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**Affective Contagion: The Impact of Subtle Affective Cues
in Political Thinking**

A Dissertation Presented

by

Cengiz Erisen

to

The Graduate School

in Partial Fulfillment of the

Requirements

for the Degree of

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in

Political Science

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Abstract of the Dissertation

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This dissertation examines the effect of subtle affective cues (such as the American flag, upbeat music, and balloons in conventions, or smiling faces, family togetherness, or dark, moody backgrounds in political ads, and the like) in citizen thinking, reasoning, and behavior. Stemming from prominent theories in political psychology and social psychology, this dissertation explores the long-term effects of incidental affective cues on how people think deeply about such political issues as illegal immigration and the energy crisis. Using data from several experiments and surveys this dissertation analyzes how unnoticed (or too peripheral) affective influences change the way we “stop and think” about political issues and policies, update our political attitudes, and reach political judgments. By manipulating affective cues readily available in the environment, I demonstrate that incidental affective influences exert systematic effects on political attitudes and behavior in general. Although subtle, sudden, and unnoticed, affective cues (i.e. primes) around us impact the way we think, reason, and behave. Implications for citizen rationalization of judgments and decisions, and our understanding of democratic citizenry are discussed.

Dedicated to my beloved wife, Elif

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INTRODUCTION

This dissertation investigates an unexplored aspect of political thinking: Affective Contagion. In stark contrast with the great majority of political science research that takes responses to basic survey questions as indicators of citizen behavior, this dissertation proposes a distinct approach. The dissertation employs the affect-driven dual process paradigm --proposed by several experiments in social psychology and the neurosciences-- to explore the effects of incidental affective cues in political thinking, reasoning, and behavior.

The affect-driven dual process paradigm distinguishes the unconscious automatic processing from the conscious deliberative processing. Based on this differentiation, this dissertation places preconscious affect at the core of the mechanism. The fundamental assumption of this mechanism is that both affective and cognitive reactions to external and internal events are triggered unconsciously; and we only become consciously aware of the thoughts and feelings at the end of the processing. In this respect, the experimental

studies in the following chapters explore how affective influences processed at the unconscious level can actually alter political thinking, reasoning, and attitudes.

The dissertation elaborates on the effects of preconscious affect in six chapters. Chapter 1 introduces the main research question of the dissertation and provides the background for the Theory of Affective Political Thinking. In this chapter, I discuss the pillars of affect-driven dual process models --primacy of affect and hot cognition-- and define the cognitive mechanisms that these pillars function through. Next, to put the theory in place, this chapter gives real world examples of unnoticed affective influences in political and social environments. The principal goal of this chapter is to present the underlying hypotheses of the Theory of Affective Political Thinking. I briefly describe each hypothesis and present the big picture that will be elaborated in the respective chapter. Last, this chapter places the current work into place compared to three related models in political science.

Chapter 2 discusses the analyses and findings on the core hypothesis of the dissertation, Affective Contagion. The chapter includes three separate studies two of which are based on political issues and the last one relates to public policy recommendations. Through these studies, I show the effects of the affective primes in what we remember with respect to political issues and public policies. In addition, I examine the evidence whether affective primes are as powerful as prior attitudes in what we remember on issues and policies. In this chapter, I describe the priming paradigm employed throughout the dissertation. Also, I lay out the attitude measurement and construction used in the dissertation.

Chapter 3 examines the crucial role that affect-triggered thoughts take in political attitudes and evaluations. Building upon the results of the second chapter, Chapter 3 shows to what degree the affect-evoked thoughts impose a change on political attitudes and policy preferences. I explain and present the results by employing a sequential mediation analysis on two major studies of the dissertation, illegal immigration and energy security.

Chapter 4 functions as a theoretical link between Chapter 2 and Chapter 5. It begins with the Affective Contagion hypothesis and sets up the stage for the Affective Causal Coherence hypothesis. The principal goal for this chapter is to elaborate on the Causal Coherence hypothesis that suggests that spontaneous thinking on issues and policies come to mind in cause-and-effect chains. In other words, the Causal Coherence hypothesis postulates thinking and deliberation through causally coherent thoughts in the sense that antecedents prompt consequences and consequences prompt antecedents. This chapter not only defines what coherence means in the dissertation but also presents the links that coherent causal thinking has to the theory of integrative complexity and inter-attitudinal implicational relations. However, Chapter 4 only focuses on the non-affective dimension of thinking.

In turn, Chapter 5 integrates the affect driven mechanism into coherent political thinking and reports experimental tests of the role of affect in coherent reasoning. This chapter postulates that coherent thinking about political events and policies entails patterns of thought retrieval and generation that maintain reasonably consistent valence as well as causal chaining. Affect, whether triggered directly by the political policy under consideration or incidental to that policy, should promote both forms of coherence in

political thinking, reasoning, and deliberation. Building on the findings of previous chapters, Chapter 5 uses an experimental study to show that thoughts and preferences are often implicitly triggered with subsequent deliberation largely in the service of rationalizing that behavior, which is termed as Affective Causal Coherence hypothesis.

Chapter 6 takes a broader point of view to demonstrate the effects of affect-triggered thoughts on voting behavior, and discusses where the affective voting model stands in comparison with the two alternative models of thinking (snap judgments and unconscious thinking). So, this chapter first shows the effects of affect-colored thoughts and considerations in the probability of correct voting for presidential candidates, the Affective Voting hypothesis. Secondly, this chapter introduces two models that might as well be used by voters in making correct voting decisions. These models indicate the competitive advantages of the Affective Voting model in making correct voting choices. Building on the insights from the literature on correct voting in this chapter I introduce the impact of affect on correct voting in order to present a more fine-tuned analysis of the determinants of voting correctly.

A summary of all findings across the chapters, contributions of the dissertation, and implications for the Democratic Theory are discussed in the conclusion of the dissertation.

CHAPTER 1: THEORY OF AFFECTIVE POLITICAL THINKING

The American Voter (Campbell, Converse, Miller, & Stokes, 1980) has provided the foundation for the political behavior movement, and has shaped political scientists' understanding of citizen's values, behavioral predispositions, and feelings. These early models assume that citizen behavior is based on deliberative processes in which thoughts and feelings are conscious and explicit. In line with a reliance on verbal self-reports, political scientists limited their data sources to the self-reported considerations that come to mind when individuals are asked to report behavior, attitudes, decisions, and actions. Today, political scientists know that such models are incomplete: at the core of citizenry behavior and judgment lie the influence of unnoticed and under appreciated implicit factors. Such factors, which may be outside of the conscious awareness of the individual, have the potential to challenge how political scientists measure and interpret the structure and connections among political attitudes, evaluations, and decisions.

Evidence from the cognitive sciences, social psychology, and most recently the neurosciences posits *affect-driven dual process models* of thinking and reasoning (Zajonc 1980, 2000; Bargh 1997, 1999, 2007; Damasio 1999; Bower & Forgas 2001; Lodge &

Taber 2000, 2005). Central in these models is the separation of unconscious (automatic, implicit; referred to as System 1) and conscious (systematic, deliberative, explicit; referred to as System 2) processing. The conscious deliberative process involves the consciously controlled responses to an object, which mainly consist of verbal and thoughtful reasoning. These processes are cognitively effortful, time and attention demanding, and often require in-depth search in memory. On the other hand, system two responses are spontaneous and uncontrollable, requiring little or no cognitive resources. System one processes are slow, effortful, and deliberative; system two processes are spontaneous, fast, unreflective, and effortless.

In line with the separation of the conscious and the unconscious processes in the literature, this dissertation is based on the affect-driven dual process models and contributes to the theory of motivated reasoning: the systematic rationalization of beliefs, attitudes, and intentions built into the basic architecture of the mind, propelled by processes that *preconsciously* drive the collection, comprehension, interpretation, and evaluation of evidence in ways that bias judgments (Lodge & Taber 2000; Taber & Lodge 2006; Erisen, Lodge & Taber 2008). Building on the evidence on motivated reasoning and in direct contrast to the conventional models of how citizens think and reason when deliberating about politics and public issues, this dissertation shows that subtle affective cues – occurring outside of conscious awareness – shape how people form, update, and express their political attitudes and policy preferences. In direct contradiction to previous models of political behavior, the citizen is postulated to be more a rationalizer of preferences than a rational decision maker.

What especially attracts attention to the study of unconscious processing in political behavior and attitudes is the finding that such processes are at work not only when people make snap judgments, but even when we think hard about an issue and weigh the pros and cons. As such, this bias is unavoidable: impacting how we form judgments, make choices – and, thus, impacting our democracy.

THE MECHANISM

The affect-driven dual process model has two main theoretical pillars:

Primacy of Affect

An early example of the influence of unconscious processing on conscious judgment and evaluations comes from Zajonc's primacy of affect experiments (Zajonc 1980; LeDoux 1996, 2003). Zajonc's studies present strong evidence that objects are evaluated by the affective processing system that automatically tags objects as positive or negative. In one of Zajonc's prominent studies, participants were primed with happy, neutral, and angry faces, which resulted in evaluatively congruent judgments of Chinese ideograms (Zajonc, 1980; see also Murphy, Monohan, & Zajonc 1995). As these studies show, affect can be triggered automatically without conscious appraisal of the object. Moreover, once an affective tag is linked to an object in long-term memory (LTM) it becomes *primary* in the sense that affect enters into working memory (WM) on a time scale of milliseconds, whereas conscious thoughts and appraisals arrive later in the judgment process.¹ LeDoux (1996) similarly finds evidence that system one functions

¹ Memory is considered a network of concepts connected in a series of associations (Anderson, 1983). The

differently than the affective system: the latter operates faster and unconsciously and apparently does not require cognitive assessments to trigger a behavioral response. As LeDoux has shown with respect to threat and fear, the human brain processes external stimuli and triggers appropriate actions well before the brain is able to communicate that information to conscious awareness. If the primacy of affect holds for more complex socio-political behavior, then much of political thinking and behavior is infused with associated thoughts and feelings that come automatically to mind on mere exposure to an object and will predictably impact all subsequent political judgments and preferences.

Hot Cognition

In line with the primacy of affect hypothesis, scholars posited that all social-political concepts that have been repeatedly evaluated become affectively charged, or “hot” (Abelson 1963; Laird 1974; Bargh 1994, 1997; Fazio, Sanbonmatsu, Powell & Kardes 1986; Lodge & Stroh 1993; Taber, Lodge & Glather 2001), and that this affect is activated on mere exposure (Burdein, Lodge & Taber 2006). The hot cognition hypothesis (Abelson 1963) holds that social information is inevitably charged with affect (as in Bargh 1994, 1997; Lodge & Stroh 1993), and that this affect arises automatically when the social object is activated in memory.

In an early study of hot cognition, Lodge & Taber (2005) found that **i)** even semantically unrelated affective concepts (such as the words “sunshine” or “cancer”) influence the evaluation of political issues, figures, and groups; and **ii)** participants are faster in response time to affectively congruent political concepts (e.g., joy - Lincoln) and

mechanism of spreading activation makes concepts available to conscious thought (Neely 1977; Collins & Loftus, 1975).

slower to respond to the incongruent concepts (e.g., hug - Hitler). Thus, congruence between the affective prime and the target object -- both positive or both negative -- reduces the amount of time required to give a response and to recall information. Similarly, research demonstrates that experimentally manipulated positive and/or negative affect can alter snap evaluations of political leaders, groups and issues (Krosnick, Betz, Jussim, & Lynn 1992), as well as attitudes without conscious monitoring (for a review see Clore & Schnall 2005).

Semantic associations link objects (nodes, in long-term memory) together based on the characteristics of the objects represented by the concepts. For instance, the node representing PRESIDENT OF THE UNITED STATES (POTUS) would presumably have links to RICHARD NIXON, ABRAHAM LINCOLN and anyone else known to have held that title. Links to those presidents thought to be the best exemplars of the category, or those most frequently brought up in connection with POTUS would be stronger. For instance, POTUS would have a stronger connection with the node representing FRANKLIN ROOSEVELT than it would with the node representing GERALD FORD.

Affective association links objects together in long-term memory based on the extent to which they are considered to be good or bad. All objects in long-term memory are considered to be either positive or negative to some extent, and this positivity or negativity is automatically activated when the object is activated. In essence, objects are linked affectively in a parallel network to semantic linkages, where nodes representing objects that have nothing in common but their positivity or negativity are linked. For instance, all negatively regarded objects, such as HITLER, DEATH, POISON are linked,

to some extent, with hated politicians. For a Whig, ANDREW JACKSON might have been very close to MAGGOT. As with semantic associations, the strength of the links between objects is dependent on the relative strength of the affect associated with the object. For instance, while both STORM and POISON are considered to be negative, the latter is generally far worse than the former, and the two would be linked only weakly. Two more strongly affective negative words, such as COCKROACH and CANCER would be rather more strongly linked, despite a lack of any semantic association (Fazio, 2001).

Both of these networks are connected through spreading activation (Barsalou, 1992; Lodge & Taber, 2005). When one object in memory is activated, those nodes which are connected to it -- either semantically or affectively -- move closer to their activation threshold, or are more likely to be brought into working memory than they would be otherwise. This has the side effect of making it more difficult to activate objects that are unrelated to the object being activated, as these unrelated objects must attain a higher level of activation to overcome the disassociation.

In turn, spreading activation links the affective and cognitive reactions to concepts (e.g., political issues and policies) and objects (e.g., candidates) in memory through associative pathways that can be triggered unconsciously upon subtle mere exposure. This will lead to an uncontrollable chain of reactions that will carry affective evaluations over to feelings, to conscious thoughts, and finally to behaviors. At the end of this train of processing, we become consciously aware of our thoughts and behavior that are triggered moments earlier. We subjectively assume that our conscious thinking and reasoning results in our thoughts and behavior, which in fact is the consequence of a subtler affect-

triggered unconscious processing (Libet, 1985; Forgas, 2000; Hassin, Uleman, & Bargh, 2005).

In this mechanism, exposure to the cues and events in the environment generate a number of automatic processes within the first few hundred milliseconds of registration. Concepts and objects in memory that match with this environmental cue (call them, primes) will be activated as soon as preconscious recognition occurs. Very shortly thereafter, any affective judgments previously associated with these directly activated concepts and objects receive activation, so that initial positive and/or negative affect is aroused within the first two hundred milliseconds (Chapter 2 shows simple positive and negative valence toward political issues and public policies can be energized in as little as 39 ms.).

Affective activation of recognized memory concepts and objects would then spread across the most associated pathways from, say, OBAMA to DEMOCRAT, or PRESIDENT, or AFRICAN AMERICAN (Lodge & Taber, 2005). In contrast, affect associated with more distant, indirectly activated objects (perhaps, a pathway from OBAMA to ILLINOIS or HAWAII) may also be activated, potentially altering the current affective state. However, since initial affect influences the spread of activation along affectively congruent pathways, the direction of initial affect is more likely to favor the retrieval of affectively congruent thoughts and considerations. Given that strongly associated pathways among objects and concepts in memory are affectively-charged, those that match with the valence of the affect and those with strong associations to the most directly activated object will receive more activation than affectively *incongruent* or weakly associated objects, and so will enter the decision stream earlier (Bower & Forgas,

2001; Forgas, 2001). All this processing is preconscious, operating largely outside of our awareness in under a second of time. The depth and direction of downstream processing are ultimately a function of the direct activation of objects and their associated affect.

Subliminal Priming

Subliminal priming can help researchers show the effects of the preconsciously activated affect on behavior and judgment. Subliminal priming involves a two-step process: first, an objective threshold, as can be measured by brain wave patterns, must be passed for some stimulus event to enter one of the sensory systems. Second, a subjective threshold is passed if the stimulus event enters conscious awareness. If the objective threshold is not passed perception does not occur, and there is no registration on the senses of the event. If the objective threshold is passed, but the subjective is not, than subliminal priming occurs, a sensory experience that registers on the mind without entering conscious awareness (Dijksterhuis, Aarts & Smith, 2005; Bargh 2007; Wittenbrink, 2007).

An objectively perceived stimulus may *not* reach conscious awareness for many reasons: because it could occur too rapidly or too peripherally to be acknowledged, or one is momentarily distracted, or most commonly, one “sees” the stimulus but fails to recognize its influence on thoughts, feelings, preferences, and choices (Bargh 2007). The event is noted but its impact unappreciated. If the subjective threshold is passed, we have conscious perception, the point at which one is consciously become aware of the stimulus.

One important challenge to the utility of subliminal priming is its long-term influence on behavior. This is an issue because...Considering the priming manipulation of 39 ms used in this dissertation (discussed in greater detail in Chapter 2): the long-term effects of affective primes are tested only during the duration of the experiments, 40-45 minutes on average. First, an average of forty minutes is longer than the average study time for most survey and experimental research in political science, as well as in social psychology. Being able to show the affective priming effects in an experiment of 40 minutes would be substantial. Longer-term effects over time (across days/weeks) will not be tested in this dissertation, but a strong initial expectation of these effects will be shown. Yet, research on long-term effects of subliminal priming has developed showing consistent results that effects of subliminal influences last hours (Nelson & Norton 2004) and days (McCabe, Tobler, Schultz, Dickinson, Lupson & Fletcher 2009). Lastly, researchers have documented various ways in which unnoticed primes in daily life become functional in a way that substantiates their long-term effects.

Real World Examples

Unconscious priming events are ubiquitous in the world of commercial (Yi 1990; Grunert 1996; Nelson & Norton 2004; Scarabis, Florack & Gosejohann 2006; Berger & Fitzsimons 2008; Chang 2008; Lindstorm 2008) and campaign advertising (Mendelberg 2001; Valentino, Hutchings, & White 2002; Mickiewicz 2005; Brader 2006; Weinberger & Westen 2008). A particular example is the 2000 presidential election campaign ad by the Republican National Committee presented nationwide 4,400 times in TV. While criticizing Al Gore's prescription plan, towards the end of the ad the word "RATS" is

superimposed on the words “Bureaucrats Decide” for approximately 300 ms. (almost subliminal exposure). Although near subliminal, Weinberger and Westen (2008) showed the effects of this ad on Al Gore and his drug plan. Mainly, the “rats” prime increased negativity towards the plan and hence decreased support for Gore’s drug plan.

John Bargh and his colleagues have also shown similar results on the effect of incidental daily “primes” on behavior and judgments. In an experiment, Bargh, Chen & Burrows (1996) found that given a scramble-sentence test that “primes” participants with word associated with aggression, individuals tend to interrupt a conversation much faster than those who received the words related to politeness. Similar results are confirmed for the relationship between old-age related words in a scramble-sentence test and walking pace (Bargh et al. 1996) and the tactile feeling of warmth and trust (Williams & Bargh 2008). These incidental events are as well at work for those who receive the prime of “professor” vs. “hooligan” in answering Trivial Pursuit questions correctly (Dijksterhuis & Knippenberg 1998), and for African American students who are asked about their race (a single question) at the beginning of Graduate Record Examination which would in turn cut their success rate by half (Steele & Aronson 1995). We now know that social stereotypes (Devine 1989; Macrae, Milne & Bodenhausen 1994) and goal-directed behavior (Aarts & Dijksterhuis 2000; Bargh, Gollwitzer, Chai, Barndollar & Totshel 2001; Shah 2003) can be activated automatically.

Research on facial attractiveness also has shown strong effects of unconscious influences on judgments and evaluations. As shown in the subtle effects of gender, race, height, and attractiveness on presidential candidate evaluations (Eagly, Ashmore, Makhijini & Longo 1991), individuals’ facial characters are registered to the brain

automatically which would trigger stereotypic assumptions about the person. The meta-analyses covering over 1000 peer-reviewed psychological studies of physical attractiveness present that physically attractive people are perceived to be more sociable, dominant, extroverted, popular, and warmer. (Arthur 1992; Eagly et al. 1991; Langois, Kalakanis, Rubenstein, Larson, Hallam & Smoor 2000).

Such unconscious effects are found in politics as well: Mendelberg's (2001) showed the subtle effect of racial cues in George H.W. Bush's 1988 Willie Horton ad. Valentino, et al. (2002) presented it with subtle racial cues used in political ads. Brader (2006) documented the effects of preferences of upbeat music, smiling faces, family togetherness, or dark, moody backgrounds in political ads. Berger, Wheeler, & Meridith (2008) showed that support for more state taxation on education increased if people voted in schools rather than if they casted their vote in churches or firehouses. Even subtler, Schneider, Krosnick, Ofir, Milligan, & Tahk (2008) showed that 80% of the candidates listed first in a ballot have a greater chance of being voted for. Thus, we in fact are often unaware of these, and many other, "priming events" in our daily lives -- whether consciously noticed or not -- that influence our beliefs and attitudes (Gladwell 2005; Gigerenzer 2007; Lindstrom 2008).

THE THEORY OF AFFECTIVE POLITICAL THINKING

As defined earlier, the theory of affect employed in this dissertation stems from the affect-driven dual process models that rely on the primacy of affect and hot cognition hypotheses. The major goal is to disentangle the determinants of political behavior involving thinking, reasoning, and vote choice through the lenses of incidental unnoticed

affect-laden stimuli that current and earlier models of political behavior have not accounted for. To that end, I present five hypotheses on how people become, through affect-triggered thoughts, rationalizers rather than rational decision makers.

Central to the account of how political attitudes and evaluations are formed and expressed is the claim that the affect aroused in the initial stages of processing all sociopolitical concepts inevitably colors *all* subsequent phases of the evaluation process. When asked to list thoughts, express a judgment, or make a choice (given sufficient time to think and motivation to query memory for pros and cons) the considerations that enter into WM will be biased in the direction of the initial affect. As I will show in upcoming chapters, what comes to mind when voicing an opinion – as when responding to an open-ended question like the ones used in the ANES – will of course reflect what information is currently accessible in memory (Sniderman, Brody & Tetlock 1991; Zaller & Feldman 1992; Rahn, Krosnick, & Breuning 1994). In addition, the accessibility of new considerations will be biased by what this dissertation refers to as an *affective contagion effect*: the facilitation of affectively congruent information and the inhibition of incongruent information (Chapter 2).

Affective Contagion Hypothesis: Preconsciously activated affect will change the valence of thoughts that we recall by promoting affect-congruent thoughts and inhibiting affect-incongruent thoughts.

The considerations that come consciously to mind therefore do not represent an unbiased sample of pro and con associations (as might be expected by a naïve Zaller and Feldman model, as discussed later) but are biased systematically by the feelings that arise

in the earliest stages of processing. These biased pro and con associations are also expected to influence attitude formation and consequent political judgments and evaluations, as discussed more fully in Chapter 3.

Attitudinal Consequences of Affective Contagion: Preconsciously activated affect-congruent thoughts will enter into the construction of reported evaluations, and promote affect-congruent policy preferences and attitude change.

The affectively-biased thoughts are expected to enter into the construction of reported evaluations. These biased evaluations then promote prime-congruent considerations and preferences which in turn drive motivated reasoning and rationalization in political thinking. In this respect, it is important to elaborate how individuals reason (as the normative theory assumes) and search for rationales for their behavior and attitudes (Chapter 4).

Causal Coherence Hypothesis: Individuals tend to develop causally consistent thoughts on issues and policies.

The next step would be to control for the affect and feelings in this process and test if they alter the valence and coherence among the thoughts and considerations. In other words, affective-congruent information would not only relate to the valence (negative or positive) but also affect the quality (causal or non-causal) of thoughts and considerations. The assumption is that the affect-triggered thoughts and considerations are affectively *and* causally associated with each other. This makes people mere

rationalizers of their attitudes, judgments, and beliefs rather than rational decision-makers. This process is called as *affective rationalization* (Chapter 5).

Affective Causal Coherence Hypothesis: Preconscious affective primes or stimuli, even if unnoticed, will promote the generation of antecedent-consequence (If-Then) pairs and chains when people think about political issues and public policies.

If it is the case that preconscious affect influences thoughts and considerations, leads to causally linked associations, and changes political behavior and judgment, it should also impact voting. Rational choice models of voting assume that individuals consider all relevant information prior to making a final vote decision (Downs 1957). However, the psychological models of voting suggest a more realistic view of the individual decision-maker by incorporating cognitive limits and a boundedness factor into the model (Simon 1957; Anderson 1983; Lodge & Taber 2000; Taber & Lodge 2006). As a voter attempts to evaluate the various types of information on candidates and issues, s/he perhaps puts the quality of the vote in jeopardy. In reality, what voters think of as reasons and rationales in reaching a rational voting decision could in fact be a function of affective cues readily available in the environment that would determine the correctness of the vote choice. This is coined as the *affective voting effect* such that the affect-triggered thoughts alter political predispositions and ultimately correctness of the vote choice (Chapter 6).

Affective Voting Hypothesis: Affectively-biased thoughts will enter into the construction of decisions and influence the correctness of vote choice.

This final hypothesis should at the same time account for the condition where there is no involvement of affect-colored thoughts. Some individuals do not spend as much time and resource on candidate and issue based information during election time. Equally important, previous research has shown the negative effects of introspection and extensive deliberation on the quality of decisions (Wilson, Dunn, Bybee, Hyman, & Rotondo 1984; Wilson & Schooler 1991; Wilson & Brekke 1994; Wilson 2002). Thus, different coping mechanisms can be developed such as satisficing rule (Simon 1957; for an application of this model to voting see Lau & Redlawsk 2006; Lau, Andersen, & Redlawsk 2008) and unconscious thinking, defined as unconscious activity during a period of distraction (Uleman & Bargh 1989; Dijksterhuis 2004; Dijksterhuis, Bos, Nordgren, & Baaren 2006; Dijksterhuis & Olden 2006). In connection with the affective voting effects, these mechanisms are examined in Chapter 6.

With these hypotheses, this dissertation goes beyond previous research in political science and social psychology in two ways: First, this dissertation examines how affective priming influences downstream processing, rather than fast on-the-spot evaluations. Building on the findings of reaction time studies, this dissertation shows that the affective primes – which are ubiquitous in everyday life and the playthings of commercials – propel individuals to bias their recall, making their thoughts congruent with the affective prime; this, in turn, alters political behavior in several ways. Second, this dissertation investigates the rationalization process not simply by relying on personal reports but in fact by delineating the relationship between the thoughts.

WHERE DOES AFFECT STAND IN RESEARCH ON EMOTIONS?

There is vagueness in the literature related to emotions (including mood and affective states) as to what affect is and how it is related to other, related psychological constructs. The predominant aspect of the literature treats emotions as discrete (Frijda 1986; Elster 1999) with reasons or attributions (Weiner 1990; Lazarus 1991) generating these emotional states. On the other hand, the valence approach has been the most commonly employed method in emotions research among researchers making use of affect and mood manipulations (Osgood, Suci & Tannenbaum 1957; Isen 1984; Forgas 1995). Yet, neither of these strands of research takes into account preconscious affect (like/dislike), which can be triggered upon exposure to subtle cues (Zajonc 1980). The major distinction of affect from mood and discrete emotions is that it occurs under the threshold of conscious awareness. It can be triggered on mere exposure and it can generate affect-laden stream of processing. Despite the criticism that the global valence approach is taken, most evidence on preconscious affect is valence-based. This dissertation takes a similar approach and makes predictions that conscious emotions are triggered by subtle, sudden negative and positive influences.

COMPARATIVE MODELS OF THINKING AND REASONING

There are three models that this dissertation specifically relates to. Here I briefly discuss what these models' assumptions are and how they are similar and different from the model of Affective Political Thinking as described above.

1. Affective Intelligence

The Marcus, Neuman & MacKuen (2000) theory of *Affective Intelligence* (AI) has been the most cited theory of emotion in the political science literature, though it has not been without some criticisms (Huddy, Feldman, Taber & Lahav 2005). The theory begins with the drawbacks of previous theories of emotion. First, Marcus (2003) suggests that the *valence* theories reduce emotions to a single dimension, which would not account for distinct emotions. On the other hand, the *discrete* theories of emotions would provide mutually exclusive categories for emotions, which would not however control for the interconnectedness between emotions. Third, the *dimensional theories* propose that emotions can have multiple dimensions (valence and arousal) and account for the drawbacks of previous models. Yet, Marcus (2000, 2003) claims that the problem with the dimensional models is that they do not account for *aversion*; emotions like disgust, contempt, hatred, etc. are hard to fit on the dimensional models. The valence-arousal model is especially poor at accommodating this *third* dimension of emotion (Conover & Feldman 1986; Marcus et al. 2000).

As a solution to the drawbacks of emotion models, Marcus and his colleagues (Marcus, et al. 2000) propose the AI model with its qualifications, as better measurement tools, ability to account for aversion, and specification of the source of emotion. Stemming from the foundations of Gray (1984, 1985), the tenet of the AI theory is that different emotion systems operate to subserve behavioral learning as well as control attention. In this model, affect is conceptualized in terms of two relatively independent “systems” driving the effortful versus disposition-based processing.

The *disposition system* is a collection of emotion mechanisms that provide direct

guidance and facilitate approach-oriented behaviors. When in this state, individuals are more likely to rely on habitual behaviors. In the domain of politics, these habits might be partisanship predisposition, or feelings (enthusiasm and aversion) towards political issues. Although such behaviors are developed over a long period through repetition, they do not require explicit processing. In accord with this, the dispositional system operates outside conscious attention and occurs prior to conscious awareness.

On the other hand, one's emotional state may result in monitoring the environment and weaken the tendency to rely on habitual ways of thinking. Simply put, the *surveillance system* refers to the battery of emotions that signal us to direct our attention to the threatening stimuli that would lead to additional search and learning on the subject. The surveillance system is activated when something unexpected is encountered, generating anxiety. Anxiety then drives conscious attention and processing in an effort to learn more and seek more information. As a result, increasing degrees of political anxiety are found to move people to learn more about politics and obtain information from political campaigns (Marcus et al., 2000; see Huddy, Feldman & Cassese 2007 for a contrast to this approach).

In line with this, the major similarity between AI and the theory of affective political thinking is that they both rely on the separation of conscious from unconscious processing with the very same assumptions on primacy of affect. There is as well a hint of connection between the disposition system and the theory of motivated reasoning (Taber & Lodge 2006) without any particular explanation as to how processing actually takes place under AI (Marcus 2008).

The major difference between AI and the theory of affect employed in this

dissertation is the treatment of emotions. This dissertation approaches affect by taking a valence perspective that every socio-political object is negatively and/or positively tagged as we encounter them in our social and political lives. Although AI has the two systems (disposition and surveillance) approach, the non-discrete emotions of enthusiasm and anxiety in theory map on with the valence dimensions nicely, in which enthusiasm relates to positive feelings and anxiety to negative feelings. Neither AI nor the theory of affect used in this dissertation discriminates within the negative and/or among positive emotions.

Both AI and the theory of Affective Political Thinking argue that the discrete emotions are preceded by preconscious affective states. However, AI has not shown any evidence (other than relevant citations) of preconscious states' influence in generating the disposition or surveillance systems. This dissertation particularly shows how unconsciously processed affective states influence judgments and evaluations.

Similarly, AI has provided no evidence for the direct influence of affect on political thinking and reasoning other than NES type verbal reports. I take a step further in this dissertation and show direct effects of affect on the valence and quality of thoughts, which in turn change subsequent political behavior.

Most importantly, the behavioral predictions between the two models are quite distinct from each other. AI proposes that when individuals feel enthusiasm (comparable to positive affect) towards politicians, issues, events, or objects, they are more likely to rely on heuristic processing whereas anxiety (comparable to negative affect) should lead

to in-depth processing and deliberation.² Correspondingly, as I discuss in greater detail in the following chapters, I found stronger consistent effect of the negative affective prime than the positive prime in promoting prime-congruent thoughts and behavior. This finding promises to provide connections with the valence asymmetries approach (positivity offset and negativity bias; Lau 1985; Holbrook Krosnick, Visser, Gardner, & Cacioppo 2001; Goren 2002; Ito Larson, Smith, & Cacioppo 1998) instead of a direct link with the theory of AI.

On a different note, the mechanism of affect employed in this dissertation makes an important contribution to the discussion of in-depth vs. heuristic processing argument. The manipulation of positive and negative primes relates to the Likability Heuristic (Sniderman, et al. 1991). In this respect, both negative and positive primes promote in-depth thinking and people use the likability heuristic across issues and policies. In contrast to the theory of AI, this dissertation argues (and finds strong evidence) that preconscious affect promotes affect-laden thoughts and considerations and challenges the notion that negative affect (anxiety) generates in-depth and positive affect (enthusiasm) generates heuristic processing relying on cues such as party identification. Affect, it will be shown, in fact colors all subsequent thoughts and evaluations and endorse processing that would not be separated as in-depth vs. heuristic.

² This assumption relates more to attitude change and persuasion literature on Elaboration Likelihood Model (Petty & Cacioppo 1981, 1986) and Heuristic-Systematic Model (Chaiken 1987; Chaiken, Liberman, & Eagly 1989; Eagly & Chaiken 1993). Both of these models of persuasion suggests a similar output to AI that individuals would choose between heuristic and in-depth processing on the basis of the encountered attitudinal information but not necessarily the affective state that they are in.

2. Zaller's (1992) Model of Political Behavior

Zaller (1992; also Zaller and Feldman 1992) provided one of the most prominent models of survey response and political behavior, called memory-based model as their theory underscores the critical dependence of attitudes on what is readily available and salient in an individual's memory. Zaller's model holds that evaluations about candidates or issues are created on the fly, by taking a random sample of all of the relevant known facts about the object, and averaging them, rather than being drawn from long-term memory. So, when asked about a candidate, the voter will quickly recall some sample of the salient facts about the candidate at the moment. For instance, if the facts that come to mind are all bad, the candidate will be evaluated negatively; if they're all good, the candidate will be regarded positively; if they're mixed, the evaluation would be ambivalent. Even in this model, though, individuals are not necessarily aware of the facts – often referred to as “considerations” – that underlie their evaluations. In this respect, Zaller's model of public opinion is in line with assertion of two distinct (unconscious vs. conscious) systems for individual information processing. Yet, this postulate is not underscored in Zaller's model as much as it is in this dissertation.

Similarly, one of the four premises of Zaller's model of political behavior partially corresponds to the effects of incidental affective environmental cues on individuals. In particular, the accessibility axiom posits that accessibility depends on what the person has “thought” about shortly before the question is asked. So, for instance, if a person saw a news report, or read an article in the newspaper, or talked to someone about illegal immigration or energy needs of the U.S., then that issue would be more salient and accessible at that time than several weeks later when the person is asked about

the issues and the recent news emphasized on economic condition of the nation. What we perceive from outside or what we are exposed to momentarily would influence what we remember and how we generate a response. The theory of affective political thinking coincides with the Zaller's model on this premise. Yet, the major distinction that this dissertation puts forth from this premise is that what considerations are recalled reflects affect-triggered bias that diminishes the quality of subsequent judgments (see Chapters 2 and 3).

In accord with this, the other difference between Zaller's model and the predictions of the current theory of affect is the emphasis on the systematic effects of thoughts on attitude reports. Zaller's model argues that thinking about an issue or a policy is thought to enable people to recall a larger number of considerations and hence to make more reliable responses. This is used to explain why more politically aware persons exhibit greater response stability and why the public as a whole is more stable on important political issues. In contrast, the premise of this dissertation that what people recall is biased by preconsciously processed affective influences, which in turn alter their policy evaluations, posterior attitudes, and most importantly, vote choice. What Zaller (1992) sees as stronger reliability, this dissertation argues to be affect-congruent bias.

3. The Model of Correct Voting (Lau & Redlawsk 2006)

Lau & Redlawsk (2006) provide four models of voter decision making in primary and general election campaigns. The models posit four distinct routes that voters take in reaching a final vote decision: rational choice (Model 1), an early socialization/cognitive consistency (Model 2), fast-and-frugal decision making (Model 3), and intuitive (i.e.,

heuristic) decision making through the satisficing rule (Model 4). By tracking every step of participants in their experiments, Lau & Redlawsk (2006) make explicit predictions for each model.

The measure of correct voting is defined by the choice that would have been made under the conditions of full information as rational choice theory argues. Deviations from Model 1 are here as elsewhere commonly observed. The major finding of this research is that voters employ fast-and-frugal (Model 3) and intuitive decision-making (Model 4) methods most frequently to make their vote choice. The principal reason for the utilization of the two strategies is to find a way to parsimoniously handle excessive information load, such as that provided by political campaigns. More importantly, the cost of excessive information and in-depth processing load produce weakened decision quality and increased likelihood of incorrect vote choice.

The major similarity between this dissertation and the models of correct voting is the insight that thinking in rational choice models demand excessive processing power whereas individuals in fact follow intuition. As found by Lau & Redlawsk (2006), rational choice based voting requires individuals to consider the pro and con aspects of each policy. This in-depth research in turn retrieves affect-evoked bias (unexplored by Lau & Redlawsk 2006) that misdirects the voter from the optimum decision matching with his/her preferences. On the other hand, simple cues and intuitive evaluation of relevant information about the candidates lead less bias and correct vote decision.

This dissertation matches with the voter decision-making models of Lau & Redlawsk (2006) suggesting that there are distinct routes (rational choice model and deviations from this normative model) in voting decisions. I explore this distinction with

the Affective Voting hypothesis (Chapter 6), which distinguishes in-depth processed vs. intuitive vote choice (unlike the differentiation between Model 3 and Model 4). What Lau & Redlawsk (2006) has unaccounted for is the role of affect or emotions in voting decisions. In this respect, this dissertation offers answers to factors that were left as error in the four models of Lau & Redlawsk (2006). Also, the voting measure of spatial models is used instead of the correct voting method employed by Lau & Redlawsk (2006).

CONCLUSION

This chapter provides the pillars of affect-driven mechanism to be used in the following chapters of the dissertation. The many dimensions and hypotheses of the theory of Affective Political Thinking are outlined here with comparisons to the comparable models.

The theory tested in this dissertation builds on a large body of work in political science, social psychology, and the neurosciences. I have drawn from several major works in these literatures in developing and presenting the pillars of this dissertation. The theory of Affective Political Thinking complements and challenges the existing theories of political psychology on voter behavior. Many of the effects that are shown in this dissertation are not accounted for in the current literature. More importantly, the findings of this dissertation challenge some aspects of the major political behavior theories that present the citizen as a rational decision maker. Through several experiments this dissertation provides evidence for a distinct point of view that suggest that the citizens are rationalizers of their decision, positions, and attitudes.

CHAPTER 2: THE ROLE OF AFFECT ON THOUGHTS AND CONSIDERATIONS: AFFECTIVE CONTAGION HYPOTHESIS

Stemming from the discussion in Chapter 1 on the many dimensions of affect, this chapter provides the major contribution of the dissertation, the Affective Contagion Hypothesis. The Affective Contagion Hypothesis postulates that being exposed to affective stimuli, even quickly enough that it is outside of our conscious awareness, alters decisions, beliefs and attitudes in our daily lives. The extent to which such affect impacts our thinking and reasoning is examined throughout this chapter.

As this dissertation intends to experimentally test the impact of unnoticed affective primes on political thoughts, attitudes, and policy evaluations, this chapter introduces a new method to understand its effects on downstream processing. Research on affective priming effects has been on quick, snap judgments through reaction time measurement. Yet, citizens employ effortful, deliberative processes for their political decisions and preferences. In many of the political domains, citizens face with conditions in which they collect information about the subject, ruminate about its downsides and benefits, and most probably discuss it with others. Thus, in order to demonstrate that preconscious affect can trigger affect-laden processing for an individual I propose the Affective

Contagion hypothesis that measures one's processing through thoughts and considerations on general political issues and policy proposals.

I propose two hypotheses representing the core assumptions of the Affective Contagion Hypothesis. Based on the literature on affective priming and emotional congruence effects, the hypotheses posit that the affective primes should influence the thoughts that come to mind (Roseman, Abelson & Ewing 1986; DeSteno, Petty, Rucker, Wegener & Braverman 2004). First, affective primes should promote affect-congruent thoughts more so than affect-incongruent ones. In other words, once exposed to positive stimuli one is more likely to recall positive thoughts on an issue or a policy regardless of the connection of the stimuli to the subject. In a similar vein, negative stimuli would promote negative thoughts and considerations rather than positive ones. The effect of affect in this respect could be truly incidental in a way that the affective stimuli have no semantic relationship with the subject at hand. This leads to the following hypothesis:

Hypothesis 1: *Affective primes will influence the valence and the number of negative and/or positive thoughts cited on general issue statements.*

Secondly, one's prior information about the issue or attitudes that are developed over time might influence the balance of negative and positive thoughts and considerations. If someone supports an issue s/he is more likely to recall positive thoughts whereas if someone opposes an issue s/he is more likely to cite negative thoughts. On the same basis, there could be an interaction between the prior attitude and the affective prime, such that if someone supports an issue and receives a positive prime (congruent prime condition) then s/he would cite more positive thoughts on the issue. Or,

for someone opposing the issue a negative prime (congruent prime condition) would promote more negative thoughts and inhibit the number of positive thoughts. In an incongruent condition (negative prime and a prior of support or a positive prime and a prior of opposition), I still expect to see the effect of the affective prime on the valence and number of thoughts in the prime-directed way. That is, controlling for the effect of the prior, my expectation is to see a positive prime promoting positive thoughts for the opponents of the issue and a negative prime promoting negative thoughts for the supporters of the issue. This proposal implies that there is an unknown situation in which either the affective prime or the prior attitude influences the retrieval of thoughts. The Affective Contagion Hypothesis holds that the affective prime would change the valence of thoughts even controlling for the prior attitude. In other words, the affective prime could generate thoughts that are as strong as, or perhaps more than the influence of the prior attitude of support/opposition.

Hypothesis 2: *Participants' prior attitude of support/opposition toward the issue will be less influential than the affective primes in recalling positive/negative issue related thoughts.*

I. AFFECTIVE PRIMING PROCESS IN THE EXPERIMENTAL STUDIES AND RESEARCH DESIGN

Given the critical distinction between conscious and unconscious influences, I need to fulfill two requirements to conduct a study including the unnoticed affective priming procedure: First, I need to employ a treatment that operates below consciousness so that the participants do not recognize the stimuli. In order to do so, I make use of subliminal

primes. Subliminal priming relies on measures that are unnoticed by the participants. Research by Zajonc (1980) and Bargh (2007) provide several examples of subliminal priming in laboratory conditions. In this sense, subliminal affective priming is to replicate the sort of unnoticed ubiquitous influences common in the world outside of the laboratory. Second, to find the effect of the subliminal affective primes on participants' thoughts on political issues and policies each participant will engage in a thought-listing procedure. This is the measure of what one explicitly recalls while thinking and reasoning about a policy. There are several examples in political science demonstrating how this thought-listing procedure is valuable in capturing citizen behavior (Lane 1969; Zaller & Feldman 1992; Rahn, Krosnick & Breuning 1994).

In all studies discussed in this chapter, the affective primes (cartoon faces) are semantically *unrelated* to the political issues. The positive affective prime is a smiley cartoon face, the negative affective prime is a frowning cartoon face, and the neutral affective prime is a cartoon face without a mouth impression. These primes are purely affective and hence would not raise any semantic associations with the statement that the participants receive on the computer screen. The purely affective primes employed in all of the studies in this chapter (and in the following chapters) are especially valuable in comparison with more commonly used primes like happy or negative words which have semantic association. So, I was able to get around the problem of raising semantic associations between the stimuli and the target statements.

