POLITICAL AFFECT: AN INVESTIGATION OF VISUAL BEHAVIOR AND POLITICAL ATTITUDES

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This dissertation addresses relationships between affect and political orientation. My analyses were driven by observations of attentions over visual fields that were contextualized by the implication of sadness and by visual perceptions of a contradicting sentence in the field of vision. After an extensive review of literature, my investigative approach considered data from independent factors including; several self-reported political attitudes (i.e. support for government downsizing) and several physical variables (e.g. vertical or horizontal eye movements and differences in pupil area sizes). I also incorporated altruistic attitudes (e.g. support for government social programs and support for government-based and non-government-based charities). My dependent variables were three political orientations; conservative, moderate and liberal. I then compared the frequencies of participant's eye movements over the controlled fields of vision. Each visual field used in these tests contained a sad face and a contradicting sentence. I discovered differences in changes of pupil size during views of the faces. Although the participant population appeared to be overwhelmingly politically conservative, the comparatively moderate subjects exhibited a more active ocularmotor response while at times also demonstrating seemingly atypical conservative viewpoints. My findings indicated that visual behaviors can be assessed as components of political attitudes. Consequently, I surmised that the differences in visual responses were probably associated with political orientation. The implications of my research infer that emotions allow a person to perceptually engage matters of social and political consequence using essentially the same bio-physical processes. I argue that although political preferences may abide by political orientation, the physical experiences in reaching one's political goal point are unique.

Dedication

This work is dedicated to my wife Sherry and my children Danielle, Lela, my beloved son Cedric aka “Bubby Boy” and to the memory of my tireless parents Hughes and Lela. I sincerely hope that each moment lost with them or the moments I strayed from their influences in this process was righted by influences from my siblings Ronald, Sylvia Toy, Cedric Medford and Shela Omell and supporter John Hibbing, for who my love and respect in some way always helped to restore my sight of the potential contributions of this work especially when I was off-track. Thanks so much. I love you. -e

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Throughout this process I have received at times an extreme amount of encouragement. The support I have received from Dr. Combs is equal to the support of a devoted parent in my worst behaved times. It often seemed as though the encouragement was due to my stumbles. It was at times as though, there was a collective faith in my many questions. There were other times, especially when I persisted to hold fast to an unconventional approach, when the encouragement seemed even more fervent and also felt perhaps that it was not so deserving. I wish to thank Professor John Flowers for his inspirational lectures on physical perceptions and Shantel Gassman and Scott Barnes who helped with the focus groups and who provided assistance in determining ways to assess the meaning of eye movements. In these endeavors we lay ourselves prostrate before the court of the opinion of our peers. With encouragement we gasp and sigh in relief when the moments leading up to support are both fulfilling and traumatic. These explorations and new trails were extremely difficult at times. Drs. Combs, Wagner and Hibbing were heroes to me, picking me up time and again often with detectible winces. Heroism means sacrificing common sense for the sense that something novel is eminent. Thank you friends for what you continue to put up with. And Professor Peter Longo! – A freewheeling sort of man who set me out on this trail. It was Peter who said "that sounds interesting… it's a sort of rational cultural perspective …' to wit I reference on nearly a daily basis … "rational cultural determinism" is in fact a social scientist's duty to include bio-physical aspects in all investigations of human behavior… It is the rational thing to do!" Dr. Wagner, I have harangued you with 'there can be no rational entity, only irrational people'. You winced. You sort of relented in a moment I'll never, ever, ever forget. The wind was gone in my sails. So, from that moment I had no recourse. Without your resistance I had no choice but to move on and eventually found Marcus et al (2005). This brings me to our Dept. Chair. (….Regardless of Hibbing and Alford's many works, Kevin Smith's quantum contribution of referring me to Baron-Cohen et al. (1997) …) It was Elizabeth Theiss-Morse who seems to have opened the door for Peter H. (and Rose McDermott) and the rest of us burst through and said "Hey" we have to do this!!! Physiology is our imperative! Nurturing voles notwithstanding, and forget my and (now) Dr. Oxley's shouting matches about elites and "who's responsible"? Thanks, Helen Sexton for letting TMI pass for desperate conversation more than once. Someone once said there is a dichotomy of appeals that occurs when individual political beliefs are challenged by uncertainty…where interest groups will wage a *battle* for political attentions. In those skirmishes I will be. Thank you all for your help. I especially thank Eva Bachman and the institution for considering my applications.

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CHAPTER ONE - THE BIG QUESTION: MAIN HYPOTHESIS & OUTLINE

The Big Question

The big question addressed in this dissertation asks: 'What is the relationship between affect and perceptions of social consequence?' I wanted to know how affect is associated with the political things that mattered most. For example the feelings people have about their own political goals are uniquely relevant to their perceptions about another person's situation and goals. More specifically, I used the implication of a social context in pictures and a survey about politics and government to examine the affective relationships between physical affect (i.e. visual attention) and perceptions of social consequence. I expected similar feelings to emanate in attentions that would lead to detectable feelings about the role of government and charity. A conservative Republican may be motivated to shrink the size of government in order to limit redistribution of wealth. Conversely, a liberal Democrat might prefer to expand the size of government in order to advance redistributive policies.

A person's perceptions about social consequences ought to emanate from what they want from government. Helping where help is needed is one of the underlying assumptions about what government is supposed to do. I assumed that altruism was endemic to politics in general. I surmised that individual altruistic differences influence behavior related to political attitudes. Hence the question: 'Is political affect associated with altruism?'

I was also curious whether attitudes toward government were observable through physical behaviors. My interests were slightly different from the research that had

inspired me. This made the process of implementing various hypotheses more complicated. I had to justify the need to ask the questions I wanted to answer about physical attention and physical affect. The most recent literature had been more devoted to the physical nature of emotion. I was able to find a good deal of research about attitudes and temperament.

The research lending the most support for my beliefs came from a diverse assortment of works. These were focused on the physiology of the eyes, Rationalism and affective automaticity respectively (e.g. Yarbus, 1967; Simon, 1985; Lodge and Taber, 2005). Ultimately I settled on a variation of the big question at the beginning of this chapter. The fundamental research question became: "What is the relationship between physical attention and political orientation?"

