Samuel L. 1991. The Reasoning Voter: Communication and Persuasion in Presidential Campaigns. Chicago: University of Chicago Press.
- Riker, William H. 1990. "Political Science and Rational Choice." In Perspectives on Positive Political Economy, ed. James E. Alt and Kenneth A. Shepsle. Cambridge: Cambridge University Press.
- Riker, William H., and Peter C. Ordeshook. 1973. An Introduction to Positive Political Theory. Englewood Cliffs, NJ: Prentice-Hall.
- Rolls, Edmund T. 1999. The Brain and Emotion. Oxford: Oxford University Press.
- Rosenstone, Steven J. and John Mark Hansen. 1993. Mobilization, Participation and Democracy in America. New York: Longman.
- Rothenberg, Lawrence S. 1988. "Organizational Maintenance and the Retention Decision in Groups." American Political Science Review. 82:1129-52.
- Russell, James A. 1979. "Affective Space is Bipolar." Journal of Personality and Social Psychology. 37: 345-356.
- Schickler, Eric, and Donald P. Green. 1995. "Issue Preferences and the Dynamics of Party Identification: A Methodological Critique. In Political Analysis, vol. 5, ed. John R. Freeman. Ann Arbor: University of Michigan Press.
- Simon, Herbert. 1976. "From Substantive to Procedural Rational." Methods and Appraisals in Economics, ed. S.J. Latsis. Cambridge, UK: Cambridge University Press.
- Sigelman, Lee and William D. Berry. 1982. "Cost and the Calculus of Voting." Political Behavior. 4:419-428.
- Texiera, Ruy A. 1987. Why Americans Don't Vote: Turnout Decline in the United States, 1960-1984. New York: Greenwood Press.
- Uhlener, Carole J. 1989. "Rational Turnout: The Neglected Role of Groups." American Journal of Political Science. 33:390-422.

- Valentino, Nicholas A., Vincent L. Hutchings, Antoine J. Banks, and Anne K. Davis. 2008. "Is a Worried Citizen a Good Citizen? Emotions, Political Information Seeking, and Learning via the Internet." Political Psychology. 29:247-273.
- Verba, Sidney. 1967. "Democratic Participation." The Annals of the American Academy of Political and Social Science. 373:53-78.
- Verba, Sidney, Kay Lehman Scholzman, Henry E. Brady and Norman H. Nie. 1993. "Race, Ethnicity and Political Resources: Participation in the United States." British Journal of Political Science. 23:453-497.
- Verba, Sidney, Kay Lehman Scholzman, Henry E. Brady. 1995. Voice and Equality: Civic Voluntarism in American Politics. Cambridge, MA: Harvard University Press.
- Wolfinger, Raymond E. and Steven J. Rosenstone. 1980. Who Votes? New Haven: Yale University Press.
- Watson, David, Lee Anna Clark and Auke Tellegen. 1988. "Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales." Journal of Personality and Social Psychology. 47:127-144.
- Whiteley, Paul F. 1995. "Rational Choice and Political Participation – Evaluating the Debate." Political Research Quarterly. 48:211-233.