All the affective primes appeared for 39 ms. on the computer screen right after the forward mask and prior to the backward mask. The forward and backward masks are

asterisks shown for 13 ms. each.³ The priming procedure in Study 1 and Study 2 was as follows: Immediately before each P saw a *general issue statement* they received an affective prime at the exact location on the computer screen where the statement would appear 65 ms. later (see Figure 1). On receiving the statement, a dialogue box is provided to the participants to type in whatever thoughts that came to mind. Each participant had the opportunity to write up to ten thoughts. After having written each thought another response box appeared and the participant was again primed with a cartoon face of the same valence. In other words, participants were primed before writing down each thought. To call a stop to the thought-listing task participants are told to type “No” as an answer in the response box.⁴

<<<Place Figure 1 Here>>>

The affective priming process in Study 3 was similar in terms of exposure to the affective prime (65 ms. before the statement appeared), and location of the primes and of the statements on the screen. But now, the participants in Study 3 cited their thoughts on illegal immigration and energy security *policy statements* (e.g., “Illegal immigrants in the U.S. should be allowed citizenship if they learn English, have a job and pay taxes” on the illegal immigration issue, and “The U.S. government should allow oil and gas drilling in

³ An attention grid of checkered box is first presented on the computer screen for one second. This had the participants to focus on the exact point where the priming procedure will occur.

⁴ I should here note that since every participant was able to type in as many thoughts as possible some cited two, some cited four thoughts on the provided statement. As shown in the following studies both in this chapter and in the following chapters, this situation does not cause a situation that would violate experimental results. First of all, those who read newspaper more and watch TV more are exposed to primes more than others. Hence, the experiment replicates this situation. Secondly, as will be shown later in this chapter, an experimental treatment with fixed number of primes do not lead to more number of thoughts on average than other experimental treatments.

the Arctic National Wildlife Refuge in Alaska” on the energy security issue). There were six policy statements for each issue.

Since all studies were between subject experimental design one-third of the total participants received a negative affective prime, one-third received a positive affective prime, and the remaining group received a neutral affective prime (i.e., the control group which was the cartoon face without any mouth expression) immediately before they saw the *issue* (in Study 1 and Study 2) or *policy* (in Study 3) statement on the screen.

Thus, I employ two distinct methods to collect thoughts and considerations. The first method employs simple general statements on particular issues. These statements intend to collect thoughts and considerations related to the issue at large. The second method extends this approach and uses particular policy recommendations. The only difference between the two methods is that the participants were given only a single general statement on political issues. These issues are illegal immigration, energy security, affirmative action, terrorism, and poverty. Among these issues, the first two issues are in particular interest and will be examined most as I chose them to be the targeted issues of this dissertation.⁵ Thus, for the second method I selected only these two issues (illegal immigration and energy security) and presented six policies for each issue.

Attitude Measures

In all three studies, I asked participants to report their attitudes on a number of political and social issues. Attitude measures included attitude reports in general and

⁵ I should also add that I particularly expect a difference in the degree to which prior attitudes are crystallized for the targeted two issues. At the time of the data collection illegal immigration was an important topic given presidential and public interest. Yet, energy security was not a part of the public debate until the beginning of the primaries for the 2008 presidential election. Hence, it would be appropriate to test the effect of primes on two distinct issues.

attitude strength dimensions in particular, including accessibility, certainty, extremity, importance, knowledge, and relevance (Krosnick & Petty 1995; Wegener, Downing, Krosnick & Petty 1995). Participants answered the same attitude questions both at the beginning and at the end of the studies. This measurement allows me to compare their posterior attitude to their prior attitude and to observe attitude change as a function of priming on the issues. The time difference between two attitude measures was on average 35-40 minutes in the studies. At the end of the experiment, participants answered demographic and political sophistication questions, and a manipulation check to see if they had been aware of the primes (Figure 2 shows the flow of the studies). None of the subjects reported having been aware of the primes used in the studies and none reported any suspicion of the studies' aims.

<<<Place Figure 2 Here>>>

Coding of Thoughts

Thought-listing procedure is a very advantageous method in understanding human thinking and reasoning. Previous research has shown that thought-listing can be used in examining political reasoning (Lane 1962, 1969), political discourse (Gamson 1995), cognitive assessments (Cacioppo & Petty 1981), and memory (Ericsson & Simon 1993).⁶ The most important advantage of this method is that it provides the best measurement tool to understand what actually comes to mind given a stimulus. It is a direct measure working much better than attitude measures that have certain disadvantages. As every measurement tool has its own problems, the downsides of this method are coding

⁶ Ericsson & Simon (1993) focused on verbal thought listing as much as written thought listing and problem solving procedures.

procedure and time consumption. Unlike other methods employed for measuring attitudes and behavior, the thought-listing procedure is time-consuming for the researcher. The coding procedure needs to be instructed to the coders who then will work on the collected thoughts. This procedure not only takes time but also it requires the coders to be consistent across the coding procedure. For this dissertation I have developed an extensive coding procedure that required several trial coding exercises before research assistants were capable of performing the tasks.⁷

Thoughts collected through the open-ended response boxes are coded by two coders unaware of the research hypotheses.⁸ Inter-coder reliability for Study 1 (focuses on general issue statements of three issues) is .85, reliability for Study 2 (focuses on general issue statements of two major issues) is .92, and reliability for Study 3 (focuses on policy recommendations of two major issues) is .89. A third coder resolved the discrepancies between the first two coders.⁹

II. GENERAL ISSUE STATEMENTS

Study 1 focuses on the role that affect plays on the thoughts and considerations generated by participants in the thought listing. This study will show how the affective

⁷ Please refer to Appendix A to see the coding scheme used to train the coders.

⁸ Coders were undergraduate students at the junior or senior academic level in the Department of Political Science at Stony Brook University. All coders went through a training procedure and did not begin coding any data after at least a trial period of one month. Most of the coders worked with me for two semesters (officially allowed limit to be a research assistant) and hence they were very well trained and experienced in the coding procedures by the second semester.

⁹ I personally did not involve in any part of the coding procedures across all of the studies in the dissertation. The third coder was always one of the research assistants who had more experience than the other two research assistants' who would be able to make decisions whether the codings were right or wrong.

cues shown subliminally to the participants influences the valence of the thoughts recalled from the working memory, or short-term memory.

In Study 1 and Study 2, the main goal is to test if subliminally presented stimuli would change the *valence* of thoughts that one could recall on a number of political issues. I have selected five issues there are a part of the political discourse for a long time. Three of the five issues focus on more debated subjects, Affirmative Action, Poverty, and Terrorism. The other two issues are more recent and comparatively “hot-button” issues (illegal immigration and energy security), although energy security became important later on. The first three issues were used only in Study 1. The latter two issues (illegal immigration and energy security) will be the major issues for the rest of the dissertation. Because of the difference of analyses across the issues, I first examine Study 1 (including affirmative action, poverty, and terrorism issues) and Study 2, both of which focus on the two major issues.

II-A. First Group of Issues - Study 1

Data for Study 1 was collected in the Spring of 2006 at the Stony Brook University’s Laboratory for Experimental Research in Political Behavior. All participants were undergraduate students in the Political Science courses, who participated in the study for course credit. The sample includes 201 participants (96 male, 93 white, 112 Democrat, 39 Republican). On arriving at the lab and following consent procedures, participants were taken to separate experimental rooms and seated in front of personal computers.

The experiment began with prior attitude reports and continued with the affective priming section where participants listed their thoughts on the issues. Each issue is randomly presented to the participants. Next, participants answered political sophistication and demographic questions and finished the study with posterior report of their attitudes on the deliberated issues. A final section included the manipulation check.

The instructed thought-listing procedure was as follows: Each participant received the statements on the upper portion of the computer screen. For the issue of poverty, affirmative action, and terrorism the following statements are used respectively: “A sizeable amount of poverty will continue to exist in the U.S.”, “Affirmative Action programs provide additional benefits and advantages to African American students that amount to discrimination against whites”, and “Most Americans believe that terrorist threats to the United States are still not eliminated.”

These statements are used to collect general thoughts and considerations on the issues. Every participant was given an opportunity to write-up ten different thoughts on each issue. They were instructed to type in “No” as an answer whenever they were done listing their thoughts. Since the experiment included negative and positive priming conditions, the thoughts are categorized into two main categories, negative and positive. For instance, statements such as following are coded as negative “The social programs to eradicate a sizeable amount of poverty would in reality be very costly and impossible to fund”, “Asian American students are not benefitting as much from Affirmative Action program as other ethnic groups are”, and “There are still many terrorist groups who believe it is their duty to harm Americans”. Such responses as the following were coded as positive: “More jobs should be created to control this”, “Affirmative Action benefits

more than just African Americans”, and “Most feel better with increased security in airports and other public areas”.

As explained before, two research assistants coded the thoughts written by the participants and a third coder resolved the differences between the two previous coders.

II-A1. Results on the First Group of Issues

Before moving into the results, I would like to first provide the generic model testing the hypothesis stated at the beginning of this chapter. This section includes two models tested by Analysis of Variance (ANOVA). The first model is designed for to test the effects of the affective prime on the number of thoughts across the conditions. Hence, the number of thoughts listed on a particular issue statement is tested across the three treatment conditions (positive, neutral, and negative). This test will also show whether there is any evidence for Hypothesis 1.

The second model accounts for the prior attitude in addition to testing the effects of the affective primes on the number of thoughts cited by the participants. So, the model is again an ANOVA analysis controlling for the treatment conditions plus one’s prior attitude. The dependent variable here is the number of negative or positive thoughts. This model will provide the test for Hypothesis 2 as it relates to the effects of the prior attitude and the affective prime at the same time.

a. Initial Results for the Influence of the Affective Prime – Study 1

The initial results on the first three issues support Hypothesis 1 and hence the Affective Contagion Hypothesis. I will first present the ANOVA results on the number of

thoughts for each issue. Then, I will include the prior attitude measure and discuss the findings.

Poverty: Results on the issue of poverty are supportive of the Hypothesis 1. A simple one-way ANOVA on the number of positive thoughts listed on the issue of poverty is statistically significant, $F(2, 201) = 7.05, p < .001$. The number of positive thoughts cited across the negative, neutral, and positive treatment conditions are 1.10, 1.13, and 1.78 respectively. Similarly, the number of negative thoughts listed across the treatment conditions (negative, neutral, and positive) is 2.29, 1.46, and 1.48, respectively. The differences between the groups is also statistically significant, $F(2, 201) = 7.42, p < .001$.

Affirmative Action: Results on the issue of affirmative action are also in support of Hypothesis 1. A simple one-way ANOVA on the number of positive thoughts listed on the issue of affirmative action is statistically significant, $F(2, 201) = 5.99, p < .001$. The number of positive thoughts cited across the negative, neutral, and positive treatment conditions are 1.25, 1.38, and 1.93 respectively. Similarly, the number of negative thoughts cited across the treatment conditions (negative, neutral, and positive) is 2.29, 1.66, and 1.39 respectively. The differences between the groups is also statistically significant, $F(2, 201) = 7.47, p < .001$.

Terrorism: In a similar vein and in line with the Affective Contagion Hypothesis, results for the issue of terrorism are very supportive. A simple one-way ANOVA on the number of positive thoughts listed on the issue of terrorism is statistically significant, $F(2, 201) = 14.45, p < .001$. The number of positive thoughts cited across the negative, neutral, and positive treatment conditions are .7, .8, and 1.46 respectively. Similarly, the number

of negative thoughts cited across the treatment conditions (negative, neutral, and positive) is 2.86, 2.20, and 1.87 respectively. The differences between the groups is also statistically significant, $F(2, 201) = 6.17, p < .003$.

A different way to interpret these results is a cross-comparison of the issues. Table 1 presents the number of negative and positive thoughts cited across the first group of issues and across the three affective priming conditions. It is clear that terrorism has provided more negative thoughts in general compared to poverty and affirmative action. Affirmative action, however, was the least in promoting negative thoughts given the influence of the negative prime.

<<< Place Table 1 Here >>>

For the issue of terrorism positive thoughts generated the least number of positive thoughts even when controlling for the effect of the positive prime. Nonetheless, there is a significant difference between the negative (.7 thoughts on average, less than a single thought) and positive (1.46 thoughts on average, more than a thought) conditions on the number of positive thoughts for the issue of terrorism.

These results suggest that the initial analysis of the influence of subliminally presented affective primes altered the valence and number of thoughts that one can remember on a given political issue. There is hence preliminary evidence for Hypothesis 1. The initial results on the influence of affect however do not present the strength of the influence of the affective prime across one's prior attitude on the respective issue. So, in the following section the analyses will be across the prior attitude on the respective issue of interest.

b. Results for the Influence of the Affective Prime controlling for the Prior Attitude – Study 1

Study 1 includes attitude measures on all three issues of interest. However, because Study 1 is designed to be an introduction for the follow-up studies, I used a smaller set of prior attitude items. Hence, only the basic items necessary to create a prior attitude are included in the study but not all dimensions of attitude strength are measured unlike Study 2 and Study 3 on illegal immigration and energy crisis.¹⁰

The prior attitude for the first group of issues is the product of position on the issue and attitude strength (composed of certainty and importance) on the issue. Position on the issue is anchored from (-3) to (+3) where (-3) represents strong opposition and (+3) represents strong support for the issue. Attitude strength was recoded to range from (0) to (1), where (0) represents weak and (1) represents strong attitude strength. All alpha levels for generating a single attitude measure (through arithmetic mean calculations) on any issue were above .8. All prior attitude measures for the first three issues were categorized by selecting a number less than 10% away from the neutral zero point of the distribution for the item.¹¹ Those below the lower cutpoint are coded as “Opponents”, those above the higher cutpoint are categorized as “Supporters”, and those in between the two cutpoints are coded as “Moderates.” This method utilizes the neutral zero point which represents the real moderates on the issue, and controls for their attitude strength at the same time.

¹⁰ Please refer to Appendix B to see the attitude items used across the studies.

¹¹ Since there was not enough individuals at the exact neutral zero point that would stand for the entire moderates of the issue, I chose a number around this neutral point. For instance, on the scale of -3 to +3, if the item distribution is normal I chose -.2 and +.2 as the two cutpoints. Those less than -.2 are coded as Opponents, those above +.2 are coded as Supporters, and those in between are coded as Moderates (including the neutral zero point) on the respective issue.

For the results discussed below, I excluded participants who did not report any thoughts on the respective issue. On average, less than 3% of the sample cited neither positive nor negative thoughts on any one of the three issues.

The statistical model here again takes the number of negative and positive thoughts as the dependent variable. The main independent variable is the affective prime, treatment conditions. The secondary independent variable is the prior attitude on the respective issue. So, the two-way ANOVA analysis predicts the number of thoughts through the affective priming conditions controlling for the effect of the prior attitude. This model hence represents the statistical analysis of Hypothesis 2.

The results are in line with Hypothesis 2, and hence the Affective Contagion Hypothesis, that on controlling for the prior attitude we see a statistical significance difference in the direction of the affective prime. For some issues, the prior is even less influential on the cited thoughts than the affective prime. Results are discussed below.

Affirmative Action: There is strong support for the effect of affective primes on the number of negative and positive thoughts that participants cite on the issue of Affirmative Action. Prior attitude on this issue represents where participants stand on the issue (whether support or opposition). The two-way ANOVA analysis on positive and negative thoughts separately shows strong influence of the affective prime. For the number of negative thoughts on this issue, the prior attitude altered the number of thoughts, $F(2, 193) = 4.28, p < .02$, as well as the affective prime, $F(2, 193) = 4.49, p < .01$, with a strong interaction between the prior attitude and the priming condition, $F(4, 193) = 2.49, p < .05$, in the full model, $F(8, 193) = 4.17, p < .001$. This finding shows

that the prior attitude, as expected, changed the number of negative thoughts one can recall on affirmative action, an effect is also strengthened or moderated by the affective prime. The interaction effect indicates that when someone opposing the issue received a negative prime, s/he wrote more negative thoughts than if s/he received the neutral prime. Similarly, when the same person receives a positive prime, s/he wrote less negative thoughts than if s/he received the neutral prime. The interaction is particularly effective among the moderates, as shown in Figure 3: among moderates, receiving a positive or negative prime led to a difference of more than three negative thoughts.

<<< Place Figure 3 Here >>>

On the number of positive thoughts, we see a strong effect of the affective prime ($F(2, 193) = 7.31; p < .001$), with an insignificant prior attitude effect. In contrast with the results on negative thoughts, this finding shows a distinct effect of the primes on the number of positive and negative thoughts that one can come up with. Given the issue of affirmative action, recall of positive thoughts after an incidental prime (smiley cartoon face) increased recall of positive thoughts on the issue. The prior attitude is rather insignificant in this process. As expected, supporters of the issue of affirmative action did cite more positive thoughts when primed with a positive prime compared to the opponents and moderates on the issue. We also see that the negative prime decreased the number of positive thoughts for the opponents of the issue, but not for the moderates. However, the external validity of this finding is severely limited by the very small number of moderates found in the sample on this issue (just seven were present).

Terrorism: Results on the issue of terrorism (more specifically, the government's handling of terrorism and the threat from Iran) is similar to those for the issue of affirmative action. Controlling for the prior attitude, the priming treatment statistically significantly changed the number of elicited negative and positive thoughts. Considering the negative thoughts cited on the issue, we see that the prior attitude, $F(2, 201) = 3.23$, $p < .04$, and the priming condition, $F(2, 201) = 6.23$, $p < .002$, strongly influenced the number of thoughts, in the full model, $F(4, 201) = 4.39$, $p < .002$. There was not a significant interaction between the prior attitude and the priming condition in predicting the number of negative thoughts.

As presented in Figure 2, considering the negative thoughts, the mean difference between the negative and positive priming conditions within a particular prior attitude group is largest for the opponents of the issue, thereby supporting the Affective Contagion hypothesis. The congruence between the priming condition and the prior attitude should bolster the ability to list more congruent thoughts. Hence, the opponents of governmental handling of the issue wrote more negative thoughts when they received a negative prime compared to the positive and neutral priming conditions. Substantively put, when those who think that the government has not done enough to deal with Iran in its pursuit of nuclear power are given a negative prime, they write approximately two more thoughts than those with the same prior attitude but in the neutral prime condition. Interestingly, the same result, though weaker, is also seen for the supporters of the government's handling of Iran.

In predicting the positive thoughts on government's handling of terrorist threats, there is a strong effect of the priming condition, $F(2, 201) = 15.77$, $p < .001$, but an

insignificant effect of the prior, which is contrary to the prediction of Hypothesis 2 (see Figure 4).

<<< Place Figure 4 Here >>>

There is a major difference when comparing the differences between number of negative and positive thoughts on the issue of terrorism. On the negative thoughts, it seems that there is a strong influence of the prior perhaps due to constant information flow through the media on terrorism, national security, and governmental success on these issues. So, participants perhaps relied on their prior attitude as much as the incidental influence in remembering negative things about terrorism and potential future terrorist threats.

Poverty: Results show that the affective prime has a stronger impact on the thought listing than the prior attitude towards governmental support to solve the problem of poverty in the U.S. Supporters of this issue argue that governmental funding to solve the problem of poverty is necessary whereas the opponents think otherwise. The two-way ANOVA analysis shows that the affective prime strongly influenced the number of positive thoughts more so than the prior attitude, $F(2, 197) = 5.99, p < .003$. Similarly, for the dependent variable – the number of negative thoughts – the affective prime is much stronger than an insignificant prior attitude, $F(2, 197) = 7.15, p < .001$.

Figure 5 presents the mean distribution for negative and positive thoughts across the prior attitude groups. The major finding seen in this figure is that the affective prime influenced the number of negative and positive thoughts more strongly than the prior

attitude on the issue. In line with findings on the previous two issues, this supports the general hypothesis on Affective Contagion. The second important finding is that the moderates are those that are *more* influenced than the other two groups. Both for negative and positive thoughts, moderates are influenced by the affective prime more than the supporters and opponents of the issue. The difference between the neutral prime and the congruent priming conditions (match between the prior and the prime) is larger for the moderates than it is for the two other prior attitude groups. This finding suggests that those that are opinionated, with a “crystallized” prior attitude on the issue of poverty are less susceptible to the affective primes, whereas those who do not have crystallized prior attitudes on the issue are the ones that are pushed in terms of recalling negative and positive thoughts.

<<< Place Figure 5 Here >>>

The distinctiveness of findings for the poverty issue from the previous two issues is that the prime and prior attitude congruence is insignificant. That is, for those who oppose governmental intervention in terms of providing funding to solve poverty a negative prime does not make them write more negative thoughts compared to other priming conditions. Nonetheless, in line with previous findings on terrorism and affirmative action, for those who support governmental intervention a positive prime make participants to cite more positive thoughts compared to other priming conditions.

II-B. Second Group of Issues - Study 2

This section focuses on two major issues (illegal immigration and energy security) that will be discussed here and in the following chapters of the dissertation. Data for Study 2 were collected in the Fall of 2006 at the Stony Brook University's Laboratory for Experimental Research in Political Behavior. All participants were undergraduate students in the Political Science courses. The sample includes 224 students (108 male, 97 white, 124 Democrat, 41 Republican) recruited from the Political Science Department subject pool. The experimental flow was exactly the same as explained before. This section presents findings on both issues as done for the previous three issues.

II-B1. Results on the Second Group of Issues

As before, each participant received a statement on the upper portion of the computer screen. The following statements are used for the issue of illegal immigration and energy security, respectively: "The number of illegal immigrants coming to the United States will drastically increase in six years", and "The extent of energy consumption and the need for energy resources in the United States will drastically increase in the next decade." Every participant was given an opportunity to write-up ten different thoughts on each issue. They were instructed to type in "No" as an answer whenever they were done listing their thoughts. Since the experimental is a between-subject design, the thoughts are categorized into two categories, negative and positive. Two research assistants coded the thoughts written by the participants. For instance, on the immigration issue "they can come here and make good money," "more people will come looking for a better life," and "the U.S. is a nation that prides itself on being a

melting pot of cultures” were categorized as positive. In contrast, the following thoughts were categorized as negative: “we need stricter laws and regulations to keep illegal immigrants from entering our country,” “people who come here because of the lack of economic opportunities in their own countries,” and “the United States will better our security by, closing down the border.” A third coder resolved the differences (approximately 10% for each issue) between the two previous coders.

a. The Influence of the Affective Prime

As stated previously, the statistical model conducted in this subsection is a test of the treatment conditions on the number of negative and positive thoughts cited by the participants. I will conduct ANOVA analyses for all tests. The major independent variable is the affective priming condition. These models will again present the findings for Hypothesis 1 showing whether the positive prime promoted more positive thoughts (and less negative thoughts) and the negative prime promoted more negative thoughts (and less positive thoughts).

I now turn to the critical question of whether affective primes influence the valence of retrieved thoughts that come to mind.

Illegal Immigration: A one-way ANOVA on the data shows that the subliminal affective primes had a large and significant effect on the number of negative and positive thoughts that participants cite about illegal immigration. The average number of *negative* thoughts listed under the positive, neutral, and negative conditions were 1.12, 1.38, and 2.28, respectively, $F(2, 224) = 9.04; p < .001$, indicating that the negative affective prime (frowning cartoon face) significantly increased the number of negative thoughts. Results

are similarly robust for the *positive* thoughts listed by the participants. The average number of positive thoughts across the positive, neutral, and negative conditions in Study 2 were 1.31, 1.00, and .81 respectively, $F(2, 224) = 3.71$ $p < .02$, showing that the positive affective prime increased the number of positive thoughts.

Energy Security: Findings are in line with immigration issue on the influence of affective prime. The affective primes strongly influenced the number of thoughts that one cited on the issue of energy security. The average number of *negative* thoughts listed under the positive, neutral, and negative conditions were .93, 1.11, and 1.58, respectively, $F(2, 224) = 5.39$; $p < .005$. The average number of *positive* thoughts across the three priming conditions (positive, neutral, and negative) were 1.43, 1.10, and .55 respectively, $F(2, 224) = 15.48$; $p < .001$. Both findings demonstrate that the valence of the unnoticed prime triggered same-valence thoughts and inhibited opposite-valence thoughts. With these results I once again found support for Hypothesis 1.

b. The Influence of the Affective Prime controlling for the Prior Attitude

As discussed before, the statistical model in this subsection takes prior attitude as an additional independent variable and integrates into the model where affective priming conditions (independent variable) predict the number of negative and positive thoughts on the issues (dependent variables). This is once again an appropriate test of Hypothesis 2 which proposes that the prior attitude is more influential than the affective prime in generating thoughts.

As for previous analyses on the first three issues, I computed a prior attitude for the illegal immigration and energy security issues. The major difference at this time is

that I used the full item battery to measure prior and posterior attitudes on both issues. Participants answered all attitude items at the beginning and at the end of the study. The attitude measure included attitude position on the issue and attitude strength on five dimensions: accessibility for the issue, relevance of the issue, importance of the issue, knowledge on the issue, and certainty for the issue

Attitude Construction: *Attitude Position* on the issue is the arithmetic mean of six attitude position items (three opposing and three supporting arguments) on each issue. This measure is anchored from -3 (opposition) to +3 (support) and an additional item on general issue position (α for illegal immigration items is .86; α for energy security items is .63). *Attitude strength* is the arithmetic mean of items on relevance, certainty, importance, knowledge, and accessibility. This measure is anchored from 0 (weak) to 1 (strong) attitude strength. The combined attitude measure is the product of the two constructs for prior attitude and is a continuous measure ranging from -3 to +3 with a moderate attitude position of neutral zero. This prior attitude measure includes not only one's position on an issue but also the strength of that position (Fishbein & Ajzen 1975).

For ease in presenting priming affects I categorized the attitude measure into three categories (oppose – moderate – support). The neutral group for illegal immigration issue included only those who received a score of zero (n=14). The groups of opposition (n=126) and support (n=84) included the remaining majority of the sample. For the energy security issue, however, the sample was highly skewed in support of the issue. To make substantive meaning from the results, I collapsed the prior attitude measure into two groups: those who present support for the issue (n=166) and those who take a moderate position or show weak opposition for the issue (n=58).

For the following analyses, I excluded all those who did not report any thoughts on the respective issue. Approximately 16% of the sample cited neither positive nor negative thoughts on the illegal immigration issue and 14% of the sample did not cite any thoughts on the energy security issue.

The results are in line with Hypothesis 2, and hence the Affective Contagion Hypothesis, that controlling for the prior attitude there is change in the direction of the affective prime. Results are discussed below.

Illegal Immigration: ANOVA tests for the total number of negative and positive thoughts (cited on the issue of immigration) as the dependent variable show statistically significant results indicating an influence of affective primes and one's prior attitude. That is, focusing on the total number of negative thoughts on the issue, I expected to see more negative thoughts listed when a subject who opposes illegal immigration receives a negative prime: the congruence between one's prior attitude and the prime is expected to boost the accessibility of negative thoughts (DeSteno et al. 2004; Lodge & Taber, 2005). The mean values substantiate this expectation with 2.34 negative thoughts in the negative prime condition in contrast to 1.11 negative thoughts on average under the incongruent positive prime condition for someone with a prior attitude of opposition.

More interestingly, results show that when those in support of illegal immigration are subliminally exposed to a negative prime (that is an influence incongruent with their prior attitude), they cited more negative thoughts (3.26 negative thoughts) than the positive priming condition. In statistical terms, a two-way ANOVA analysis shows that the priming condition, $F(2, 187) = 8.97; p < .001$, and the prior attitude, $F(2, 187) = 2.92; p < .06$, are statistically significant in the full model. In other words, an affectively

negative prime (a frowning cartoon face) increased the number of negative thoughts that participants listed more strongly than one's prior attitude on the issue.

When I test for the total number of *positive thoughts* listed by the participants, my expectation (in line with Hypothesis 2, and thus the Affective Contagion Hypothesis) is that subjects in support of illegal immigration, who received a positive prime, would now cite more positive thoughts since the prime and prior attitude are congruent. In contrast, participants exposed to a negative prime would predictably report fewer positive thoughts.

In a similar vein to the negative thoughts, I find strong effect for the positive prime (a smiley cartoon face) on the number of positive thoughts. As noted earlier, the congruence between one's prior attitude and the prime should theoretically increase the retrieval of congruent thoughts. The mean pattern supports Hypothesis 2 that when those with a prior attitude of support are exposed to a positive prime, they cited 1.29 positive thoughts on average, as opposed to those who were in the *incongruent* groups (i.e., neutral and negative prime conditions), who listed 1.00 and .84 positive thoughts, respectively. A two-way ANOVA for all positive thoughts shows statistical significance for the affective prime, $F(2, 187) = 8.89; p < .001$, and the prior attitude, $F(2, 187) = 3.57; p < .03$, in the full model. Once again, the effect of the prior on the number of positive thoughts is less than the effect of the subliminal affective prime.

<<< Place Figure 6 Here >>>

Energy Security: The energy security issue has a distinct feature among all five issues analyzed in this chapter. The prior attitude measure shows that the sample is

strongly in favor of the issue. Ninety percent of the respondents are on the right of the neutral zero point. Accordingly, I had to create a measure that divides the sample into two groups (instead of three: support, oppose, neutral) on the issue. The cut-point is placed on the 33rd percentile of the distribution. Those below the cut-point are categorized as moderates and/or weak opponents and those above it are categorized as supporters of the issue.

When I control for the prior attitude in the analysis, the results are similar to those of illegal immigration. In short, a negative prime promoted negative thoughts and inhibited positive thoughts, whereas a positive prime facilitated positive thoughts and inhibited negative thoughts. For the number of *negative* thoughts, the two-way ANOVA analysis shows significant main effect for the affective priming condition, $F(2, 194) = 5.09$; $p < .007$ with a marginally significant prior attitude on energy security, $F(1, 194) = 2.31$; $p < .13$. The negative affective prime influenced the supporters on the issue more than the moderates of the issue in promoting negative thoughts. In other words, the affective primes polarized the participants more so than it did for the illegal immigration issue. Supporters are being pushed more to retrieve negative information about the issue than others. This might be due to the level of information that the supporters obtained on the negative antecedents and consequences of the issue.

For the number of *positive* thoughts, the two-way ANOVA analysis reports that the affective prime influenced the recalled thoughts, $F(2, 194) = 22.40$; $p < .001$, as well as the prior attitude, $F(1, 194) = 3.70$; $p < .05$. This finding suggests that the negative affective prime was so influential that even supporters of the issue could not cite positive thoughts (.57 thoughts; much less than a single positive thought) On the other hand, those

supporters who received a positive prime wrote even more positive thoughts (1.59 thoughts) in a congruent condition between the prime and the prior attitude.

In a similar vein, the moderates (or weak opponents) on the issue who received a positive prime cited more positive thoughts than those moderates who received a negative prime. There is more than one thought difference between the two groups showing the effect of the affective prime. These results – presented in Figure 7– are supportive of the Affective Contagion Hypothesis that unnoticed affective primes evoke affect-congruent thoughts and inhibit affect-incongruent thoughts. In this analysis we particularly see that the affective primes were much more influential than the prior attitude.¹²

<<< Place Figure 7 Here >>>

The greater impact of the affective primes for the energy security issue is perhaps due to the fact that the attitude strength measure of energy security was not formed as strongly as the prior on illegal immigration. Although most of the participants were scaled on one side of the issue their attitude may not have been crystallized until the time of the study and hence were more susceptible to the primes.¹³

However, these findings should be compared to the results in the following section on policy recommendations for a full picture of the role of affective primes. All in

¹² To explain why affective primes were more influential for this issue I included another factor in the analyses, political sophistication. Political sophistication is measured by NES-type six factual questions (Delli Karpini & Keeter 1996). Correct answers to these questions are summed and two groups are created by median-split. Next, I conducted the same ANOVA analyses for negative and positive thoughts and found that there was no difference on the effect of the affective primes across political sophistication groups. Affect was strongly influential for low and high sophisticates.

¹³ One evidence for this conjecture is that in a CNN/Opinion Research Corporation Poll of June 4-5, 2008, voters nationwide were asked, “Which of the following issues will be MOST important to you when you decide how to vote for the president?” The results were: the economy (42%), war in Iraq (24%), health care (12%), terrorism (11%), illegal immigration (8%) and other (1%). Energy security, referring to energy needs of the U.S., alternative energy methods, and increased oil prices, thus, combined, rate less than 1%, and did not even make the list.

all, there is evidence for Hypothesis 2 across Study 1 and Study 2, thus supporting the Affective Contagion Hypothesis.

III. PUBLIC POLICY STATEMENTS

Moving forward from the first two hypotheses, this section extends the analysis of affective primes on public policy related thoughts. Citizens probably encounter policy related material more frequently in the print and the media than general issue statements. For instance, prior to the 2008 presidential primaries, candidates occasionally appeared before the public where they engaged in debate on important political issues among which the issue of immigration (legal and illegal) and particular policies to deal with illegal immigration were a major topic. Some of these discussed policies proposed building a wall on the U.S. - Mexican border, deporting illegal immigrants, enforcing a temporary working permit policy, etc. to deal with the issue. With Hypothesis 3, I would like to account for the differences on specific policy recommendations to handle the particular political issue.

The core of the hypotheses still focuses on the expected influence of the subliminal affective primes and a lessened or weaker prior attitude effect.

Hypothesis 3: *The affective primes will influence the valence and the number of negative/positive thoughts cited on public policy statements.*

Hypothesis 4: *The influence of the affective primes will differ across pro/anti policy recommendations in promoting affect-congruent policy related thoughts.*

Hypothesis 5: *Participants' prior attitude of support/opposition toward a policy will be less influential than the affective primes in recalling positive/negative policy*

related thoughts.

In line with previous hypotheses on general issue statements, Hypotheses 3-5 postulate similar expectations on *policy* related thoughts as with issue related thoughts. So we should be able to see the role of affective primes not only for issue related thoughts (as discussed in the previous two sections) but also for policy related thoughts cited by the participants.

III- A1. Differences from Study 1 and Study 2

There are two major differences between the previous two studies and Study 3. First, the statement given to the participants were policy related and hence directed the participants to a cued search in short-term memory on the particular policy. In Study 1 and Study 2, I provided participants only general issue statements without any information on policies related to these issues. Following are the public policy proposals used for *illegal immigration*:

The *anti illegal immigration policy statements* were:

- “All illegal immigrants should be deported”,
- “The Minutemen group should be supported by the government”, and
- “Illegal immigrants should be stopped from entering the U.S. by building more fences.”

The *pro illegal immigration policy statements* were:

- “Illegal immigrants in the U.S. should be allowed citizenship if they learn English, have a job and pay taxes”,

- “Temporary visas should be granted to immigrants not in the U.S. so they can do seasonal/temporary work and return to home countries”, and
- “Illegal immigrants already here should be allowed to stay permanently.”

The *anti energy security policy statements* (promoting continuation of the traditional methods to generate energy) were:

- “The U.S. government should raise the tax on gasoline to reduce consumption”,
- “The U.S. government should allow oil and gas drilling in the Arctic National Wildlife Refuge in Alaska”, and
- “The U.S. government should be promoting the increased use of nuclear power.”

The *pro energy security policy statements* (promoting alternative methods to generate energy) were:

- “The U.S. government should require better fuel efficiency for cars, trucks and SUVs”,
- “The U.S. government should give tax cuts to energy companies to develop wind, solar and hydrogen technology”, and
- “The U.S. government should lobby against the international organizations (such as OPEC) that are responsible of high gas prices.”

The second difference was with the priming procedure: The same affective primes of cartoon faces are presented to the participants in the same manner as explained for Study 1 and Study 2. The only difference in Study 3 was that every participant was given seven screens (instead of ten) for each policy to record their thoughts. Also, unlike Study 1 and Study 2, participants were not able to skip any of the available seven screens.

Hence, every participant was primed seven times for every policy statement on both issues.

III-A2. Issue specific Public Policy Statements – Study 3

This section first presents the sample characteristics of Study 3 and then discusses the findings on illegal immigration and energy security issues, after which I will elaborate on the effect of the affective prime on the number of thoughts across the pro and anti policies and then discusses the results when the prior attitude of the participant is controlled for on the respective issue.

Data for Study 3 were collected in the Fall of 2007 at the Stony Brook University's Laboratory for Experimental Research in Political Behavior. All participants were undergraduate students in the Political Science courses. The sample includes 125 participants (75 male, 52 white, 65 Democrat, 25 Republican).

a. The Influence of the Affective Prime

In this subsection, the statistical model will be similar to those that pointed to the direct effect of the affective prime on the number of negative and positive thoughts. The ANOVA analysis will take the thoughts as the dependent variable and the affective priming conditions as the independent variable. This model evidently represents the statistical testing of Hypothesis 3.

Illegal Immigration related Policies: As expected, the influence of the subliminal affective primes on illegal immigration policies is very powerful. In line with Hypothesis 3, I found strong support for the affective priming treatment on recalled

thoughts across all illegal immigration related public policies. The affective prime altered the number of *negative* thoughts listed across six policies, $F(2, 125) = 13.26$; $p < .001$. The means across positive, neutral, and negative groups are 6.98, 8.17, and 11.84, respectively, across all six policies. The affective prime similarly and very strongly changed the number of *positive* thoughts listed across six policies, $F(2, 125) = 41.63$; $p < .001$. The means across positive, neutral, and negative groups are 12.49, 6.76, and 4.93, respectively, across all six policies.

From a different point of view, one would wonder if there would be any difference between the type of policy and the valence and number of thoughts cited on that particular policy. That is, would the pro policy recommendation promote more positive thoughts than negative, and would the anti policy statement promote more negative thoughts than positive? It is conceivable if not highly probable that the policy statement itself would lead a directed search in memory, which could be still influenced by the affective primes. To this goal, I will separate the valence of thoughts (negative and positive) and the policies (pro or anti illegal immigration) and test if affective primes have distinct influences in support of Hypothesis 4.

The statistical model for Hypothesis 4 takes the number of negative or positive thoughts cited across two types of policies, either anti or pro. The expectation here is that the statement itself might promote negative or positive thoughts which can be teased out by the following ANOVA analyses.

Table 2 reports the mean distribution across priming conditions. For the number of *negative* thoughts cited on *anti* illegal immigration policies, there is a strong influence of the affective prime, $F(2, 125) = 7.57$; $p < .001$, as expected. Simply put, the negative

statement of the policy (an anti notion against illegal immigration) interacts with the negative affective prime and in turn promotes more negative thoughts. For the number of *positive* thoughts cited on *anti* illegal immigration policies, there is even stronger influence of the affective prime, $F(2, 125) = 33.39$; $p < .001$. That is, the affective prime still strongly influences the retrieval of positive thoughts although the statement has a negative connotation on illegal immigration, but this difference is less than the interaction with the negative affective prime. As hypothesized, there are more negative thoughts cited than positive thoughts on three anti illegal immigration policies. Those who received a negative prime listed approximately seven negative thoughts whereas those who received a positive prime listed approximately four negative thoughts across three anti illegal immigration policies. Results are also replicated for the positive thoughts on these policies.

<<< Place Table 2 Here >>

For the number of *negative* thoughts cited on *pro* illegal immigration policies, there is a strong influence of the affective prime, $F(2, 125) = 10.17$; $p < .001$. For the number of *positive* thoughts cited on *pro* illegal immigration policies, there is even stronger influence of the affective prime, $F(2, 125) = 20.10$; $p < .001$, with a distribution of means as expected. That is, there are more positive thoughts cited (which is also influenced by the affective prime) than negative thoughts on three pro illegal immigration policies. In total, approximately seven positive thoughts are listed for those in the positive priming condition whereas only three positive thoughts are listed for those in the negative

priming condition. Results are similar for the negative thoughts listed on pro illegal immigration policies.

In sum, the negative/positive prime altered the number of negative/positive thoughts across the anti/pro illegal immigration policies. Substantively, there is strong evidence that the affective primes facilitated affective-prime congruent thoughts and inhibited affective-prime incongruent thoughts. Even presented subliminally the subtle, smiley and frowning cartoon triggered same-valence thoughts or inhibited opposite-valence thoughts. The next step is thus to test the generalization of this result to policies related to the energy security issue.

Energy Security related Policies: Initial results for the energy security related policies are in line with Hypothesis 3, suggesting a strong impact of the affective prime on the valence and number of listed thoughts. A one-way ANOVA predicting the number of *negative* thoughts listed across six policies shows significant results for the affective prime, $F(2, 125) = 17.89$; $p < .001$, with pattern of means as expected. Across six policies, those who received a positive prime listed almost six negative thoughts whereas those who received a negative prime listed almost eleven thoughts. The difference is statistically very strong. A one-way ANOVA predicting the number of *positive* thoughts listed across six policies similarly present strong effect of the affective prime, $F(2, 125) = 22.98$; $p < .001$, with a mean distribution as expected. That is, those primed with a frowning cartoon face cited almost four positive thoughts whereas those primed with a smiley cartoon face cited almost ten positive thoughts. The difference between the treatment conditions is once again significant.

Results are supportive of Hypothesis 4, as shown in Table 3, where negative and positive thoughts cited across anti and pro policies are compared. For the number of *negative* thoughts cited on *anti* energy security policies (promoting traditional methods of energy), I found strong influence of the affective prime, $F(2, 125) = 9.76$; $p < .001$, with a mean distribution as expected. For the number of *positive* thoughts cited on the same three policies, there is even stronger influence of the affective prime, $F(2, 125) = 13.24$; $p < .001$, with a mean distribution as expected. As hypothesized, there are more negative thoughts cited than positive thoughts on these three anti energy security policies. Those who received a negative prime listed approximately six negative thoughts across anti energy security policies. Results also are replicated, in support of Hypothesis 4, for the positive thoughts on policies supporting traditional methods to satisfy the energy needs.

For the number of *negative* thoughts cited on three policies promoting alternative methods to generate energy (i.e., *pro* energy security policies), I found strong support for the influence of the affective prime, $F(2, 125) = 16.17$; $p < .001$, with a mean distribution as hypothesized. For the number of *positive* thoughts cited on these policies, I found a similar result, $F(2, 125) = 17.92$; $p < .001$, with a mean distribution as expected. As before, there are more positive thoughts cited than negative thoughts on three pro energy policies. Across three policies, approximately six positive thoughts are listed for those in the positive priming condition whereas only three positive thoughts are listed for those in the negative priming condition. Results are similar for the negative thoughts listed on these policies endorsing alternative energy resources.

<<< Place Table 3 Here >>

All in all, I found very strong support for the effect of the affective prime on policy related thoughts. The affective primes influence policy related thoughts not only across issues and six policies on each issue but also in line with the pro or anti direction of policy). Results are stronger compared to those for general issue statements. However, I need to test the strength of these findings across prior attitude groups on issues. The next section elaborates on this subject.

b. The Influence of the Affective Prime, Controlling for the Prior Attitude

The goal of this section is to examine the influence of the affective priming on policy related thoughts controlling for one's prior attitude. The statistical model hence includes the prior attitude as an additional independent factor in the model in addition to the dependent variable of number of negative and thoughts and the major factor of affective priming conditions. The results would provide evidence for Hypothesis 5, testing the relative strength of the effects of the prior attitude and the affective primes in retrieval of negative and positive thoughts.