Main Hypothesis: Background

This chapter introduces the thought process leading up to the experiments in the dissertation. The subtitles marking each of its sections represent a summation of the contents of the chapters that follow. This is a simple paradigm of three parts. First, there were things about attention and affect that were intriguing enough to inspire questions related to any connection between them.

Second, the initial answers to those questions always appeared to include a human somatic quality. I interpreted the somatic experience to represent nature intermingling with matters of social consequence. Finally, as somatic contexts are uniquely clinical, the dissertation had little recourse than to engage the science of politics as incomplete wherever attention and affect were not explained as discrete individualized experiences.

During the first years of my doctoral studies mainstream media was noticeably occupied with the notion of fear and fear of big government. I felt this warranted a closer look at political affect especially regarding the emotions and attitudes linked to feelings about government, big and small.

Ultimately I found what appeared to be differences in the pupil sizes of political orientation groups. If the phenomenon proved to be replicable then, physical effects related to physical attention might also be useful in gauging political attitudes and political differences.

The first step was to gather as many findings as possible and then consider the value of pursuing physical attention as a purveyor of political affect. These works included research about bio-physical relationships in perception, feelings about social consequence and to a lesser extent, bias.

Yechiam and Telpaz (2011) examined risk taking behaviors and pupillometric variance in conditions of loss and gain domains. In one study they found a positive effect in the gain domain condition. Pupil sizes appeared to significantly vary in the loss domain condition. Ultimately, these scholars found pupillometric correlation s in which the tonic arousal-behavior association appears to support the notion that the psychology of loss is related to the physiology of risk (344).

Attention is not random

My decision to explore physical effects was fueled by the belief that as long as social variables were clearly defined, properly interpreted physical effects ought to assist in measuring emotional effects which logically would infer certain social or political

meanings. Even in the absence of an immediate physical response, it seemed plausible that individual political goals would be evident depending on the perceived socially contextual import of specific attitude objects. In the sense that politics is a social context any reasonable presumption of political meaning in a perceived object should render correspond effects relevant. In the literature it also seemed clear that the problem was not *whether* physical effects in social contexts were evident. Rather, it was seemingly more a question of *which ones* were more viable in the process of gauging affect. I sought examples to further inform science about the relationships between physical affect and perceptions of social consequence, biases or attitudes (e.g. Oxley, 2008; Fazio, 1989; Devine, 1989).

This inquiry assumes that attention is not random but is part of a prevalent monitoring system in which past, present or future effects are stored for later use through cognitions or automaticity (e.g. Simon, 1985; Lodge and Taber 2005). Making sense of physical attentions required converting survey tool responses into specific social variables to be used later in identifying the contextual implications of physical attentions. I transformed variables into contextually interpretable effects which I had surmised were affectively-charged events.

My line of reasoning centered on the need to develop a methodology that would explore affective relationships in the context of the behavioral impact of perceptions of social consequence. My objective has always been to establish affectively identifiable physical phenomena. In this regard, I found emotions to be the more favorable 'low hanging fruit'. I added to this paradigm the idea that social bias may also contribute to

altruistic behaviors. However, I elected not to focus on the science of bias. I was much more interested in whether altruistic tendencies would impact political attitudes.

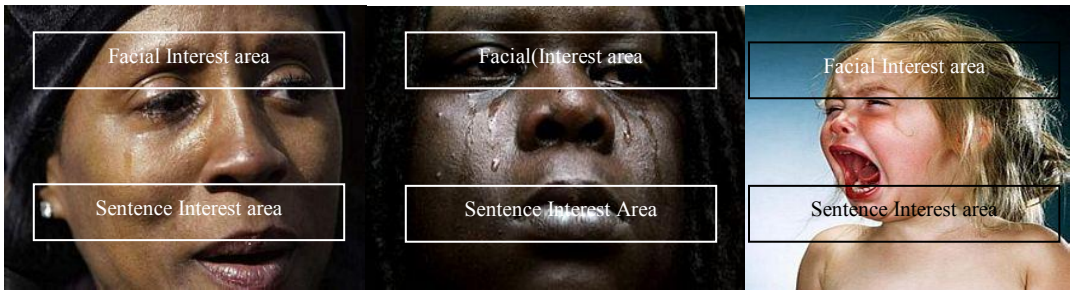
The notion of *hot* cognitions or other affectively-charged political reactions is well-established in academia and has been successfully combined with traditional political attitude research (e.g. Abelson, 1963; Lodge and Taber, 2005; Yechiam and Telpaz, 2011). In my experiments I adopted a methodology that is reminiscent of Lodge and Taber (2005) but it is also similar to Oxley et al (2008) where certain beliefs emanate from a person's responses after they've been exposed to at least one evocative stimulus. However, my experiments are more focused on the physical implications of a given response and are less focused the socio-political implications.

Outline

In the coming pages I will discuss what I determined to be missing in the literature. I will offer an objective approach that is mindful of affective relationships and less concerned with attitudes and bias. In my view, affect precedes social characteristics. For example research questions pertaining to expectations about bio-physical effects should focus on emotions not values. This is why my methodology includes an altruism component. This addition augments interpretations of the effects on a dependent variable. I admit however, a reliance of social variables is not altogether avoidable. To summarize the methodology I employed, I used a survey to establish basic political orientations and compared differences in measures of visual attention between political orientation groups.

My earlier work on the article "Political Affect" (Shanks, 2013) also led to this dissertation. After an extensive review of literature roughly spanning the last sixty years it was clear that the dissertation should address physical attention and the affective contexts which seem prone to emanate in individual behavior. Hence, this approach seeks to measure relevant affective phenomena and physical behaviors as they simultaneously occur. I tested for relationships between physical affect and perceptions of social consequence by measuring political attitudes through the administration of a survey tool and of controlled visual tests for attention.