For this model, the prior attitude is constructed as defined before: At the beginning of the Study 3, participants answered questions that measure their position on the targeted issues (illegal immigration and energy security) and the strength of their attitude. The combined attitude measure (from attitude position and attitude strength) ranges from -3 (strong opposition and high attitude strength) to +3 (strong support and high attitude strength). This scale includes a neutral zero point representing the moderates. In order to ease description of the results across prior attitude groups, I then categorized the scale into three groups (oppose, moderate, and support).

There were only six participants who were at the zero neutral point out of 125 individuals. In order to make the substantive interpretations more meaningful, I selected a cut point around the neutral zero to generate the prior attitude groups. This cut-point will generate groups that would reliably include participants at all three categories of the measure. For the illegal immigration issue, those between the negative (-.1) and positive (.1) cut points represent the moderates. Those below the negative cut point (-.1) are categorized as opponents of the issue and those above the positive cut point (.1) are categorized as supporters of the issues. For the energy security issue, the scale was skewed in support of the issue. Hence, in order to make sense of the results I generated two categories through an arbitrary cut point selected within the 33rd centile of the scale. Those below the cut point are coded as weak opponents and moderates, and those above the cut point are coded as supporters of the issue.

Illegal Immigration related Public Policies: The findings resemble those of Study 2 in terms of predicting the influence of unnoticed affective primes and the frequency of negative and positive thoughts controlling for one's prior attitude. Since policies on illegal immigration were on distinct domains (pro and anti), I discuss the findings separately.

For the pro illegal immigration policies, there is a main effect for the affective prime and the prior attitude on the valence and frequency of negative and positive thoughts. In predicting the *positive* thoughts on pro illegal immigration policies as the dependent variable, controlling for the prior attitude, both the affective prime, $F(2, 125) = 19.60$; $p < .001$, and the prior attitude, $F(2, 125) = 3.17$; $p < .05$, had a significant influence. As presented in Figure 8, mean patterns confirm this statistical finding by showing the

highest frequency of positive thoughts for those who support illegal immigration and receive a positive prime. So, those who supported the issue and received a positive prime (congruence between the prime and the prior attitude) listed more than four positive thoughts across the pro policies than those in the incongruent condition (those who favored the issue but were in the negative priming condition).

In predicting the *negative* thoughts on pro illegal immigration policies as the dependent variable, controlling for the prior attitude, a two-way ANOVA indicates that both the affective prime, $F(2, 125) = 9.97$; $p < .001$, and the prior attitude, $F(2, 125) = 2.73$; $p < .07$, had a significant influence. The treatment condition had a strong influence in the valence of the thought that one can generate given a particular policy in favor of illegal immigration.

<<<Place Figure 8 Here>>>

If we look at the policies against illegal immigration, the results point in the same direction, suggesting that the affective priming condition influenced both the frequency and valence of policy related thoughts that came to mind controlling for one's prior attitude. As shown in Figure 9, for the *positive* thoughts on anti illegal immigration policies, results are in line with Hypothesis 5 (in this chapter) showing support for a greater affective prime effect, $F(2, 125) = 38.68$; $p < .001$, than prior attitude, $F(2, 125) = 5.55$; $p < .005$, with mean patterns as expected. Regardless of the fact that the statements were against illegal immigration, a positive prime promoted positive thoughts across the prior attitude groups more so than other treatment conditions. For anti illegal immigration policies, a negative prime inhibited the frequency of positive thoughts across all prior

attitude groups whereas a positive prime highly promoted the frequency of positive thoughts. For *negative* thoughts on anti illegal immigration policies, there is again strong support for the affective priming condition, $F(2, 125) = 9.95$; $p < .001$, and prior attitude, $F(2, 125) = 7.05$; $p < .001$. Those who received a negative prime listed more negative thoughts than those in other treatment conditions. Similarly, participants who received the positive prime wrote fewer negative thoughts across the three policies.

<<<Place Figure 9 Here>>>

These findings thus provide evidence for Hypothesis 5 suggesting that *no matter what* one's prior attitude is on illegal immigration, affective primes changed the valence and number of thoughts on a particular policy. The valence of unnoticed primes consistently and powerfully shaped the basic character of thinking on illegal immigration, in Study 3 with larger effects than prior attitude on the balance of thinking. Next, I will test if this findings hold for the policies on energy security.

Energy Security related Policies: Similar to the illegal immigration analyses, I tested the strength of the affective prime on anti and pro policies related to the issue of energy security. As before, the model has the negative and positive thoughts cited on anti and pro policies as the dependent variable. The priming conditions constitute the main factor whereas the prior attitude is the second factor in the ANOVA analyses.

Findings across the analyses are consistent on the influence of the affective prime and but here insignificant for the role of the prior attitude. In all two-way ANOVA analyses, there is strong impact of the affective prime on the valence and frequency of negative and positive thoughts across both types of policies. For anti energy security

policies (that endorse traditional energy methods), there was a statistically significant difference for the affective priming conditions on the number of *negative* thoughts, $F(2, 125) = 9.69$; $p < .001$, and on the number of *positive* thoughts, $F(2, 125) = 13.14$; $p < .001$, cited by the participants. On the pro energy security policies (promoting alternative energy methods), the affective primes influenced the number of *negative* thoughts, $F(2, 125) = 16.05$; $p < .001$, and the *positive* thoughts, $F(2, 125) = 17.95$; $p < .001$, cited by the participants.

Once again, the prior attitude in all of these analyses was insignificant in influencing the thoughts. One potential reason for having no prior attitude influence is the nature of this issue, the methods used in the U.S. to generate energy and to find answers for the future energy needs. Although the subject is quite important now at the mass level, at the time of the study the attitudes may not have been well developed in memory. Perhaps, people did not have very strong beliefs about the issue but some supported the traditional methods and some supported the new alternative energy methods. In this respect, the findings here suggest that the participants to the study should have developed their “new” attitudes and perhaps beliefs through the influence of the subliminal affective primes. Some of those became more negative towards the issue and generated links in their short term memory that are more negative whereas some become more positive and formed positive links among the thoughts. Thus, given an “undeveloped” attitude, the influence of the primes is much stronger than the prior attitude. This perhaps leads to attitude formation as people are exposed to the incidental cues, which in turn changes how we think, reason, and deliberate on the issue. This question will be elaborated in the

following chapters. All in all, I found strong support for Hypothesis 5 and hence the Affective Contagion Hypothesis.

CONCLUSION

This chapter investigates the many ways in which unnoticed affective primes can influence thoughts and considerations about several political and social issues. Findings can be extended from general issue statements to particular public policies across two major issues. Also, I found strong evidence that the effects of the affective primes are maintained on distinct political issues. The first section of the chapter discussed the results on affirmative action, poverty, and terrorism issues whereas the second section focused on illegal immigration and energy security issues. In the third section, I provided specific public policies and found that affective primes again make affect-laden thought more accessible to short-term memory, controlling for the prior attitude.

Findings can be summarized under two sections: First, subliminal affective primes promote affect-laden thinking and inhibit affect-incongruent thinking. Given a positive (or a negative) prime, people are more likely to remember positive (or negative) thoughts on political issues and policies. Second, affective primes promote affect-laden thinking even controlling for prior attitude on political issues and policies. When affective prime is in congruence with the prior attitude (e.g., negative prime with opposition against an issue), the effects are bolstered. However, for the energy security issue I found that regardless of one's prior attitude, affective primes strongly influenced the valence of thinking. As a post-hoc explanation, this finding is an initial support for the possibility of stronger priming effects on undeveloped attitudes.

Taken findings together all three studies offer surprisingly strong evidence for the major hypothesis of Affective Contagion that simple cartoon faces flashed outside the awareness of participants significantly and consistently altered their thoughts, considerations, and thinking, with effects comparable or greater in size to those of prior attitude on the issue. More interestingly, results on the energy security issue posit that the affect-triggered thoughts can form our attitudes, preferences, and perhaps beliefs. Thus, what I have not answered in this chapter is the impact of these thoughts on political behavior – political attitudes and policy evaluations – to which I turn to in Chapter 3.

Table 2.1: Comparison of number of thoughts across the First Group of Issues

<i>Treatment condition</i>	# of Positive Thoughts			# of Negative Thoughts		
	<i>Negative</i>	<i>Neutral</i>	<i>Positive</i>	<i>Negative</i>	<i>Neutral</i>	<i>Positive</i>
Poverty	1.10	1.13	1.78	2.29	1.46	1.48
Affirmative Action	1.25	1.38	1.93	2.26	1.66	1.39
Terrorism	.70	.80	1.46	2.86	2.20	1.87

Table 2.2: Mean Distribution across Illegal Immigration policies

	Anti Illegal Immigration Policies		Pro Illegal Immigration Policies	
	Negative Thoughts	Positive Thoughts	Negative Thoughts	Positive Thoughts
<i>Positive Prime</i>	4.29	5.56	2.68	6.93
<i>Neutral Prime</i>	4.95	2.98	3.22	3.78
<i>Negative Prime</i>	6.88	1.84	4.95	3.09

Table 2.3: Mean Distribution across Energy Security policies

	Anti Energy Policies		Pro Energy Policies	
	Negative Thoughts	Positive Thoughts	Negative Thoughts	Positive Thoughts
<i>Positive Prime</i>	4.15	3.78	1.80	5.90
<i>Neutral Prime</i>	4.46	2.15	2.24	3.85
<i>Negative Prime</i>	6.44	1.49	4.30	2.95

Figure 2.1: The Affective Priming Paradigm used in All Three Studies

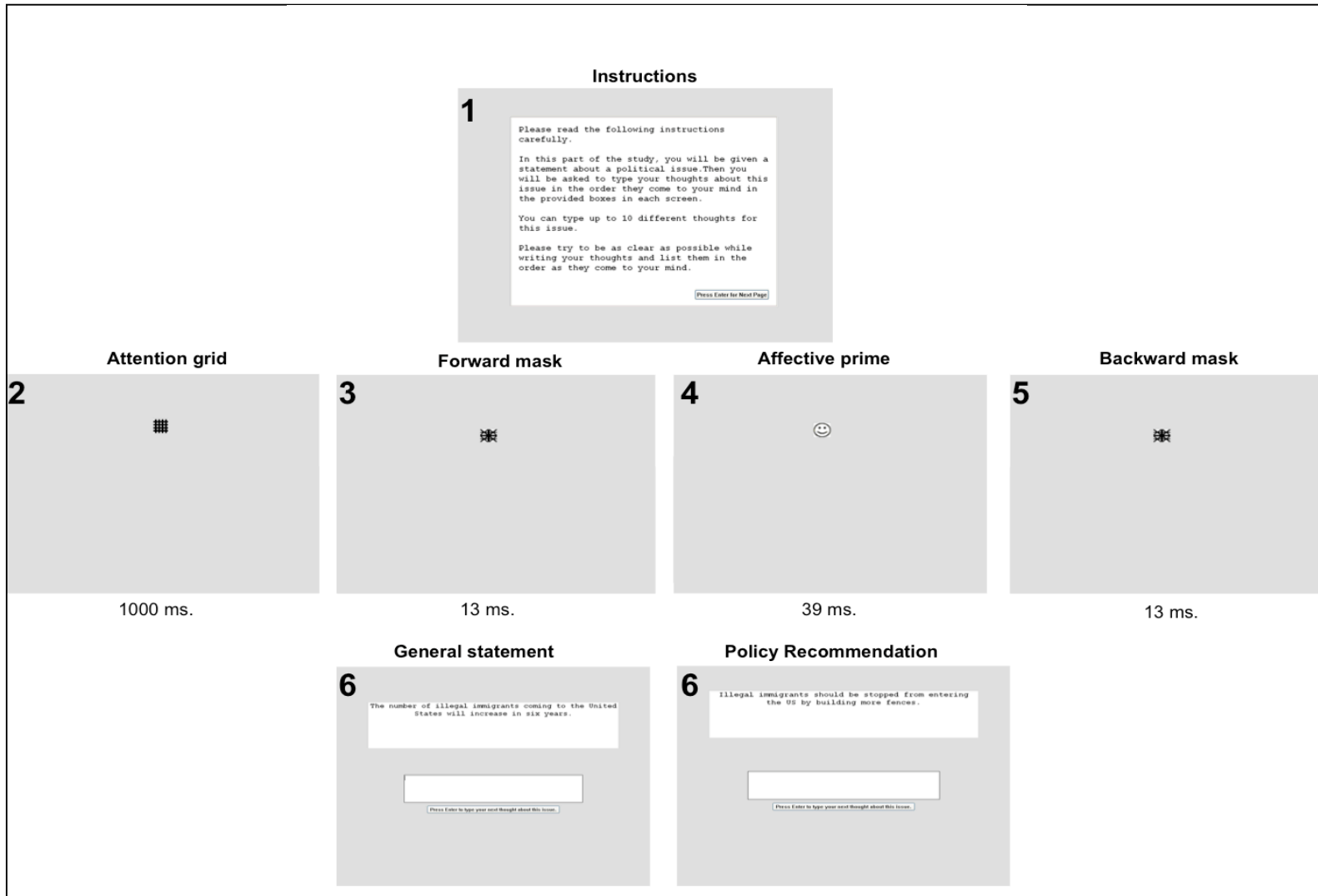


Figure 2.2: Flow of the Experiment

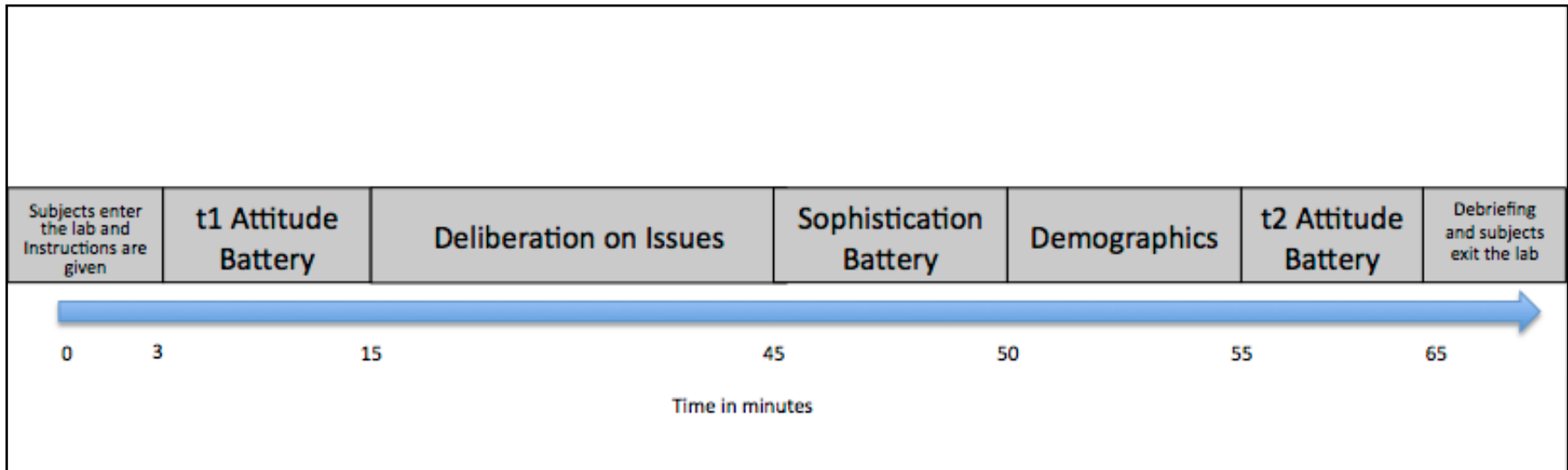


Figure 2.3: Comparison of Positive and Negative Thoughts controlling for the Prior Attitude on the Issue of Affirmative Action

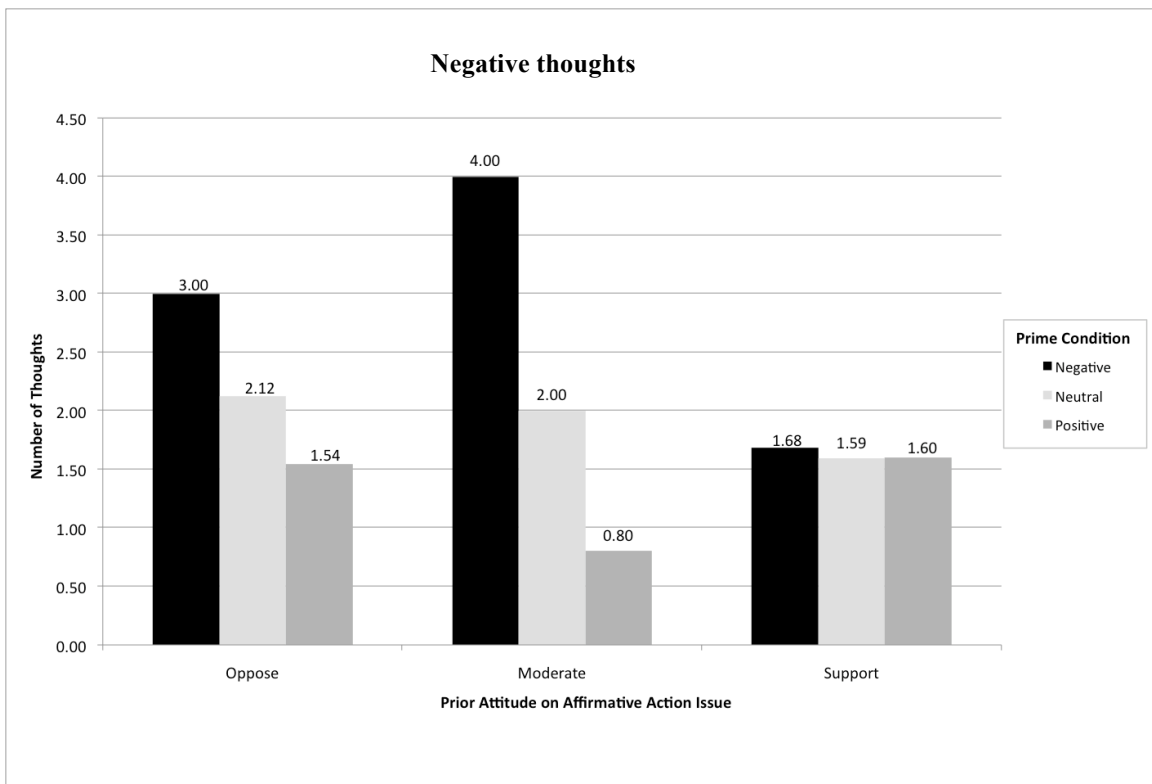
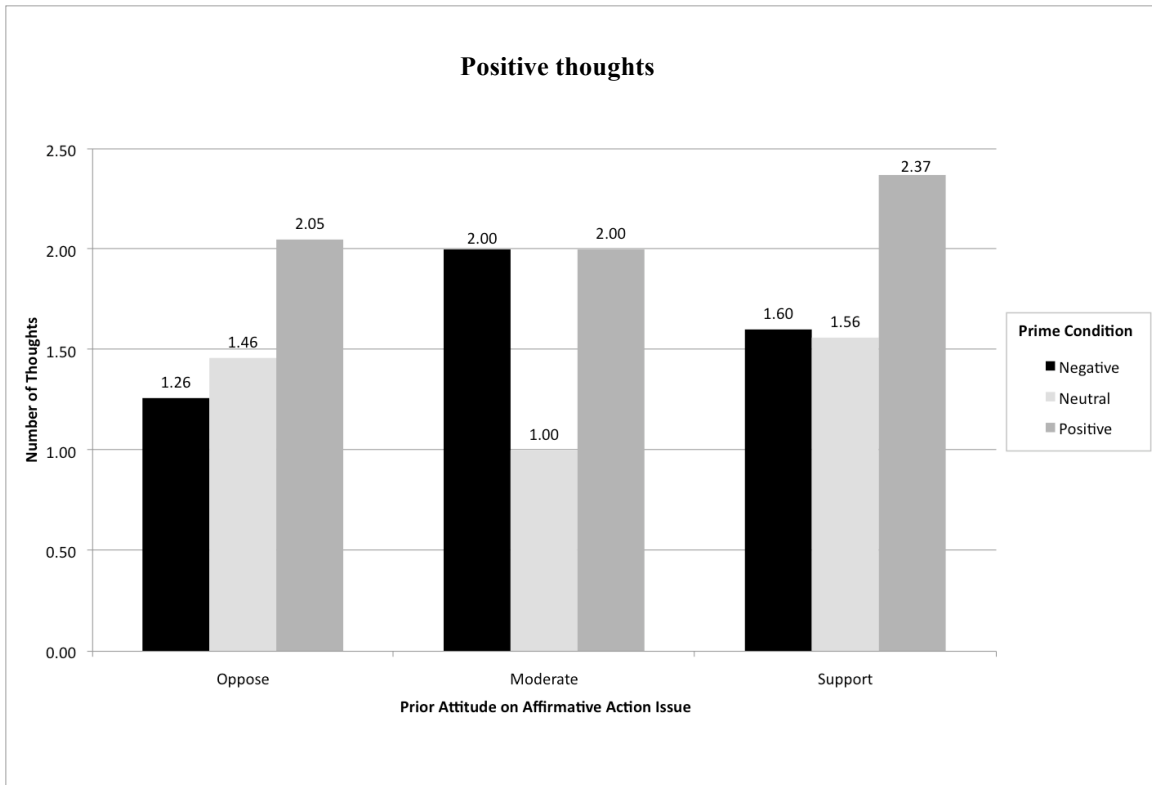


Figure 2.4: Comparison of Positive and Negative Thoughts controlling for the Prior Attitude on Government's Handling of Terrorism

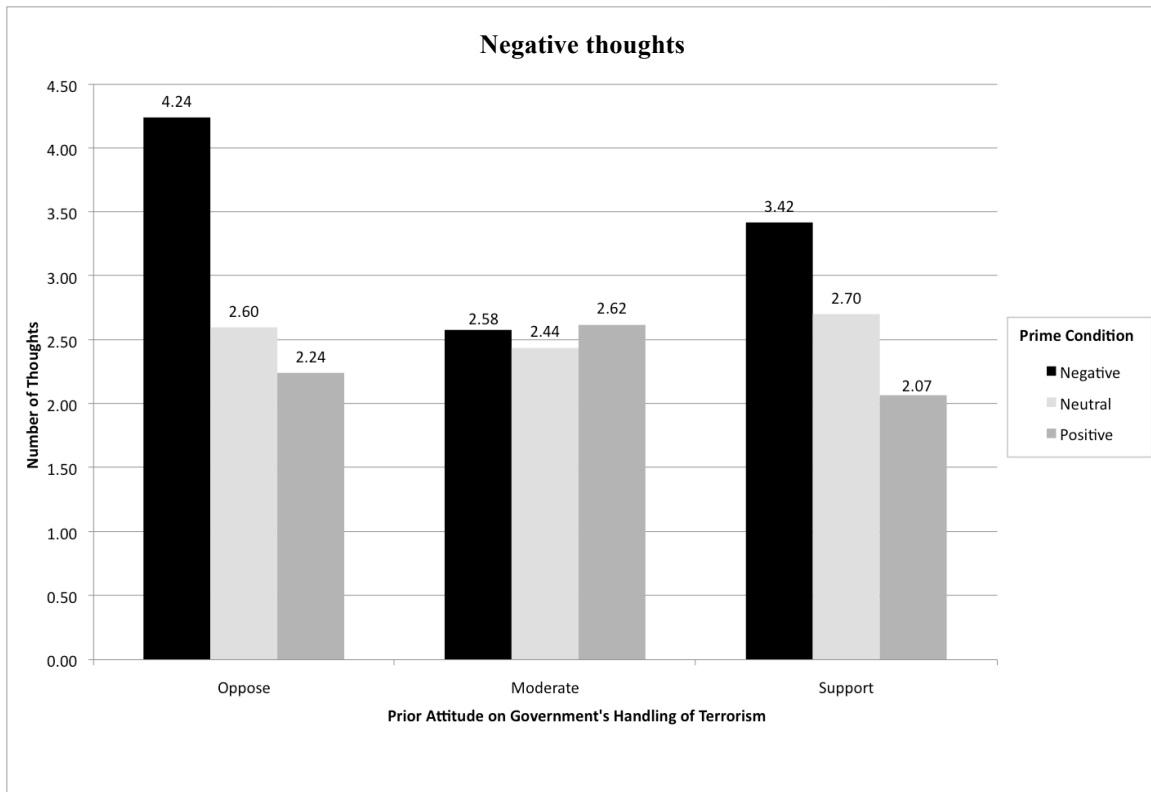
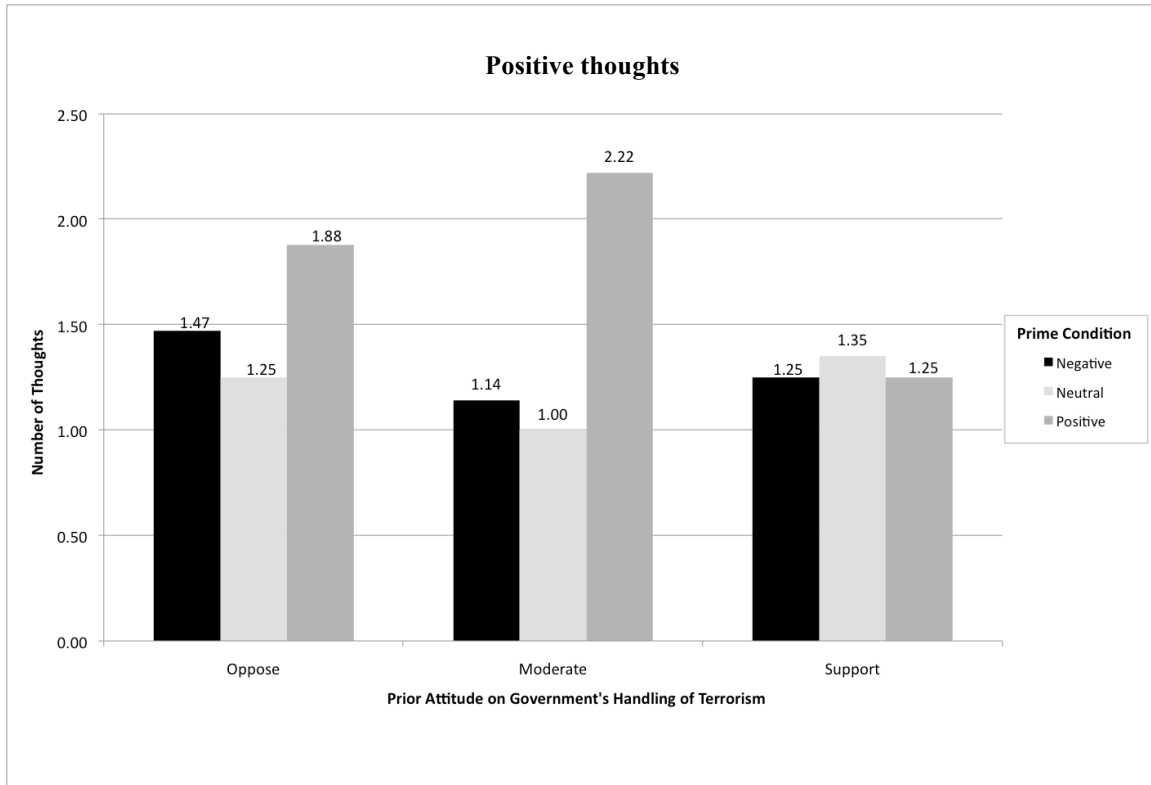


Figure 2.5: Comparison of Positive and Negative Thoughts controlling for the Prior Attitude on Governmental Funding to Solve the Issue of Poverty

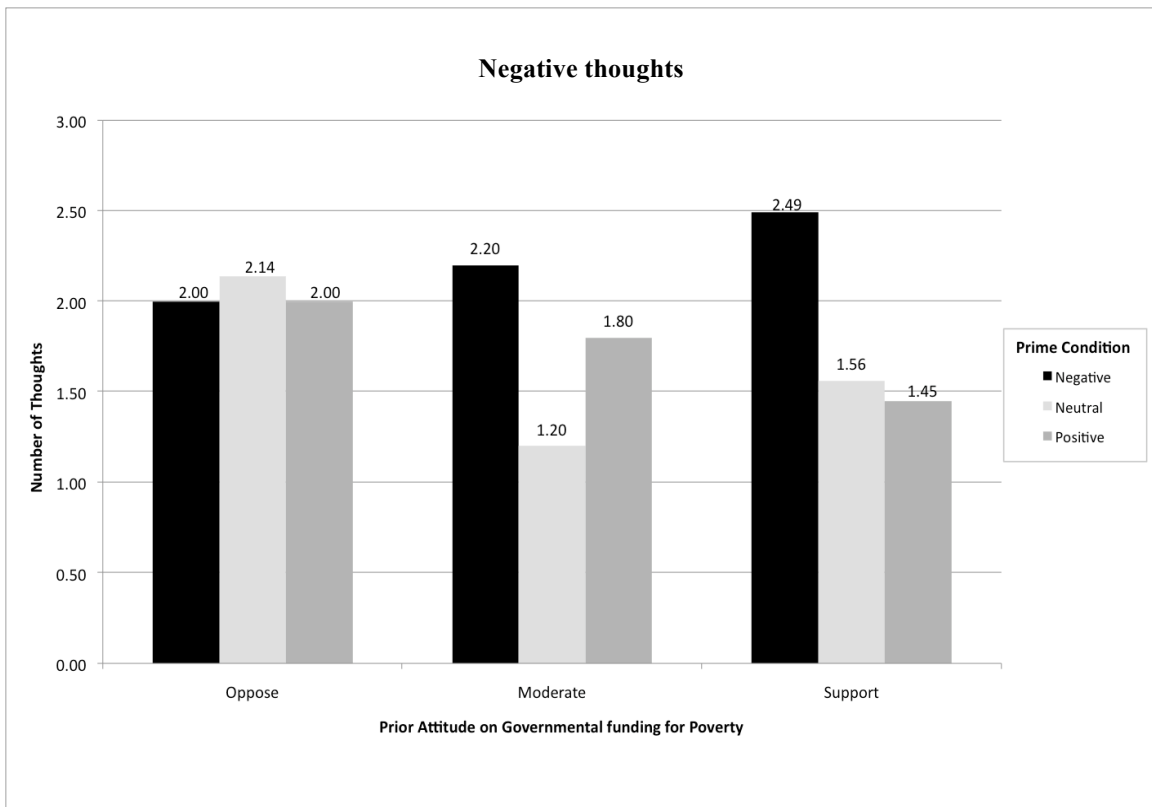
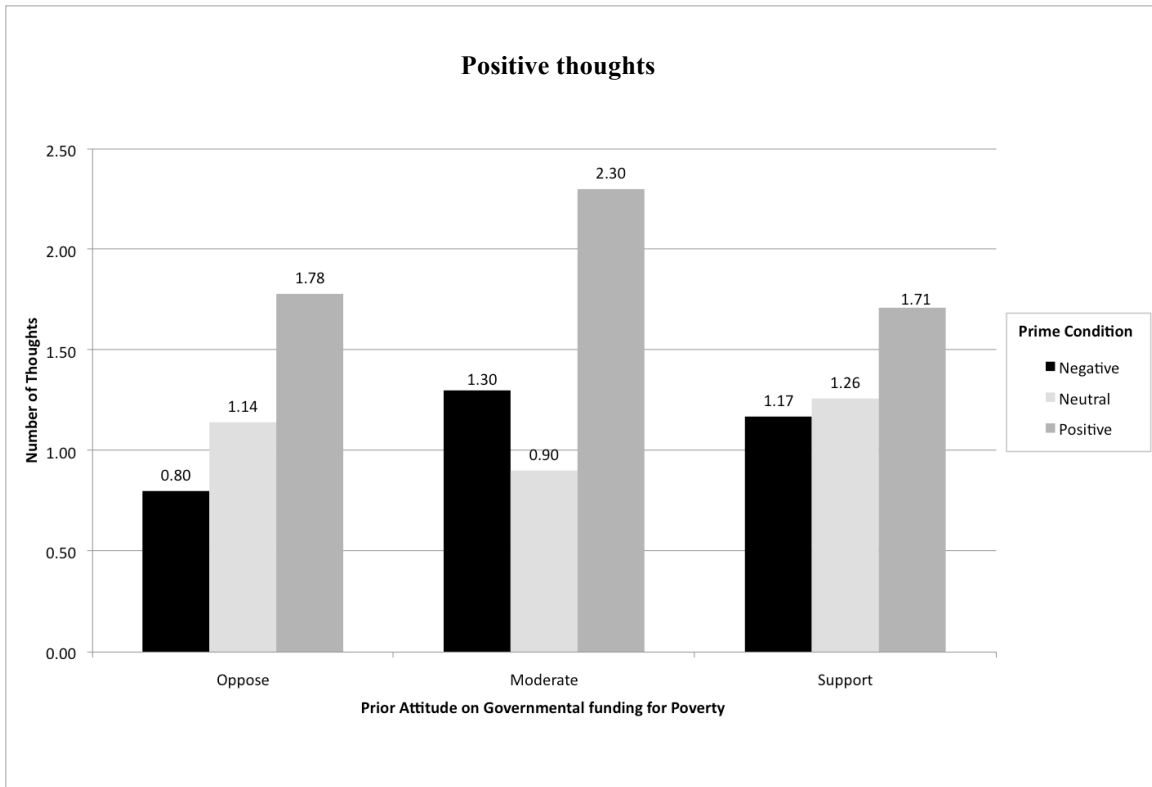


Figure 2.6: Comparison of Positive and Negative Thoughts controlling for the Prior Attitude on the Issue of Illegal Immigration

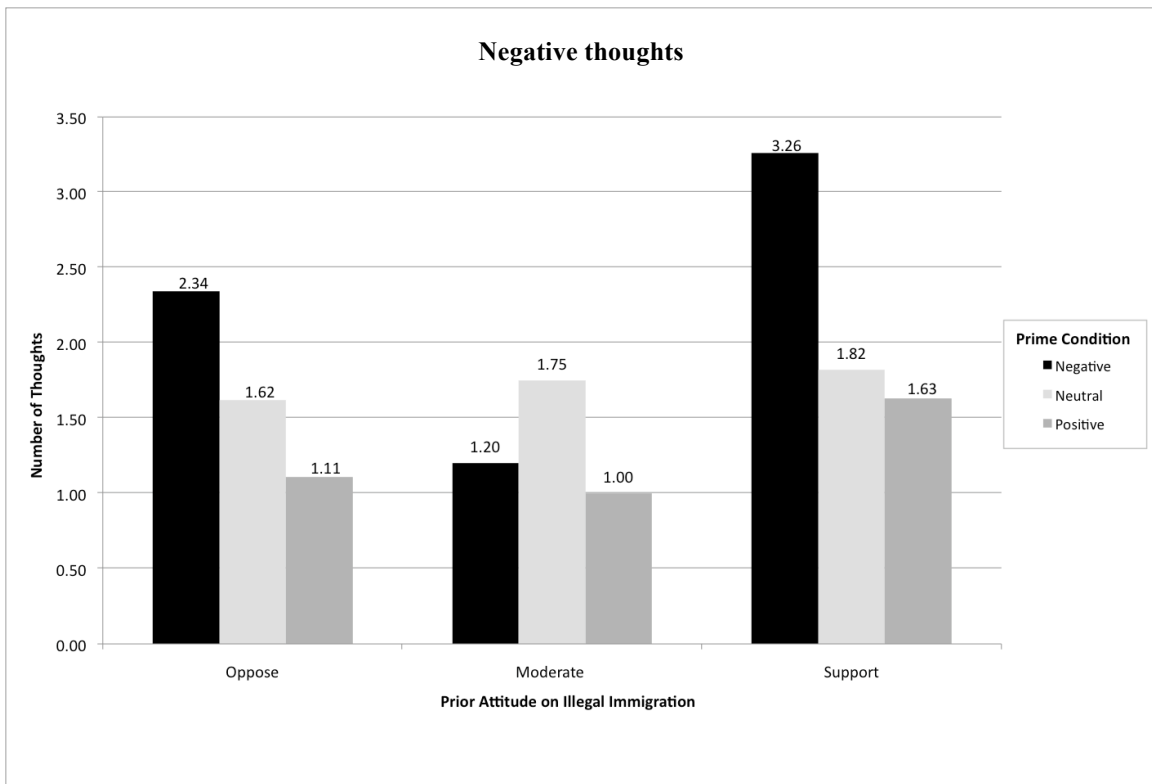
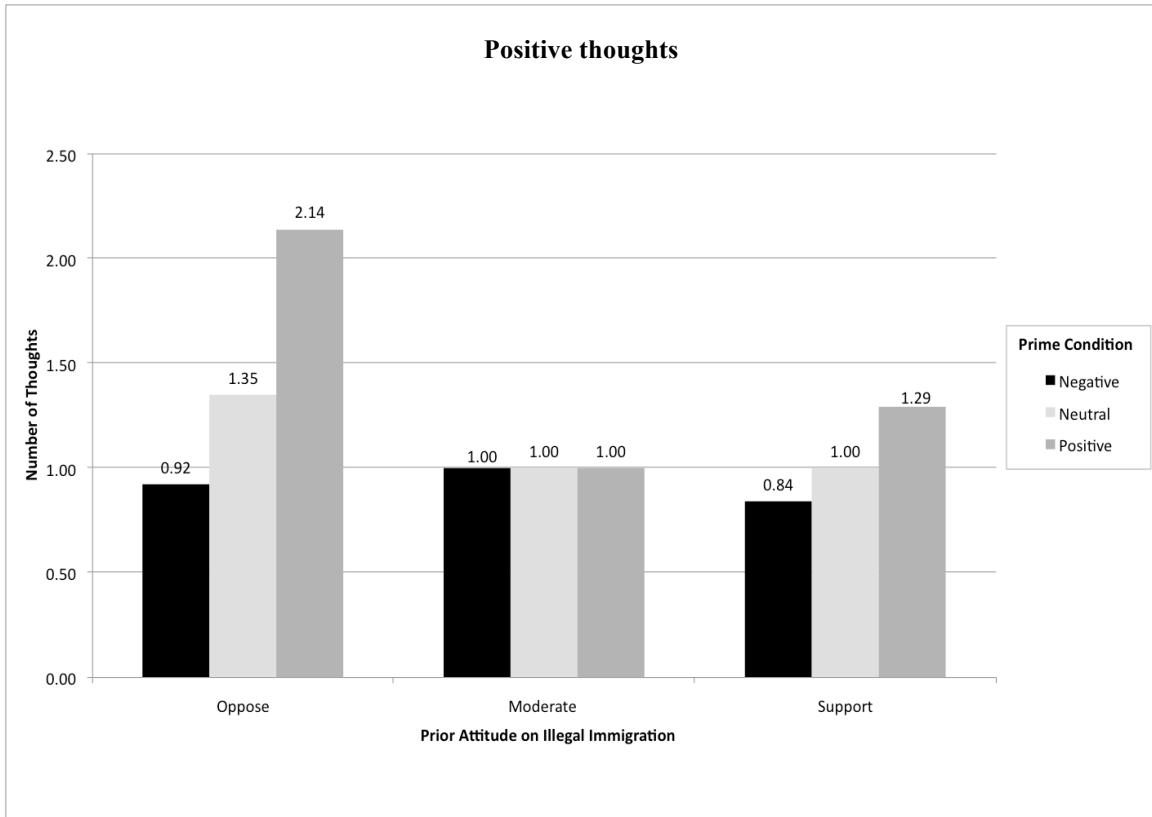


Figure 2.7: Comparison of Positive and Negative Thoughts controlling for the Prior Attitude on the Issue of Energy Security

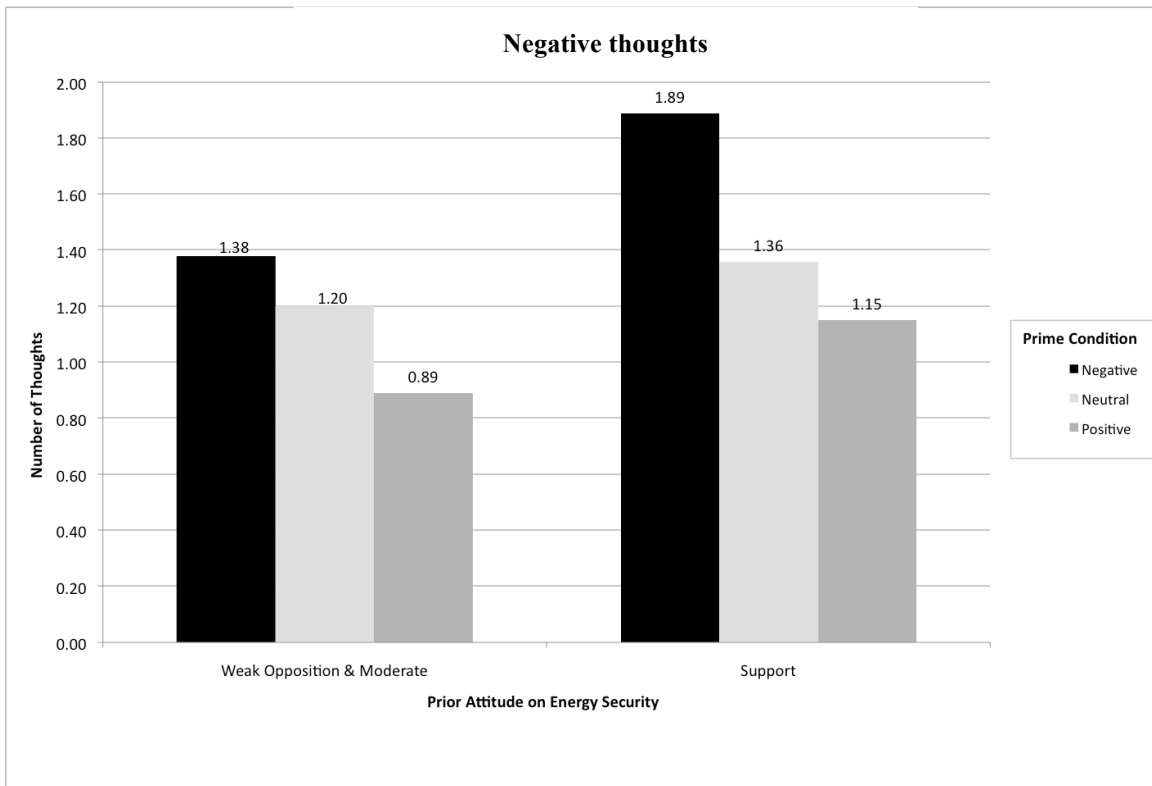
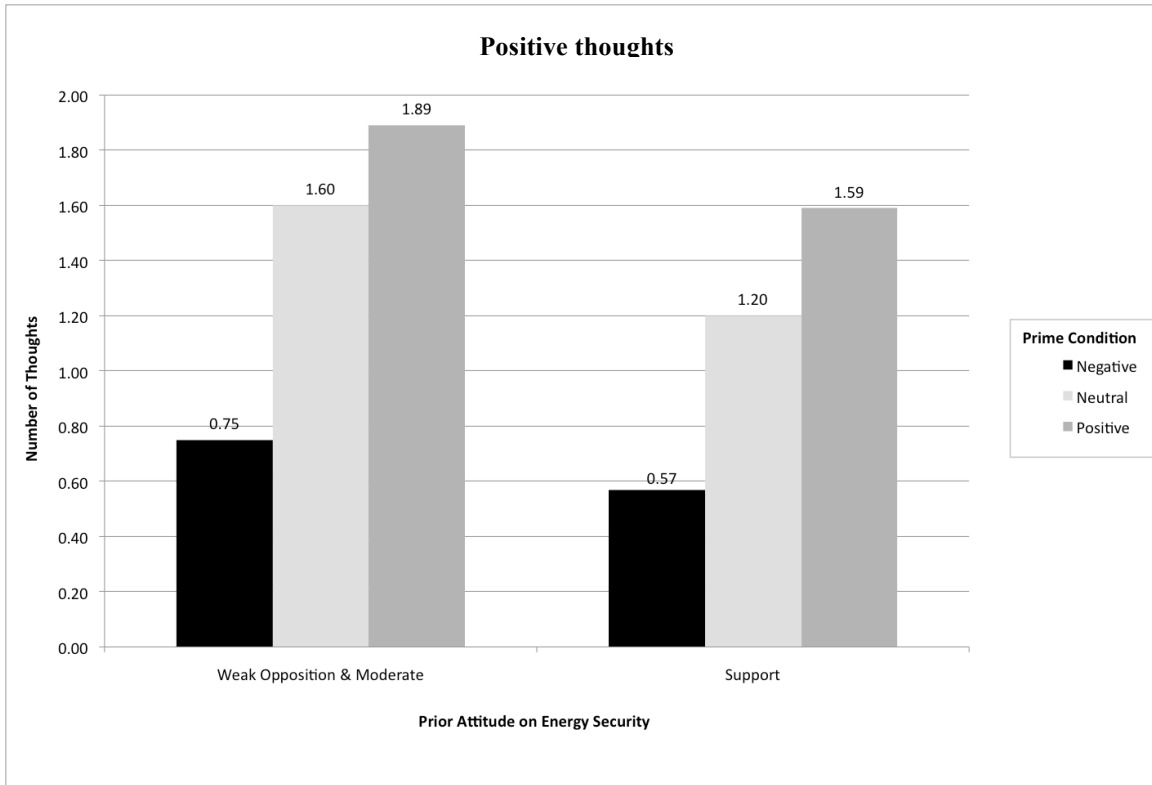


Figure 2.8: Comparison of Positive and Negative Thoughts cited on Pro Illegal Immigration Policies controlling for the Prior Attitude

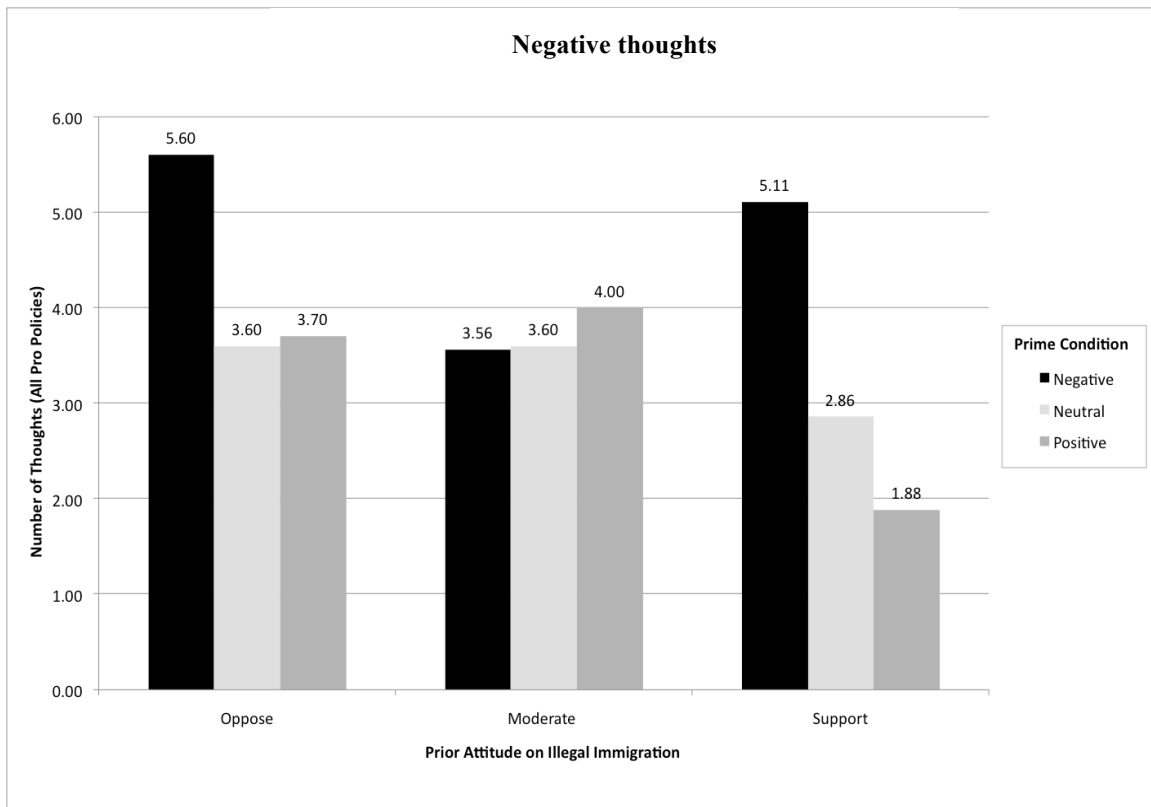
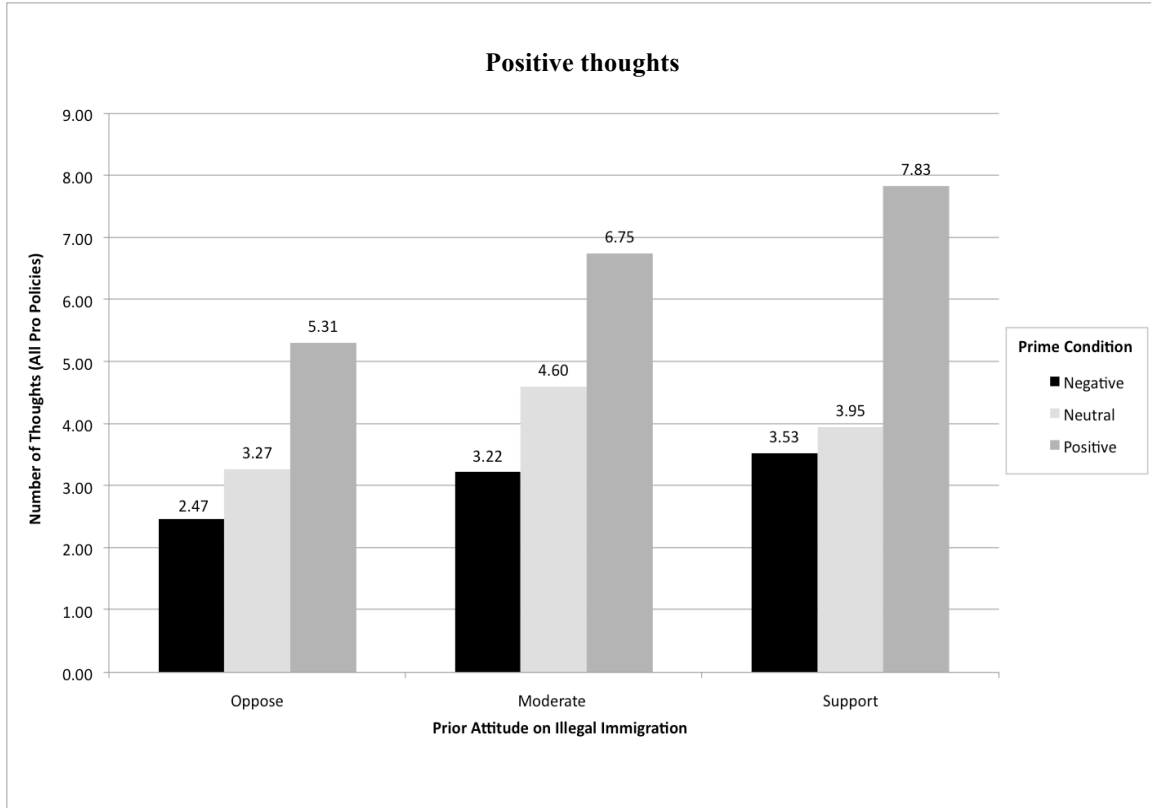
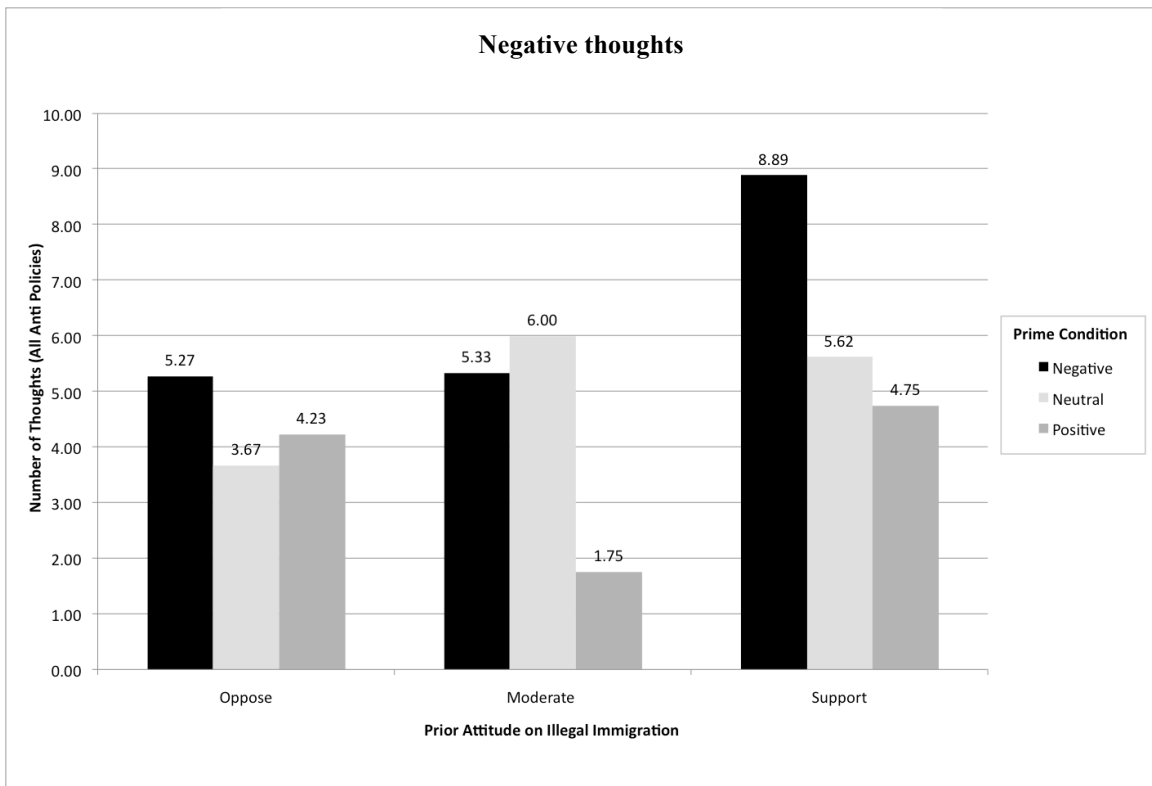
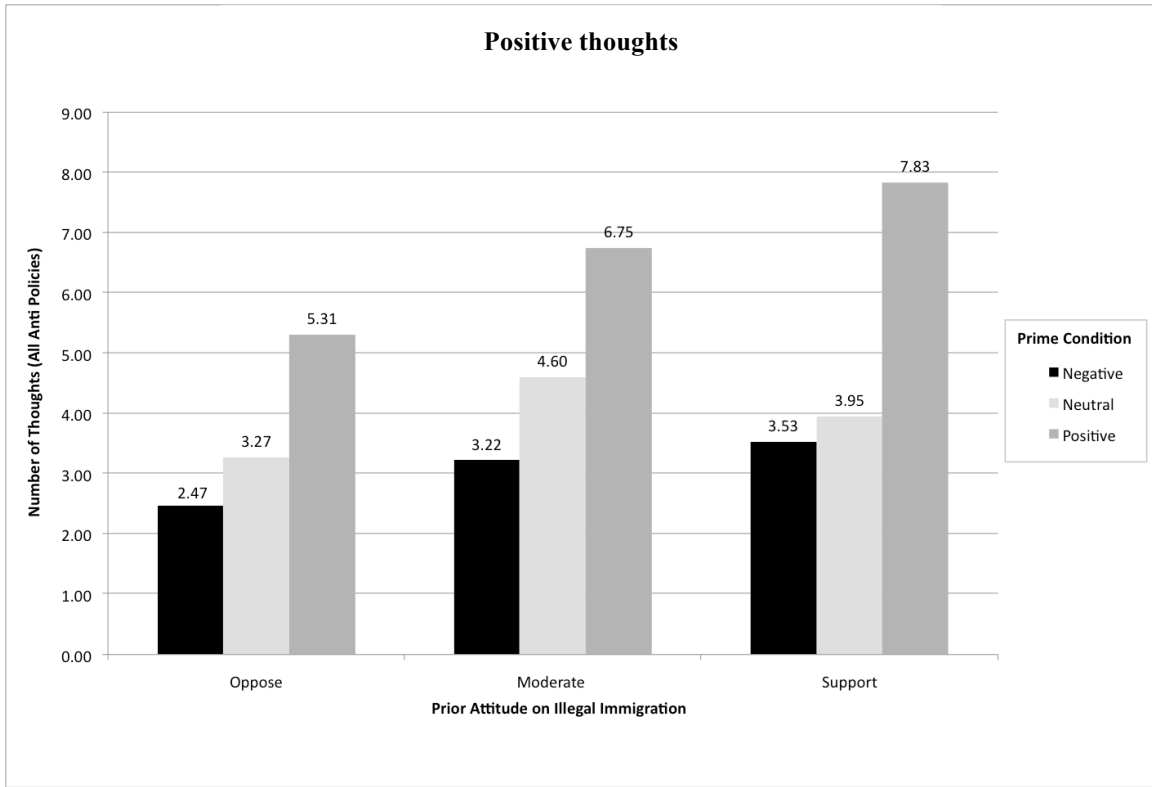


Figure 2.9: Comparison of Positive and Negative Thoughts cited on Anti Illegal Immigration Policies controlling for the Prior Attitude



CHAPTER 3: ATTITUDINAL CONSEQUENCES OF AFFECT-TRIGGERED THOUGHTS

Chapter 3 extends the Affective Contagion hypothesis and examines the long-term effects of subliminal affective primes on political attitudes. In addition to the effect of affective primes in downstream processing, thinking, and reasoning --evidence in support of the Affective Contagion hypothesis presented in Chapter 2-- this chapter elaborates on the attitudinal consequences of affect-elicited thoughts.

By attitudinal consequences, I intend to test the effects of subliminally presented affective primes on political attitudes and policy evaluations. The goal is not only to analyze the direct effects of the affective primes, but also indirect influences that would be carried over by the thoughts and considerations that are initially evoked. Hence, the models in this chapter are founded on the findings presented in Chapter 2 about the influence of affective primes on thoughts. Hence, this chapter examines if the affect-triggered thoughts play a subsequent role in political attitudes.

Models predicting political attitudes often treat attitude change and policy evaluations as the main indicators. So, the goal in this chapter is to predict these important indicators of political attitudes through the process initiated by affective

primes. In other words, would the unnoticed affective primes (the cartoon faces) trigger a process that would change one's attitudes and policy positions?

To answer this question, I hypothesize a *chain reaction effect* initially triggered by the subliminal affective primes. The quick, unnoticed but registered effect of the affective primes will then initiate affect-colored thinking which makes affect-laden thoughts and considerations available in short term memory. These affect-triggered thoughts (now passed the threshold of availability in short term memory) in turn influence how one constructs an answer to a social survey question, one's attitudinal reports and policy evaluations. This chain reaction effect is a *sequential process* like a line of dominos. Step-by-step, as the first domino falls (or the first door is unlocked) it sets the process in motion by triggering the following steps. As discussed in Chapter 1, interconnectedness among thoughts, considerations, and beliefs are affect-laden. Once a concept is initiated, the related nodes light up and make relevant information available in short term memory. Hence, I propose a model that places the affective prime at the core of the mechanism promoting affect-directed thinking and reasoning, which would then enter into the construction of evaluations, preferences, and attitude change.

I intend to test two hypotheses on the attitudinal consequences of affect-elicited thoughts and considerations. First, I propose that affect-triggered thoughts can generate a change on attitudes across priming conditions. Accordingly, Hypothesis 1 postulates that the thoughts promoted by affective primes should also influence how one updates his/her attitude. That is, given evidence for the effect of incidental affective primes, I should also observe that those thoughts change one's attitude.

Hypothesis 1: *Affective primes will generate affect-laden thoughts which in turn will alter participants' attitude on a given issue.*

Second, it would be important to see if affect-triggered thoughts can lead to changes on policy evaluations and preferences. The following hypothesis takes *policy evaluation* as the dependent variable and aims to address the issue through affect-triggered thoughts cited on policies. To test this statement, I propose Hypothesis 2:

Hypothesis 2: *Affective primes will generate affect-laden thoughts on public policies which in turn alter participants' public policy evaluations dealing with a political issue.*

THE METHOD

This chapter employs mediation analysis to present the attitudinal consequences of affect-elicited thoughts. In the conventional mediation analysis the goal is to predict the effect of the independent variable on the dependent variable through a mediator (Baron & Kenny, 1986). Mediator here is a variable that accounts for all or a portion of the causal relation between the independent and dependent variables. The goal is to present the effect of the independent variable on the dependent variable whose effect is in fact carried over by the mediator that has the indirect effect on the dependent variable.

Mediation analysis and indirect effects constitute an important part of social science research. Empirical research in political psychology (Zebel, Zimmermann, Viki, & Doosje, 2008; Valentino, Hutchings, Banks, & Davis, 2008), social psychology

(Shrout & Bolger, 2002), and prevention studies (Judd & Kenny, 1981; MacKinnon & Dwyer, 1993) present the many ways in which mediation analysis can be used to depict complex relationships among predictors and outcomes. Mediation analysis is also an introduction to more sophisticated measurement models such as structural models (Fiske, Kenny & Taylor, 1982; Long, 1985).

In this chapter, I use mediation analysis to investigate whether the thoughts elicited by the affective primes carry any influence onto political attitudes and policy evaluations.¹⁴ In other words, the thoughts, elicited by the affective primes, are expected to play a role in the deliberative process of considering one's general position and evaluating political issues.

Mediation Analysis

There are three steps in building a mediation model. The first step involves showing the effect of the main independent variable on the dependent variable (i.e. attitude reports or policy evaluations). According to Baron and Kenny (1986) the relationship between the independent and the dependent variables should be significant for causal connections to exist. Nonetheless, this step is not required to establish mediation given the developing criticism in the literature about this requirement.(Collins, Graham, & Flaherty 1998; MacKinnon 2000, 2008; MacKinnon, Krull, & Lockwood,

¹⁴ From a different point of view, it is probable to take the prior attitude as the independent variable predicting the posterior attitude on an issue. The affect-triggered thoughts would then function as the mediator as well. However, the experimental design did not have any specific expectation or treatment on the basis of prior attitude. So, the real treatment in the experiments has focused on the affective prime as explained before in this chapter. The affective primes stand at the core of the theorized mechanism in these experiments. Hence, the independent variable will always be the affective prime in the mediation analyses.

2000; Shrout & Bolger, 2002). I discuss this point and the resulting theoretical expectations below.

The second step in the mediation model requires the influence of the independent variable on the mediator variable (i.e. thoughts on the issue or the policy). The independent variable has to predict the mediator. The third step integrates all of the variables by requiring the prediction of the dependent variable through the mediator, controlling for the independent variable (Baron & Kenny 1986; MacKinnon 2008). If the effect of the independent variable on the dependent variable becomes insignificant, this is called Full Mediation. If the effect weakens, mediation becomes partial.¹⁵

The major limitation of this mediation model is the first step: the significant influence of the independent variable on the dependent variable. Most analysts believe that the essential conditions in establishing mediation are the second and third steps as explained above (Fiske et al. 1982; Collins et al. 1998; Kenny, Kashy & Bolger, 1998; Shrout & Bolger, 2002; MacKinnon, 2008). Current mediation models have shown that the effect of the independent variable on the dependent variable can be insignificant, yet there can still be substantial mediation (MacKinnon et al. 2000).¹⁶ Similarly, mediation for experimental studies has been argued as an “intra-individual process involving the occurrence of a mediator which in turn leads to the occurrence of an outcome” (Collins et al. 1998: 304).

¹⁵ The Ordinary Least Squares (OLS) models are used to estimate the coefficients and standard errors in all steps of the mediation analysis.

¹⁶ This condition is especially suggested for mediators which act like a suppressor variable: If the direct and indirect effects in a mediation model have opposite signs, then it could be the case that first step would not be met, but there is still mediation (Baron & Kenny 1986; Kenny et al. 1998; Shrout & Bolger 2002; MacKinnon 2008). Models with positive and negative mediated effects are as well called inconsistent models (Blalock 1969; Davis 1985). These cases are termed as Supression Models (Inconsistent Mediation).

In line with this proposition, there are two points to be acknowledged in order to interpret the mediation models in this chapter. First, there is no theoretical reason in this chapter to expect a direct effect between the independent variable (affective primes as smiley and frowning faces) and one's political attitude or policy evaluations. In other words, the treatment effects (the independent variable) have no substantive bearing on the dependent variables. On the other hand, as Chapter 1 posits, the affective primes put the participant into a different affectively colored cognitive state (i.e. affective contagion) which in turn alters thinking as evidenced by the changes in the participant's (negative and positive) thoughts. So, mediation analysis in this chapter refers to the stage-sequential mediation which does not require the effect of the independent variable on the dependent variable to validate mediation (à la Collins et al. 1998).

Second, models with two mediators are difficult to incorporate in the conventional mediation analysis. There is no defined procedure in the conventional mediation analysis to obtain the distinct effects of the mediators on the same dependent variable. Yet, in explaining the attitudinal effects of affect-invoked thoughts, I hypothesize that these thoughts (negative and positive) separately alter attitude reports and policy evaluations.¹⁷

In line with the developing literature explained above, this chapter will not require the validation of the first condition in the mediation model. The subsequent mediational effect of the affect-evoked thoughts on attitudes and policy evaluations is explored here.

¹⁷ This is again a condition where suppression models can occur. In this chapter, whilst it is expected that the negative thoughts should mediate negative effects, the positive thoughts should mediate positive effects on the dependent variable. Hence, the mediators could function as a suppresser in the following models if the first step is insignificant.

The Mediator

This section outlines the mediators and explains how they are formed and used in the following analyses. Mediation models discussed here consider affect-triggered thoughts to function as the mediator reflecting the influence of the independent variable (affective primes) on the dependent variable (attitude reports and policy evaluations). There are two mediation models in this chapter: one with two mediators, called a multiple mediator model, and the other with a single mediator variable. I chose having these two models because of the fact that the mediator measure can be formed in two distinct ways each with a different explanatory strength: the number of thoughts (positive and negative) and the proportion of thoughts.

First, the use of the number of positive and negative thoughts as the two mediators of the multiple mediation model follows from the analyses in Chapter 2. It is important to see the distinct effects of the negative and positive thoughts on issues and policies, controlling for the overall frequency of thoughts.

Second, a variable representing the balance between the negative and positive thoughts listed for the issues and policies can also serve as a mediator, which led to the second mediation model. The best way to create such a mediator is by developing a proportion measure. The proportion of thoughts measure ranges from 0 to 1 where 0 represents someone who cited only negative thoughts and 1 represents someone who cited only positive thoughts, with a mid-point of .5 (equal number of negative and positive thoughts). The major advantage of using the proportion of thoughts is that it presents a greater perspective on the attitudinal influence of affect-evoked thoughts. The disadvantage, on the other hand, is that the proportion measure does not differentiate the

intensity (measured by frequency of the thought) of thoughts. For instance, someone who listed two positive thoughts will be treated the same as someone who cited four positive thoughts.

In sum, each one of these mediators has strength in explaining a different unknown aspect of how the affect-triggered thoughts impact attitudinal predictions. Hence, the use of both measures --the number of thoughts (positive and negative) and the proportion of thoughts-- in separate mediation models presents a more complete picture of the mediational relationships.

Attitude Construction

As described in Chapter 2, I will employ the same attitude construction in this chapter. I used a combined measure of attitude construction --the product of one's position on a given issue and the strength of that position. As explained before, one's position on a given issue is anchored from -3 (strong opposition) to +3 (strong support) and the strength of that position ranges from 0 (weak) to 1 (strong).¹⁸ Reliability among the correlated items was above .7 for both issues (illegal immigration and energy security). Items with weak correlation (.3) are excluded from attitude construction.

Since the mediation analysis includes a number of OLS regression models, I kept the attitude measures in their original format as continuous, which will make substantive interpretation more meaningful.¹⁹ Here, unlike Chapter 2, categorizing the attitudinal measure into three groups limits the ability to interpret the findings. Converting a

¹⁸ As explained and done in Chapter 2, only three of the six issue position statements and items measuring availability dimension of attitude strength are reverse coded. The respective items (for attitude position and attitude strength separately) are combined by taking the arithmetic mean.

¹⁹ In Chapter 2, I have categorized the prior attitude into three groups (supporters, moderates, and opponents) for presentation purposes. Bar graphs for variable with more than ten groups are unclear and almost un-interpretable.

continuous ratio-level measure into a categorical ordinal-level measure reduces the effect of the variables (e.g., affective primes, affect-triggered thoughts) on the dependent variable (i.e., political attitude on an issue or policy evaluation).

I. PREDICTING POLITICAL ATTITUDES

In line with Hypothesis 1, I am interested in the role of affect-elicited thoughts in predicting the position of the participants on the issue of illegal immigration and energy security. What gives the motivation for the following analyses is the proposition that affect-elicited thoughts could be consequential in deliberative processing of considerations and attitude formation. In this section, I focus on the affective mediation from the priming condition to the attitudes on illegal immigration and energy security.

I-A. Illegal Immigration

The mediators will be the negative and positive thoughts written on illegal immigration, and the proportion of thoughts cited on the same issue. Whilst the negative and positive thoughts as the mediators show distinct effects, the proportion of thoughts will present the balance of thoughts' impact on the ultimate attitude measure. The negative and positive thoughts are simply count variables showing the number of thoughts. The independent variable is the priming condition (positive=1, neutral=.5, and negative=0) and the dependent variable is the attitude on illegal immigration.

Positive and Negative Thoughts as multiple mediators: In the first step of the mediation model a simple regression shows the effect of affective prime on the attitude ($\beta=.34$; $p<.07$). Although not hypothesized, this confirms the direct influence of the

affective prime on the illegal immigration attitude.

In the second step of the mediation, the regression model takes the mediators (negative and positive thoughts on the illegal immigration issue) as the dependent variable and the affective priming condition as the independent variable. This condition needs to hold in order to show a mediational relationship. In line with the previous findings in Chapter 2, the regression model shows the significant effect of the affective primes on the number of negative ($\beta=-1.13$; $p<.001$) and positive ($\beta=.74$; $p<.001$) thoughts. In substantive terms, as one gets the positive prime, s/he is more likely to list positive thoughts on the issue of illegal immigration. Similarly, as one gets the negative prime, s/he is likely to remember more negative thoughts and fewer positive thoughts on the issue.

In the third step of the mediation analysis, the model includes the mediators, positive and negative thoughts, predicting the attitude, controlling for the priming condition (see Figure 1). This last step reveals several important results: The most important of all is that the mediators appear to have an impact on the attitudinal reports. Both the positive thoughts ($\beta=-.15$; $p<.03$) and the negative thoughts ($\beta=.07$; $p<.09$) alter where one stands on the issue of illegal immigration. This result suggests that one portion of the total effect is *mediated* through the positive and negative thoughts that are strongly influenced by the subliminal affective primes. Statistically, a one unit change in the number of negative thoughts is associated with a .07 increase on attitudinal reports on illegal immigration whereas a one unit change in the number of positive thoughts is associated with a .15 decrease on the same attitudinal reports. The second finding is that the priming condition still influences one's position on illegal immigration with

somewhat increased strength ($\beta=.56$; $p<.01$) indicating a partial mediation. As one receives a positive prime (smiley cartoon face), s/he supports the issue more.

<<< Place Figure 1 Here >>>

Proportion of thoughts as the mediator: For the mediating role of the balance of thoughts, I run a mediation model with the proportion of thoughts as the single mediator where the independent and the dependent variable are the same as in the previous model. The first step of the mediation model is the same as above showing the priming condition effect on the dependent measure. In the second step of the mediation model, the affective primes predict the proportion of thoughts that one listed on the general statement of illegal immigration ($\beta=.26$; $p<.001$), confirming the condition that the independent variable predicts the mediator. The third step of mediation analysis presents that the proportion of thoughts mediates approximately 19% of the relationship between the affective prime and one's standing on illegal immigration. The last phase of the mediation analysis indicates a consistent influence of the affective prime ($\beta=.45$; $p<.02$) and the balance of thoughts ($\beta=-.43$; $p<.07$). Sobel test confirms the validity of partial mediation ($z=-1.73$; $p<.08$).

I-B. Energy Security

Similar to the illegal immigration issue, thoughts on energy security issue are separated into two groups: negative and positive. The mediators are again the negative and positive thoughts (as multiple mediators in a single model), and the proportion of thoughts in two separate mediation models.

Positive and Negative Thoughts as multiple mediators: As before, the first step of the mediation model ought to present the effect of the prime on one's attitude. In this mediation model, however, the affective prime does not change energy security attitude directly ($\beta = -.10$; $p > .10$). Yet, as discussed before, the first step of mediation analysis is not required to establish the model (Shrout & Bolger 2002; MacKinnon 2008). If the second and third steps were confirmed then the model would still be considered a mediation model. In line with this requirement, the second and third steps of the mediation analysis confirm these conditions. First, the affective prime influences the number of positive thoughts ($\beta = 1.04$; $p < .001$) and the number of negative thoughts ($\beta = -.67$; $p < .01$). Second, controlling for the affective prime, in the third step of the mediation model, the positive ($\beta = .14$; $p < .01$) and negative ($\beta = .12$; $p < .01$) thoughts separately mediate a portion of the causal relationship (see Figure 2). Statistically, mediation through the negative thoughts increases opposition by .08 units [$(-.67) * (.12)$] whereas mediation through the positive thoughts increases support by .15 units [$(1.04) * (.14)$]. In other words, one who received the negative prime recalled negative thoughts on the issue and in turn become opponent of the issue compared to one who received a neutral prime. Similarly, one who received a positive prime recalled positive thoughts on the issue and become more supportive of the issue compared to the neutral group. The total mediated effect through positive and negative thoughts is .23 units indicating that a change from negative prime to the positive prime would push someone to be more supportive of the energy issue.

<<< Place Figure 2 Here >>>

This finding suggests that the affective prime did *not* have a direct effect on one's attitude but strongly influenced the valence and frequency of thoughts on the issue. These thoughts then *imposed* a subsequent influence on individuals' standing on energy security. Hence, the step-sequential mediation model works as expected (Collins et al. 1998).

As shown in Figure 2, affective primes do not have a direct effect on the attitudinal measures but rather have an indirect effect through the negative and positive thoughts cited on energy security. This finding posits that the affective primes elicited affect-congruent thoughts so strongly that the thoughts in turn influenced the formation of attitudes on the issue. Considering the previous finding in Chapter 2 on energy security that the affective primes had a significant but the prior attitude had a weak impact on thoughts, it is not surprising to see that only the negative and positive thoughts (but not the affective prime) had the consequential effect on attitude.

Proportion of thoughts as the mediator: For the mediating role of the balance of thoughts, I conducted the same mediation model with the proportion of thoughts as the single mediator where the independent and the dependent measures were the same as before. The first step again was insignificant for the effect of the affective prime in predicting one's attitude on energy security. Although the second step of the mediation model shows that the affective primes strongly influence the balance of thoughts, in the third step the mediator does not significantly alter one's attitude. So, there is no support for the required third step of the mediation analysis and the hypothesis does not receive support for this mediator. The reason for this insignificant effect refers to the loss of strength on the frequency of thoughts in the mediator which is probably a consequence of

participants' weak attitudes on the issue.

In conclusion from these mediation analyses on political attitudes, I was able to show on illegal immigration and energy security issues that the subliminal affective primes **i**) change the valence of recalled thoughts (also confirmed in Chapter 2); and **ii**) the thoughts that are elicited by affective primes influence one's attitude on both issues, thereby supporting Hypothesis 1. These findings in sum provide evidence to confirm that the affective priming manipulation is directly influential on the participants' thoughts and indirectly on the participants' political attitudes. These findings thus need to be compared with those on policy evaluations through which mediational effects can be retested and a broader picture of the affective mediation hypothesis can be depicted.

II. PREDICTING POLICY EVALUATIONS

This section investigates further the role that affect-triggered thoughts play in political attitudes. Particularly, I focus on how policy thoughts evoked by the affective primes alter evaluations and preferences about public policies.

As presented previously, participants of Study 3 (discussed in Chapter 2) evaluated the policies that they have reported their thoughts about. Policy evaluation occurred after the thought-listing procedure and before the next block on a different issue (energy security). That is, participants first cited their thoughts on policies related to illegal immigration while at the same time they received affective primes prior to reading the statement on the computer screen. After reporting their thoughts on illegal immigration policies, participants were asked to evaluate them. After the experimental

block on illegal immigration is finished, participants received the policies on energy security and asked to evaluate those policies.

The mediation model in this section takes the thoughts (negative and positive) cited on the policies as the mediator. The dependent variable is the policy evaluation. Since the main manipulation in the experiment is through the assignment of participants to different affective treatments, the priming condition becomes the independent variable. Hence, the independent variable in the following mediation models is the priming condition (positive, neutral, and negative).

II-A. Illegal Immigration

Policy evaluation is the dependent variable of the affective mediation model for illegal immigration. As previously discussed in Chapter 2, three of the six policies were pro illegal immigration whereas the other three were anti illegal immigration. An explanatory factor analysis also indicated two separate factors in which anti policies loaded on one factor and the pro policies loaded on the other. Similarly, thoughts cited on the two types of policies were different from each other, showing that a policy-based cued search in short term memory would have been done while listing thoughts and considerations. For instance, participants cited more positive thoughts for the policies in favor of illegal immigration (4.57 positive thoughts across three pro policies) than they did for the policies against illegal immigration (3.64 positive thoughts across three anti policies). This suggests that it is unwise to treat all thoughts equally because they are reported for different reasons across different policies. Given that there are theoretical and statistical differences between the thoughts on anti and pro policies, I conducted

separate analyses on both. In line with this argument, I combined the thoughts cited on the policies on the basis of policy type, either pro or anti.²⁰

Since reliability of three anti ($\alpha = .72$) and three pro ($\alpha = .74$) policies was strong, I generated a single measure representing the position of the participant. The items were scaled from -3 (strong opposition) to +3 (strong support) and the measure was the arithmetic mean of evaluations across the three respective policies. All items are left continuous for ease of substantive interpretation.

II.A.1. Anti Illegal Immigration Policies

Positive and Negative Thoughts as Multiple Mediators: In this multiple mediator model, positive and negative thoughts listed across three anti illegal immigration policies are the two mediators. The priming condition and policy evaluations are independent and dependent variables, respectively. The first regression predicting policy evaluation is insignificant for the affective prime ($\beta = -.07$; $p > .1$). Yet, if one can confirm that the direct effect and the mediated effect are opposite of each other, then mediation can still be established.

To this aim, the second step of the mediation predicting the mediators, negative thoughts and positive thoughts, shows statistical significance for the affective priming condition, ($\beta = -2.68$; $p < .01$) and ($\beta = 3.71$; $p < .01$) respectively. This suggests that if a subject is given a positive prime, s/he cites fewer negative thoughts but more positive thoughts on the anti illegal immigration policies. On the other hand, as she gets a

²⁰ As indicated above, the mean for proportion of thoughts measure of pro policies is .54 whereas the mean for the proportion of thoughts measure for anti policies is .39. This suggests that it is relevant to separate the policies for validity purposes.

negative prime, s/he lists more negative thoughts and less positive thoughts on the same policies.

The third step of the mediation, predicting evaluations on anti illegal immigration policies, resulted in a number of interesting findings (see Figure 3). First, the mediators, affect-evoked positive ($\beta=.27$; $p<.01$) and negative ($\beta=-.25$; $p<.01$) thoughts on the anti illegal immigration policies, strongly influence one's policy evaluations, controlling for the affective prime. One positive thought on anti policies is associated with a .27 increase in support for the policies. On the other hand, one negative thought on these policies decreases support by .25, on the scale of -3 to +3. The total mediated effect on policy evaluations is 4.495, indicating that a change from the negative priming condition to the positive priming condition will generate a 4.495 effect (on a 6-point scale) on anti illegal immigration policy support through the two mediating variables. This is an exceptionally strong change triggered by the affective primes whose effect is in turn mediated through the negative and positive thoughts.

<<< Place Figure 3 Here >>>

The second finding from the third step of the mediation model is the direct effect of the affective prime on policy evaluations although the treatment was given minutes earlier ($\beta=-1.71$; $p<.01$). Nonetheless, for every additional positive or negative thought one could remember and list on the anti illegal immigration policies, s/he would support or oppose the anti policies even stronger regardless of the direct effect of the affective prime. Since the mediated effect and the direct effect have opposite signs, this is again a suppression model of mediation (Shrout & Bolger 2002; MacKinnon 2008).

Proportion of thoughts as the Mediator: In line with these findings, I tested if the balance of thoughts on anti illegal immigration policies would as well mediate the relationship between the priming condition and the policy evaluations. To this goal, I generated the proportion of thoughts measure for these three policies and integrated into the mediation model. Once again, findings are similar to those presented for the multiple mediator model for the negative and positive thoughts. In an inconsistent mediation model, I found strong mediational effect of the thoughts ($\beta=4.61$; $p<.01$) which consequently altered one's judgments and preferences on anti illegal immigration policies. Sobel test confirms the robustness of the model ($z=5.36$; $p<.01$). With these findings on anti illegal immigration policies I found initial support for Hypothesis 2.

II.A.2. Pro Illegal Immigration Policies

Positive and Negative Thoughts as Multiple Mediators: In this mediation model, positive and negative thoughts listed across three pro illegal immigration policies are treated as the multiple mediators. In the first step of the mediation the affective prime does not predict policy evaluations ($\beta=.40$; $p>.1$). However, regression results in the second and third steps of the mediation are significant indicating a suppression model of mediation.

At the second step, the affective primes influence the number of positive ($\beta=3.81$; $p<.01$) and negative ($\beta=-2.28$; $p<.01$) thoughts that one can list on the pro illegal immigration policies. Finally, in the third step, both mediators, the positive thoughts ($\beta=.15$; $p<.01$) and the negative thoughts ($\beta=-.25$; $p<.01$), and the affective prime ($\beta=-.73$; $p<.03$) strongly predict one's preferences on pro policies (see Figure 4). These

findings suggest that, as one gets exposed to incidental positive stimuli (smiley cartoon faces), s/he is more likely to come up with positive thoughts and therefore show much stronger support for pro policies on illegal immigration. Similarly, as one is exposed to negative stimuli (frowning cartoon faces), s/he is more likely to recall negative thoughts which will next decrease the support for the pro policies. Results are thus in line with Hypothesis 2.

<<< Place Figure 4 Here >>>

Proportion of thoughts as the Mediator: In line with these findings, the proportion of thoughts mediator showed significant results ($\beta=3.27$; $p<.01$). Although the affective prime does not predict the policy evaluation ($\beta=.40$; $p>.1$), the prime does alter the balance of thoughts ($\beta=.31$; $p<.01$) and these thoughts do change one's standing on pro illegal immigration policies. The affective prime had a direct effect when proportion of thoughts is controlled for in the third step of the mediation model ($\beta=-.62$; $p<.05$). The mediated effect of the affective prime through affect-evoked thoughts to pro illegal immigration policy evaluations is approximately five times larger than the direct effect of the affective prime on pro illegal immigration policy evaluations. Sobel test confirms the robustness of the model ($z=4.45$; $p<.01$). With these findings on pro illegal immigration thoughts I found full support for Hypothesis 2 for the issue of illegal immigration.

II-B. Energy Security

Energy security is the second issue that participants listed their thoughts on in Study 3. Thoughts on policies are collected from participants before making evaluations

on the policies. Similar to the illegal immigration issue, a factor analysis indicated two distinct factors on the energy security policies and the expected division between the policies as anti and pro holds.²¹

II.B.1. Anti Energy Security Policies

Positive and Negative Thoughts as Multiple Mediators: In this multiple mediator model, positive and negative thoughts listed across anti energy security policies are the two mediators. The priming condition and policy evaluations are independent and dependent variables, respectively. The first regression predicting policy evaluation is significant for the affective prime ($\beta=.51$; $p<.08$) indicating a possibility for a conventional mediational model.

The second step of the mediation is confirmed with strong influence of the affective primes on the mediators (negative and positive thoughts). Both negative ($\beta=-1.32$; $p<.01$) and positive ($\beta=1.53$; $p<.01$) thoughts on the anti energy security thoughts are influenced by the affective primes. This suggests that as one receives a positive prime, s/he cites fewer negative thoughts but more positive thoughts on the policies. On the other hand, as one receives a negative prime, s/he lists more negative thoughts and less positive thoughts on the same policies.

The third step of the mediation, predicting evaluations on anti energy security policies, presents a particular finding: The multiple mediators, affect-evoked positive ($\beta=.31$; $p<.01$) and negative ($\beta=-.29$; $p<.01$) thoughts on the anti energy security policies, strongly influence one's policy evaluations, controlling for the affective prime. The total

²¹ Two of the six policies did not load strongly (less than .4 on factor loadings) on either policy side. So, these two policies are excluded from analyses.

mediated effect on policy evaluations is .87, indicating that a change from the negative priming condition to the positive priming condition will generate a .87 effect (on the scale of -3 to +3) on anti energy security policy support through the two mediating variables. The direct effect of the affective prime on the policy evaluation is insignificant in the third step of the mediation confirming full mediation through the affect-evoked thoughts. In short, the direct effect of the affective prime is reflected by the negative and positive thoughts cited on the anti energy security policies which in turn changed one's support or opposition for these policies.

<<< Place Figure 5 Here >>>

Proportion of thoughts as the Mediator: In line with these findings, I tested if the balance of thoughts would as well influence one's policy judgments on the same policies. The only difference from the above mediation model is that the mediator is the proportion of thoughts measure. Once again, findings are similar to those presented for the multiple mediator model on negative and positive thoughts. I found strong mediational effect of the thoughts ($\beta=-2.47$; $p<.01$) which consequently altered one's judgments and preferences on anti energy security policies, controlling for the priming condition. The initial direct effect of the affective prime is insignificant in the third step of the mediation model. Sobel test confirms the robustness of the full mediation model ($z=3.38$; $p<.01$).