This dissertation investigates the impact of political orientations on physical attentions toward images which combine a sad face and a contravening statement in a sentence. Figure 1.0 shows the three sad faces that were used in these tests. The images were presented as a portion of a series of 24 ten-second viewing presentations in conjunction with an IRB study titled: "Hot and Cold Visual Selective Acuity" (See Shanks, 2013, 131-32).I combined the visual attention data with political attitude survey data to determine the physical effects if any, of differences in political orientation.



Slide 15 "Sad" Slide 8 "Tearfully Sad" Slide 24 "Dispairitly Sad"

Figure 1.0 Sad Faces

The Research Approach

Translating physical phenomena into relevant variables required combining disparate forms of scientific research. Many works included here were never intended to supplement a body of political science knowledge. However, several of these included works have contributed to the translation of bio-physical variables from affect, emotion, attitudes and temperaments. Most notably, Yechiam and Telpaz (2011) addressed endowment effect and loss aversion in experiments measuring pupil size. Several other works have been successful in directly addressing social and physiological variables (e.g. Hibbing and Alford, 2007; Alford and Hibbing, 2004; Hibbing and Smith, 2007).

This process was about more than translating variables used for experimentation. It was also about supporting a research design which was attempting to cull together research that collectively facilitated a view that visual behaviors are socially relevant. Further, the effects of those identifiable affective events speak to context and meaning (e.g. Dodd et al., 2012; Oxley et al., 2008).

Fear of Big Government

In the literature there is a connection between attitudes about race and the size of government. Gainous (2012, 252) noted that opposition to big government is a basis for White American's disapproval of race-conscious policy. A 2013 Gallup Poll reported a prevalent trend, that Americans were more concerned about big government than either big business or big labor. Pollster Jeffrey Jones wrote: "In the future, Americans will likely continue to view big government as the greatest threat of the three, partly because of Republicans' reluctance to rely on government to solve problems, and because

Democrats and Independents are also inclined to view big government as a bigger threat than big business or big labor" (Jones, 2013).

During the 2008 Presidential campaign Kenski et al. (2010) devoted considerable attention to Republican strategies to capitalize on racist fears cloaked in questions about candidate's views on wealth redistribution. Fears about big government have been on the rise since Gallup Polls began to ask poll participants which threat they deemed the greatest; big business, big labor or big government.

Dating back to 1965 poll results indicate that big government has consistently been perceived the greater threat (i.e. Saad and Jones, 2013). Assuming size of government is an appropriate political attitude object, the feelings a person exhibits when exposed to it are relevant to this inquiry.

Based on what seemed to be unusually intense media attention about public fears of big government during the 2008 campaign, I believed that opposition to big government was a strongly felt emotional reaction. I also believed a comparable emotional reaction existed in support of big government. I expected that emotional effects in the debate about big government could be observed through physical phenomena. Based on fairly recent Gallup Poll data, frequent media references to Barack Obama's supposed socialist agenda, and recent research findings indicating political differences, I assumed that the perception of big government policies was a pertinent and uniquely evocative attitude object. When Obama became the leading candidate for the Presidency for the 2008 election, I immediately suspected that his candidacy would cultivate fears about big government and other evocative factors.

It seemed as though public debate in the 2008 presidential election year was highly emotionally charged. A cultivation of a prevalent divisive political rancor fueled by emotions was not readily compatible with the notion of bio-physical experimentation on the subject of political affect. I suspected that this debate would not be in the province of political science as much as in the realm of political *emotions.* I anticipated that heightened sensitivities might even cause the perception of a dramatic rush to the polls.

I first completed an investigation of the stability of political attitudes in a manuscript titled "Battle for the attention of the public" (Shanks, 2010, unpublished manuscript). Some of that research led to important questions in this dissertation.

In Shanks (2013) I reported that I had found evidence that attitude stability could be degraded by exposure to ambiguous questions about big government. I suspected that ambiguity also had an impact on emotions. As I reported in Shanks (2013) necessity and attractiveness are based on qualities of relevant political content. I subsequently surmised that this could dictate the affective influences in the formation of attitudes. Logically, these qualities may *push* individuals to select preferences and declare support for values which may not represent how they really feel (e.g. Lodge and Taber, 2005; Hatemi and McDermott, 2012). Consequently, I opted to investigate ways physical attentions impact political affect.

Emotional overtones in television news of public demonstrations protesting Obama's candidacy seemed to infer the racially-based fear and misgivings about big government. Whether they were warranted or not these effects potentially could have impacted political perceptions across large swaths of the public. I expected the political process to continue in much the same way as it always had. The difference I felt, if there

would be any would likely be that there would thence be questions about race which might only have been raised because one candidate was of African descent. I did not expect politics to change. I simply expected the political discourse about the Obama candidacy to be affectively charged by feelings about race. I did not however expect racial divides to significantly erode any part of the American political system.

As a Political Scientist I was swept up by a fairly recent upsurge in new political thinking about physiology in academic research. Whatever effects I experienced came from my own exposures to media and what I gleaned from social media. Obama's prominence seemed to heighten emotions. What I saw playing out in the mainstream press were prevalent reminders of the charge that Obama was a *spread the wealth* socialist with no regard for the rightfully accumulated wealth of hardworking folks like *Joe the Plumber*" (Kenski et al., 2010, 228). I felt this phenomenon deserved a closer look. And so, I set out to examine ways emotions impact their political behaviors. Specifically, I wanted to know if political ideals would induce stability even when attitude objects are obscured by ambiguity.

In the final weeks of October before the 2008 election, Republican strategy was to weave the socialism charge into its messages about Obama. Although both Obama *and* his Republican opponent supported the $700 Billion "rescue package" or "bailout" giving taxpayers a $250 billion share of major U.S. banks "Republicans continued to parry the charge that Obama was a practicing socialist" (Kenski et al. 2010, 226-27). Fearful that Obama's candidacy and his subsequent 2008 victory spelled a dangerous turn toward a more socialistic form of government the Republican strategy was to insinuate that Obama would remove wealth from hard working people and give it to the under employed poor

(228). I agree with Kenski et al. (2010) who argued these charges were fraught with unmistakable racial over tones. I expected racial elements to evoke emotional responses to the issues people cared about.