II.B.2. Pro Energy Security Policies

Positive and Negative Thoughts as Multiple Mediators: In this mediation model, positive and negative thoughts are treated as the multiple mediators on the pro energy

security policies. In the first step of the mediation the affective prime does not predict policy evaluations ($\beta=-.33$; $p>.1$). However, regression results in the second and third steps of the mediation will determine the possibility of a suppression model of mediation.

At the second step, the affective primes influence the number of positive ($\beta=1.32$; $p<.01$) and negative ($\beta=-1.62$; $p<.01$) thoughts that one can list on the pro energy security policies. Finally, in the third step, only the positive thoughts ($\beta=.10$; $p<.08$) but not the negative thoughts ($\beta=-.06$; $p>.1$) predict one's preferences on these policies (see Figure 6). Since one of the mediators did not predict the dependent variable I cannot consider a mediation model. Results for the pro energy security policies do not provide support for Hypothesis 2.

<<< Place Figure 6 Here >>>

Proportion of thoughts as the Mediator: In contrast with the multiple mediator model, I found strong mediation for the proportion of thoughts measure ($\beta=-.88$; $p<.02$). Although the affective prime does not predict the policy evaluation ($\beta=-.33$; $p>.1$) at the first step of mediation, the prime does alter the balance of thoughts ($\beta=-.29$; $p<.01$) and these thoughts do change one's standing on the policies. The affective prime had a direct effect when proportion of thoughts is controlled for in the third step of the mediation model ($\beta=-.61$; $p<.02$). Sobel test confirms the robustness of the model ($z=2.13$; $p<.03$). Only the mediation model through the proportion of thoughts provides support for Hypothesis 2 on the issue of energy security.

In sum, from these results it is evident that the affect-evoked thoughts greatly

altered how one evaluated a policy recommendation. With the exception of the results on pro energy security policies, in all models the positive and negative thoughts (as multiple mediators) altered one's support or opposition for a policy. As expected, the genuine effect of the affective primes promoted affect-laden thoughts (negative or positive), which decreased or increased support regardless of the type of the policy. In sum, the step-sequential mediation model is strongly supported for both issues by establishing mediation regardless of the causal effect of the independent variable on the dependent variable.

CONCLUSION

Continuing the line of reasoning of Chapter 2, this chapter examined the subsequent influences of affective primes flashed on the computer screen for a brief amount of time. I found strong evidence supporting the hypotheses postulated at the beginning of this chapter. First, the step-sequential mediation model provides a reliable theoretical and statistical design, particularly for this dissertation, which shed light on the sequence of effects from affective primes to affect-colored thoughts to political attitudes. Mediation models predicting political attitudes and policy evaluations are substantiated.

Secondly, findings across several mediation models are consistent that political attitudes and policy evaluations are constructed through affect-triggered thoughts. I believe that the findings on how preconscious affect leads to affect-laden thinking which in turn promotes affect-laden attitudes is critically important for the study of political behavior and political psychology. As opposed to the major assumption of political behavior theories that prior attitudes are direct predictors of behavior, this chapter posits

an alternative route that citizens possibly take --without being aware of the process-- in reaching political decisions and judgments. Besides, the sequential mediation analyses represented an efficient test of the associative model of processing. All in all, I found support for the Attitudinal Consequences of the Affective Contagion Hypothesis.

Figure 3.1: Multiple Mediation Model for the Predicting Attitude on the Illegal Immigration Issue

Note: Coefficients are obtained from the OLS regressions for attitude reports on the illegal immigration issue. Robust standard errors are presented in parentheses. Asterisks denote * = $p < .1$; ** = $p < .5$; *** = $p < .01$.

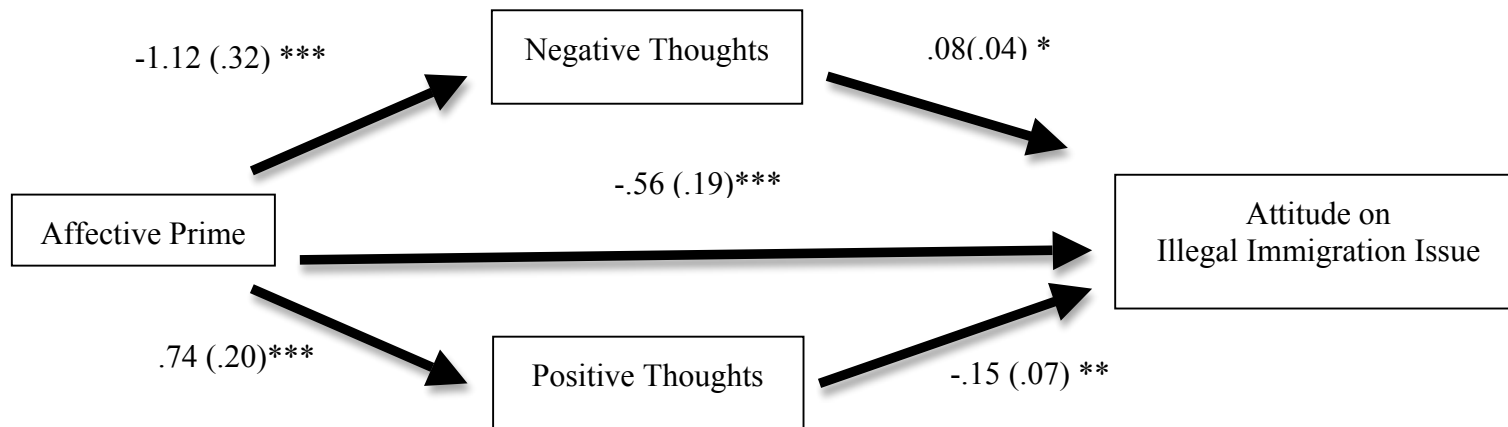


Figure 3.2: Multiple Mediation Model Predicting Attitude on the Energy Security Issue

Note: Coefficients are obtained from the OLS regressions for attitude reports on the energy security issue. Robust standard errors are presented in parentheses. Asterisks denote * = p<.1; ** = p<.5; *** = p<.01.

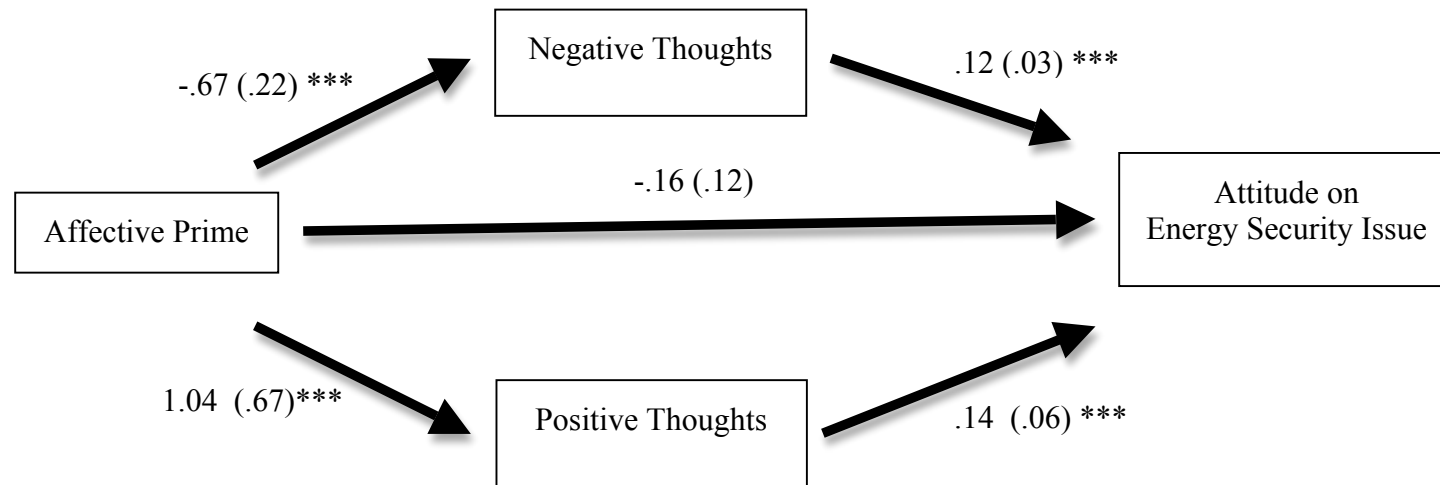


Figure 3.3: Multiple Mediation Model for Anti Illegal Immigration Policy Judgments

Note: Coefficients are obtained from the OLS regressions for anti illegal immigration policy evaluations. Robust standard errors are presented in parentheses. Asterisks denote * = p<.1; ** = p<.5; *** = p< .01.

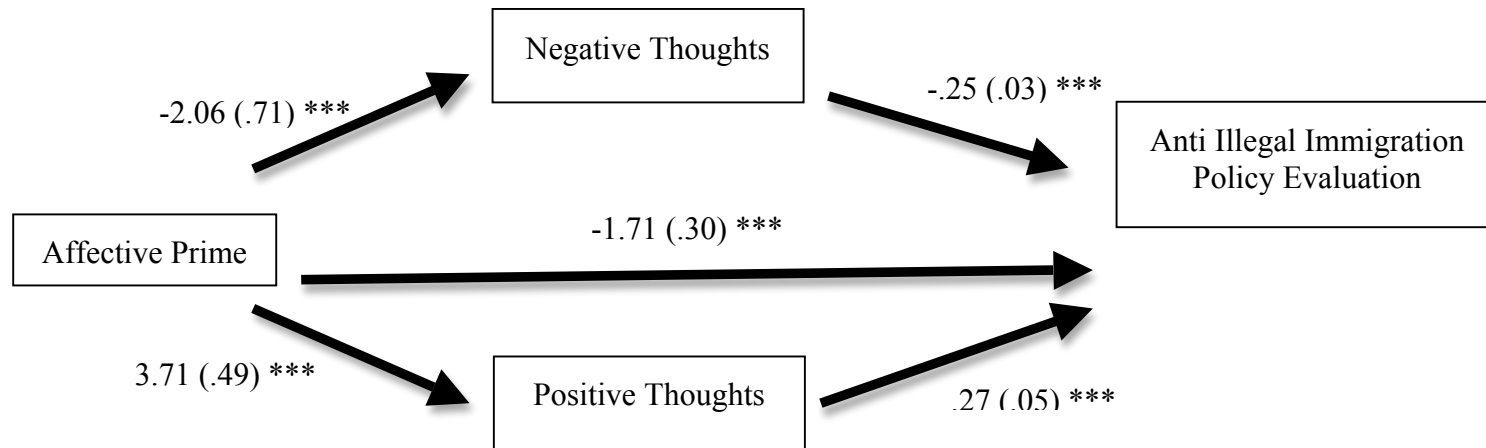


Figure 3.4: Multiple Mediation Model for Pro Illegal Immigration Policy Judgments

Note: Coefficients are obtained from the OLS regressions for pro illegal immigration policy evaluations. Robust standard errors are presented in parentheses. Asterisks denote * = $p < .1$; ** = $p < .5$; *** = $p < .01$.

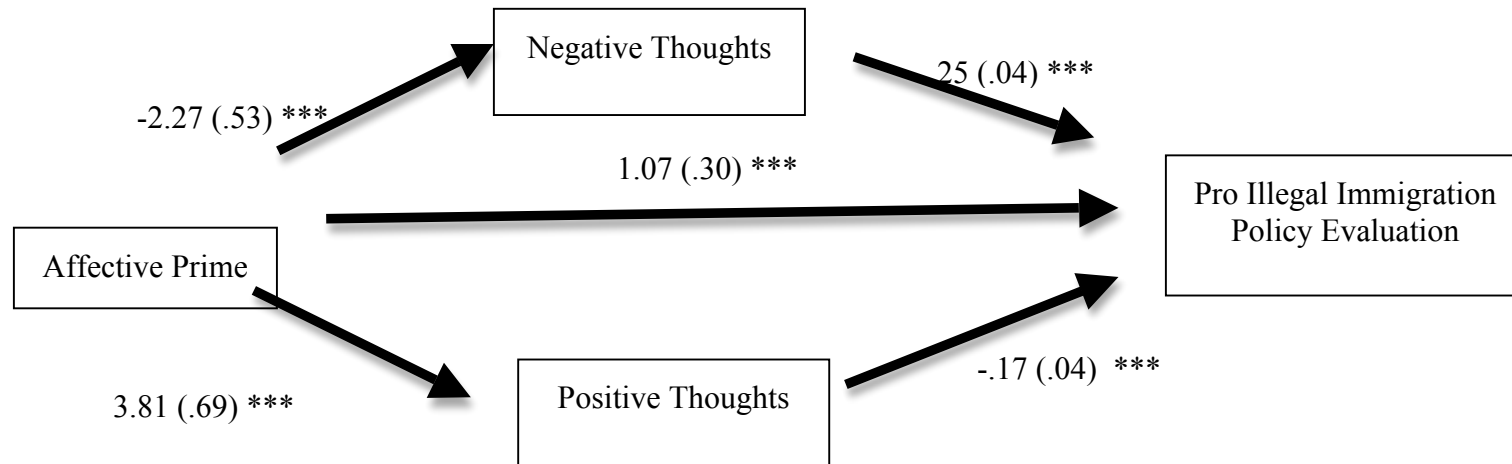


Figure 3.5: Multiple Mediation Model for Anti Energy Security Policy Judgments

Note: Coefficients are obtained from the OLS regressions for anti energy security policy evaluations. Robust standard errors are presented in parentheses. Asterisks denote * = p<.1; ** = p<.5; *** = p<.01.

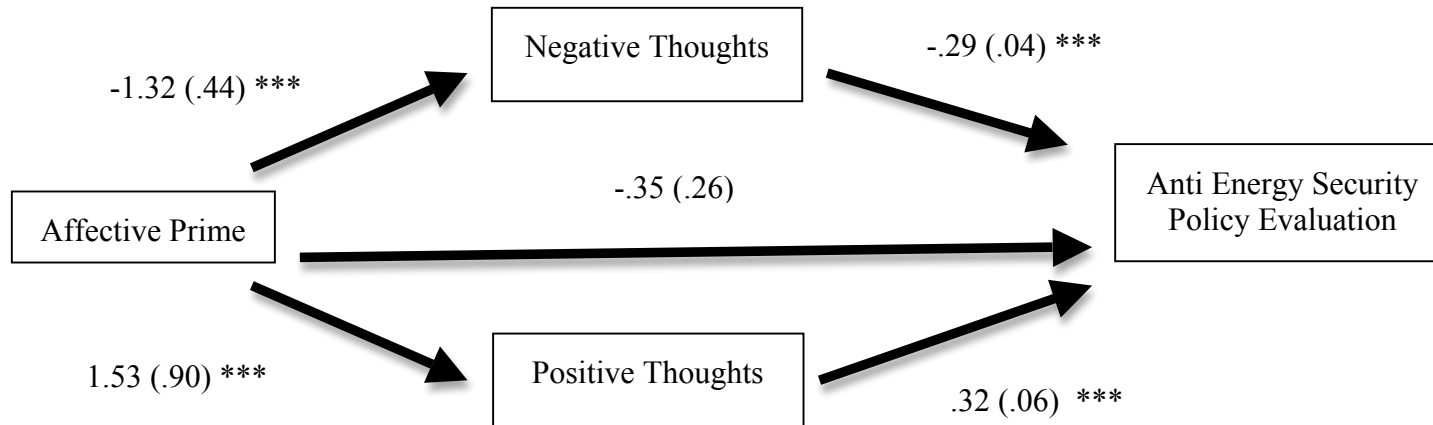
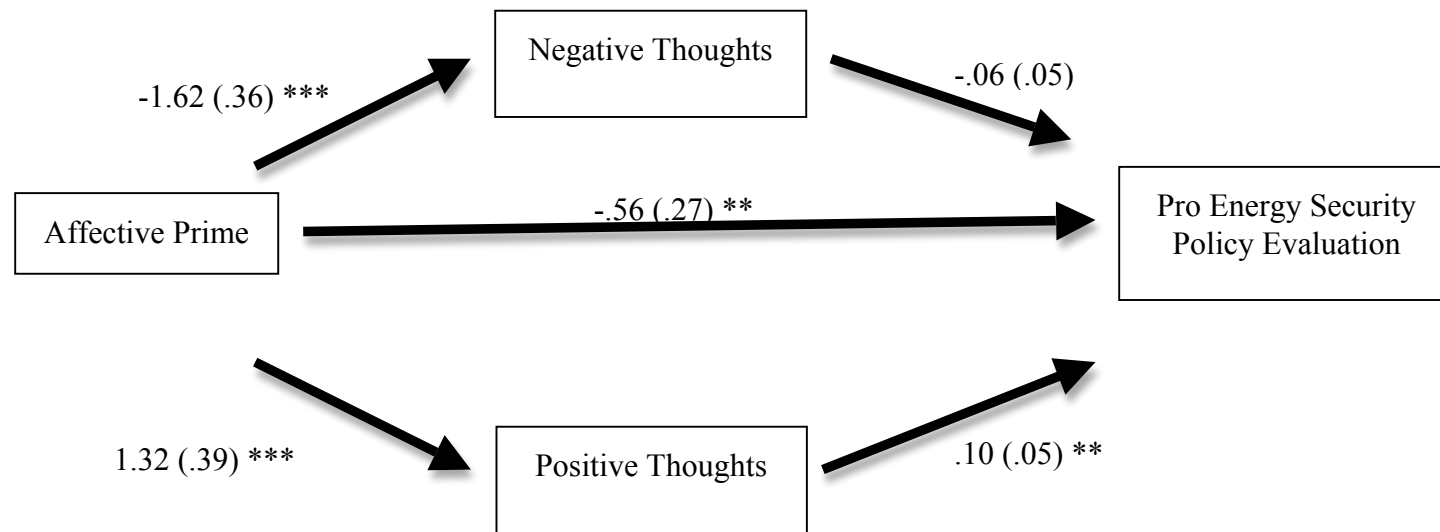


Figure 3.6: Multiple Mediation Model for Pro Energy Security Policy Judgments

Note: Coefficients are obtained from the OLS regressions for pro energy security policy evaluations. Robust standard errors are presented in parentheses. Asterisks denote * = $p < .1$; ** = $p < .5$; *** = $p < .01$.



CHAPTER 4: COHERENT POLITICAL THINKING AND REASONING

The second part of this dissertation begins with Chapter 4. It stems from the Thought Systems experiments examining the ways in which people think and deliberate about politics (Erisen, Lodge & Taber 2006). These experiments have shown that the thoughts that individuals have on various social and political topics are often times causally associated (either antecedents or consequences) with each other rather than forming non-causal semantic connections. The respective place of causal and non-causal connections is integral to the argument in this chapter, and so is defined in the following sections.

At the same time, Chapter 4 draws on the findings on the role of affect on the *valence* of thoughts that one can cite on political issues and public policies. A major goal of this chapter is to present the link on the role of affect between the *valence* of thoughts that one can recall (Chapter 2) and the *logical causal reasoning* that one exhibits (Chapter 5) on political issues and policies.

So, this chapter will elaborate on **i)** the connection of causal reasoning (in terms of antecedents and consequences) with the theories of cognitive styles, such as rational choice (Downs 1957), integrative complexity (Suedfeld & Tetlock 1977; Tetlock 1985), intra-attitudinal structure and consistency (Lavine, Thomsen, & Gonzales 1997), cognitive dissonance (Festinger 1957), and balance (Heider 1958) theories; **ii)** the connections among antecedent and consequence thoughts (in political reasoning) in definition of the concept referred to here as *coherence*.²²

In order to understand the role of coherence in thinking and reasoning for political decisions, we should first acknowledge that causal inference is a central construct to reasoning, problem solving, and human cognition that define cognitive styles (Anderson 1990). Causal attributions, causal associations among factors, consequences (i.e., prediction) of actions manifest themselves at the core of individuals' cognitive styles. Cognitive style (as employed in this chapter) refers to one's method of reasoning for political judgments, decision-making, and policy preferences: the ways in which one thinks about and ruminates on political information. In this respect, determinants of one's cognitive style can be disentangled through the study of thought systems, including most prominently introspection methods and deliberation processes, involving verbal and written reports (Lane, 1969; Ericsson & Simon 1980, 1993).

²² The concept of coherence will be used in Chapters 4 and 5. Whilst Chapter 4 defines the concept and shows its important relation with certain models depicting political thinking and reasoning, Chapter 5 involves affective stimuli into the equation and takes a further step in explaining the Affective Rationalization hypothesis.

I. COGNITION, REASONING, AND CAUSAL THINKING

Normative theory expects citizens to maintain coherent and consistent thought processes when introspecting and deliberating about politics, which should help them to resolve ambivalence, weigh and adjudicate conflicting thoughts and feelings, and promote congruency in their attitudes and behavior. It is through such a process that reasoned thought can reliably be linked to political action. But given what has been documented about cognitive limits (Simon 1957; Kahneman, Slovic, & Tversky 1982; Nisbett & Ross 1982), rampant ignorance and low motivation (Delli Carpini & Keeter 1996) in politics, one wonders how average citizens could actually approach this ideal. The major problem of normative expectations is that citizens do not normally weigh the pros and cons fairly and accurately, take into account all possible consequences, or properly judge the possible consequences under evaluation.

The normative model of rational choice has been the grand theory of individual behavior in political science (Arrow 1951; Downs 1957; Olson 1965). Rational choice theory assumes that individuals are utility maximizers. That is, individuals should be able to consider all possible antecedents and consequences of alternatives and choose the one that would best serve his/her objectives. Rational choice model considers conscious thoughts to be associated with potential outcomes. This process involves introspection and deliberation of the antecedents and consequences of each option. In this respect, the model requires the ability to weigh “cause-and-effect relationship between actions and outcomes” and then choose the one that maximizes the individual’s utility (Shepsle & Bonchek 1997).

Relatedly, psychological research has uncovered a tendency for thoughts to be generated along causal lines (Hastie 1984; Anderson 1990, 1996; McGuire & McGuire, 1991). All else equal, people are likely to spontaneously think in terms of cause-and-effect when understanding an event or policy. The McGuires (1991) documented that thoughts tend to be causally related in the sense that antecedents prompt consequences and consequences prompt antecedents, so that streams of thoughts tend to form If-Then elements or chains. Erisen, Lodge & Taber (2006) supported this hypothesis (Thought Systems experiments) by reporting that the thoughts that individuals have on various social and political topics are often times causally associated (either antecedents or consequences) with each other rather than forming non-causal connections. For instance, given the following sentence “Most Americans believe that terrorist threats to the United States are still not eliminated,” participants reported more causal thoughts (e.g., “our borders are still not protected enough” or “Iraq war is generating a greater threat that we will face in the future”) than other thoughts such as simple (dis)agreement with the statement, or an expressed feeling towards the issue.

I should note that the Thought Systems experiments have shown the extent to which individuals spontaneously think in causal terms on policies and events. Across thirteen political issues, in line with the findings of the McGuires (1991), Erisen et al. (2006) found that people use antecedents and consequences related to the provided issue more so than the thoughts that are simple evaluations or basic assumptions on the issue. Thought Systems experiments proposed that causal thinking comes to mind naturally, that is, spontaneously and so provides a framework for how to deal with an ever-changing world where citizens are constantly exposed to complex information on several

issues, especially during campaign periods. More importantly, causal thinking provides people with an efficient way to make sense of the world by thinking in terms of whether the antecedents of some problem are positive or negative and whether the antecedents will promote or inhibit some positive or negative consequences.

Following the McGuire's logic, scholars have proposed several empirical approaches to the questions of what the effects of causal thinking may be in politics. Sniderman, Brody & Tetlock (1991) stated that citizens form attitudes on an issue first through the appraisal of their feelings, then seek out the reasons substantiating the antecedents of the issue, and finally form their opinion on the issue. Employing NES questions, Sniderman et al. (1991) provided participants with six causal statements on the target issue of government assistance to blacks. They found that citizens reach a specific opinion first by some sort of appraisal of their feelings, then seek out the reasons substantiating that blacks have problems, and finally they form their opinion on the issue of government assistance for blacks. However, Sniderman et al. (1991) relied on *indirect* measures of reasoning whereas in this chapter tries to obtain more direct measures of the reasoning processes involved in assessment and evaluation of issues.

Causal associations among thoughts and events have also been found in the social psychology literature. Hastie & Pennington (1992, 1993) demonstrated that a coherent story built upon cause-and-effect relationships is particularly persuasive in mock jury decision-making. Thagard (2003) has also shown a similar finding that the jurors' causal reasoning of the accused person is a process of causal inference between the crime and the person. Applying the similar approach to political thinking, Berinsky and Kinder (2006) found that framing political events as coherent stories (i.e., in terms of cause-and-

effect relationships) promotes citizens' comprehension, recall, and opinion expression. In a similar line of research, Rosenberg (2002) examined the structure of political thinking and showed that citizens differ in how they think causally. In general, Rosenberg's research shows that the more one thinks in causal terms, citing antecedents and consequences of an event, the more accurate the predictions and evaluations are on political issues.

These empirical results show that antecedent-and-consequence relationships are fundamental to thinking and reasoning across political and psychological domains. Yet, the *quality* of the relationships among causal and non-causal thoughts (as coherent or incoherent) is described by cognitive consistency theories.

II. THOUGHT COHERENCE AND COGNITIVE CONSISTENCY

There is a fifty-year history of psychological theories designed to account for cognitive consistency. Balance theory (Heider 1958), congruity theory (Osgood & Tannenbaum 1955), and dissonance theory (Festinger 1957) all posit that people prefer consistency among their attitudes to inconsistency. According to these theories, cognitive consistency is driven by a system of syllogistic logic which is a motivational pressure to promote consistency among objects, attitudes, and thoughts on events or issues. Similar attitudes (both positive and both negative) toward two objects are defined as *coherent* if the objects both constitute instances of the same category or are positively linked to each other through some sort of association. Contrasting attitudes (one positive and one

negative) toward two objects are *coherent* if the objects are negatively linked to one another (Abelson & Rosenberg 1958; Newcomb 1968).²³

Additionally, consistency theories suggest that people would recall more thoughts if the relationships among attitudinal objects are coherent. In other words, thoughts are facilitated more by the coherent relationships (as defined above) among the attitudinal objects compared to the case where relationships are incoherent. This being said, coherent relationships are stored as a single unit whereas unbalanced ones will be stored in separate units in memory (Judd & Krosnick 1989).

Similarly, research in social psychology suggests both inter-attitudinal (Judd & Krosnick 1989; Judd, Drake, Downing, & Krosnick, 1991; Eagly & Chaiken 1993) and intra-attitudinal (contained within single attitudes; Lavine et al., 1997) structure and consistency, which should also promote attitude-behavior consistency. This work principally examines the attitudinal balance within and among attitude objects and the thoughts, feelings, and behavioral inclinations associated with these objects.

Although most of the consistency theories focus on attitudes and objects related to these attitudes, the concept of coherence as defined in this dissertation solely refers to thoughts on political issues. Thus, this chapter takes a similar approach to the cognitive consistency models with thoughts being the main objects.

²³ Thagard (1992, 2000) provides a similar approach to the measurement of coherence through the generic cause-and-effect chains among pieces of information. In essence, Thagard (2000) shows that information pairs have to be coherent in different conditions. If a pair is coherent and this pair is a part of a set including ten different pairs, by assumption, then all pairs have to be coherent with each other. If either one part of the pair is incoherent with the other or one pair does not cohere with another pair then the whole set is incoherent. This method would result in coherent links in information processing and updating rather than interrupted by incoherent stimuli.

III. WHAT IS CAUSAL COHERENCE?

The original method that this chapter introduces is the coherence among thoughts. The relationship between the thoughts (categorized as causal or non-causal) will be tested to see whether they are coherent or incoherent. In this sense, *coherence* is a function of causal thinking. *Coherence* means the use of reasoning chains where antecedent and consequent thought elements linked in logical reasoning. *Coherence* means that an antecedent would promote a consequence or a consequence would promote an antecedent rather than promoting non-causally associated thoughts or evaluations. *Incoherence*, in contrast, indicates that a causal thought (an antecedent or a consequence) is *preceded* or *followed* by a non-causal thought (agreement/disagreement with the issue, or simple probability evaluations, etc.). In this respect, the key lies with the number of associations that one makes among his/her thoughts. Some of those associations could be coherent (only among causal thoughts) and some of those associations could be incoherent (among causal and non-causal thoughts).

Simply put, coherence and incoherence simply refer to the extent to which one's thoughts are properly linked to each other. One can have totally coherent associations or partially coherent associations (such as two coherent associations and one incoherent association), or totally incoherent associations (all associations are among non-causal thoughts). Therefore, coherence and incoherence are considered as separate dimensions: the fact that an individual has a large number of coherent associations does not mean that they cannot also have a large number of incoherent associations.²⁴

²⁴ I should note that a measure that would combine the degree of coherence and incoherence into a single measure is not suitable statistically for this chapter as it would be a similar situation faced in Chapter 3. The frequency of coherent and incoherent associations will be lost when a measure (like, proportion of

Chapter 4 combines these two literatures with a single hypothesis. First, motivated by the findings on causal thinking, I follow the McGuire (1991) postulate that people spontaneously think in causal terms. Erisen et al. (2006) also presented a strong evidence for this expectation through the Thought Systems experiments. Secondly, following the cognitive consistency theories, I integrate the concept of coherence among thoughts. Through these two factors, I postulate the *causal coherence* hypothesis:

Causal Coherence Hypothesis: Individuals tend to develop causally consistent thoughts on issues and policies.

IV. COMPARATIVE MODELS OF COHERENT POLITICAL THINKING

In order to show why one should care about the Causal Coherence hypothesis in political thinking and reasoning, this section continues with the comparative models of coherent political thinking. I will explain the basic assumptions of each model and its relation to the Causal Coherence hypothesis.

1. Integrative Complexity

One of the methods paying attention to reasoning quality in political science is the Theory of Integrative Complexity. Integrative complexity (Tetlock 1985) is primarily based upon conceptual complexity (Schroder, Driver, & Streufert 1967), and later on interactive complexity (Streufert & Streufert 1978) concepts. Both of these complexity measures focus on the cognitive styles of individuals when they process and recall

coherence) is developed. Yet, the goal is to present that people form coherence and incoherence association among their thoughts among which coherent thinking is the one that promotes better argumentation and inter-attitudinal consistency.

information and make decisions. The goal of integrative complexity is to depict the degree of reasoning of elite decision-makers as well as the citizens.

Integrative complexity specifically examines information processing through the lenses of two distinct dimensions, as defined by Tetlock (1985): differentiation and integration. While differentiation refers to the number of dimensions that one uses to elaborate on a political or social issue, integration refers to the links and associations among these dimensions. The more one shows usage of various dimensions and presents the integration of these dimensions, the better the scores are for the person. In contrast, the level of integrative complexity decreases so long the person does not provide a multidimensional view of the subject's dimensions and the links among those dimensions.

In this respect, causal coherence is embedded in the concept of Integrative Complexity. In other words, increased levels of integrative complexity reflect the ability of the individual to organize, recall, and cite thoughts and considerations through causal thoughts that are coherent with each other. Hence, the expectation is that the greater the integrative complexity of an individual's reasoning, the higher the coherence should be among his/her causal thoughts.

2. Implicational Relations among Thoughts

Previous work by Lavine et al. (1997) shows that there is an implicational relation that creates consistency between attitudes. Lavine et al. (1997) suggests that if there is a positive implicational relation between two policies then these policies are believed to promote a similar set of consequences. On the other hand, if there is negative

implicational relation, then the two policies are expected to produce opposing effects on the similar set of consequences, where one promotes the outcome, the other would inhibit. For example, viewing both legalized abortion (policy 1) and the Equal Rights Amendment (policy 2) as facilitating the value of freedom of opportunity should result in the perception of a positive implicational relation between the two policies. In other words, support for (or opposition to) one of the policies implies support/opposition to the other.

In a similar vein, I argue that the individuals should carry implicational relations among their thoughts related to their attitudes, issue positions, and policy evaluations. Specifically, thoughts should carry a positive implicational relation supporting the attitudinal position. So, perhaps the causal coherence among thoughts conveys a common ground for the implicational relation among attitudes and judgments. For instance, on the issue of illegal immigration if a person cites the thoughts that “we should build a wall to protect our borders” that is paired with “illegal immigrants destroy American culture”, then s/he should see a positive implicational relation between the two in order to be consistent with his/her position of opposition against illegal immigration. In other words, building a wall and illegal immigrants destroying American cultures facilitates one’s opposition towards the issue of illegal immigration. This positive implicational relation between the thoughts will indicate that the inter-attitudinal consistency is formed and maintained through causally coherent associations. On the other hand, if the person thinks that there is a negative relation between the two thoughts (that while one thought is facilitating opposition the other thought is inhibiting) then s/he would be incoherent and ambivalent on his/her position.

In this respect, implicational relations among thoughts and considerations relate back to the links among antecedents and consequences (i.e., the Causal Coherence hypothesis) with respect to the issue and their inter-attitudinal effects.

V. EXPERIMENTAL DESIGN

This chapter hypothesizes that causal coherence stands at the center of the above-mentioned cognitive consistency models. These comparative models of political thinking indicate a similar expectation that the higher the causal coherence, the better the argumentation is in terms of having consistent implicational relations among thoughts, and higher integrative complexity. On the whole, we would expect that cognitive style in processing and recalling information directly relates to the organization of coherent causal links.

Within this theoretical setting, I conducted an experiment in the Spring of 2007 at the Stony Brook University's Laboratory for Experimental Research in Political Behavior. All participants were undergraduate students in the Political Science courses. The sample includes 90 students (45 male, 52 white, 42 Democrat, 14 Republican). In this study, I used a single general issue statement on illegal immigration and four policy propositions on the same issue to collect thoughts.²⁵ The thought listing procedure was similar to the previous studies (see Chapter 2), though *without* the involvement of any affective primes. Participants were given a statement on the upper portion of the screen

²⁵ The general issue statement was the following sentence: "The number of illegal immigrants coming to the United States will drastically increase in six years." The policy statements were the following: "All illegal immigrants should be deported", "Illegal immigrants in the US should be allowed citizenship if they learn English, have a job and pay taxes", "The 'Minutemen' group should be supported by the government", and "Temporary visas should be granted to immigrants not in the U.S. so they can do seasonal/temporary work and return to home countries."

with a response box on the lower portion of the screen to list their thoughts. Participants received up to ten response boxes for the general illegal immigration issue statement and up to four response boxes for each policy statement. Participants were instructed to type in “No” as an answer to quit the thought-listing process.

The experimental design was as follows: First, participants reported their prior attitude on illegal immigration including their position on the issue and the strength of their attitude. Second, participants engaged in the thought-listing procedure starting with the general statement on illegal immigration and continued with randomly presented four policies on illegal immigration. After listing their thoughts on the issue or the policy, participants are requested: **i)** to evaluate their thoughts whether they support or oppose the issue or policy, anchored at (1) Support the Issue/Policy, (2) Oppose the Issue/Policy, (3) Neutral/Unrelated with the Issue/Policy. For this first step, I presented each one of the thoughts in order they are listed with the policy statement on the computer screen so that the participants knew which thought referred to which policy. And, **ii)** to evaluate the association between their listed thoughts in pairs – anchored from (-5) Negative to (+5) Positive – including an additional option of Unrelated. At this step, both of the thoughts are shown on the computer screen with the policy statement shown in the upper portion of the screen. Next, at the third step of the experiment, participants responded to political knowledge questions and provided demographic information. The last section included posterior attitude measures (same items as asked at the beginning of the study) and policy evaluations.

As done in previous studies, two independent coders unaware of the research hypotheses categorized all the thoughts cited by the participants. A third coder (judge)

later solved the disputes between the two coders and generated the final dataset. The coding scheme included two steps: First, the coders categorized whether the thought was *causal* or *non-causal*. At this step, the causal thoughts were also categorized as antecedent and consequence so that the quality of thought is detected knowing that it is a causal thought. For instance, the following thoughts are categorized as causal thoughts related to the illegal immigration statement. The following thoughts are coded as consequences: “*These immigrants will keep the U.S. dollar at a stable cost by sending money abroad,*” “*I don’t think that the government will come up with a solution to change illegal immigration so yes it will continue to rise,*” “*This will help with the jobs that Americans don’t want,*” and “*More illegal immigrants means more low paying jobs and more government intervention to support low income families.*” In contrast the following thoughts are coded as antecedents: “*The government does not provide economic assistance to Mexico,*” “*I thought that the lack of border patrol has been the major problem for this subject,*” “*The U.S. is still the best option for many immigrants and they are all eager to come to work here.*” In addition, the following thoughts are coded as non-causal thoughts, or unrelated other thoughts: “*More than likely, yes,*” “*This is probably true,*” “*I agree with this statement,*” “*May not be just from Mexico,*” and “*It is a serious concern.*”

After the first step is completed in coding procedure, the coders categorized the *sequence* in which the thoughts were cited. So, all thoughts are put in the order in which they were cited. The sequence of thoughts will be used to understand the type of *transitions* (coherent or incoherent) that participants made between causal and non-causal thoughts. The goal is to see if thoughts (both causal and non-causal) are linked to each

other in a coherent and consistent manner (cause-and-effect chains) which should predict their links to Integrative Complexity and Implicational Relation methods.

VI. OPERATIONALIZATION OF MEASURES

Causal Coherence: Causal coherence among thoughts is measured as the number of transitions among antecedents and consequences. The causal links ought to be either from antecedents to consequences or from consequences to antecedents in order to be considered as coherent. Causal incoherence among thoughts is the number of inconsistent transitions between causal and non-causal thoughts. Or, all remaining transitions among one's sequence of thoughts other than the causally coherent ones. Controlling for the number of transitions (from one thought to another) in reasoning about the issue or the policy, the codings of the research assistants are used to generate a measure that counts the number of coherent and incoherent links. So, someone with four thoughts, all of which are either antecedent or consequence (linked in the proper causal order, either from antecedent to consequence or from consequence to antecedent), receives a score of three in the measure of causal coherence. On the other hand, someone with four thoughts, two of which are causal and two of which are non-causal, would receive a score of one for causal coherence *if* the two causal thoughts were cited back-to-back. If these two thoughts were separated by any of the other two non-causal thoughts than this person receives a score of three for causal incoherence and zero for causal coherence.

Integrative Complexity: Integrative complexity has a particular coding scheme of one's thoughts developed by Tetlock (1985). I employed the same coding scheme to the thoughts cited by the participants in my experiment. Thoughts are coded by the

coders in the following scheme: 1 stands for low differentiation and low integration; 3 stands for moderate to high differentiation, but low integration; 5 stands for moderate to high differentiation and moderate integration; 7 stands for high differentiation and high integration. In the score 1 the individual is found to create good-bad categories for the events/cases. In the score of 3, the individual recognizes alternative points of view, but does not perceive relations between them. For instance, the following paragraph on free trade is written by one of the participants in Green, Visser, & Tetlock (2000: 1384) and received a score of 3: *“I have mixed feelings about free trade. It is true that competition from other countries helps to keep American companies on their toes but it is also true that other countries sometimes don’t play fair... It is a hard issue and there is no easy answer.”*

In the score of 5, the individual develops an explicit comparison rule to contrast alternative perspective on the issue. From the same experiments of Green et al. (2000), the following individual received a score of 5 on free trade: *“There must be some way to strike a reasonable balance between free trade positions. American consumers benefit from having more choices, and they get more choices when other countries can sell their goods here. Still, American workers do suffer when they have to compete against workers in other countries who make far less and when other countries do not allow American goods inside their borders. So I favor free trade but only with countries that treat their workers right and that are willing to buy American goods when those are the best products.”*

In the score of 7, the individual uses complex rules to compare and contrast alternative perspectives on the issue. Hence, as the individual recalls more information

about the issue or policy and organizes the causal links among the thoughts on the topic, s/he will present a better understanding of the antecedents and consequences of alternatives. Once again, I employed this same coding method without making any changes. Coders read the thoughts that participants cited on the issue statement and then gave a score representing the standing of that person's integrative complexity. Same procedure is repeated for each policy statement.

Implicational Relations: The coding method here generates a count measure for the number of *correct* implicational relations that one has among his/her thoughts. Implicational relation among thoughts indicates that if one has two favorable thoughts on an issue the relation between these two thoughts should be positive. For instance, the relationship between the argument that “temporary visas should be granted to illegal immigrants since they support our secondary market by filling jobs” and the statement that “illegal immigrants take the jobs people don't want for less money and allow businesses to operate more cheaply” should be evaluated as *positive* because they are both supportive of illegal immigration. Similarly, if one has two thoughts that oppose the issue, the relationship between these two thoughts should be as well positive. For instance, the relationship between the following two statements should be positive: “illegal immigrants come to this country by breaking the law” and “I don't approve amnesty programs for illegal immigrants.”²⁶ However, if one has one favorable and one

²⁶ I should note that the type of the thoughts (whether causal or non-causal) did not matter for the implicational relation evaluations, because the participants were able to cite every thought that they had about the issue and policy statements. Obviously some of those thoughts were non-causal but mostly causal. The goal for the participants was to *correctly* determine the relationship between a pair of their thoughts regardless of the quality of the thought. The predictors on the other hand are the coded thoughts into two categories causal and non-causal and the transitions between these two categories (coherence and incoherence). The coherence and incoherence measures will then predict the number of *correct* implicational relations (inter-attitudinal consistency) made by the participants.

opposing thought on the same issue, the implicational relationship between these two thoughts should be *negative*. For this last case, as both thoughts have opposing links to the issue, one should try to solve this discrepancy to maintain cognitive consistency (Osgood & Tannenbaum 1955; Haider 1958).

As explained earlier, each participant first listed his or her thoughts on the general issue statement of illegal immigration. Later, participants are asked to evaluate each one of their thoughts whether it supports or opposes illegal immigration. Last, they are asked to evaluate the degree of association among the first four thoughts that they listed on the issue. The implicational relation scale was from (-5) Negative Relation to (+5) Positive Relation with a (0) neutral point. The evaluation process was as follows: Upon presentation of the first and second thoughts on the computer screen, participants judged the relationship between a pair of their thoughts. Same evaluation process occurred for the first and third, first and fourth, second and third, and second and fourth thoughts.

Secondary Independent Variables

The statistical models testing the Causal Coherence hypothesis include three independent variables to control for the external effects and to increase the statistical strength: prior attitude on the issue of illegal immigration, party id, and political knowledge. The prior attitude measure is formulated in the exact same way as explained in Chapter 2. The formulation is the product of the position on the issue (position items generated a single scale, $\alpha = .92$) and the attitude strength (strength items generated a single scale, $\alpha = .91$). The measure is continuous and ranges from (-3) representing those who oppose illegal immigration to (+3) representing those who support illegal

immigration ($M=1.16$; $SD=1.03$). Party id is scaled from (1) Republican, to (3) Democrat ($M=2.32$; $SD=.74$). Political knowledge is measured by seven items five of which were National Election Studies (NES) type factual questions on identification of Dick Cheney, the Prime Minister of United Kingdom, the Speaker of the House of Representatives, the Supreme Court Chief Justice. The remaining three questions were on the identification of the power of the president appointing the Supreme Court justices and of the party in control of the House of Representatives and the Senate. Political knowledge measure is the summation of all correct responses ($M=5.15$; $SD=1.55$).