During my research for this dissertation I found differences in pupil size across three general political orientations. Research participants who were oriented toward moderate political views demonstrated a more active pupil dilation process when viewing sad faces. By more active, I mean that the observed minimum and maximum pupil area differential was noticeably greater than the differentials of participants in the conservative and liberal political orientation groups. Subjects in the moderate group also demonstrated overall greater pupil area sizes when compared to conservative and liberal participants. This finding appeared to be at least partial confirmation that certain bio-physical factors can coincide with political orientation. The implication seemed to be that emotionally, people may *wrestle* with matters of social and political consequence through similar frames while using essentially the same bio-physical processes. Meanwhile, every individual experience is still unique to the person's own literal physical experiences.

Table 1.0 shows data collected on the pupils of twenty-three subjects who were a portion of a group of 74 research participants who were administered the survey and who were participants in visual test experiments involving 24 randomly-generated 10-second slide presentations. (Note: One participant in the group was ultimately excluded due to incomplete data). These data show the measurements of pupils during these subject's viewings of three slides featuring a sad face and a sentence containing a contravening message. Each slide presented a full-face frontal view of a single subject. Each slide was of a different face and each sentence was different.

The results shown in Table 1 include Political orientation group and "n" size, overall mean "M" pupil area, and the average difference "m" between minimum and maximum pupil area size within each group.

In this test the moderate group exhibited a noticeably larger overall mean pupil area size as well as the greatest difference between minimum and maximum pupil areas on viewings of sad faces. Notably, the conservative group exhibited the overall smallest pupil area size, while the liberal group exhibited a somewhat larger mean pupil area size.

Table 1.0 Pupil Sizes, Min. & Max. Sad Face Views N=23

Political Orientation	Mean Pupil area size	Average min/max Difference
Conservative n=5	M = 442.025	m = 123.815
Moderate n=6	M = 494.866	m = 138.537
Liberal n=12	M = 461.058	m = 101.967

In the analyses in Chapter Five these pupil area size measurements were also compared with frequencies of other visual variables. Pupil size alone is merely indication of the ability of the eyes to absorb light although it may also imply level of stress (Fong, 2012). Ensuing assessments of physical attention and eye movement will be discussed in pages below in a broader discussion of the possible implications of ocularmotor behavior that will also include political orientations and attitudes toward social programs.

Pupil Size as a Bio-physical Measure

Constricted pupils are smaller and indicate that an individual is probably more alert. But more importantly dilation means less light is absorbed by the eyes. Further, when pupils are enlarged individuals are usually more relaxed and the eyes are capable of absorbing more light. Fong (2012) quoted Daniel Khaneman as having said that "The pupils reflect the extent of mental effort in an incredibly precise way". I argue that attentional effort is a measurable effect. I assume that the physical effects of a stimulus are reflected in the manner in which eyes attend to objective features. In this sense, visual perception transpires in part because eyes are variously capable of absorbing light and also because they are able to transmit meaning.

People share essentially identical physiological features and routinely employ the same cognitive apparatus' (e.g. Cosmides, 1994, 329; Baron-Cohen, 1995, xii-xiii). Moreover, as people adapt to their environments they benefit from similar social learning processes. As a social phenomenon impacted by physical affect, political behavior represents the embodiment of feelings experienced while attending to something of political relevance. In my studies as a Doctoral student I began to question the relationships between affect and social contexts. Out of this quandary arose a general overriding assumption that while human beings share the same (or very similar) social experiences, the very nature of human physiology dictates that personal experiences can be replicated but it is impossible to duplicate a personal experience. Hence, the big question: "What is the relationship between affect and perceived social consequence?"

I now believe that this relationship is contextual in the sense that people automatically access physical and social references prior to having to explicate their

political attitudes and biases. Further, it also appears that certain physical and emotional references can function as affectively-charged effects which can be observed as people attend to attitude objects.

Physical Affect

Among my early expectations was that various physical behaviors would betray political tendencies. The literature seemed to confirm that physical behaviors were somewhat predictably linked to affective systems, especially "hot cognition". Lodge and Taber (2005) reported on three experiments testing the hot cognition hypothesis. These authors wrote that the hot cognition hypothesis "posits that all sociopolitical concepts that have been evaluated in the past are affectively-charged and that this affective charge is automatically activated within milliseconds on mere exposure to the concept, appreciably faster than conscious appraisal of the object" (455).

Very early in my studies, I predicted that automatically activated physical effects were not solely indicative that emotion had occurred. I also predicted that the intensity of emotion would also indicate contextual factors relevant to the individual experiencing the effect(s) in question. It also seemed plausible that in the laboratory, under controlled conditions, an investigator should be able to replicate physical effects, even to the point of introducing an artificial visual stimulus. What I found were consistencies in ocularmotor processes that were reliable enough to be correlated across apparent political tendencies which I identified through attitudes toward redistributive policies, government size, partisanship and bureaucratic processes.

Relationships between Affect and Perceived Social Consequence

The tendencies for a person to embrace certain political preferences are mainly influenced by what they believe other people will do. Biases and perceptions of social consequence ought to permeate the ways people affectively arrive at their various political choices. Hence, their political likes and dislikes are not static. As long as attentions are trained on relevant objects, their biases are not fixed (Devine, 1989). These phenomena are fluid. I pursued this notion through an inductive process. I agree with Simon (1985, 293) who concluded that a person's goals are more predictive than rationality of the effects of political phenomena.

I expected to find that when a person's political orientation is known, at least some of their political goals are predictable. I also expected that their political attitudes would be reflected in their physical attentions. In a stark confirmation that affect impacted attentions can lead to automatic heuristic reasoning. Fazio et al. (1992) found that attentions toward political objects indicated the use of associative mechanisms functioning in connection with affect.

I agree with these authors that those associations "are capable of being activated from memory automatically…" Fazio et al. (1992, 229) It seemed logical that a person's affect inevitably will drive them toward some actions and away from others. In this context, attentions will seemingly reveal how certain objects might evoke a person's likes and dislikes. Consequently, I also expected that once physical experiences can be correlated with concomitant social events the degrees to which affect impacts a specific political preference will probably be indicated in a variety of affective measures.

The title of this work refers to visual behavior and political attitudes. The intent is to explore facets of social science and physiology to discover ways they intersect in experimental political science research. The literature supports the notion that when actions and goals are directed toward the same end, multiple level processing occurs (e.g. Simon, 1985; McDermott, 2004; Strack, 1999; Mondak, 1993 and Bullock, 2004). When people say they believe in something their actions may not be consistent with their beliefs.

If a person's beliefs are in conflict, carrying through with what they say they believe probably requires some internal balancing. Perhaps the eyes behave differently when a person encounters 'friendly' information as opposed to 'threatening' information. Perhaps a person who feels threatened gazes less economically on an image with words while they try to make sense of what they are seeing. In my tests, each research participant was presented with the same twenty-four pictures. At the bottom of each picture frame was a contradictory sentence.

The pictures and each contradictory sentence were different. All subjects viewed in random order the same picture frames. The sentences were written to contradict the picture in viewing field. Therefore each viewing of a picture frame included an experimental ambiguous condition. This was a partial extension of a technique employed by Oxley et al. (2008) who introduced a loud startling noise to gauge involuntary physical reactions and research by Lodge and Taber (2005, 461-67) who tested reaction time under conditions in which subjects were asked to respond 'as quickly as possible'. These scholars deflected the subject's attentions by introducing out of context prime words.

In both studies as well as in my own research design, the assumption was that reaction times are faster under congruent conditions. “This is the basic hot cognition hypothesis. Critical to the hot cognition postulate is that one's feelings are triggered automatically on the mere presentation of the concept” Lodge and Taber (2005, 467). Therefore since participants in my experiments had only 10 seconds to view each slide, the contravening message in each contradictory sentence was expected to push (or pull) them toward familiar content.

Nuthmann and Henderson (2010) speak of contrasted forms of visual attention to what is in a visual field. Visual salience relies on image-based representation. The cognitive relevance hypothesis relies on the features to which attentions are directed. These researchers found that a person’s attentional selection in scenes is object-based.

The literature offers substantial evidence that affect follows real and perceptual content (e.g. Dodd et al. 2012; Henderson, 2007; and Fazio, 1986). I believed that since multiple mental processing mechanisms are generally understood to help people manage life’s complexities, the processing of images and the simultaneous processing of words seemed a useful manipulation. Since my interests stemmed from wanting to explore affective phenomena as opposed to say, political behaviors per se’ a disruption in attention ought to yield noticeable physical effects. Considering that participants had only 10 seconds to view each slide this factor extended the conditions in Lodge and Taber (2005) in which participants were instructed to respond as quickly as possible. I also agreed with Strack (1999) who argued that “insufficient processing may be compensated by adjusting one's response in the opposite direction of a presumed influence” (169).

The notion that an ocularmotor response is evidence of the contextual orienting of social contexts was extremely intriguing. It seemed reasonable that a person's emotions would impact the ease in which they observe things. I expected that individual emotions would demonstrate unique features in individual appraisal systems. For example, a relaxed person who finds a picture of a face to be appealing they may hardly notice other objects in the picture. Another person may actually be *more* likely to notice the words included in a picture.

In this sense automatically activated affect is expected to confirm political orientation rather than actually guide a person's orientations. In terms of attention, I expected the affective vigor with which a person approaches a situation to emanate from how they were oriented to meet their goals. In this sense, individual likes and dislikes (i.e. goals) would be implied through various affect-centered online processing.

Some of the earlier challenges in obtaining good data in experiments about affect can now be overcome with technology. For example, thirty years ago, research of attitudes mainly meant the broad use of questionnaires or that direct contact and interaction between subjects and investigators. Those methods are still necessary. However, equipment and resources today can all but eliminate various forms of research bias in part because bio-physiological perspectives are less dependent on interviewers and interviewees.

Simon (1985) expressed concern for biases that could spoil a person's response to an interviewer. He was not convinced that self-reports alone could adequately extract a person's motivation. The scholar wrote: "psychoanalytic theory, passion takes mainly the form of unconscious drives, largely unknown to the actor, that provide the "real"

wellsprings of action. This approach, whether it be correct or false, has always been troublesome for empirical research, because it makes suspect human testimony about motives. If we don't know why we act, if our motives are unconscious, then we can't report them, no matter how much we wish to cooperate with the researcher" (301).

I decided to assess the individual motivations of people according to the content of self-reports on which I based my own expectations about their presumptive political orientation. Participants in these experiments were administered a web-based survey and therefore did not interact with investigators while answering questions.

I speculated that in a representative democracy, attentions toward political objects probably perpetuated a self-reflective process because of expectations about the actions of others infer what a person does or does not want to happen. Examples of early developing self-reflection in affect are a telling feature. In fact, the expectations of another person's interest are physically visible from birth. Ayers (2003) and Rochet (2009) recount a significant amount of evidence of infants and parents engaging one another through active physical attentions which appear to betray goals.

In her book "Mother-Infant Attachment and Psychoanalysis: The Eyes of Shame" Ayers (2003) showed that babies react to facial expressions they learn from their mothers. In a baby's attempts to repeat interactions with the mother, the child will attempt to re-engage the mother once the he gaze averts from the child. Rochet (2009) wrote: "Consciousness entails a self-reflective loop and an introspective process dealing mental objects or objects that are re-represented" (58). My research looks for ways likes and dislikes emanate from physical behavior. My investigations became largely a matter of

attempting to address the effects of perceived meaning by observing how events impact physical perceptions.

Slovic et al. (1991, 439) argued that affective feelings will precisely reflect the meaning of a stimulating image and that the more precise an affective impression, the more precise it's reflection in meaning. Logically, when equipped with an understanding of the physical processes of perception, a researcher can reasonably speculate about how people might respond according to what things mean to them. Affect then, should reveal the meaning of a thing through an approach avoid dyad which is a two-dimensional display of conscious or unconscious feeling.