VII. FINDINGS

A. General Issue Statement on Illegal Immigration

In this section, I first discuss the postulate that causal coherent thinking has strong associations to integrative complexity and implicational relation methods. Confirming the association of causal coherent thinking with both methods will strengthen the reliability of the conceptualization of the Causal Coherence hypothesis.

Integrative Complexity and Causal Coherence

Participant's thoughts are coded according to the Integrative Complexity coding scheme ($M=3.1$; $SD=1.36$). Given that the sample is drawn from a student population, the distribution of integrative complexity scores is more at the lower and mid scores as fewer high scores were expected (Green, et al. 2000).

In order to present the statistical association of causal and non-causal thoughts with integrative complexity, I conducted a pair-wise correlation analysis. In this

correlation analysis I also included the number of transitions among causal thoughts (representing causal coherence) and the number of transitions among causal and non-causal thoughts (representing causal incoherence). This simple analysis will show the statistical relationship between the variables that conceptualize causal coherence, as defined in this chapter.

This initial pair-wise correlation analysis (Table 1) shows that the number of causal thoughts (considered as rationales of the statement) strongly relate to integrative complexity scores ($r=.55$; $p<.01$), while the number of non-causal (i.e., other) thoughts does not ($r=.04$; $p>.1$). This finding suggests that as one uses more causal thoughts and engages in causal thinking, s/he is providing integratively complex arguments.

Additionally, causal coherence (number of transitions among causal thoughts; $r=.49$; $p<.01$) and causal incoherence (number of transitions between causal and non-causal thoughts; $r=.28$; $p<.01$) significantly relate to the integrative complexity scores as well.

<<<Place Table 1 Here>>>

This finding then suggests that the degree of integrative complexity could be a function of the number of associations that one makes among his/her causal thoughts, and among his/her causal and non-causal thoughts. In other words, as one cites an antecedent and links that causal thought to a consequence of illegal immigration, s/he is more likely to get a higher score on the integrative complexity scale. However, this score will decrease once non-causal thoughts (such as simple evaluations) involve in the reasoning procedure.

Additional Predictors of Integrative Complexity

From a different point of view, integrative complexity could be a function of individual political attributes such as prior attitude on the issue, political knowledge, and party identification (Green et al. 2000). Hence it is necessary to predict integrative complexity scores while controlling for these independent factors.

To this goal, I will test a statistical model that predicts integrative complexity scores of each participant by their degree of causal coherence and causal incoherence, and their political knowledge, prior attitude and party id. Since the dependent variable is continuous I conducted an Ordinary Least Squares (OLS). Table 2 presents the results.

The principal finding is the effect of associations that one can make among causal thoughts on the level of integrative complexity: The greater the number of associations that one can make among reasons and rationales related to illegal immigration, the better the integrative complexity score becomes in terms of enriching the quality of differentiation and integration dimensions. However, if one makes associations between reasons and other considerations that do not spell out the reasons, the person does not demonstrate integrative complexity. In other words, as one integrates reasons (defined as causal thoughts) into the thinking process, s/he bolsters the quality of argumentation. Political knowledge similarly increases integrative complexity which can be interpreted that sophisticates are more likely to depict several dimensions of the subject (Judd & Krosnick 1989). Unlike previous studies in political behavior taking party identification and prior attitude at the core of the models, here they do not predict the level of integrative complexity.

<<<Place Table 2 Here>>>

So, with these results I find that causal coherence strongly predicts the level of one's integrative complexity. As I expected, it is not only thinking in cause-and-effect terms but also the number of transitions that one can make among his or her causal thought that determines integrative complexity.

Implicational Relation of Thoughts and Causal Coherence

This section focuses on the implicational relation among thoughts that one could have on an issue. All thoughts cited on the illegal immigration issue are coded as explained before. The number of correct implicational relations made by a participant composed the main dependent variable in the following models. As done in the previous section, I will first run pair-wise correlations to depict the relationships and then conduct an OLS to predict the determinants of implication relation for an individual.

As found for the Integrative Complexity method, pair-wise correlations show a strong correlation **i)** between the implicational relation of one's thoughts and that person's number of causal thoughts ($r=.35$; $p<.01$), and **ii)** between the implicational relation of one's thoughts and that person's causal coherence ($r=.37$; $p<.01$). On the other hand, the number of other thoughts ($r=.12$; $p>.1$) and causal incoherence ($r=.16$; $p>.1$) do not significantly relate to one's implicational relation among his/her thoughts (see Table 3).

<<<Place Table 3 Here>>>

Once again, this finding suggests that the integral part of one's implicational relations among his or her thoughts is a function of the number of causal thoughts that she or he obtains and of the number of causal coherence transitions that she or he can make among the thoughts. In contrast, non-causal thoughts and causal incoherence do not predict the implicational relations that one carries among his or her thoughts.

Additional Predictors of the Implicational Relation of one's thoughts

In the following OLS model, I predicted the level of implicational relation of thoughts by one's causal coherence, causal incoherence, and additionally prior attitude on illegal immigration, political knowledge, and party id. As shown in Table 4, the results indicate a substantial effect of the coherent associations among causal thoughts. Yet, the transitions between causal and non-causal thoughts (causal incoherence) do *not* influence the implicational relations among one's thoughts. As hypothesized, causal incoherence does not statistically significantly predict implicational relation scores. That is, citing or remembering non-causal thoughts decreases the probability of having a correct implicational relation among the attitudinal thoughts.

Unlike previous findings on integrative complexity, I found no effect of party id and prior attitude in having correct implicational relations among one's thoughts. So, there is no variance across people in terms of party alignments and prior attitudes. In other words, Republicans do not maintain more or less implicational relations among their thoughts on illegal immigration than Democrats. The same finding applies to opponents and supporters of the issue.

<<< Place Table 4 Here >>>

Interestingly, political knowledge also had no effect in predicting implicational relations. It could be expected that the higher the political knowledge, the better the implicational relations should be among one's thoughts. Lavine et al. (1997) presented a finding that experts possess stronger implicational relations among their attitudes than do novices. One might hence wonder if these findings vary across levels of political knowledge. Perhaps, high sophisticates are more likely to recall causal thoughts and generate coherent links among their causal thoughts whereas low sophisticates are not (Fiske & Kinder 1981; Judd & Krosnick 1989). To test this possibility, I created two groups through median-split of the political knowledge measure and predicted the same OLS model as before (see Table 5).

In this model, I found that low and high sophisticates are equally likely to have better implicational relations among their thoughts or maintain stronger cognitive bonds as they make more connections among their causal thoughts. In other words, causal coherence generates greater logical associations among one's thoughts, and relatedly, attitudes. Experts are able to construct slightly stronger implicational relations than novices, but there is no detectable difference between the two groups. All other variables are insignificant for both groups suggesting that there is no across group variation.

<<< Place Table 5 Here >>>

These findings suggest that causal coherence is integral to the creation of implicational relations among thoughts on political issues. It has been shown in above analyses that causal coherence significantly correlates with and predicts stronger

implicational relations among thoughts. In other words, stronger cognitive bonds through causal coherence form one's inter-attitudinal consistency.

With these findings, I again find support for the argument that causal coherence is central to both of the comparative models of coherent political thinking. So far, I have been able to show that coherent political thinking described as reasoning in antecedent and consequence chains show strong links with the models of Integrative Complexity and Implicational Relations among thoughts. Hence, thinking in causal chains (causes and effects) manifest itself as an integral part of the methods of cognitive style. Associations among causal thoughts determine the degree to which individuals are integratively complex and are able to maintain inter-attitudinal consistency through implicational relations among their thoughts. Findings in this section represent a new facet in this area and contribute to the current literature on both methods of coherent political thinking.

B. Policy Proposals on Illegal Immigration

In the previous section, I examined issue statement related sections of the experiment. This section discusses the place of the Causal Coherence hypothesis on *policies* related to illegal immigration. In this section, since the reliability of all four policies (all regarding illegal immigration) was high across all analyses, I treat the thoughts cited on all policies combined. All thoughts for all policies are merged into a single measure for all statistical models. Instead of discussing the results across four policies, I only report the findings on the combined measure.

Integrative Complexity and Causal Coherence on Policies

Thoughts collected on the policies are coded according to the Integrative Complexity coding scheme as explained before. Integrative Complexity scores for the four policies scaled reliably together ($\alpha = .73$). The combined integrative complexity item for policies is similar to that of general issue statement on illegal immigration in terms of distribution ($M=3.02$; $SD=.79$). The pair-wise correlation analysis presents similar findings to the issue statement showing that the number of causal thoughts, causal coherence (the number of associations among causal thoughts), and causal incoherence (the number of associations between causal and non-causal thoughts) significantly relate to integrative complexity scores while the number of other (i.e., non-causal) thoughts does not.

The next step constitutes the OLS model predicting integrative complexity level for four policies by causal coherence and incoherence, as well as prior attitude on illegal immigration, party id, and political knowledge.

Table 6 presents the robust regression results predicting the level of integrative complexity on illegal immigration policies. Results resemble the general issue statement findings in that as one can make transitions among causal thoughts and think in a causally coherent manner on public policies, there is more integrative complexity. Yet, causal incoherence does not have a positive effect on improving the quality of integrative complexity. Two of the other independent factors (party id and political knowledge) do not indicate any statistical effects. This finding suggests that **i)** Democrats cannot be separated from Republicans on their integrative complexity level, as opposed to Tetlock's (1993) finding that conservatives are less integratively complex. **ii)** Political knowledge

(as measured here) is a separate concept from causal coherence in predicting integrative complexity. Although I found supportive results for the general issue statement, I was not able to find it for the policy statements. Last, I found a marginal effect of the prior attitude on integrative complexity, suggesting that opposition on the issue might increase integrative complexity.

<<<Place Table 6 Here>>>

With these findings, I can confirm that causal coherence is an important component of integrative complexity. The more one can recall reasons that are causally connected to each other, the better the quality of arguments s/he will make and the person will engage in a cognitive deliberation process involving several dimensions of the subject at hand. Although this argument could sound tautological, what these analyses aim to show is that causal coherence is the initial step that one takes in developing an integratively complex statement. The individual begins with a thought on a policy that is either an antecedent or a consequence. Next, this causal thought triggers another one and another one to the extent that one can recall relevant information. All these thoughts in sum generate a level of argumentation which is scaled through integrative complexity. Simply put, causal coherence initiates a mode of reasoning that further on becomes a high quality of integrative complexity. The outcome is hence integrative complexity rather than the causal coherence among thoughts. Thus, integrative complexity is a *measurement tool* rather than a *description tool*; the former just measures but the latter shows how one could come up with causal thoughts and how one can make transitions among these causal thoughts through a theoretical design.

Implicational Relations among Thoughts and Causal Coherence on Policies

As explained before in the experimental design section there were four policies on illegal immigration. As done for the general illegal immigration statement, after citing their thoughts on each policy, participants were shown their thoughts back on the computer screen and, first, asked to evaluate whether each thought is for or against the policy. After the evaluation of thoughts, participants judged the paired relations between their thoughts.²⁷

The number of relations that are judged correctly generated the strength of one's implicational relation score (i.e., inter-attitudinal consistency) among his/her thoughts. Implicational relation scores ($\alpha = .60$) are then combined into a single measure ($M=9.78$; $SD=4.55$). Similarly, causal coherence ($\alpha = .72$) and causal incoherence ($\alpha = .64$) scores are combined into single measures as the major independent variables whereas party id, prior attitude, and political knowledge are kept in their original format.

Table 7 presents the results for the OLS model. Once again, coherent transitions among causal thoughts (causal coherence) predict one's implicational consistency among thoughts on illegal immigration policies. In contrast with my expectation, causal incoherence (associations between causal and non-causal thoughts) also improves the strength of one's inter-attitudinal consistency. One possible investigation of this finding could be made through political knowledge, with the assumption that experts and novices have different predictors.

<<< Place Table 7 Here >>>

²⁷ In order to save time in the experiment only four of the six possible implicational relationship judgments are made by the participants. Participants evaluated the paired relationships between the first and second thoughts, the first and third thoughts, the first and fourth thoughts, and the second and third thoughts.

To this end, I conducted the same regression model for low and high sophisticates separately and found that causal *coherence* increases consistency of implicational relations for *high* sophisticates whilst causal *incoherence* functions in the same manner for *low* sophisticates (See Table 8). This means that high sophisticates think through causally coherent connections whereas low sophisticates think through causally incoherent ones. From a different point of view, we should remember that the implicational relation judgments included all thoughts cited by the participants, among which there were non-causal thoughts as well as causal thoughts. Thus, Table 8 shows that experts are more likely to report perhaps more causal thoughts and connections are made through causal thoughts whilst novices use non-causal thoughts. This result posits that on policy based thinking low and high sophisticates have different ways in forming their implicational relations.

<<< Place Table 8 Here >>>

CONCLUSION

This chapter confirms that thinking in terms of cause-and-effect strongly relates to the methods depicting the quality of reasoning and the inter-attitudinal consistency through thoughts (McGuire & McGuire 1991). Moreover, transitions among causal thoughts (i.e., causal coherence) are as well critically important in understanding the quality of reasoning and inter-attitudinal consistency. Causal coherence in thinking is embedded in integrative complexity and implicational relations of inter-attitudinal thoughts.

In this chapter, I have repeatedly found that causal coherence is strongly correlated and associated with the methods of coherent political thinking. Both in pairwise correlational and in OLS regression analyses findings are robust in favor of causal coherence. As one begins citing a causal thought and then follow this with another one, she or he is more likely to present a stronger argumentation (higher integrative score) and to maintain stronger implicational relations among her or his thoughts. Although this finding varies slightly between high and low sophisticates, I did not find consistent supporting evidence on this possibility. On the other hand, causal incoherence (involvement of non-causal thoughts in thinking procedures) actually decreases correlation and generates a reasoning chain that is weak in argument quality and loose in forming implicational relations among inter-attitudinal thoughts. Simple evaluations, agreement or disagreement reports,

All in all, there is strong evidence for the Causal Coherence hypothesis that individuals tend to develop consistent associations among their causal thoughts on issues and policies: Antecedents promote consequences and consequences promote antecedents in a chain reaction which in turn enhances reasoning quality and bolster inter-attitudinal implicational relations among thoughts. Equally important, evidence for the Causal Coherence hypothesis stands as the integral notion of other consistency models such as cognitive dissonance and balance theories. Causal coherence hypothesis would posit that the dissonance that one wants to solve or the balance that one desires to establish in his or her attitude(s) could be primarily a function of coherence among thoughts which in turn manifests itself at the attitudinal level.

In brief, in an environment separated from any affect-laden cues and information, individuals spontaneously think in cause-and-effect terms, and the associations among these causal terms are an integral part of cognitive styles. Given the fact that I have not controlled for affective influences in causally coherent thinking in this chapter, I turn to this question in Chapter 5.

Table 4.1: Pair-wise Correlation Matrix for Integrative Complexity Scores and Number of Thoughts and Associations

	Integrative Complexity Score	Number of Causal Thoughts	Number of Non-Causal Thoughts	Number of Associations among Causal Thoughts (Causal Coherence)	Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)
Integrative Complexity Score	1.000				
Number of Causal Thoughts	.55 (.001)	1.000			
Number of Non-Causal Thoughts	.04 (.67)	.13 (.19)	1.000		
Number of Associations among Causal Thoughts (Causal Coherence)	.49 (.001)	.97 (.001)	.09 (.38)	1.000	
Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)	.28 (.01)	.36 (.001)	.88 (.001)	26 (.01)	1.000

Note. Pearson correlation coefficients are provided in each cell with p-values in the parentheses.

Table 4,2: Regression Results for Integrative Complexity Scores on Illegal Immigration Issue Statement

Variable	Coefficient	S.E.	t-value
Number of Associations among Causal Thoughts (Causal Coherence)	.26	.06	4.43***
Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)	.05	.11	.48
Party ID	.03	.20	.14
Prior attitude	.18	.14	1.26
Political Knowledge	.17	.08	2.08**
Constant	1.46	.74	1.98**

N = 86

$R^2 = .31$; $F(5, 80) = 6.34$; $p < .001$

Note. Coefficients are obtained from the OLS regression of the Integrative Complexity Scores on illegal immigration issue statement on the independent variables. Robust standard errors are presented. Asterisks denote * = $p < .1$; ** = $p < .5$; *** = $p < .01$.

Table 4.3: Pair-wise Correlation Matrix for Implicational Relation Scores and Number of Thoughts and Associations

	Implicational Relation Score	Number of Causal Thoughts	Number of Non-Causal Thoughts	Number of Associations among Causal Thoughts (Causal Coherence)	Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)
Implicational Relation Score	1.000				
Number of Causal Thoughts	.37 (.001)	1.000			
Number of Non-Causal Thoughts	.12 (.30)	.14 (.19)	1.000		
Number of Associations among Causal Thoughts (Causal Coherence)	.35 (.002)	.97 (.001)	.09 (.38)	1.000	
Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)	.16 (.16)	.36 (.001)	.88 (.001)	26 (.01)	1.000

Note. Pearson correlation coefficients are provided in each cell with p-values in the parentheses.

Table 4.4: Regression Results for Implicational Relation Scores on Illegal Immigration Issue Statement

Variable	Coefficient	S.E.	t-value
Number of Associations among Causal Thoughts (Causal Coherence)	.23	.08	2.89***
Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)	.12	.16	.75
Party ID	-.28	.35	-.80
Prior attitude	.16	.25	.65
Political Knowledge	-.04	.12	-.29
Constant	2.02	1.25	1.61

N = 69

$R^2 = .34$; $F(5, 63) = 1.90$; $p < .1$

Note. Coefficients are obtained from the OLS regression of the Implicational Relation Scores on illegal immigration issue statement on the independent variables. Robust standard errors are presented. Asterisks denote * = $p < .1$; ** = $p < .5$; *** = $p < .01$.

Table 4.5: Regression Results for Implicational Relation Scores on Illegal Immigration Issue Statement across Political Knowledge Groups

Variable	Low Sophisticates			High Sophisticates		
	Coefficient	S.E.	t-value	Coefficient	S.E.	t-value
Number of Associations among Causal Thoughts (Causal Coherence)	.20	.10	1.82*	.30	.11	2.56***
Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)	.33	.26	1.24	-.14	.24	-.60
Party ID	-.05	.55	-.09	-.50	.45	-1.11
Prior attitude	-.12	.39	.75	.43	.32	1.31
Constant	1.18	1.50	.79	2.51	1.16	2.16**
	N = 34			N = 35		
	R ² = .16; F (4, 29) = 1.39; p<.2			R ² = .19; F (4, 29) = 3.02; p<.03		

Note. Coefficients are obtained from the OLS regression of the Attitude Change on illegal immigration on the independent variables. Robust standard errors are presented. Asterisks denote * = p<.1; ** = p<.5; *** = p<.01.

Table 4.6: Regression Results for Integrative Complexity Scores on Illegal Immigration Policies

Variable	Coefficient	S.E.	t-value
Number of Associations among Causal Thoughts (Causal Coherence)	.10	.02	4.48***
Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)	.06	.04	1.52
Party ID	.11	.10	1.05
Prior attitude	-.12	.07	-1.73*
Political Knowledge	.05	.07	.77
Constant	1.82	.44	4.13***

N = 85

$R^2 = .26$; $F(5, 79) = 6.06$; $p < .001$

Note. Coefficients are obtained from the OLS regression of the Integrative Complexity Scores on illegal immigration policy statements on the independent variables. Robust standard errors are presented. Asterisks denote * = $p < .1$; ** = $p < .5$; *** = $p < .01$.

Table 4.7: Regression Results for Implicational Relations Scores on Illegal Immigration Policies

Variable	Coefficient	S.E.	t-value
Number of Associations among Causal Thoughts (Causal Coherence)	.37	.15	2.40***
Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)	.54	.21	2.48***
Party ID	.80	.68	1.16
Prior attitude	-.73	.47	-1.56
Political Knowledge	-.25	.28	-.91
Constant	5.62	2.80	2.01**

N = 86

$R^2 = .23$; $F(5, 80) = 4.83$; $p < .001$

Note. Coefficients are obtained from the OLS regression of the Implicational Relations Scores on illegal immigration policy statements on the independent variables. Robust standard errors are presented. Asterisks denote * = $p < .1$; ** = $p < .5$; *** = $p < .01$.

Table 4.8: Regression Results for Implicational Relations Scores on Illegal Immigration Policies across Political Knowledge Groups

Variable	Low Sophisticates			High Sophisticates		
	Coefficient	S.E.	t-value	Coefficient	S.E.	t-value
Number of Associations among Causal Thoughts (Causal Coherence)	.18	.20	.91	.48	.22	2.10**
Number of Associations between Causal and Non-Causal Thoughts (Causal Incoherence)	.53	.25	2.11**	.52	.39	1.33
Party ID	1.66	1.10	1.51	.58	.87	.67
Prior attitude	-.32	.66	-.49	-.97	.75	-1.29
Constant	3.05	2.84	1.08	3.99	2.79	1.43
	N = 42			N = 44		
	$R^2 = .20$; $F(4, 37) = 2.79$; $p > .04$			$R^2 = .27$; $F(4, 39) = 5.14$; $p > .002$		

Note. Coefficients are obtained from the OLS regression of the Implicational Relation Scores on illegal immigration policies on the independent variables. Robust standard errors are presented. Asterisks denote * = $p < .1$; ** = $p < .5$; *** = $p < .01$.

CHAPTER 5: AFFECTIVE CAUSAL COHERENCE: THE ROLE OF AFFECT IN COHERENT POLITICAL THINKING

Chapter 2 demonstrates that subliminal (i.e., unnoticed) affective primes (smiley and frowning cartoon faces) influence the valence of recalled thoughts. Chapter 3 shows that these affect-elicited thoughts influence attitude and public policy evaluations. All in all, the Affective Contagion hypothesis is based on the concept of coherence, which favors *affectively* consistent thoughts over affectively inconsistent thoughts throughout the deliberation process.

Chapter 4, on the other hand, provides an introduction to causally coherent thinking and documents empirical evidence on causal coherence and its place in political reasoning. The Causal Coherence hypothesis postulates that thinking and deliberation take place through causally coherent thoughts in the sense that antecedents prompt consequences and consequences prompt antecedents. However, Chapter 4 only focuses on the cognitive dimension of thinking, under the assumption that it is purely rational, stripped of feelings and emotions.

However, this paradigm of cognition has not considered how affect might facilitate the generation of coherent and causal thoughts, promoting consistency in deliberation and persistence in attitudinal structures (Thagard 2000, 2003; Forgas 2006). This is despite the fact that – as discussed in Chapter 1 – considerable research has shown that political and social objects are affect-laden and can be easily, even automatically activated by affective cues (Zajonc 1980, 2000; Lodge & Taber 2005; Bargh 2007). Research in the decision-making literature has similarly shown the role of affect in choice-based decision-making (Loewenstein & Lerner 2003), in consequential thinking and reasoning (Loewenstein, Weber, Hsee, & Welch 2001), and in heuristic usage (Slovic, Finucane, Peters & MacGregor 2002). Affect, in other words, may help us make coherent judgments, form coherent stories, and assist us in making sense of the world in consistent ways.

In this respect, Chapter 5 combines these findings and integrates both preconscious affect and cognition. Thus, we may expect preconscious affect to motivate deeper and more consequentialist thinking. That is, cause-and-effect based thinking might be facilitated by valenced affect. Perhaps citizens are motivated to examine the causes and effects of a policy when their feelings are engaged.

To this end, Chapter 5 reports the results of experimental tests on the role of preconscious affect in coherent reasoning. In developing the hypotheses, I employ the fundamental assumption of *affect-driven dual process models*, namely that affective and cognitive reactions to external and internal events are triggered unconsciously, and we only become consciously aware of the thoughts and feelings at the end of the processing. Coherent thinking about political events and policies entails patterns of thought retrieval

and generation that maintain reasonably consistent valence *as well as* causal chaining. Affect, whether triggered directly by the political policy under consideration or incidental to that policy, should promote both forms of coherence in political thinking, reasoning, and deliberation. In other words, affect may promote coherent thinking and reasoning.

The principal reason for this expectation stems from the Thoughts Systems experiments that I conducted in 2006. These experiments have motivated the fundamental argument of this chapter. As discussed in Chapter 4, Erisen et al, (2006) has shown that thought systems on political and social subjects are mostly formed by causal thoughts. Although this was the initial finding from the Thought Systems experiments, several points remain to be examined. The first is the connection between causal thoughts, elaborated on in Chapter 4. Previous chapter showed that the relationships among these causal thoughts are found to be integral to how one perceives, ruminates, and recalls information. Secondly, the paradigm described in Chapter 4 was purely “rational”, uncontrolled for the affective influences, as the McGuires (1991) have left unaccounted for. In contrast, Chapters 2 and 3 demonstrated that almost no political information comes without affective tags. Simple affective cues presented as fast as 39 milliseconds change the way one recalls negative or positive thoughts. Perhaps it is not only the valence (negative or positive) of the thought that one recalls but also the quality (causal and non-causal) of the thought. Moreover, the connections between causal thoughts (antecedents and consequences) should be analyzed to determine the role of affect in coherent reasoning.

Previous chapters demonstrate that automatic affective biases on thought retrieval and deliberation drive the rationalization of behavior at least as much as they provide the

rationale for behavior. Behavior and thoughts are often implicitly triggered with subsequent deliberation largely in the service of rationalizing that behavior. To test this theoretical argument I postulate the following hypothesis:

Affective Causal Coherence Hypothesis: Unnoticed affective primes will promote the generation of antecedent-consequence (If-Then) pairs and chains when people think about political issues and public policies.

I. EXPERIMENTAL DESIGN

To test this hypothesis, I conducted a study in the Spring of 2008 at the Stony Brook University's Laboratory for Experimental Research in Political Behavior. All participants were undergraduate students in the Political Science courses. The sample included 250 participants (130 male, 119 white, 120 Democrat, 44 Republican). On arriving at the lab and following consent procedures, participants were taken to separate experimental rooms and seated in front of personal computers. Four steps of the experiment were as follows:

1. *Prior Attitude Measurement:* Participants' first task was to report their attitudes on a number of political issues including the target issues: illegal immigration and energy security. As before, item batteries asked for their overall position on these issues and the attitude strength dimensions of accessibility, certainty, importance, knowledge, and relevance (Krosnick & Petty 1995; Wegener, et al. 1995). This section took approximately 10 minutes to complete.

2. *Priming Paradigm:* The priming paradigm was exactly the same as it was for the studies introduced in Chapter 2: First an attention grid is presented on the screen for a

full second so that the participant focuses on the exact location of the upcoming prime. Then a forward mask (a meaningless array of asterisks) is presented for 13 ms. to assure that all participants start with no meaningful image on their retinas or in visual memory. Then the prime is presented for 39 ms., well below the threshold for subjective conscious awareness but above the objective threshold for sensory and brain reaction. A backward mask followed for 13 ms., which wipes sensory memory and ensures that the prime remains below the threshold of subjective conscious awareness. In addition to the positive (smiling) or negative (frowning) primes, one third of the participants were exposed to a cartoon face without a mouth impression (control group).

3. *Thinking and Reasoning Procedures - Prompts:* I used two different procedures to prompt and then collect thoughts (representing one's reasoning) on an issue. Both of these methods create a situation where a particular thought is collected or a choice is made upon a reference statement, or a prompt.

First, I presented participants with a simple reference statement about the issue as a prompt, and then engaged them in a thought-listing procedure (Lane 1969; Cacioppo & Petty 1981; Gamson 1992; Zaller & Feldman 1992). Following exposure to an affective prime as described above, a statement about the policy appeared at the same screen location with an empty response box below. Participants were asked to type a thought into the box below the prompt, which remained onscreen until the participant finished typing. Each participant had the opportunity to type up to two thoughts in response to any given prompt. Participants were primed once for each prompt.

<<<Place Figure 1 Here>>>

The prompt in this case is designed to elicit the very first thought the participant has in response to the statement. As such, the prompts function as a reference point that the participants take while reporting their thoughts. Hypothesis testing will hence control for the thoughts that are reported given a particular prompt. Without the directed prompts, it would be impossible to understand why one would cite a thought that is related or unrelated with a topic. Thus, hypothesis testing would be unreliable without understanding why a thought is listed. To get around this problem, simple prompts are used in the experimental study.

For simple prompts with open-ended response boxes, participants received four statements on illegal immigration and energy security issues: a negative antecedent (The U.S. government is not concerned enough with the economy of poor countries), a positive antecedent (There are a several new laws imposed by the federal government that will control the level of illegal immigration), a negative consequence (With the influx of illegal immigrants, the U.S. will lose her culture and economic standing), and a positive consequence (Illegal immigrants add to the American culture as a representation of a melting pot) of illegal immigration. The same types of statements are also used for the energy security issue.²⁸

The second approach to eliciting thoughts presented participants with a more complex statement consisting of either an antecedent-policy pair or a policy-consequence

²⁸ Following is the list of reference statements used as prompts to collect thoughts the energy security issue: negative antecedent prompt: “Many energy options such as solar power and alternative fuels are not being explored enough”, negative consequence prompt: “Because of oil and gas consumption, our atmosphere is getting warmer”, positive antecedent prompt: “The government has recently allocated budget and passed legislature that promotes alternative energy”, positive consequence prompt: “As we improve in technology we will generate renewable sources and develop wind and solar energy.”

pair. That is, these complex prompts (reference statements) took the form “If *antecedent* Then policy” or they took the form “If policy Then *consequence*.” These policy statements were also constructed to be either positive or negative with respect to the issue.²⁹

As with the simple prompts, these complex prompts were primed subliminally with a smiling face, a frowning face, or with a face without a mouth. Below this policy prompt, a list of options appeared on the same screen. Five response options were presented that varied in their valence and causal element (consequence or antecedent). Among these five options there was only one “correct” answer for a given priming condition. This correct answer was in coherence with the reference policy statement both in *valence* and in *causality*.

For instance, to the negative antecedent prompt on illegal immigration (i.e., “Since illegal immigrants broke the law to enter the U.S. the federal government currently considers deporting all illegal immigrants.”), the *affectively coherent* response (both in

²⁹ Following is the list of complex prompts used as prompts to make policy selections on **i**) illegal immigration:

negative antecedent prompt: “Since illegal immigrants broke the law to enter the U.S. the federal government currently considers deporting all illegal immigrants”, negative consequence prompt: “Deportation of illegal immigrants would generate several problems in low-labor jobs across the country”, positive antecedent prompt: “Most illegal immigrants take labor-intensive jobs that Americans do not. So temporary visas should be granted to them for seasonal work”, positive consequence prompt: “Illegal immigrants in the U.S. should be allowed citizenship if they learn English, have a job, and pay taxes as every citizen”, and **ii**) energy security:

negative antecedent prompt: “Since the U.S. became more dependent on oil, the government is constantly raising the tax on gasoline to reduce consumption”, negative consequence prompt: “The U.S. government allowing oil and gas drilling in the Arctic National Wildlife Refuge in Alaska will cause more problems than it would possibly correct in our energy needs”, positive antecedent prompt: “Since we have advanced technology, the government should require better fuel efficiency for cars, trucks and SUVs”, positive consequence prompt: “If the U.S. government provides tax cuts to energy companies to develop wind, solar and hydrogen technology, we might find solutions to our energy needs.”

terms of valence and causality) for those who received the *negative* affective prime was: “This will have an adverse reaction on the economy and the immigrant families.” On the other hand, for those who received the *positive* affective prime with the same negative antecedent prompt, the affectively coherent response was a positive consequence: “By deporting some of the illegal immigrants we would show our determination and stand strong against illegal immigrants.” The reason for difference across affectively coherent responses depends upon the treatment condition that the participant was in. Since the underlying key mechanism is the *affective prime*, the prime should lead a process that will make thinking affectively coherent. Last, for those who were in the control group, the correct response was to choose the affectively coherent response (negative consequence, in this example) given the prompt (a negative antecedent).

Once again, the use of complex prompts makes statistical testing for the Affective Causal Coherence hypothesis possible. It gives us a comparison, to allow us to determine the degree to which participants prefer an affectively coherent correct, over an affectively incoherent correct choice. Without the reference statement it would be impossible to understand whether the choice is affectively coherent one or not.

Both of the thinking and reasoning procedures were completed first for the illegal immigration issue and second for the energy security issue. All participants received all of the statements on both issues. None of the statements was repeated in the study.³⁰ This section took approximately 25 minutes to complete.

³⁰ All statements used in this study are originally generated from the thoughts listed by the participants to the Affective Contagion (Chapter 2) studies.

4. Additional Variables and Manipulation Check: After the priming and thought-listing procedure, participants answered political knowledge and demographic questions, in addition to a mood check to test if the affective primes generated a particular mood.³¹ Finally, subjects were asked questions to verify the subliminal nature of the primes and whether they were aware of the study purposes. None of the participants reported having been aware of the affective primes used in the experiments and none reported any suspicion of study aims. This last section took approximately 10 minutes to complete.

II. OPERATIONALIZATION OF MEASURES

The principal goal of Chapter 5 is to test whether unnoticed affective primes influence *the type of thought(s)* that one recalls and *the type of policies* that one chooses, and more importantly promotes *coherence* between the prompt (i.e., reference statement) and the recalled thoughts or preferred policies. I distinguish between thoughts listed on the statements and judgments made on policy recommendations. This distinction allows me to control for the influence of the affective primes not only on thoughts that one recalls on a given policy but also on choices that one makes on that policy. In this way, we can test whether unnoticed affective primes inhibit or facilitate *affectively coherent reasoning chains*.

I theorize that *preconscious affect* will bias conscious thinking and reasoning about political issues and policies. That is, I predict that when participants are asked to

³¹ The mood manipulation check would confirm whether or not positive (or negative) affective primes put the participant into a positive (or negative) mood. If no relationship were found between the priming condition and mood of the participant, then it would be confirmed that the priming procedure was not a mood manipulation.

stop and think about a public issue and related policy proposals, or when they are asked to make policy evaluations, their affect toward the policy will systematically impact what thoughts and feelings enter the decision stream. More surprising from the point of view of conventional models of political thinking, I predict that completely incidental and irrelevant affective stimuli presented outside the awareness of the participants will bias the content and character of the thoughts that they retrieve and policy choices that they make. In short, I expect that the conscious thoughts that come to mind for our experimental participants will be biased by both their prior attitudes and unnoticed affective events. Moreover, the affectively congruent considerations that enter the decision stream subjectively validate and rationalize preferences, reliably leading to bias in the subsequent expression of attitudes and evaluations on an issue and policy.

I first begin with thoughts on statements. The first expectation is to see when given a prompt (e.g., a reference thought or position as an antecedent or a consequence) on any issue, does the preconscious affect make someone more or less likely to think coherently? Given an affective prime, are thoughts that come to mind coherent – in terms of same *valence* and proper *causality*– with the prompt? For instance, given a positive antecedent of a policy and a positive affective prime, do people recall a *positive consequence more* compared to those in the control group? If so, this would indicate that the affective prime influenced not only the valence but also the causal coherence of the thought(s) recalled. In simple terms, given the experimental design, I operationalized the Affective Causal Coherence hypothesis such that given a prompt (i.e., a negative/positive antecedent/consequence) on a policy, participants primed with a negative/positive affective prime would cite an affectively coherent thought (i.e., a negative/positive

consequence/antecedent).

Additionally, I would like to test the strength of the affective primes in promoting or inhibiting coherent reasoning on policy evaluations and decisions. Now I am interested in evaluations of a policy, given a prompt on the policy and an affective prime. I argue that affective primes influence one's policy position in coherence with a policy prompt. I therefore propose that the complex prompt and closed-choice policy response task works in the following way: Given a prompt (i.e., a negative/positive antecedent/consequence) for a policy, participants primed with a negative/positive affective prime will be more likely to select an affectively coherent policy option (i.e., a negative/positive policy consequence/antecedent).

In line with these expectations, Chapter 5 specifically asks whether preconscious affect influences how people reason when called on to deliberate on political issues and policy recommendations. With prompts representing cause-and-effect statements, I will be able to test how reasoning takes place by examining the effects of the affective primes. In this respect, the statements represent a part of the rationalization process. The goal is ultimately to investigate whether preconscious affect influences not only the valence of what we remember (the *Affective Contagion hypothesis*) but also alters the connections among the thoughts we retrieve or generate (the *Causal Coherence hypothesis*) that make us act in a seemingly rational manner (the *Affective Causal Coherence hypothesis*).

III. RESULTS

A. Affect-Coherent Thinking on Political Statements:

The first aim is to test whether affective primes influence what participants

remember about illegal immigration and energy security given prompts as an antecedent or a consequence. As defined in the experimental design section, thoughts collected via the thought-listing task are categorized in terms of three main categories: **i)** antecedents of the statement (e.g. border patrol has been inconsistent, the government has not passed any laws to curb illegal immigration, immigrants perceive the golden opportunities of the U.S., cheap gas prices are perceived as given, etc.), **ii)** consequences of the statement (e.g. alternative energy sources will take the greenhouse emissions under control, offshore drilling is not only expensive but also a decade long investment, illegal immigrants take many of the low labor jobs, etc.); **iii)** other thoughts (such as feelings toward the statement, agreement or disagreement with the statement, and likelihood of the statement happening, etc.). These three categories are also coded in terms of their valence, either negative or positive.

Two coders, blind to the experimental conditions and unaware of the research hypotheses, coded the thoughts listed by the participants. A third coder at the end solved the discrepancies between the codings of the two coders and generated a coder-reliable dataset.

From this coder-reliable dataset, a measure is developed that counts the number of times that a participant listed a *coherent* thought in the thought-listing task. Here the concept of coherence theorizes that if someone receives a negative antecedent on a political issue or policy and at the same time is exposed to a negative prime (such as moody pictures or disturbing music, etc.) this person is more likely to remember a negative consequence of the antecedent. Similarly, if someone receives a positive antecedent and is exposed to a positive prime related or unrelated with the prior

information, s/he is more likely to recall positive consequences of the antecedent. This situation should also be replicated for prompts of negative or positive consequences and the negative or positive affective primes promoting negative or positive antecedents of the consequence.

For instance, there could be a negative antecedent on the issue of illegal immigration arguing that the U.S. government has not paid much attention to the economic well-being of poor countries. This antecedent relates to the steps prior to illegal immigrants coming into the U.S. According to the Affective Causal Coherence hypothesis, receiving a *negative* affective prime would promote a negative consequence on this statement (such as, “*Illegal immigrants coming in economic destitute take jobs that Americans should be entitled to.*” or “*Bills like NAFTA and CAFTA are beneficial to big businesses and, to a degree, U.S. consumers, but it has destroyed the economies of much of central America.*”) and thus cause the participant to cite negative consequence thought(s). On the other hand, a *positive* prime could trigger positive consequences (such as, “*Illegal immigrants mostly take low labor jobs with minimum payment that add to the American economy*” or “*IMF has developed programs that would assist poor economies in order to control the immigration movement.*”). The cause-and-effect thinking procedure should be more frequent in affect-congruent conditions than affect-incongruent conditions. When it is an affect-incongruent or the neutral priming condition, other unrelated thoughts that are not causally coherent with the statement (such as “*There are many programs to help the poor nations.*”) or simple evaluations such as agreement/disagreement with the statement or reports of feelings on the statement could come to mind more often.

To test the basic hypothesis on the treatment effects of affective primes given the prompt, as described before I provided a single statement for each possible reference statement option (negative/positive antecedent/consequence) and then counted the number of times the participants listed an affectively coherent thought in the thought-listing task. Then these thoughts are compared across the priming conditions. For this test, I employed Analysis of Variance (ANOVA).

A-1-Illegal Immigration:

On average, participants listed two thoughts on each one of the prompts used on illegal immigration. I first conducted one-way ANOVA analyses taking the number of coherent thoughts as the dependent variable and the priming condition as the independent variable. I find that given a negative or positive antecedent on illegal immigration, the priming condition had significantly altered the retrieval of coherent thoughts (i.e., negative or positive consequences) on the statement, $F(2, 250) = 4.45; p < .01$. In a similar vein, for any given negative or positive consequence on illegal immigration, the priming condition significantly influenced the possibility of citing a (negative or positive) antecedent on illegal immigration, $F(2, 250) = 6.45; p < .001$.

A-2-Energy Security:

As for the illegal immigration issue, I conducted the ANOVA analyses for the energy security issue prompts. Participants on average listed two thoughts for each statement on energy security. A simple one-way ANOVA for the valenced antecedents on energy security shows that the priming condition had a significant effect in recalling

coherent thoughts (i.e., valenced consequences), $F(2, 250) = 9.08$; $p < .001$. For the consequences, I find a similar result influencing the retrieval of coherent thoughts, $F(2, 250) = 11.92$; $p < .01$.

These findings suggest a preliminary finding that the preconscious affective primes influence not only the valence of thoughts that we recall but also the quality of these thoughts upon receiving prior information about a political issue or public policy. Yet, there could be additional factors – prior attitudes, political knowledge – promoting or inhibiting one’s coherent thoughts with respect to the prior information. I discuss these factors in the following section.

A-3-The Role of External Factors in Affective Coherent Thinking:

Having found that the priming condition changes how coherently one thinks and reasons, I extend these findings by testing with two additional control variables – prior attitude and political sophistication – on coherent thinking.

First, I expected that someone who opposes an issue should recall more coherently linked negative thoughts than positive thoughts, and vice versa for someone who supports an issue. So, I included one’s Prior Attitude as a control variable.³²

³² The prior attitude measure, as defined in Chapter 2, is constructed from two attitudinal factors. First, participants’ position on the issue is measured through ten items, anchored from -3 to +3. As found in the earlier chapters, four of the ten items (those items that oppose the illegal immigration/energy security) were reversed coded. All these items later scaled strongly together ($\alpha = .89$ for illegal immigration and $\alpha = .65$ for energy security) and a combined measure is created by taking the arithmetic mean of all items. Second factor measured participants’ attitude strength through ten items on five dimensions, accessibility (reversed coded items, as found previously), certainty, importance, knowledge, and relevance. All items scaled

Second, in line with findings on sophistication effects in Chapter 4, I expected that one's political knowledge would influence how coherently s/he thinks on issues and policies. Coherent reasoning could be a result of political sophistication, so I measured participants' political sophistication through the NES type factual questions.³³ I then generated a single item for correct responses, and separated the participants into two groups at the median. I also expected to see an interaction between the priming condition and one's political sophistication level. The interaction would tell us whether high and low sophisticates are equally susceptible to the primes. Hence, an interaction between political sophistication and priming will be included in the models.