My assumptions are supported by other research findings indicating among other things, that certain political constructs probably factor into affective response systems and political cognition. As a result of my own findings in Shanks (2013) I came to believe that certain affective events would predictably precede or accompany some behaviors, and that these events would probably cause replicable physical effects. I wanted to further test whether expected physical effects could be used as predictors of other political behaviors.

In reviewing the literature for my dissertation I found that several earlier simplifying strategies became the basis for recent experimental and theoretical strategies. Some employed the wider use of heuristics, such as "availability", "representativeness", "anchoring" and "elimination by effect". This was significant, because heuristics have long been associated with the contextual broadening of attitudes.

Slovic et al. (1993) reasoned that once rationally bounded decision models were replaced by motivated reasoning researchers sought to explain the formation of political

judgments through other means. Notably, this was communicated in Tversky and Kahneman (1974), Tversky (1972), Kahneman, Slovic and Tversky (1982), and Simon (1956). I argue that fundamentally, the schism between bounded rationality and motivated reasoning is an acknowledgement that affective motivations guide judgment and that rationality is embedded in retrieved heuristics.

Many years ago as a competitive athlete and coach, I noticed that stored inside the human body there seemed to be several reactive memories. These memories appeared to operate perpetually and with a remarkable degree of predictability. I found this to be very similar to the way I viewed the political interactions and political rhetoric. It seemed a reasonable analogy that the accumulation of physical training was akin to the accumulation of political information.

Some physical effects, such as affective automaticity, hot cognition and political orientation each appear to operate with a considerable amount of appetitive or aversive affection which seemed inseparable from heuristics and emotions spurred on by specific and identifiable contexts. While an athlete prepares for competition their coaching is largely a matter of anticipating the recovery speed of certain muscle groups. Similarly, a political strategist prepares political communications based the expected valence of memories inlaid with certain evocative political images.

The stability of attitudes, attentions, emotions, and expected preferences are reflections of affective memories. As in physical exertion, political events can also determine which memories a person will draw upon. The ability of a coach to capitalize on a person's resilience is very similar to a political strategists need to understand how political affect operates.

The basis for my desire to pursue this work comes largely from the more inspiring topics I have encountered doing research papers, asking many questions and attempting to answer some of them. Through years of coursework, research projects and many conference presentations that were usually, but not always on the subject of individual behaviors and American politics, the human body has always seemed to be the place to start to figure out why people do what they do. The logical next step was to find literature supportive of addressing question about relationships between affect and social contexts. Among the most relevant investigations are those on the subject of automaticity.

Affective automaticity has been the subject of several research works since Ekman (1999) appeared to notice the effect of durable emotional events. This work hints of the concept of latency which preceded revelations by Ekman. Research of the various interpretations of automaticity reveal complex relationships between cognition (and lack of) and acute physiologic activations. Ekman (1999, 52) posited that series' of brief emotional episodes are affectively durable. Arguing that automatic appraisal function independently, this author asserted that appraisal can proceed "with little awareness, and with involuntary changes in expression and physiology…" In this sense our own awareness is secondary. The authors continued, stating: "we often experience emotions as happening to us. Emotions are unbidden, not chosen by us." This author also assumed that automatic appraisals can regulate how we think perhaps before we know we are thinking it. This scholar wrote: "that specific emotions regulate the way in which we think, and that this will be evident in memories, imagery and expectations…." (52).

Relevant Perspectives in Literature

Recent research has included various bio-physical measures linking physical effects to certain stimuli. Logically, if certain physical effects are associated with political differences then causation can be manipulated to evoke a predictable affective response. Further, if political likes and dislikes constitute concrete measures of combined responses, then appetitive and aversive expectations can be replicated. If these expectations come to fruition the way we generally view political likes and dislikes could change immensely. I believe it is very reasonable to argue that the manifestations of certain physical effects constitute identifiable likes and dislikes. Further, while researchers at the University of Nebraska have documented the impact of a stimulus on various bio-physical variables my dissertation treats affect as a potential *cause* of certain replicable behaviors that are also consistent with self reported political tendencies

Once a stimulus triggers attitudes political likes and dislikes can be reasonably inferred from the observation of attention during affective perceptions. Political likes and dislikes are probably guided by certain social, environmental and bio-physical phenomena. I make this inference because logically once perception sets upon an object affect reveals the effects of its features. This interpretation only requires that likes or dislikes be viewed as measurable phenomena which tend to move a person toward or away from objective content.

Physical Attention

An objective of the Oxley et al. (2008) research was to observe responses to political attitude objects. The authors of Dodd et al. (2012) were concerned with broad

political orientations. Amodio et al. (2004) were mainly concerned with racial bias. The common element in these studies is role of affective processes. These are also the featured in this dissertation. Here I propose that politically moderate people use noticeably different ocularmotor responses when looking at sad faces. This may be due to a heightened affective response, as might be suggested when reading Oxley et al (2008). It may also be due to differences in surveillance mechanisms controlled by automaticity or "multiple mental" processes as is suggested by Dodd et al. (2012) and Amodio et al. (2004). Regardless of the cause of these phenomena, the attention of individuals on certain objects is what can lead to identifying their likes and dislikes.

I argue that monitoring physical attention is the best way to investigate how objects affect perceptions. However, attentions need be based on a contextual framework. Lodge and Taber (2013) reported "Conscious attention is very limited, hence the need for heuristics, habits and other simplifying mechanisms for thinking reasoning and doing (Caldini, 2001; Lau and Redlawsk, 2006; Lupia, McCubbins, and Popkin, 2000; Kuklinski and Quirk, 2000)" (28).

Lodge and Taber (2013, (34-59) argued: "Deliberative processes are cognitively effortful, demanding of attention, time consuming, and presumed to be on an intentional search of memory for relevant facts and considerations" (35). These authors listed seven postulates about what drives the formation and expression of political attitudes and attentions toward political objects. Two postulates relied on consciousness and conscious effort, suggesting that in the view of these scholars, political attitudes and attentions are also revealed through unconscious means. This inferred that affective processes are

capable of moving people toward or away from certain objects when people are unaware of their attentions shifting.

Saccadic eye movement was not measured in the original experiments discussed below. However, it is a phenomenon which illustrates one of the ways perception is impacted by light and movement. Unbeknownst to the individual, saccadic movements, seem to indicate the eyes are operating independently at precognitive levels. It seems very likely that attention is an extension of that process and logically will lead a person *only* to what may be important.

In several of the ANOVAs performed during the research for this dissertation, I approached the analyses of affective stimuli as phenomena related to specific events in context. I theorized that certain affective relationships would materialize when a specific detectable event was onset by a specific stimulus. I assumed that any real or anticipated event was most likely the affective relationship of social context and certain physical effects. Hence, a scientifically relevant event could be predicted through the associations of physical effects of various known evocative social factors. This theorem of stimulus onset events (SOE) codifies the major assumptions of this dissertation and provides a theoretical template for the framing and interpretation of bio-physical experimentation. Figure 1.1 shows the major assumptions of this dissertation.

Assumption:

The physical effects of a stimulus are reflected in how the eyes gaze upon objective features.

Assumption:

Motives cause affectively-charged behaviors which are essentially bundles of relevant information.

Figure 1.1 Stimulus Onset Event (SOE) Theorem: Major Assumptions

In one of my experiments, approximately 100 individuals were administered a test of attention involving several 10-second one-time exposures. As was done in each of the visual tests reported here, these were the simultaneous presentations of a picture containing a conflicting message in the form of a contradictory sentence.

What I found was that the presumptive political orientations (i.e. implied by support or opposition to "big" and "small" government frames) appeared to set apart three clusters of support and opposition to 'big' and 'small' government. Some may argue that the big versus small dyad is culturally influenced or perhaps even racially connected. Gainous (2012) noted that a divisive public debate "centered on the source of many Whites' opposition to government programs" (Gainous, 2012, 252-53). Participants in my research were divided only according to the strength of their self-reported support for big and small government and partisanship.

The distinguishing tendencies toward certain orientations among the groups in these tests were derived from their own self-reports on a questionnaire[1], records of their gaze patterns and also changes in pupil sizes on data obtained from several exposures to the various aforementioned randomized ten-second one-time presentations. It should also be noted that in previous research participants from this sample population had been administered the same questionnaire. In a completed Internal Review Board (IRB)

[1] In 2013 I reported that "405 students responded to a survey questionnaire that was designed to determine if attitudes of "big" and "small" government were stable under politically ambiguous conditions" Shanks (2013, 124).

research project, I obtained what I felt was a strong attitude-based representation of the population sampled in this research. I used identical questionnaires for the experiments conducted for this dissertation.

I will cite my findings on attitudes for comparative purposes. These included responses from approximately four-hundred research participants including several dozen participants who also participated in visual tests for attention or ocularmotor behaviors during viewings of various pictures paired with a sentence in text. The information gathered from that research included data on attitudes toward redistributive policies, government size, partisanship and bureaucratic processes.

Physical effects have contextual meaning. The stimulus onset events theorem lays a framework for interpreting personal and interpersonal affective phenomena. Therefore how the eyes attend to objective features *could* be socially relevant. Further, social meaning adds steps to the physical process of ascertaining the perceptual relevance of the sensations that respond to environmental cues. Hence, a person's motives logically charge behaviors that are essentially stored bundles of relevant information.

In this context, one of two additional things is likely to happen. First, it may be that the lifespan of a single stimulating onset event will be relatively short and that no subsequent behaviors will follow a noticeable affective trend. Or, these events could connote meaning represented by a relevant object. Further, once affection (or aversion) is detected, feelings are predictive of what a person may do next. In this sense the additive qualities of appetitive and aversive effects probably will trend toward revealing the causes of physical affect. In this context a cumulative process of one or more affective events may justify the establishment of quantifiable objective likes and dislikes.

I suggest the ranges of pupil size are evidence that the lifespan of a stimulating event is in the process of affecting perceptions. Further, I speculate that images of sad faces offer a reasonable test of that process. Combined with the altruistic indicator data, it was possible to access physical affect in terms of how empathic feelings may impact political affect.

The remainder of this opening chapter includes a chapter by chapter overview of the dissertation. This preview will touch on the major questions of the work. I will also briefly describe my proposals for resolving those questions. I hypothesized that physical attentions guided attitudes, motivations and attentions preceding political preferences. Of course the crux of the matter is the issue of incorporating bio-physical concepts into political science research. One of the great challenges was in translating the physical perception (i.e. attention effort) related to social and political content into measurable physical properties. The brief introduction above has provided a basis for pursuing physical affect in the broader context of current trends in the Political Science discipline to investigate bio-physical phenomena and their relationships to individual behavior.

Lodge and Taber (2013, 150-151) recount some of their earlier work on the subject of partisan goals and the selective process of attention. The authors described dynamic relationships in which exogenous political agency variously caused individuals to engage different information according to their attitudes. In my view, these affective relationships occur as affect responds to a priming element and "travels" with its conceptual node into working memory (e.g. Fazio et al., 1986a Lodge and Taber, 2005, 461).

Lodge and Taber (2013) also explained what I interpreted as chains of cognitions and precognitions linked to affective events. In simple terms, affect indicates a potential like or a dislike. Each of which is capable of directing attention toward *or* away from certain objects. These encounters with attitude objects and other information denote the potential occurrence of numerous positive and negative charges. The authors wrote: "Selective attention and exposure drive attitude persistence and attitude polarization: those holding strong prior attitudes defend those attitudes against challenging information and may become attitudinally more extreme on reading pro and con arguments because they assimilate congruent evidence uncritically …" (151).