For each statement in which I tested the influence of the affective prime, I conducted the ANOVA analyses once again (as described in the previous section) with the control variables of prior attitude, political sophistication, and an interaction between the priming condition and political sophistication. This model will test the reliability of the hypothesis that the preconscious affective primes influence both the valence and the coherence of the thoughts cited by the participants, while controlling for external effects such as prior attitudes and political knowledge.

strongly ($\alpha = .88$ for illegal immigration and $\alpha = .91$ for energy security), and a combined measure is created ranging from 0 to 1. The prior attitude measure is then calculated by taking the product of two factors that created a measure ranging from -3 to +3 with a neutral zero point for those in the middle. In order to be able to show change within the prior attitude, I created three groups, opponents (all below the neutral zero point), supporters (all above the neutral zero point), and moderates (all at the neutral zero point on the constructed scale) for the illegal immigration issue. For the energy security issue, there was not enough opponents and only two groups were formed, those below the 33rd centile are coded as moderates or weak opponents and those above the threshold are coded as supporters.

³³ Political sophistication items used in the study are taken from Delli Karpini & Keeter (1997) on identification of politicians (John G. Roberts, Dick Cheney, Gordon Brown, and Nancy Pelosi), and of the party controlling the Senate and House of Representative at the time of the study.

Illegal Immigration: Results for illegal immigration are shown in Table 1 below.

In all ANOVA analyses, I found that the affective prime kept its strength in predicting affectively coherent causal thought. In all models, preconscious affective primes had the largest significant influence. Prior attitude was significant in one model whereas political sophistication remained insignificant in all models. In one of the models, the interaction between the priming condition and political sophistication was significant.³⁴ Although there is prior attitude effect for one statement and an interaction effect for another, the findings are not consistent across the statements and not as strong as the affective priming effects. Hence, I conclude that controlling for two major factors, the strength of the affective prime is maintained.

<<< Place Table 1 Here >>>

Energy Security: For the energy security issue, I again proposed that the degree of affectively coherent thinking and reasoning is a function of affective stimuli, prior attitude, political sophistication, and the interaction between affective prime and political sophistication levels. I found that the affective prime is a strong predictor of coherent causal thoughts across all models, regardless of the prompt used to collect thoughts (See Table 2). Given an affective prime, a consequence (either negative or positive) of energy security is cited after an antecedent (either negative or positive), $F(2, 250) = 8.27$; $p < .001$. And, given an affective prime, an antecedent is cited after a consequence, $F(2,$

³⁴ To see if low sophisticates are more or less influenced than high sophisticates I conducted ANOVA analyses for both groups and found that affective prime was influential for both groups but its strength was larger for high sophisticates ($F(1, 107) = 18.84$; $p < .001$), unlike the expectation that it would be greater for low sophisticates ($F(1, 143) = 2.85$; $p < .06$).

250) = 11.99; $p < .001$. In addition to the effect of the affective primes, the prior attitude on energy security also influenced the degree of coherent thinking, leading participants to be more likely to cite an antecedent after a consequence, $F(1, 250) = 4.22$; $p < .04$, or a consequence after an antecedent, $F(1, 250) = 3.54$; $p < .06$. The influence of the prior attitude on energy security suggests that attitudes on this issue were more powerful than the illegal immigration issue in thinking coherently.³⁵ Political sophistication and the interaction between priming condition and political sophistication remained insignificant in all models.

<<< Place Table 2 Here >>>

In short, I find strong and consistent support for the effect of the affective prime in coherent thinking. In substantive terms, given an antecedent (either negative or positive) of a policy and the affective prime, one is quite likely to recall a coherent consequence (either negative or positive) of that policy. We can also extend this finding to other conditions where we see incongruence between the affective prime and the prompt. For instance, if someone received a negative antecedent but received a positive prime, then s/he is more likely to recall a *positive* consequence than a negative consequence. This finding is repeated consistently across all policy statements. That is, regardless of what the prior information valence is, being exposed to a negative or a

³⁵ This result is in line with those on Affective Contagion where I found that the attitudes on energy security issue were all in the supportive of the issue. Especially for this chapter, at the time of the data collection energy security was a prominent issue in the political arena and I believe that the influence is shown by the stronger effects of the prior attitude.

positive prime makes people to recall prime-congruent thought that is in coherence with the prompt. In other words, preconscious affective prime triggers a reasoning process that promotes thoughts in coherence with the prior information. These findings suggest that the preconscious affective prime dominates the thought process and leads to thoughts that are congruent with its valence.

B. Affect-Coherent Policy Choices:

As explained before, I provided participants with four distinct complex prompts and five response options on a single computer screen. Participants were asked to make a selection among five response options that would represent their evaluation of the policy. Among the response options there was only a single “correct” answer for the negative and the positive priming conditions that would be the affectively coherent response. That is, given a negative antecedent as prompt and a negative affective prime one is expected select the negative consequence on the policy as a response. On the other hand, given a negative antecedent as the prompt and a positive affective prime one is expected to select the positive consequence as a response. Other response options were non-causally related positions and arguments with the prompt.

For instance, there could be a positive antecedent on an energy issue policy suggesting that the technological advancement in the U.S. should lead the government to require better fuel efficiency for cars, trucks and SUVs. According to the Affective Causal Coherence hypothesis, receiving a positive affective prime would promote a positive consequence (such as, “*With fuel efficient cars, we would solve most of our oil*

dependency problem and promote a better environment.”) to be chosen as a response. On the other hand, a negative prime could in turn make it more likely to choose a negative consequence (such as, *“It is possible to have hybrid cars but they are really expensive to own one. It might be better to buy a car using regular gas.”*). Other policy related thoughts that are not causally coherent (such as *“Fuel efficiency cars are cheap on gas.”*) or simple evaluations such as agreement/disagreement with the policy or reports of feelings on the policy should be less frequent under these conditions compared to the neutral priming condition.

Therefore, if participants select policies that are coherent (in terms of valence and causality) with the prior information statement, the Affective Causal Coherence hypothesis would receive support. The affective priming procedure will demonstrate if a particular treatment condition influences affectively coherent policy selections. Since I am interested in the number of correct choices, I coded every decision made for each prompt. Due to a dichotomous dependent variable (correct choice vs. incorrect choice), I conducted logistic regression for analysis.

B-1-Illegal Immigration: In order to test the Affective Causal Coherence hypothesis, I combined the correct choices made for the prompts regarding to the antecedents of illegal immigration and the prompts regarding to the consequences of illegal immigration. So, the correct responses demonstrate the degree of coherent policy selection for a participant. The statistical model predicts the probability of making a correct choice given the treatment condition, prior attitude, political sophistication, and the interaction between the priming condition and political sophistication.

The results are consistent for either type of prompt (either an antecedent or a consequence) for the illegal immigration issue. Table 3 presents the logistic regression results.

The affective primes influenced which policy one picks given a particular prompt on the issue. In addition to the affective primes, political sophistication had significant influence on the probability of recalling a consequence, given an antecedent of a policy. For the prompts that make a policy-consequence statement, we see that the prior attitude increases the probability of selecting an antecedent. Although the coefficient sizes and standard errors in a logistic regression cannot be directly interpreted, the significance and direction of the coefficients are meaningful and in support of the hypothesis.

<<< Place Table 3 Here >>>

In order to interpret the logistic regression results, I calculated the predicted probabilities across the priming conditions, prior attitude (opponents and supporters of the issue), and sophistication (low and high sophisticates).³⁶ Figures 2 and 3 present the results for the antecedent and consequence statements used as prompts on the issue of illegal immigration.

<<< Place Figure 2 Here >>>

<<< Place Figure 3 Here >>>

³⁶ I used Monte-Carlo (MC) simulations to generate the predicted probabilities of outcomes. The main factor the MC simulations (as opposed to straight probability modeling) is that it produces standard errors around the estimates. The point estimates are asymptotically the same with the standard procedure of computing probabilities for logistic regressions, but MC is confirmed to be more reliable (King, Tomz & Wittenberg 2000). Each MC simulation included 1,000 iterations. In MC simulations I varied the experimental condition, attitude on the issue, and political sophistication.

As shown in Figure 2, there is a strong effect of the negative prime increasing the likelihood of making a coherent policy selection given an antecedent on an illegal immigration policy. Regardless of the prior attitude, negative prime promoted coherent policy selection compared to the neutral and the positive priming conditions. Similarly, low sophisticates among the opponents and the supporters of the issue are most susceptible to the negative prime than high sophisticates. The likelihood of making a coherent policy selection increases from 40% (positive prime receivers) to 63% (negative prime receivers) among the low sophisticates of the supporters on the issue. There is also a significant (23%) difference between those (low sophisticates among the opponents of the issue) who received the frowning cartoon face and smiley cartoon face. Difference between the negative and positive prime receivers among high sophisticates is still detectable but smaller. In short, the negative prime promoted and the positive prime inhibited the likelihood of making a coherent policy selection on a policy statement indicating an antecedent of illegal immigration (i.e., the law-breaking entrance of illegal immigrants to the U.S. and the employment of illegal immigrants in low-labor jobs).

In addition to the effect of the affective primes, we also see that the low sophisticates are more likely to be influenced by the treatment conditions than the high sophisticates. This indicates that the high sophisticates were less likely to recall a consequence (either negative or positive) given an antecedent of illegal immigration. I found a similar result for the Affective Contagion hypothesis in Chapter 2. Low sophisticates were more likely to be swayed by the influence of the affective prime in comparison with the high sophisticates. This finding is replicated here as well and the only theoretical explanation for this situation is provided by Lodge & Taber (2005).

Authors have argued that the priming effects are expected to be more influential on low sophisticates more so than on the high sophisticates according to the associative model of hot cognition.

Next, I calculated and plotted the predicted probabilities for the positive and negative consequence statements used as prompts on the illegal immigration issue. The expectation for these statements is that the affective prime would promote coherent policy selection. That is, I would expect to see the primed participants to choose the correct antecedent policy choice rather than the unrelated policy options (see Figure 3). I similarly find support for this expectation that the affective primes made people to think in coherent terms. Once again the negative prime was more influential in making the right policy selection (i.e., selecting an antecedent of the policy). While the positive prime inhibited the probability of selecting an antecedent policy, the control group was in between the negative and positive priming conditions. This result occurs across all prior attitude and political sophistication groups.

In addition, for the complex prompts the prior attitude had an impact on the probability of correct policy selection. There is approximately 20% difference between opponents and supporters of the issue in making the right policy selection. So, the supporters of the issue were more influenced by the primes than the opponents of the issue. Comparing the two figures, it is clear that the policy prompts generated distinct results as they refer to different political outcomes. It seems that the policy consequences are influenced by political sophistication whereas policy antecedents are influenced by prior attitudes. Nonetheless, both antecedents and consequences are influenced by the affective prime on average, more so than the other factors of political sophistication and

prior attitude.

B-2-Energy Security: I next examined the policy related prompts on energy security in the same way. Since the goal of the antecedent and consequence prompts is to delineate how one thinks and reasons, I again combined the antecedent-policy prompts in one measure and the policy-consequence prompts in another measure showing the success rate of a participant in making affectively coherent policy selections. Logistic regressions for both of these measures are shown in Table 4.

<<< Place Table 4 Here >>>

As hypothesized, the affective priming condition increases the probability of making coherent judgments on policy statements. The influence of the negative prime on the antecedent-policy prompts is stronger than the effect of the positive prime on the same prompts. This finding, however, stems from the sample, which had more supporters of the issue than opponents. In brief, the results nicely coincide with those for illegal immigration. However, for the policy-consequence prompts I did not find any effect of the treatment conditions and any of the other factors. The explanation for this situation focuses on the policy prompts used in the experiment. I think that these prompts did not work as well as others and perhaps were not considered as a policy-consequence statement *per se*.

Figure 4 shows the predicted probabilities for the logit coefficients in the model, which predicts coherent choices on antecedent-policy prompts. It is clear that there is a difference between the supporters and opponents of the issue in making the coherent policy selection. It is also evident that the low sophisticates are more influenced by the

negative prime than the positive prime. The negative prime promoted correct policy selection (a consequence of energy security) whereas the positive prime actually inhibited a coherent thinking. There is 19 point difference between the negative and positive treatment conditions for low sophisticates both among the opponents and among the supporters of the issue. This finding nicely coincides with those on illegal immigration about how low sophisticates are being more influenced from the affective primes.

<<< Place Figure 4 Here >>>

All in all, I find similar support for the effect of the affective primes in promoting coherent causal thinking for both issues with the exception of the policy-consequence prompts on the energy security issue. Given an antecedent on a policy, one is more likely to think causally, selecting policies that are consequences of that antecedent. By and large, I find a similar result for the consequences of policies.

The major distinction between the treatment conditions is that the negative affective prime (frowning cartoon face) is more influential in promoting causal thinking whereas the positive affective prime (smiley cartoon face) is less influential than the control group. This finding might suggest that negativity promotes causal thinking whereas positivity promotes a “superficial” or peripheral thinking. This could be a replication of previous literature on valence asymmetry showing the negative stimuli (anxiety or negative mood) promoting in depth thinking whilst the positive stimuli (enthusiasm or positive mood) promoting less detailed thinking (Forgas, 1995; Ito, Larson, Smith & Cacioppo, 1998; Ito & Cacioppo, 2005).

CONCLUSION

Chapter 5 extends the findings on the Affective Contagion hypothesis, examines one of the major assumptions of the motivated political reasoning theory (Lodge & Taber, 2000; Taber 2005; Taber & Lodge, 2006), and tests an original hypothesis on rationality and rationalization (the Affective Causal Coherence hypothesis). I found strong evidence that the incidental, out-of-awareness affective primes alter the course of the processing stream, generating thoughts and preferences that are causally coherent with each other.

I have previously found that the simple, subtle affective primes can alter whether one cites a negative or a positive thought on a given issue or public policy. The affective priming effects were very strong in support of the Affective Contagion hypothesis. Yet, I was only able to show that the valence of the thoughts was inhibited or promoted by the affective primes. What remained to be answered was whether the affective primes promoted a distinct thinking process. To this goal, I developed and tested the Affective Causal Coherence hypothesis in this chapter showing that the affective primes are as well capable of influencing the type or quality of thought that one recalls on a political issue or a public policy.

I found that given an antecedent as a prompt, an affective prime (negative or positive) promoted more consequences than a neutral prime. In contrast, given a consequence as a prompt, an affective prime promoted an antecedent. In other words, the affective prime that one is exposed to influences not only the valence but also the causal

association of the recalled thought to the prior one. Similarly, these results are replicated for policy selection procedures.

These results are significant in understanding and interpreting the research question addressed in this dissertation. So subtle and unnoticed to an individual, one's thoughts change in valence and causality. The individual's control over thoughts and attitudes is hence associated with and limited by the incidental influences. These incidental influences trigger a stream of processing that will direct the valence and quality of thoughts and considerations. Thus, the associative model of processing is once again confirmed that the subliminally presented affective primes trigger a processing sequence that makes affect-congruent thoughts and judgments more accessible than affect-incongruent ones.

In conclusion, there could be two important messages taken from Chapter 5: First one is that affect could promote causal thinking which suggests that reasoning, as scholars formed it, could be a function of simple influences rather than in depth thinking. The second one is about the substantial support of the results for the motivated reasoning theory that "the citizen is more a rationalizer of preferences and decisions than a rational decision maker."

Table 5.1: ANOVA results for statements used to generate Antecedent and Consequence thoughts on Illegal Immigration (N = 250)

	Neg/Pos Antecedent given as a prompt predicting the number of Neg/Pos Consequences cited	Neg/Pos Consequence given as a prompt predicting the number of Neg/Pos Antecedent cited
	F-value (p-value)	F-value (p-value)
Affective Prime	4.17 (.01)	6.11 (.002)
Prior Attitude	.25 (.77)	1.79 (.17)
Political Sophistication	.19 (.66)	.04 (.84)
Interaction (Prime x Sophistication)	.35 (.70)	1.32 (.27)
Model	1.43 (.19)	2.65 (.01)

Table 5.2: ANOVA results for statements used to generate Antecedent and Consequence thoughts on Energy Security (N = 250)

	Antecedent given as a prompt predicting the number of Consequences cited	Consequence given as a prompt predicting the number of Antecedent
	F-value (p-value)	F-value (p-value)
Affective Prime	8.27 (.0003)	11.99 (.0000)
Prior Attitude	4.22 (.04)	3.54 (.06)
Political Sophistication	2.07 (.15)	.04 (.83)
Interaction (Prime x Sophistication)	.24 (.78)	.13 (.87)
Model	4.06 (.0007)	4.61 (.0002)

Table 5.3 - Logistic Regression Results for Coherent Policy Selection on Illegal Immigration

	Antecedent	Consequence
Affective Prime	-96** (.42)	-.80* (.43)
Prior Attitude	.27 (.28)	.82*** (.28)
Political Sophis.	-1.02** (.43)	.37 (.42)
Interaction (Prime x Political Sophistication)	.17 (.69)	.18 (.66)
Constant	-.27 (.33)	-.67** (.37)
-2 log likelihood	314.40	321.57
N	250	250
χ^2	21.27***	15.73***

Note: Standard errors are in parentheses; all p-values are estimated using two-tailed tests.

*p ≤ .10, ** p ≤ .05, *** p ≤ .01 level.

Table 5.4 - Logistic Regression Results for Coherent Policy Selection on Energy Security

	Antecedent	Consequence
Affective Prime	-87** (.42)	-.18 (.43)
Prior Attitude	.51 (.30)	-.39 (.29)
Political Sophis.	-.26 (.41)	.20 (.42)
Interaction (Prime x Political Sophistication)	.30 (.65)	.29 (.66)
Constant	-.21 (.33)	-.43 (.33)
-2 log likelihood	331.83	318.61
N	250	250
χ^2	8.32**	3.21

Note: Standard errors are in parentheses; all p-values are estimated using two-tailed tests.

*p ≤ .10, ** p ≤ .05, *** p ≤ .01 level.

Figure 5.1: Affective Priming Procedure

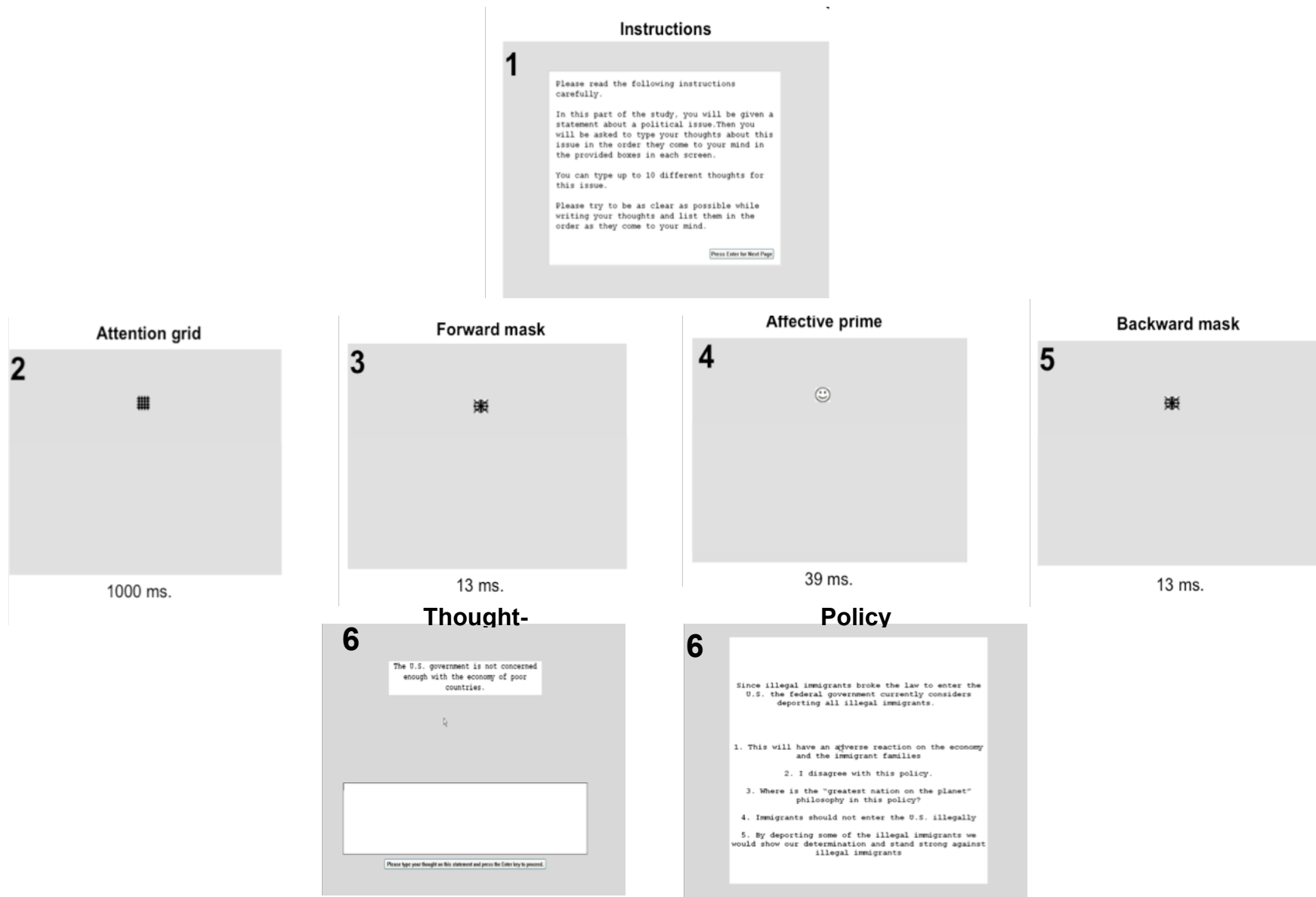


Figure 5.2: Predicted Probabilities of Making Coherent Policy Choices given an ANTECEDENT-POLICY Prompt on ILLEGAL IMMIGRATION

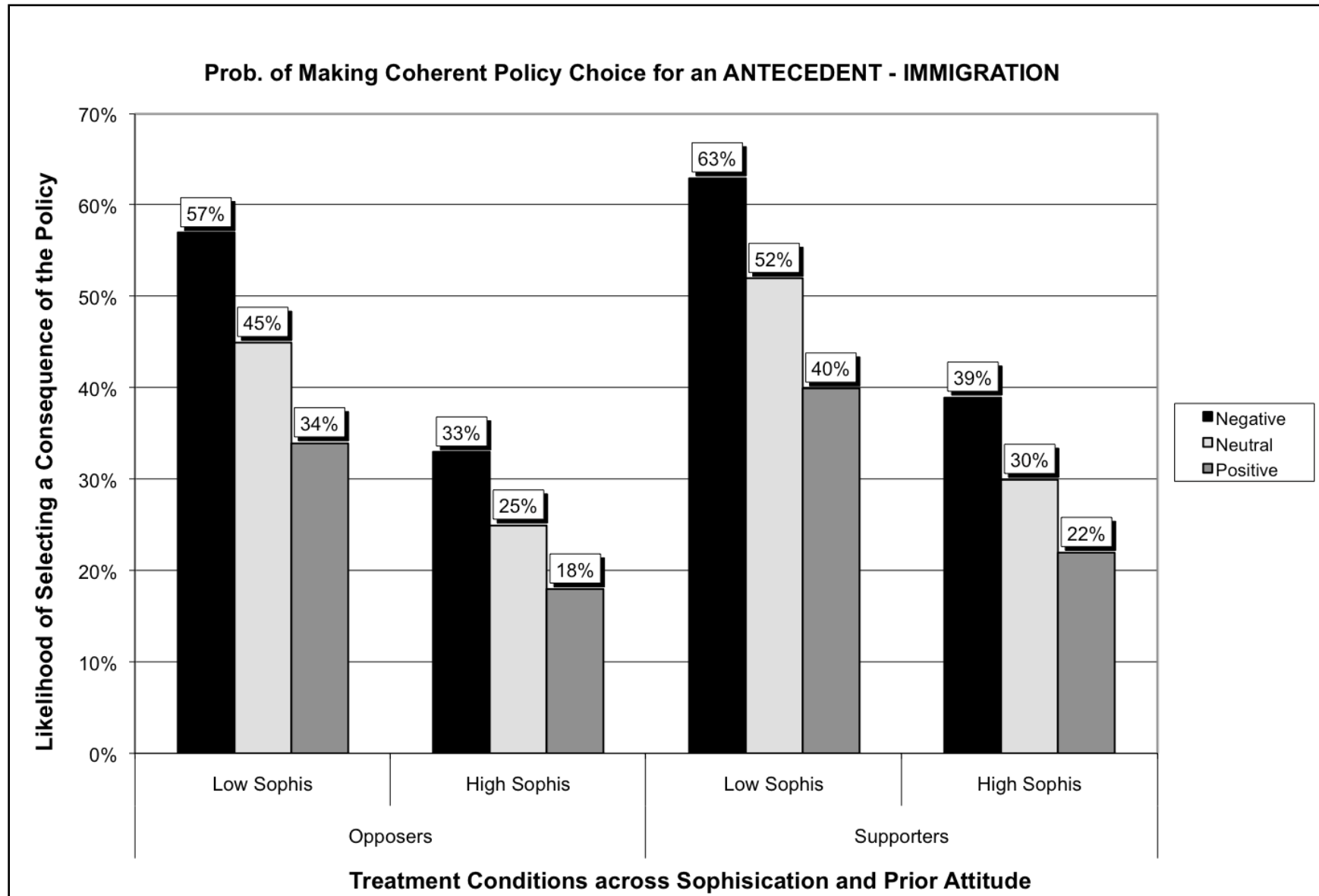


Figure 5.3: Predicted Probabilities of Making Coherent Policy Choices given a POLICY-CONSEQUENCE prompt on ILLEGAL IMMIGRATION

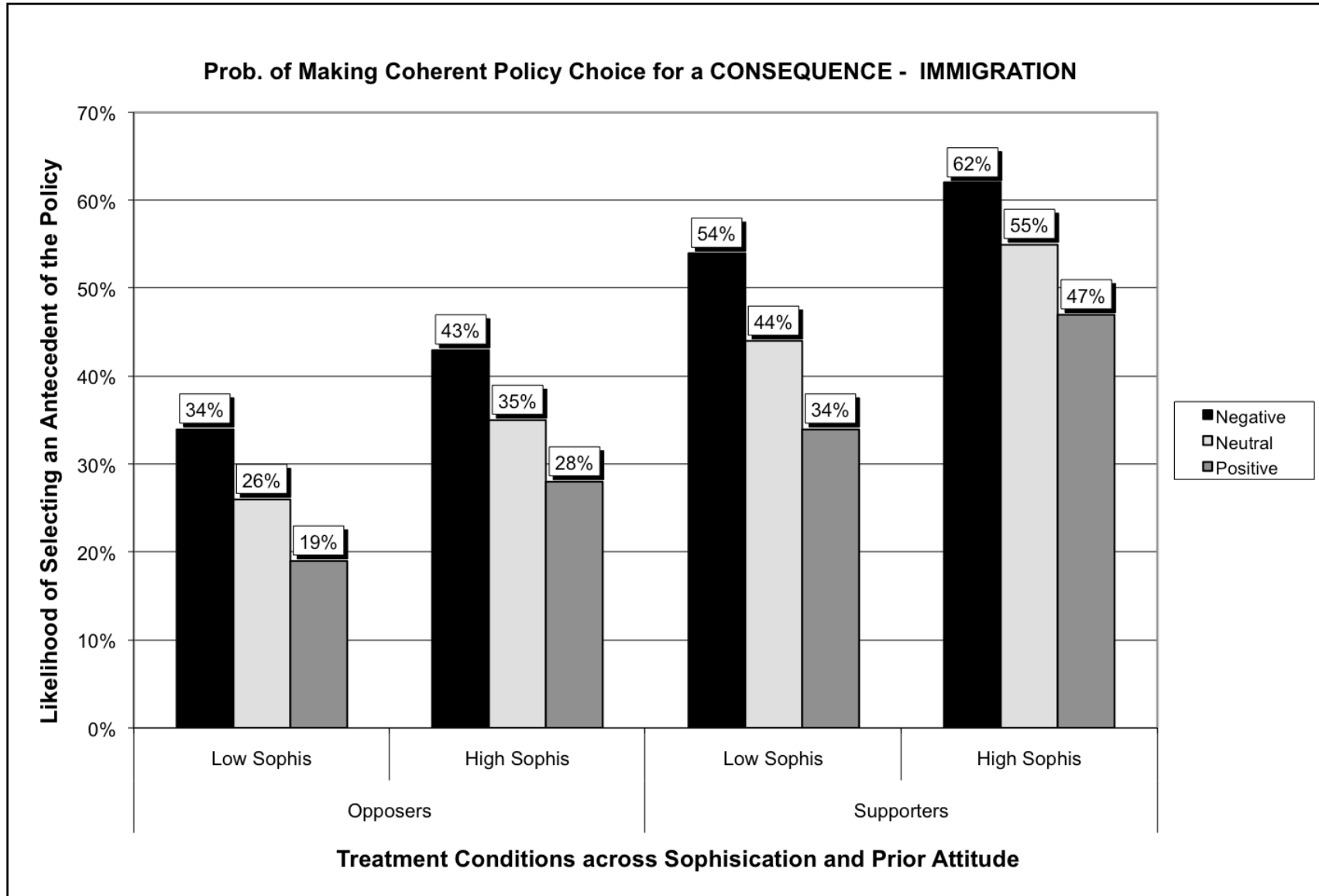
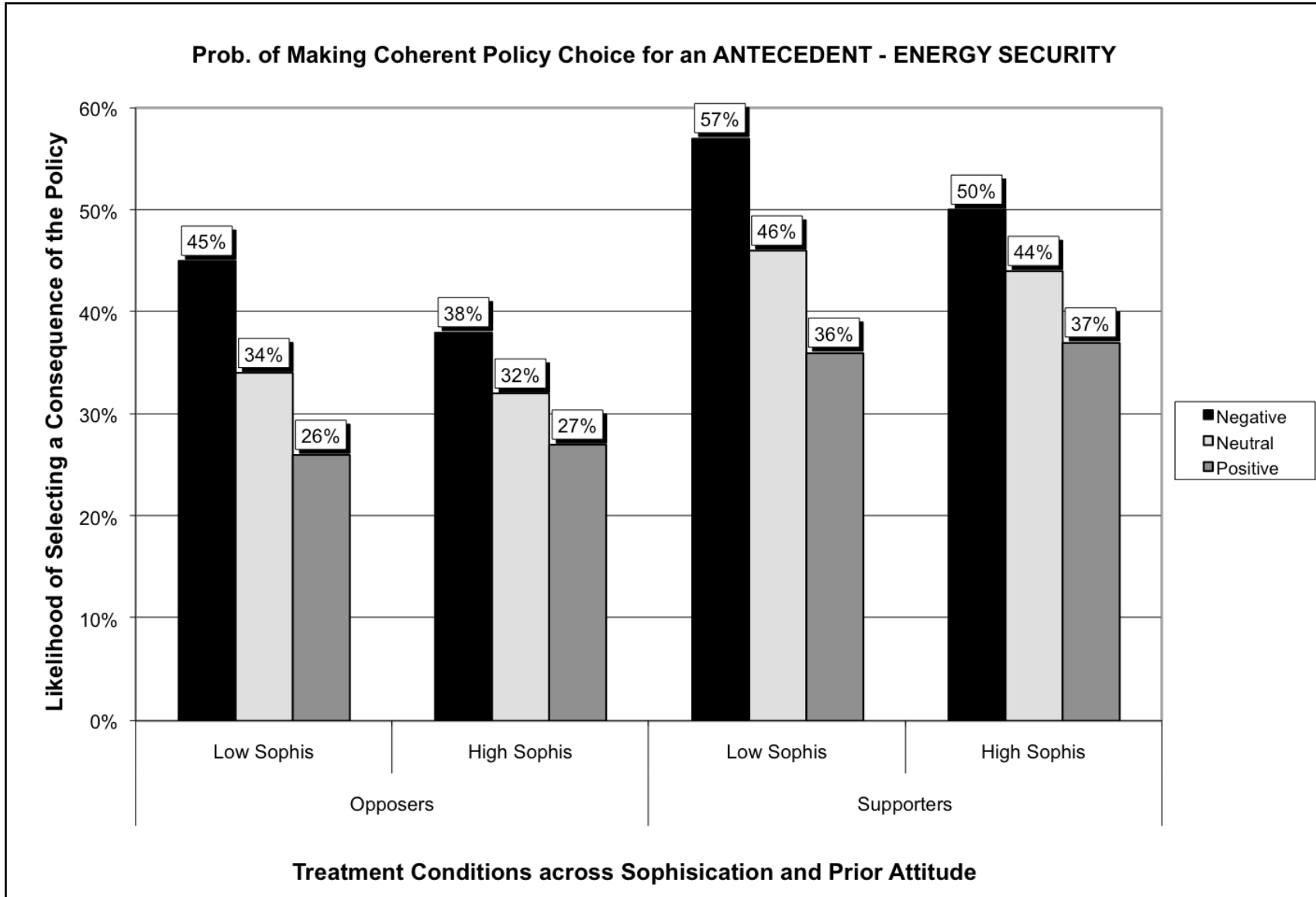


Figure 5.4: Predicted Probabilities of Making Coherent Policy Choices given an ANTECEDENT-POLICY Prompt on ENERGY SECURITY



CHAPTER 6: AFFECTIVE THINKING AND CORRECT VOTING

Much has been shown in the previous chapters about the influence of unnoticed affective primes on political thinking, reasoning, and behavior. Findings across several studies consistently show how preconscious affect intervenes and alters thoughts, promotes an affect-elicited reasoning, and changes political attitudes and policy evaluations. With this in mind, I turn to the concept of voting behavior, correct voting, addressed in Chapter 6.

This chapter examines the consequences of affect-triggered thoughts on voting behavior. Specifically, it addresses the comparative advantage (or disadvantage) of affect-colored thoughts in voting behavior. In this respect, this chapter places the affective voting effects in context, in comparison with models of decision making that postulate that thinking too much and extensive deliberation weaken decision quality (Wilson, Dunn, Bybee, Hyman, & Rotondo 1984; Wilson & Schooler 1991; Wilson & Brekke 1994; Wilson 2002). Recent empirical research on unconscious thinking sheds some light as to how deliberative thinking can result in worse choices and decrease post-choice satisfaction (Dijksterhuis 2004; Dijksterhuis, Bos, Nordgren, & Baaren 2006; Dijksterhuis & Olden 2006). However, neither of these models considers the influence of

affect in voting. Building on the insights from the literature on correct voting, in this chapter I introduce the impact of affect on correct voting in order to present a more fine-tuned analysis of the determinants of voting correctly. The question here is whether preconscious affect makes the vote choice better or worse. To this question, I propose the following hypothesis:

Affective Voting Hypothesis: Affectively-biased thoughts will enter into the construction of decisions and influence the correctness of vote choice.

Testing this hypothesis necessarily means testing the condition in which there is no involvement of affect-triggered thoughts. That is, what would be the vote choice without thinking or deliberation? Does conscious thinking (whether directed by affective primes or not) make the vote choice better or worse? These questions should also be addressed in order to understand the competitive advantage of having deliberative methods in explaining correct or incorrect voting decisions. The following sections explain the possible comparative models to affective deliberation.

I. CORRECT VOTING AND EFFECTS OF DELIBERATION

Democracy relies on citizens' attentiveness to politics, their ability to make sense of the political events and developments, and the capacity to place preferred candidates across political issues. Citizens should be able to generate connections between their preferences and their representatives, a process that should ultimately make them vote for the candidate who best fits their preferences. Correct vote choice is simply the choice that best matches the voter's preferences and those of the candidate. So, the closer the

preferences of a voter to the issue position of the candidate, the higher the probability of voting should be for that candidate. Many of these assumptions refer to the underpinnings of the spatial models in political science (Downs, 1957; Enelow & Hinich, 1984; as well as to some recent work on correct voting, Lau & Redlawsk, 2006, 2008).

In search of the candidate that would represent one's individual interests best, the normative model of voting assumes that citizens ought to seek all available information and weigh pros and cons of each factor. Accordingly, after a comparison of antecedents and consequences of candidate qualifications and preferences (i.e., through rational cognitive calculations) the correct vote choice can be constructed.

Yet, given the limits of accessibility to all relevant information, coupled with the widely documented individual cognitive limitations (Simon 1957; Anderson 1983), citizens necessarily employ coping mechanisms that deviate from normative assumptions. One of these mechanisms is the use of heuristics and cognitive shortcuts to save time and energy. As shown in earlier chapters, subtle affective cues and stimuli associated with the thoughts and considerations used in rational calculations play a critical role in political thinking. These affective influences trigger affect-laden downstream processing and alter political reasoning and evaluations. Even so, both of these models – while one is cognitive and rational and the other controls for affective effects – rely on conscious thinking in reaching a decision. By assumption, voters always engage in a reasoning procedure where antecedents and consequences are considered, thought, and weighed thoroughly to the possible extent. To account for the effects of thinking and reasoning in vote choice, the alternative models should be separated from these processes.

Fast-and-frugal methods that are on the spot, immediate snap judgments that can be employed given initial information about the political candidate. The literature on this mechanism examines the drawbacks of extensive deliberation, particularly the effects of thinking-too-much on the quality of decisions (Wilson & Schooler 1991; Wilson & Brekke 1994) and attitude-behavior consistency (Wilson, et al. 1984; Wilson & Dunn 1985; Wilson, Dunn, Kraft, & Lisle 1989). Wilson and his colleagues have repeatedly shown that when the degree of thinking and reasoning involved in a decision process increase, the quality of judgments becomes worse. Although the variable of interest has been evaluations of non-political objects, the results have been consistent. So, the alternative method to thinking-too-much should not involve thinking but rather an immediate decision call right after introductory information about the object. An immediate judgment would have little or no thought engagement which would control for any negative effects.

Another alternative could be an adaptive mechanism such as *unconscious deliberation* without attention (while one is distracted from thinking on the subject). Unconscious thinking refers to the condition in which individuals are deliberately distracted from focusing on the subject at hand. Unconscious thought studies are designed in such a way as to prevent conscious thinking and reasoning. At the center of the “thinking unconsciously” literature rests the lessons drawn from the literature mentioned above on the drawbacks of thinking consciously: namely the constant influence of affective cues, recall of wrong heuristics, or application of inappropriate strategies. Dijksterhuis and colleagues – motivated by the work of Wilson on consciousness as a poor decision procedure – conducted several experiments

demonstrating the benefits of unconscious thinking (Dijksterhuis 2004, 2008; Dijksterhuis, et al. 2006; Dijksterhuis & Olden 2006). Dijksterhuis has found evidence that people are able to make more satisfying choices when they let their unexplored unconsciousness take care of the thinking. Especially on a difficult task, such as vote choice (a task not elaborated on by Dijksterhuis), unconscious thinking could be essential. Therefore I integrate it into the following models of vote choice.

II. MODELS OF CORRECT VOTING

Motivated by the findings in the previous chapters and the research on the possible downsides of conscious deliberative models, I present four models representing different decision streams that citizens could take to reach their voting decisions. The goal of the voting decisions should be to maximize the utility that one can get by matching with the best available candidate.

The first model replicates a situation in which normative expectations are held; this baseline model promotes rational thinking. Individuals are motivated to think about the pros and cons of candidates and their positions across several political issues. Rational choice strategies demand that information search should be deep, accounting for many alternatives. Hence, conscious thinking with attention and motivation are integral parts of this model. By this logic, Model 1 should generate the best decision making procedure and predict correct voting behavior. Model 1 is similarly in line with the major assumptions of spatial model of voting (Downs 1957; Enelow & Hinich 1987).³⁷

³⁷ There is a vast amount of published work in political science on citizen's incompetence in knowing their position across issues and the ideal points of their preferred candidates on the same issues (e.g., Alvarez

Model 2 takes affective stimuli into account, triggering a distinct route of rationalization. As presented in previous chapters, affective involvement in cognition can proceed without conscious awareness and eventually lead to vote choices different from the baseline model. Because affect motivates thoughts and judgments that deviate from rational calculations, it is possible that it could make the vote decision worse. In other words, preconscious affect promotes bias and disrupts cognitive thinking and deliberation. Although the question is open as to whether affect leads to correct voting or not, vote choice is a function of conscious thinking and deliberation in the second model. This model will also represent the Affective Voting hypothesis as stated above.

The alternative models of correct voting incorporate the downside of conscious thinking processes. Model 3 takes a step back from the previous two models and posits that given initial information on candidates and their preferences, a correct choice can be made *without* any introspection and extensive thinking. The third model argues that weighing pros and cons actually hurts decision making by confusing the voter with excessive information recall and various comparison of alternatives. To this end, Model 3 argues that the best decision is made right after receiving initial information about the subject (in this case, political candidate), almost similar to the fast-and-frugal decision-making through heuristics (Gigerenzer & Todd 1999).

Another shortcoming of conscious thinking is that it is effortful and requires attention. Yet, as discussed above, recent research in social psychology postulates a theory of unconscious thinking against these assumptions. By the logic of thinking unconsciously, in Model 4, voters are distracted from thinking deliberately on the

1998). However, the goal for Model 1 is not to control for all these problems but rather to represent the normative model of voting as it ought to occur.

candidates and on the related information. In other words, given initial information about candidates and their standing on some issues, voters should reach better voting decisions without focusing on what the pros and cons of the candidates are and their issue positions. Allowing the unconscious to continue with thinking, without any involvement of conscious effort, might help the individual make the correct vote choice.

III. METHOD AND EXPERIMENTAL DESIGN

I conducted a study in the Fall 2008 semester at the Stony Brook University's Laboratory for Experimental Research in Political Behavior. All participants were undergraduate students in the Political Science courses. The sample included 279 participants (128 male, 125 white, 150 Democrat, 46 Republican). On arriving at the lab and following consent procedures, participants were taken to separate experimental rooms and seated in front of personal computers. The experimental flow was as follows:

1. *Prior Attitudes:* After introduction to the study, the first section collected data on prior attitude of the participants on four issues (illegal immigration, energy security, economic crisis, and the Iraq war) that the hypothetical presidential candidates will state their positions on in a later section of the experiment.³⁸ Additionally, participants reported their party affiliations and political ideology in this section (*5-10 minutes*).

2. *Issue Positions and Candidate Evaluations:* The second section requested participants to place themselves, first, and the two presidential candidates (Barack Obama and John McCain) later on several issues other than the targeted ones. These issues were affirmative action, gun control, defense spending, spending on social services,

³⁸ Unlike previous studies where prior attitude is measured through attitude position and strength items, in this study I used a single question that presents the respondent's position on an issue.

government's role in providing jobs, and interventionism in foreign relations. Also, participants reported their evaluation of the presidential candidates' personality on morality, leadership, knowledgeableness, care for people, intelligence, dishonesty, and decidedness. Item batteries on candidate placements and personality evaluations are taken from the American National Election Studies (ANES) annual questionnaires (5-10 minutes).

3. Information on Hypothetical Candidates: This section introduced every participant in the study to the two hypothetical presidential candidates and provided them with information about their positions on four targeted issues.³⁹ Each participant was given 60 seconds per policy domain for a single candidate (5-10 minutes).

4. Treatment Conditions: The experiment included five treatment conditions and respondents were randomly assigned to one of these conditions. Three of the five treatment conditions included a section that put the respondent into the conscious thinking and reasoning process. In the conscious thinking procedure, participants reported their thoughts and considerations on issues that hypothetical nominees address in the simulation of a presidential election. Each participant was provided with the policy statement that the candidate proposed. So, four policy statements (one statement for each issue for a candidate) were randomly provided on the computer screen with a response box below.⁴⁰ Two of the three conditions involving thinking procedures were the

³⁹ In order to disassociate the hypothetical candidates from the official ones I provided policy statements that did not perfectly match the exact positions that each official candidate actually took on that particular issue during the campaign. The policy statements were simple statements on the issues without great detail. Refer to Appendix C for the list of policy statements used in this section.

⁴⁰ Policy propositions were not mixed across the candidates. Propositions made by Candidate 1 were randomly presented first and Candidate 2 second. Refer to Appendix D for the list of policy statements employed to initiate affect-triggered conscious thinking.

affective priming conditions (negative vs. positive) whereas the last condition did not involve any priming at all.⁴¹

As such, two-thirds of those who were assigned to the conscious thinking procedure were subliminally primed either with a smiley (positive) or with a frowning (negative) cartoon face (Model 2). The remaining one-third in the conscious thinking condition did not receive any subliminal primes (control group, Model 1). As in all previous studies, the affective primes were presented for 39 ms. on the computer screen with forward and backward masks of asterisks. The policy proposition of the hypothetical presidential candidate next appeared on the exact same position where the affective primes were flashed moments before. Participants were able to list up to seven thoughts or considerations on these statements and they were exposed to the affective prime as long as they listed thoughts.⁴² Participants were able to exit the thought-listing procedure by typing “No” as an answer. After finishing the directed conscious thinking task, all participants in these three conditions were asked to make a vote choice. (*20-30 minutes*).

The remaining two treatment conditions focused on snap judgments and unconscious thinking procedures. In the snap judgments condition (Model 3), immediately after receiving information on the hypothetical candidates, participants were asked to make a vote choice. On the other hand, those assigned to the unconscious thinking procedure (Model 4) were asked to reply to political sophistication questions and

⁴¹ Unlike previous studies presented in the earlier chapters, the control group in this experiment did not receive the cartoon face without a mouth impression. The main reason for this change is to match the rational vote choice model (Model 1, spatial model) as defined in this chapter.

⁴² The major reason of priming participants as long as they continued citing thoughts is due to the consistent findings reported in Chapter 2. To depict the real world conditions in the laboratory, those who would receive several affective stimuli in real world would receive more primes in the experiment than those who is not exposed to affective stimuli in the real world. Those who have more to say, or in other words, more to collect information through different media (TV, print, social network members, etc.) should be exposed to affective stimuli more so than others.

provide demographic information. This section was used as a distraction method (took approximately 10 minutes to complete) from the previous section in which candidate-based policy information was provided. Upon completing the distraction section, participants were asked to make a vote choice between the two hypothetical candidates.

5. *Post-Vote Choice Measures:* After every participant made a vote choice, they were asked to report their evaluation of where candidates stand on the targeted political issues. Also, participants answered a question on their vote choice satisfaction. This item will show any differences across treatment conditions on post-choice satisfaction. Additionally, participants (other than those in the unconscious thinking procedure) responded to political sophistication and demographic questions in this section. Last, every participant completed a manipulation check about the affective primes (if they were in one of the priming conditions), the hypothetical candidates, and the study aims (*10-15 minutes*).

IV. MEASURES

Correct Voting Measure

In order to construct the correct voting measure, I employed the scheme proposed by the spatial models of voting. By using the ANES survey items, I generated a correct voting measure on the basis of measures of voters' preferences on issues and measures of candidates' stand on those same issues. In addition to this basic construction of correct voting I included personality traits of the candidate perceived by the voter. All of these factors that could map out the match between the voter and the candidate are eventually combined into single measure.

Issue stands are simply the participant's position on every possible issue (all of those listed before and the four particular ones presented for the hypothetical candidates) where participants are asked both for their own position on the issue and the perceived stand of the candidate on the same issues. *Candidate personality* measures the degree to which each trait represents the candidate. All of personality trait items are rescaled to -1 (does not describe the candidate at all) to +1 (describes the candidate very well).

All of these items are then summed and the final measure presented a voter's standardized distance from both candidates. When the voter's combined summary judgment is greater for one candidate than the other, the person is supposed to vote for that candidate: such a vote is defined as correct. In other words, the correct candidate is the one who has the higher value of summary judgments (the one that would provide maximum utility) for a person. If the person votes for the other candidate then he would have cast an incorrect vote. In this study approximately twenty percent of the sample voted incorrectly.⁴³

Independent Variables

The list of measures that would predict correct vote choice evidently starts with the treatment conditions of the experiment. I created a dummy variable for each condition where the baseline is the conscious thinking treatment without involvement of the affective primes, represented by Model 1. Model 2 represents negative and positive priming conditions. Model 3 represents immediate vote choice (i.e., snap judgment) condition. And finally, Model 4 represents the unconscious thinking condition.

⁴³ This figure is quite close to what Lau & Redlwask (2006) have previously found on the amount of incorrect voters in a mock election.

The three additional predictors of correct voting are: **i)** Presidential vote choice for the 2008 election. The goal of this variable is to reconfirm the reliability of the correct voting measure. Simply put, if someone has voted for one hypothetical candidate in the study, s/he ought to have voted for the actual candidate promoting similar issue positions in the 2008 election; **ii)** Post vote decision satisfaction, on a 7-point scale ranging from 1 (Not at all satisfied) to 7 (Extremely satisfied), controls for the previous research finding that individuals who do not deliberately think about the reasons of their choices and do not consider the many aspects of issues are happier with their decisions (Wilson et al. 1995; Dijksterhuis & Olden 2005). In this study, vote satisfaction is expected to be higher for those who make the correct choice; and **iii)** Interest in following politics, on a 5-point scale ranging from 1 (Never) to 5 (All the time), which would show whether those who follow politics frequently are more likely to vote correctly.

Additionally, as in the previous studies, I include the political sophistication item battery as a predictor.⁴⁴ Also as in the earlier chapters, I found substantial variation across the political sophistication groups in the quality of causal thinking (Chapter 4) and affective coherent thinking (Chapter 5). By the same logic, political sophisticates are more informed about politics and should know better where each candidate stands on the issues, increasing the probability of correctly cast votes.

Last, I include measures for the thoughts listed during the conscious thinking tasks on three of the five experimental conditions.⁴⁵ I expect that the pros and cons of

⁴⁴ Political sophistication items used in the study are taken from Delli Karpini & Keeter (1997) on identification of important political figures (John G. Roberts, Dick Cheney, Gordon Brown, and Nancy Pelosi), of the party controlling the Senate and House of Representative at the time of the study, and of the presidential duty to appoint supreme court justices.

⁴⁵ Since two of the treatment groups did not involve in conscious thinking task I will use the thoughts only to show their effects in respective conditions.

policy propositions recalled in this procedure should have an effect on voting decisions. Since the participants listed their thoughts on the policies (energy security, illegal immigration, economic crisis, and Iraq war) that the hypothetical candidates provided their positions on, I kept the thoughts separate on two factors: candidates and valence. I thus combined all negative thoughts across four issues as a single measure and all positive thoughts across four issues as another measure for both candidates separately. I expect that negative thoughts would decrease the probability of correct vote for a candidate whereas positive thoughts would do the opposite.

Finally, as there is enough variance on race (non-white) and gender I included a dummy for each of these demographic factors.

V. RESULTS

In this section, I first discuss the effects of affect-triggered thoughts cited on the hypothetical candidate positions (the Affective Voting hypothesis). As hypothesized, the goal is to test if affect-triggered thoughts promote correct vote choice. Since only three of the five conditions of the experiment included the conscious thinking procedure, I conducted analyses for the respective groups. Logistic regression is appropriate because of the dichotomous nature of the correct voting measure.⁴⁶

The regression model posits that correct voting is a function of the thoughts generated on the policies, the affective priming condition, political sophistication, the presidential vote choice in the 2008 election, interest in following politics, post vote satisfaction, and demographics (gender and race).

⁴⁶ A score of zero in the correct voting measure showed votes for John McCain and a score of one showed votes for Barack Obama.

Table 1 presents the results. As expected, affect-elicited thoughts have a substantial impact on correct vote choice. I found that negative thoughts listed across four policies promoted by the hypothetical Democratic candidate actually decreased the probability of voting correctly for Barack Obama even though one's preferences match with the candidate. Negative thoughts on the policies proposed by the hypothetical Republican candidate similarly decreased the chances of voting for John McCain. In contrast, positive thoughts on the policies actually increased the probability of voting for the respective candidate.⁴⁷ Additionally, compared to the no-prime condition, the affective priming conditions increased the probability of voting for Barack Obama. In short, I find support for the Affective Voting hypothesis in that the affect-triggered thoughts listed in the conscious thinking procedure change how well one votes correctly in line with his/her preferences.⁴⁸

<<<Place Table 1 Here>>>

Having shown that affect-colored thoughts altered correct voting decisions, I now compare this finding across all five the treatment conditions. I test the major experimental hypothesis with a logistic regression model on the dichotomous dependent variable of correct voting. This statistical model takes the rational decision making paradigm (spatial

⁴⁷ Coefficients for negative and positive thoughts for the Republican candidate are opposite of the negative and positive thoughts for the Democratic candidate. The reason for this sign difference is due to the coding of correct voting where 0 represents the Republican nominee and 1 represents the Democratic nominee. So, as positive thoughts listed on the policy propositions made by the republication candidate decrease support for the Democratic nominee, it increases the probability of correctly voting for the Republican candidate.

⁴⁸ In order to keep the discussion of findings cogent I opt out of showing the initial influence of the affective primes on the number of negative and positive thoughts listed across the policies. To this goal, I conducted a poisson regression (specifically designed for count variable outcomes) on negative and positive thoughts for the candidates separately and find statistically significant support for all ($p < .03$) except one model. I found weak influence ($p > .1$) of the affective primes on the negative thoughts cited for the Democratic presidential nominee propositions.

model of voting) as the baseline and includes dummy variables for each of the remaining conditions. Additionally, post vote choice satisfaction, presidential vote choice in 2008, interest in following politics, gender and race variables are included in the model.

Initial results across treatment conditions suggest an insignificant effect on correct voting. I found no differences across the models of correct voting, which suggests that they all have an equal impact on correct voting behavior. However, there could be factors (e.g., political sophistication) causing across group variation.

In previous chapters, I repeatedly found that political sophisticates are more likely to think in causally coherent terms, less likely to change their attitude through the thoughts that they recall, and less susceptible to affective primes and hence less likely to be moved from their prior positions on issues and policy evaluations. So, perhaps their procedure of reaching a correct vote is distinct from low sophisticates, as well.

Although, the current literature on unconscious thinking does not specifically control for sophistication effects, I believe that sophistication is an important part of the equation in a political context.⁴⁹ In line with this reasoning, I re-conducted the correct voting model across political sophistication levels controlling for the experimental condition, vote satisfaction, presidential vote choice, interest in politics, gender, and race.⁵⁰

The major finding of this analysis is that there is a substantial difference across political sophistication groups (see Table 2). For high sophisticates, we can see treatment effects, while there is no effect for the low sophisticates. High sophisticates are more able

⁴⁹ I have conducted an extensive literature search on unconscious thinking and did not find any study controlling for sophistication as a dimension to delineate the experimental effects across immediate, conscious, and unconscious thinking conditions.

⁵⁰ Political sophistication groups are generated through a median split of the constructed variable.

to vote correctly (compared to the rational choice model) if they engage in unconscious thinking, if they make immediate vote choices without engaging in thinking procedures, and if they are exposed to positive affective stimuli when they deliberate about their vote choice. In other words, compared to Model 1, including a thinking procedure of antecedents and consequences of candidate specific policies, one is better able to make a correct vote choice if s/he allows her unconsciousness to take part in the process (Model 4), or if s/he makes an immediate vote choice upon receiving initial information about the candidates (Model 3), or if s/he receives positive affect while deliberating about the candidates (Model 2). Although the last two models are marginally significant, it is clear that unconscious thinking is a better model compared to all other decision methods for political sophisticates.⁵¹ Yet, there is no significant difference across decision models for low sophisticates.

<<<Place Table 2 Here>>>

One of the reasons for the lack of variation across the models for low sophisticates could be experience with the candidate-based information. It is possible that low sophisticates have not developed enough skills to maintain political information quickly which will in turn help them to make immediate or unconscious vote choices. However, this situation does not explain why Model 2 is still insignificant. Building on

⁵¹ Here I shall note that by experimental design those in the unconscious thinking condition were distracted by requested to respond to political sophistication and demographic questions. One might hence raise the question whether significant findings on Model 4 were a result of answering sophistication questions earlier in the experiment. To control for this possibility, I conducted a chi-square test of political sophistication groups across the treatment conditions and found no support for this possibility ($\chi^2(4)=1.65$; $p>.1$).

the findings of earlier chapters, affective voting procedure could have influenced correct voting for the low sophisticates, but there is not any evidence for this conjecture.

In addition to these findings, one's presidential vote choice influences whether s/he can cast the vote for the best-fitted candidate to his/her preferences. This finding is consistent for both sophistication groups. This finding confirms the reliability of the correct voting measure. On the other hand, although expected, there is no effect of vote satisfaction and interest in following politics on correct voting.

CONCLUSION

This chapter provides two important findings for the general contribution of this dissertation. The first finding is that the thoughts cited on hypothetical candidate positions are still altered by the valence of the affective primes. So, in addition to the findings in earlier chapters on political issues and public policies, I again find support for a consistent effect of the subliminal affective primes in changing how one votes. This finding, in and of itself, is a substantial addition to the previous results and extends the effects of the affective primes and thus confirms the Affective Voting hypothesis.

Secondly, these findings also place deliberation through affective primes in a vote choice context. The findings support the view that deliberate thinking on political candidates, issues and policies may not always yield better voting decisions. In fact, what we recall to mind during the elaboration process is biased by affective stimuli and may be confusing to voters. The more we think and reason about subjects, the better we feel that we are generating reasoning chains: but, in fact, most of the time we are putting our own biases into action (Nisbett & Wilson 1977; Wilson & Schooler 1991). Given our

cognitive limits, with an unnecessary volume of information about the candidates and our intention to reason deeply we are in fact jeopardizing the quality of our valuable political decisions. Although theoretically sound, this effect is confirmed for high sophisticates suggesting the possibility of different factors being at play for low sophisticates. In sum, Chapter 6 finds evidence for the Affective Voting hypothesis and the comparative advantage of unconscious voting for political experts.

Table 6.1: Logistic Regression Results for Correct Voting across the Conditions involving Conscious Thinking

	Coefficient (Standard Error)
Negative Thoughts on Policies proposed by the Hypothetical Republican Candidate	.42** (.21)
Positive Thoughts on Policies proposed by the Hypothetical Republican Candidate	-.54*** (.21)
Negative Thoughts on Policies proposed by the Hypothetical Democratic Candidate	-.48** (.21)
Positive Thoughts on Policies proposed by the Hypothetical Democratic Candidate	.48*** (.16)
Affective Primes	1.46* (.85)
Political Sophistication	-.43 (.46)
Presidential Vote Choice in 2008	.75 (.90)
Post Vote Choice Satisfaction	.25 (.27)
Follow Politics	-.35 (.53)
Female	.65 (.85)
Nonwhite	-.07 (.84)
Constant	2.45 (2.73)
-2 log likelihood	47.06
N	157
χ^2	75.90***
Pseudo R-square	61.43

Note: Coefficients are obtained from logistic regression of correct voting on the independent variables. Robust standard errors are presented. Asterisks denote * = p<.09; ** = p<.05; *** = p<.01.

Table 6.2: Logistic Regression Results for Correct Voting across Political Sophistication Groups

	Low Political Sophisticates	High Political Sophisticates
Negative Affective Priming Condition (Model 2)	-0.01 (1.34)	1.10 (1.46)
Positive Affective Priming Condition (Model 2)	-.70 (1.03)	2.67* (1.50)
Immediate Judgment Condition (Model 3)	-.21 (1.16)	2.49* (1.41)
Unconscious Thinking Condition (Model 4)	-.33 (1.05)	3.98*** (1.53)
Post Vote Choice Satisfaction	-.41 (.27)	.14 (.28)
Presidential Vote Choice in 2008	1.53** (.78)	5.71*** (1.27)
Follow Politics	-.29 (.40)	-.17 (.40)
Female	.45 (.70)	.44 (.80)
Nonwhite	.74 (.79)	.39 (.85)
Constant	3.94 (2.61)	-.89*** (.35)
-2 log likelihood	62.08	47.40
N	157	122
χ^2	15.85*	67.76***
Pseudo R-square	19.89	58.85

Note: Coefficients are obtained from logistic regression of correct voting on the independent variables. Robust standard errors are presented. Asterisks denote * = p<.07; ** = p<.05; *** = p<.01.

CONCLUSION

This dissertation examines a multi-faceted research question stemming from the affect-driven dual process models. The Theory of Affective Political Thinking places preconscious affect at the core of its design and takes its mechanism from the associative model of processing (i.e., spreading activation) as posited by Hot Cognition and Primacy of Affect postulates. Motivated from the many functions that preconscious affect may cause in citizen thinking, reasoning, and action, I stated five hypotheses in Chapter 1. This chapter hence lays out the theoretical assumptions of the theory of Affective Political Thinking; beginning with the Affective Contagion (Chapter 2) and the Attitudinal Effects of Affective Contagion (Chapter 3), continuing with the Causal Coherence (Chapter 4) and the Affective Causal Coherence (Chapter 5), and concluding with the Affective Voting (Chapter 6) hypotheses.

Each one of these chapters constitutes at least one particular experimental study designed to empirically test the respective research hypothesis. Results have been consistent across the chapters that the preconsciously activated affect triggers the step-sequential rationalization procedure and then alters subsequent judgment, be it a political attitude, policy evaluation, or presidential vote. In concluding the dissertation I will first

discuss the major findings of each chapter and then provide a general perspective on how these findings contribute to the literature and Democratic Theory.

The Theory of Affective Political Thinking begins with a major assumption on the relevance of preconscious affect for political thinking. To test the conjecture on affective influences in the real world I designed experiments which by and large predicted a common consistent outcome on Affective Contagion. These findings can be summarized under two headings: First, preconsciously activated affective primes promote affect-laden thinking and inhibit affect-incongruent thinking. Given a positive prime, people were more likely to retrieve positive thoughts on political issues and policies. Similarly, a negative affective prime promoted retrieval of negative thoughts instead of positive ones. Results across distinct political issues and policy recommendations confirm that subliminally presented negative and positive affect trigger an affect-directed thinking procedure. This finding is the principal motivating reason for all aspects of the Theory of Affective Political Thinking. Stemming from the associative model of processing activation of nodes related to the affective prime, one is more inclined to recall thoughts that are affective linked with the political issue at hand. So, confirming the mechanism of Hot Cognition postulate an affective prime triggered a processing that spread activation of negativity or positivity among the thoughts related to the political issue. Then, the participant unaware of the existing effect of the affective prime retrieved the thoughts that were in fact in line with the valence of affect rather than another stimuli.

Second, affective primes promote affect-laden thinking even when controlling for the effects of one's prior attitude on respective issues and policies. Affective contagion is

stronger than the influence of the priors in retrieval of thoughts and considerations. Affective contagion was particularly strong when the affective prime was in congruence with the prior attitude. That is, congruence between one's prior attitude of opposition and a negative affective prime would generate stronger contagion than for someone who would be exposed to a positive affective prime. Same results are as well applied to a condition in which a prior attitude of support matches with a positive prime. What these results propose is that the preconsciously processed affective stimuli activate affect-laden thoughts whereby the influence of prior attitudes and beliefs (perhaps constructed over the span of several previous experiences on the political issue) is lessened. Considering the findings of Chapter 2 all together, experimental studies offered surprisingly strong evidence for the Affective Contagion hypothesis and thus presented the theoretical foundation for the subsequent chapters.

Continuing the line of reasoning for Affective Contagion, Chapter 3 examined the consequences of affective primes through an original test of mediation. The goal was to present the downstream influences of the affective primes carried over the attitudes and judgments through affect-triggered thoughts. I found strong evidence for the step-sequential mediation model which shed light on the sequential effects from affective primes to affect-colored thinking to political attitudes and judgments. Moreover, findings in Chapter 3 across several mediation models were consistent that political attitudes and policy evaluations were influenced and constructed by the affect-triggered thoughts.

Findings on how preconscious affect leads to affect-laden thinking which in turn promotes affect-controlled attitude change and policy preferences is critically important for the study of political behavior and political psychology. As opposed to the major

assumptions of attitudinal theories where priors are predictors of judgments, choices, and behavior, Chapter 3 posits an alternative route that is initiated without any conscious effort and awareness. In this respect, Chapter 3 presented strong support for the Attitudinal Consequences of Affective Contagion hypothesis.

Chapter 4 on the other hand functioned as a bridge between the previous and subsequent chapters. This chapter provided the theoretical description of causal coherence which is later on tested with affective influences. Chapter 4 proposed a model of thinking and reasoning that has not been shown in the literature. This model based itself on the concept of causal coherence among thoughts and considerations. Causal coherence argues that people think in cause-and-effect pairs and that these cause-and-effect pairs are strongly associated with each other. On the basis of causal thinking and cognitive consistency models, I proposed the concept of causal coherence. Causal coherence meant the use of reasoning chains where antecedent and consequent thought elements are linked in logical reasoning. This chapter hence tested the evidence for causal coherence and its role among comparative models of reasoning.

Findings were strong enough to confirm that thinking in terms of antecedent-and-consequence patterns relates to the methods depicting quality of reasoning and cognitive consistency among thoughts and attitudes. I found that causal coherence in thinking is embedded in integrative complexity and implicational relations of inter-attitudinal objects and thoughts. Thus, there is evidence for the argument that people tend to develop causally consistent thoughts and considerations on issues and policies which would be in turn used to solve the dissonance among thoughts and related attitudes.

These findings are then integrated in Chapter 5 to delineate the Affective Causal Coherence hypothesis of motivated political reasoning. This chapter extended the Affective Contagion hypothesis and demonstrated that the affective primes alter not only the *valence* but also the *coherence* among thoughts that one retrieves from short-term memory on a political issue or policy. In other words, the preconscious affective prime that one is exposed to influences both the valence and the causal associations of retrieved thoughts in the process of thinking and reasoning about political issues and public policies.

In order to test the Affective Causal Coherence hypothesis, I developed an experiment where the treatment directly measured how one's reasoning is altered by the affective primes. I gave simple and complex prompts to the participants and primed them with preconscious affect and then measured the outcome. I used two distinct methods (thought-listing and policy selection) to measure the altered reasoning procedure. Results were all in support of the hypothesis. Given a negative antecedent and a negative prime one is more likely to cite (or select) the affectively coherent thought (or policy), a negative consequence. Similarly, given a positive antecedent and a positive prime one is more likely to cite (or select) a positive consequence. These results are as well replicated for consequence-antecedent patterns. The preconsciously presented affective stimuli altered not only the valence but more importantly the quality of the thought. Thus, in addition to the findings of Affective Contagion, Chapter 5 presented results that were in support of the further influences of preconscious affect within the general theory. I should emphasize from these results that the associative model of processing is once again confirmed that the subliminally presented affective primes trigger a processing sequence

that makes affect-congruent thoughts and judgments more accessible than affect-incongruent ones. There could be two important messages taken from Chapter 5: First one is that affect could promote causal thinking which suggests that reasoning, as scholars formed it, could be a function of simple influences rather than in depth thinking. The second one is about the substantial support of the results for the motivated reasoning theory that “the citizen is more a rationalizer of preferences and decisions than a rational decision maker.”

Finally, Chapter 6 elaborated on the influence of preconscious affect in the ultimate citizen duty, voting. This chapter took voting behavior as the dependent variable. This chapter aimed to show the effects of affect-triggered thoughts in voting decisions. The findings of this chapter were in favor of the Affective Voting hypothesis that unaware of the affective primes the individuals follow a reasoning procedure which would in consequence alter how one correctly casts his (or her) vote for his (or her) preferred candidate. This is a direct consequence that the affect-colored thoughts played in the most important duty of a citizen, voting correctly.

Moreover, I was able to tease out the effects of thinking and reasoning in voting decisions compared to a condition in which either deliberative thinking is absent or unconscious thinking is present. The findings support the view that deliberative thinking on political candidates, issues and policies may not always yield better voting decisions. In fact, what we recall to mind during the elaboration process is biased through affective stimuli and perhaps confuses us. The more we think and reason on our decision who to vote for, the better we feel that we are generating reasoning chains but in fact most of the time we are putting our own biases into action. These biases in turn generate the feelings

and beliefs that we acted, behaved, or voted for our best-preferred candidate (i.e., voted correctly) but in fact the reality is the opposite. In short, Chapter 6 presented evidence for the Affective Voting hypothesis and its comparative standing to the alternative methods of voting that suggest that conscious deliberative thinking makes the voting decision worse, especially for the sophisticates.

Contributions of the dissertation

This dissertation makes five major contributions: First, in support of the previous research this dissertation assessed that the affective primes are influential in downstream processing. Although the previous research on subliminal influences does not take into account the variables that represent downstream processing but rather reaction time measures, findings in this dissertation coincide with those findings. The dissertation stems from the associative model of processing and contributes to the political psychology, social psychology, and cognitive sciences literatures in a distinct way by showing how affective priming effects thoughts, considerations, attitudes, and judgments. Thus, one of the major contributions of this dissertation is that it provides a test of affective influences in downstream processing.

Second, and equally important, this dissertation provides a unique and an original priming method. The way that the affective priming is combined with thought-collection has not been shown previously. Although the priming studies and thought-listing studies are conducted separately, this dissertation provides an approach that employs both of these methods for hypothesis testing. In this respect, the methodological tools can set an example to future studies.

Third, the primes used in this dissertation are absolutely subliminal and affective. These primes did not have any semantic association with any of the political issues or public policies. So, the affective influence is totally separated from any cognitive or semantic meanings. Previous research in priming however repeatedly used semantic priming methods which is not the case in this dissertation. Primes as simple as the cartoon faces are rarely used for subliminal priming. But the simplicity of these primes in reality makes the substantive interpretations much more easier and stronger. Several possible effects of different affective primes are controlled by the most generic affective primes, the cartoon faces. A smiley cartoon face simply represents a positive condition whereas a frowning cartoon face represents a negative condition. Differences among the conditions and the results are clear and definitive. In this respect, the cartoon faces can be used in future studies for similar goals.

Fourth, methodologically speaking, the third chapter is a contribution to the analysis of mediation effects. The sequential mediation analysis has not been yet established as a conventional test but there is a developing interest and demand on this subject. Given the theoretical assumptions of the third chapter a sequential mediation was the best method to test the consequential effects of affect-triggered thoughts on attitudes and evaluations. The third chapter thus provides a valuable example of this interest and its relevance under certain conditions.

The final contribution of this dissertation is on theoretical grounds. Many scholars in political science and psychology disciplines avoid preconscious affect. Their approach to this topic has been reluctant with some disinterest and disbelief. Yet, there are now virtually hundreds of experiments showing common outcomes for subliminal priming

effects. Besides, results are consistent not only in political science and psychology literatures but in marketing, decision-making, and neuroscience literatures. In a similar vein, this dissertation makes a simple contribution to the general theory of subliminal influences in our lives. Simple events that occur too fast or peripherally can change how we think, ruminate, reason, and act. From the unnoticed effects of the word “RATS” in a campaign advertisement to the positive feelings raised with a national symbol (such as flag, anthem, monument, etc.), incidental unnoticed influences are all around us.

Implications for the Democratic Theory

What especially attracts attention to the findings of this dissertation is that they make a valid challenge to the current political science theories that perceive citizen attitudes and behavior as a function of consciously controlled processes. This dissertation wholeheartedly suggests a different route which if accepted would enrich our understanding of the citizenry.

Let me explain the general implications of this dissertation for the Democratic Theory in two steps. First of all, this dissertation does not indicate that the Rational Choice Theory is incorrect or that the citizens are irrational. Neither of these assumptions is tested in this dissertation. Despite the fact that there could be fallacies with the presumptions of the Rational Choice Theory, the Theory of Affective Political Thinking does not challenge it nor falsify it. Rather, this dissertation postulates that humans are hard-wired with information processing systems that can be influenced by incidental or unnoticed events and stimuli. Even if it is presented very briefly (as short as 39 milliseconds) our brains are equipped with capability that will capture this effect and in

turn alter many of the subsequent steps of information processing. What matters most is that we are bound with the information made accessible through the spreading activation that is triggered by the very brief affect. We in conclusion believe that our thoughts and attitudes are a function of consciousness but rather we are motivated rationalizers; we are motivated by the brief influence in thinking, reasoning, acting in a directed way. In other words, this dissertation shows that these brief affective influences will activate an uncontrolled (hence unnoticed) stream of processing that begins with the valence of the affect, continues through the associated nodes of information with that valence, and presents the working short-term memory chunks of information which would be spelled out as consciously performed reasoning. Yet, the reality could be that we were rationalizing our preferences and decisions than a rational decision maker *per se*.

In consequence, the second implication of this dissertation suggests that the citizenry depicted by the Democratic Theory is a misrepresentation. Political scientists have been in continuous endeavor to understand the citizenry who, in one hand, is inept, uninterested with politics, and unaware of basic political information but, in the other hand, is the major part of the functioning democracy. The very understanding of the citizenry consciously reaching decisions and in control of making cost and benefit calculations is challenged in this dissertation by employing the affective influences that take place outside of one's conscious awareness. Acknowledgement of these unconscious processes is a step forward in updating the Democratic Theory in proposing a meaningful model of the citizen behavior.

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APPENDIX A: Coding Scheme instructed to the Research Assistants

This appendix shows the most detailed version of the coding scheme instructed to the research assistants. I changed the document according to the study to accommodate the best way to instruct the procedure to the research assistants. Thoughts collected in all of the experimental studies in the dissertation used parts of this coding procedure. For instance, Chapter 2 studies focused on the valence (negative or positive) of thoughts where the quality of thoughts (causal or non-causal) was not important. However, Chapter 5 refers to both the valence and the quality of the thought where the entire coding scheme is used. Hence, depending upon the requirement of the coding, the procedure is fitted to the best way that research assistants can comprehend and fulfill the tasks properly. Following is the document used in the training process:

“Data for this research are collected through experiments. Each participant in these experiments is taken to the lab and seated in front of a computer to participate the study. After instructions, participants begin the study. At one point in the experiment, participants are asked to type in their thoughts to various statements on illegal immigration and energy security. These thoughts are entered in an open-end box (i.e., response box) presented on the computer screen. These thoughts vary from single words to long sentences. The goal of the research assistant is to code these statements according to the procedure defined below. The coding procedure includes two major steps:

1. Analysis of the thoughts:

Each subject has written down a number of thoughts on the provided issues/statements/policies. Some of the responses are single words (e.g., unlikely, yes, probably, no way, I (dis)agree, etc.) but most of them are sentences. The research assistant’s task is to categorize these thoughts into the following categories as indicated in Table 1. There are eleven cells four of which are for the negative/positive *antecedents* (causes) and *consequences* (effects). An antecedent is a thought that is *prior* to the event causing it to happen. A consequence is a thought that occurs *after* the event generating an outcome. This is the easiest way to separate one from the other. The other six cells are allocated for the negative/positive *agreement* (agreement or disagreement with the statement), *probability* (likelihood of the event to occur), and *feeling* (any type of emotion) statements. *Other* category (the last one) is for those thoughts that would not fit any category. These cells are also created in the excel sheet for the statements used in the study.

Table 1: Count the number of each type of thought occurring

	Negative	Positive
Agreement		
Antecedent (Cause)		
Consequence (Effect)		
Feeling		
Probability		
Other		

2. Sequence of Thoughts:

The order in which thoughts came to mind is the second step in coding procedure. After counting the number of thoughts, the research assistant needs to code the same participant's train of thoughts, *the sequence* in which the thoughts are listed. Please remember, each thought must be in the sequence that it appears in each excel cell. The coding sheet will look like the following:

Table 2: An Example of the Coding Sheet

1 st Thought	2 nd thought	3 rd thought	4 th thought	5 th thought
<i>NAGREE</i>	<i>NA</i>	<i>PA</i>	<i>NC</i>	<i>NC</i>

In coding the sequence of thoughts the RA should border the thought(s) that correspond to a single excel cell. Excel cell in this case refers to the open-end box (i.e., response box) provided to the participant in the experiment. Whatever is written by the participant in that open-end box is given in a single excel cell. For instance, if there is a single thought posted on a single excel cell then the border should only be around that particular thought. If there are two thoughts coded from a single excel cell then the border should be around those two thoughts. Through this procedure I will be able to know which thoughts refer to which particular cell and how you coded them.

The following should be used as acronyms for the coding categories:

NAGREE = Negative Agreement with the statement

PAGREE = Positive Agreement with the statement

NPROB = Negative Probability evaluation for the statement

PPROB = Positive Probability evaluation for the statement

NFEEL = Report of a Negative Feeling

PFELL = Report of a Positive Feeling

PA = Positive Antecedent

NA = Negative Antecedent

PC = Positive Consequence

NC = Negative Consequence

IMPORTANT NOTES:

1. The most important of all - On the issue of negativity and positivity: The research assistant should take objectivity into account while coding the thoughts. While deciding *negativity or positivity*, you should take into account the objective meaning of the thought. The research assistant should *not* define negativity or positivity of the thoughts in relation with the statement given to the participant. Also, the research assistant should *not* put his/her subjective evaluation of a thought as being positive or negative. The thought should be coded as positive or negative whether it matches the *genuine* negativity or positivity. For instance, "this will be bad for the nation" or "this will be good for the nation", are negative and positive consequences respectively. It is similar when thinking about the causes (antecedents). The excel sheet for the particular study will also include a number of examples with respect to the statements used in that study.

2. Unbiased Coding: The experiments were anonymous. One cannot create any links between the participant's identity and the thoughts. The research assistants will come across thoughts that may sound ethically wrong or even racially discriminative. This however *should not* influence the research assistant's coding performance. The research assistant's goal is to remain unbiased on any thought written by any participant and to code them according to the provided coding scheme. The research assistant's personal evaluations, thoughts, and/or opinions should be kept outside of the coding procedure. This would otherwise jeopardize the whole task of coding and the quality of the output.

3. The 'NO' option in the experiment: The participants are asked to type in "NO", "No", "no" to end the thought-listing procedure on a single statement. The research assistant should not count the "No" as a thought and ignore them.

4. Coding the unrelated statements: The main goal of coding is to categorize the thoughts that are reasonably connected to the provided statement. There are thoughts written by participants that do not make any sense or totally unrelated with the statement. If these thoughts are slightly related to the statement the research assistant may code them as Other. If they are unrelated (such as, "I have said everything that I need to say on this statement", "why are you asking me the statement over and over again", etc.), the research assistant should ignore them. There are some participants who did not read the instructions carefully and assumed that they cannot skip to the next step unless they have to find something to type in. Those are the ones who most frequently wrote unnecessary things. This situation is very uncommon in the dataset but the research assistant should be cautious about it.

5. Do not count the same thought twice, if it's exactly the same: There are some participants who repeatedly provided very similar or exactly same statements on a single statement. If the participant repeats himself or herself, the research assistant shall not count the same thought twice. For instance, if the participant thinks "illegal immigrants overpopulate the U.S." and writes a similar statement on a different open-end response box, then the research assistant should only count the thought once. However, if the same statement is merged with an *additional* thought/idea (such as, "this overpopulation causes economic problems"), then that thought can be counted as a new thought. Again, this situation is very uncommon in the dataset but the research assistant should be cautious about it.

6. Recommendations on performing 100% on the Tasks: Plan ahead in order not to be pushed at the very last moment. The coding takes time. But it should not take too much time. On average, a single participant's thoughts should be coded in 2 minutes at the maximum. If you're spending more time, you should be faster and do not think too much while coding. After you get some experience, it should go pretty smoothly and easily.

I also recommend focusing on coding at a particular time period. Take 3-4 hours and work only on the coding. Every research assistant develops his/her own coding procedure and if there are too many breaks or distractions (e.g., music, TV, etc.) the coding will probably be unacceptable. So, take a block of time and only work on the coding in a silent environment.

Always contact me (cengiz.erisen@stonybrook.edu) if you have any questions."

APPENDIX B: List of attitude items used across the experimental studies in the dissertation

Attitude Position Items:

- Do you favor or oppose the <<<attitude object>>>? Response Scale: Strongly Oppose (1), Oppose (2), Somewhat Oppose (3), Somewhat Favor (4), Favor (5), Strongly Favor (6)
- Please indicate whether you agree or disagree with the following statement(s) on the <<<attitude object>>>? Each issue had three pro and three con statements. Pro statements are *reverse coded* in construction of the attitude position measure. Response Scale: Completely Disagree (1), Disagree (2), Somewhat Disagree (3), Somewhat Agree (4), Agree (5), Completely Agree (6)

Attitude Strength Items:

Accessibility

- How often do you think about the <<< attitude object>>>?
 - How often does the <<< attitude object>>> come up during informal conversations?
- Accessibility items are *reverse coded* in construction of the attitude strength measure. Response Scale: Very Often (1), Often (2), Sometimes (3), Seldom (4), Never (5)

Certainty

- How sure are you that your opinions on the <<<attitude object>>> are right?
 - How firm are your opinions on the <<<attitude object>>>?
 - How confident are you on the <<<attitude object>>>?
- Response Scale: Not much (1), Neutral (4), Very Much (7)

Importance

- How concerned are you about the <<<attitude object>>>?
 - How important is the <<<attitude object>>> to you compared with other issues?
- Response Scale: Not too important (1), Neutral (4), Extremely Important (7)

Knowledge

- How well-informed are you about the <<<attitude object>>>?
 - Do you consider yourself knowledgeable on the <<<attitude object>>>?
- Response Scale: Not much (1), Neutral (4), Very Much (7)

Relevance

- How likely the <<<attitude object>>> is to affect you personally?
- How relevant is the <<<attitude object>>> to you?
- How likely it is that a proposal about the <<<attitude object>>> would affect you?
- Response Scale: Not personally relevant and will not affect me (1), Personally relevant and will affect me (7)

APPENDIX C: Information on hypothetical presidential candidates' political positions used in the experimental study in Chapter 6

Economic Crisis:

- CANDIDATE 1 makes the following propositions on the TAXES and the U.S. ECONOMY:
 - S/he wants to cut estate tax rate to 15 percent and exempt estates under \$10 million.
 - S/he plans to pay for the tax cuts by eliminating deficit spending and overhauling programs like Social Security and Medicare.
 - S/he is willing to lower corporate tax rates and strengthen the businesses for economic recovery.
 - S/he promotes to give tax cut for every individual.
 - S/he strongly favors to regulate the Wall Street and keep track of every penny provided in the \$750 billion "Bailout" Plan.

- CANDIDATE 2 makes the following propositions on the TAXES and the U.S. ECONOMY:
 - S/he proposes to keep estate tax.
 - S/he plans to raise capital gains taxes to as much as 28 percent.
 - S/he wants to cut taxes by \$80 billion a year for workers, homeowners and retirees.
 - S/he aims to give credits to working families, eliminate income taxes for elderly workers, and strengthen the middle class.
 - S/he wants to provide tax break for 95 percent of the population.
 - S/he strongly favors to regulate the Wall Street and keep track of every penny provided in the \$750 billion "Bailout" Plan.

Energy Security:

- CANDIDATE 1 makes the following propositions on the ENERGY SECURITY of the US:
 - S/he aims to promote diversification and conservation of the energy sources in the U.S. that will in sufficient time break the dominance of oil in the transportation sector.
 - S/he has voted against drilling in the Arctic.
 - S/he supports domestic drilling.
 - S/he emphasizes the development of alternative energy sources to end dependence on foreign oil.
 - S/he is willing to promote alternative fuels and other energy sources like nuclear.
- CANDIDATE 2 makes the following propositions on the ENERGY SECURITY of the US:
 - S/he wants to invest heavily over the next decade to develop new energy sources.
 - S/he aims to reduce oil consumption over all by at least 35 percent by 2030.
 - S/he supports financing research into discovering alternative energy sources and developing technologies.

Illegal Immigration:

- CANDIDATE 1 makes the following propositions on the issue of ILLEGAL IMMIGRATION:
 - S/he supports a path to legalization that includes learning English and paying fines.
 - S/he was a co-sponsor of a Congressional bill that called for establishing guest-worker program and setting up a path to citizenship for illegal immigrants.
 - S/he voted for a fence to be built along the Mexican border.
 - S/he argues that border security is the first and foremost priority in solving the issue of illegal immigration.
 - S/he proposes to toughen penalties for employers who hire illegal workers.
- CANDIDATE 2 makes the following propositions on the issue of ILLEGAL IMMIGRATION:
 - S/he proposes to create a system to verify employment eligibility.
 - S/he supports guest worker programs but would like immigrant workers to be less dependent on employers to stay in the country.
 - S/he proposes a guest worker program driven by the needs of the employers and workers and one that provides a pathway to citizenship.
 - S/he voted for a fence to be built along the Mexican border.
 - S/he supports granting driver's licenses to illegal immigrants.

Iraq War:

- CANDIDATE 1 makes the following propositions on the IRAQ WAR:
 - S/he is against a timetable for troop withdrawal from Iraq.
 - S/he is a vocal proponent of increasing troop levels. Says political settlement can be achieved only after violence is contained.
 - S/he says that the United States is now succeeding in Iraq, but that there is still a long way to go.
 - S/he is against dividing Iraq into three regions.
- CANDIDATE 2 makes the following propositions on the IRAQ WAR:
 - S/he proposes to withdraw one or two brigades a month to finish withdrawal within 16 months.
 - S/he wants to leave limited forces to combat terrorism.
 - These forces will not involve in deterring Iranian involvement.
 - US troops would train Iraqi forces only if there is political reconciliation.
 - S/he aims to redeploy some troops to Afghanistan.
 - S/he has called for forming three autonomous regional governments --Shiite, Sunni and Kurd-- with a strong but limited central government.

Appendix D: List of hypothetical presidential candidate policy statements used in conscious thinking procedure in the experimental study in Chapter 6

- **Economic Crisis:**
 - Candidate 1 is willing to lower corporate tax rates and strengthen the businesses for economic recovery.
 - Candidate 2 aims to give credits to working families, eliminate income taxes for elderly workers, and strengthen the middle class.

- **Energy Security:**
 - Candidate 1 supports domestic drilling, and aims to promote alternative fuels and other energy sources like nuclear.
 - Candidate 2 supports research financing into discovering alternative energy sources and developing technologies.

- **Illegal Immigration:**
 - Candidate 1 argues that border security is the first priority and hence a fence should be built along the Mexican border.
 - Candidate 2 proposes a guest worker program driven by the needs of the employers and workers and one that provides a pathway to citizenship.

- **Iraq War:**
 - Candidate 1 is against dividing Iraq into three regions and a timetable for troop withdrawal.
 - Candidate 2 proposes to withdraw one or two brigades a month to finish withdrawal within 16 months and redeploy some troops to Afghanistan.