This line of inquiry is centered on the belief that physical processes lead to certain quantifiable values. The frequencies of physical affect may also be translated into intensities. These measures ought to contribute to the improved understanding about the meaning of things perceived. Returning briefly to Simon's point about the importance of understanding the goals of an organism, appetitive processes appear throughout the literature. There is evidence of a primordial anticipation process. In my view this is manifested as either an appetitive or an aversive response. Baron-Cohen et al. (1997) referred to a groundbreaking study by Baron Cohen (1995) which implied appetitive or expectant drives persist in ways research study participants engage their environments. Kahneman (2011) referred to a bias to believe and confirm. In my own experiments, I tested the stability subject's self reported attitudes in relationship to their approach to ambiguous political and bureaucratic objects (i.e. Shanks, 2013).

These researchers demonstrated that children with autism do not use self-directed gaze strategies to track what someone is speaking about, as do children without autism.

Baron-Cohen (1997, 50) reported that Baron-Cohen et al. (1997) found that autistic children performed an egocentric error in their responses in an experiment designed to track children's abilities to infer a speakers referent. The error suggests that they may be relatively "blind" to the significance of a speaker's gaze direction as a cue to their intended reference. The metaphor of blindness is used in another notable context in the literature (e.g. Baron-Cohen, 1994, 1997). Chen at al. (2006, 534) reported that Capuchin monkeys exhibited the human like tendency to avoid risk and Cosmides and Tooby (1992) in which people demonstrated tendencies to avoid being cheated by second-guessing.

I argue that the process of liking and disliking is initiated when at least one stimulus event occurs in the form of a detectable excitation (i.e. fear or fear of being cheated). Then by stimulating other nearby sensory apparatus events that have been onset by a stimulus allow the storage of various sensory memories which can come from any combination of visual, audible, and tactile stimulations. Daily life offers endless examples of the sensory memories from physical affect. Figure 1.2 lists a few examples of simple ways to demonstrate sensory stimulations and the resulting sensory memories. These examples show how sound, touch, and light signal other cells in other affective systems and so on, until a detectible response dissipates.

Auditory and Tactile Sensory Stimulations and Memories

Try this exercise: Sit quietly at a table for moment. Clap your hands together. Can you hear the echo after the clap?

Try this exercise: Next clap your hands and immediately slap the table with both palms. Can you feel the impact on your palms and still hear a different echo?

Try this Visual Sensory Stimulation and Memory exercise: Go into a room with a lamp covered by a lamp shade. While still looking at the light shining through the shade, turn off the light. Can you still see the lampshade?

Figure 1.2 Examples of Sensory Stimulations and Corresponding Memories

Emotion versus Physical Effects

The emotional overtones of politically influenced affect may also be included as certain feelings about political objects cause either an appetitive or an aversive response. The difference is that politics is a social construct which depends on a person's level of engagement and the activation of tendencies to confirm information they favor. I reason that this phenomenon is a socially engaged expectant response akin to what Kahneman (2011) argued could manifest as intervening functions of "a machine for jumping to conclusions" (79). Zak et al. (2005) wrote: "Because humans are highly social creatures, there may be both positive and negative physiologic controls over social behaviors" (360). I interpret this to mean that multiple mental processes probably determine the extent to which the brain is designed to allow emotions to contribute to judgment prior to, during and after slower acting cognitions (i.e. McDermott 2004, 693).

Emotions and visceral responses are not necessarily explainable in cognitive terms. Because of what Ekman called "biological constraints" he felt it necessary to argue that social learning could not fully explain the complex system of emotions governing

individual behavior (i.e. Ekman, 1999, 52). Ultimately, Ekman set the stage for others to consider relationships between emotions and actions to be seen more as something naturally automatic.

The nuance of explaining the physical effects of social norms is important because it sheds light on the diverseness of character by which affect has come to be understood. I would argue that is vital to *first* describe the bivalence of political likes and dislikes from there trace backwards to define the ways affect shows likes and dislikes happening. One particularly valuable method I feel is useful incorporates factors taken from survey tools and data from laboratory experiments on attentions, and various emotional outputs.

Experimental Methodology

Among the most significant breakthroughs in the Political Psychophysiology sub-discipline is the theory of "Hot Cognition". Lodge and Taber (2005, 462) define the hot cognition hypothesis as positing that previously evaluated sociopolitical concepts are affectively-charged and prone to automatically respond at the onset of a stimulus. Ostensibly, the intensity of the "charge" is regulated by perceptions of social factors relative to biases held by the individual. The bivalent nature of political information and political images needed an explanatory variable to account for precognitive reflexes. Although a cognitive apparatus may not be readily apparent in sudden or reflexive choices, the phenomenon of "hot cognition" as a fundamental component of affective automaticity has been well documented.

Revelations that reflexive attention during situations involving a sudden stimulus onset infer that appetitive or aversive responses (i.e. emotions) can occur just before cognition. Yarbus (1967) posited that the revelation that eyes are never truly still while images can still be properly perceived was evidence of a much more complex system of vision than previously thought. In the introduction to his book Eye Movements and Vision, Yarbus (1967) wrote: "experiments have shown that for conditions of perception to be optimal, slight but not excessive continuous or interrupted movement of the retinal image over the retina is necessary, as a result of which the light acting on the receptors is constantly changing" (3).

This finding is no small issue. Imagine that if the eyes are always in motion, you would have to wonder why visual perception has evolved in this way. There is a simple way to demonstrate the strange phenomenon of saccades. Figure 1.3 below offers a simple test. If the eyes are always moving that would mean also that there are affective components tempered to make hundreds if not thousands of minute adjustments on objects in a visual field.

The theory of affective automaticity assumes that there exist prevalent information processing biases. This is supported in Lodge and Taber (2005, 475-477) and Ekman (1999, 50). Lazarus (1991, 191-92) had also adopted a similar view in which a differentiated appraisal system involved a psychobiological process which provides for emotional biases. Perhaps the information processing biases related in Lodge and Taber (2005) are indicative of a sort of particular embedded attention bias. Further, I believe that as described by Ekman (1999), the attention that is functioning on behalf of the

appraisal system is directly due to amplifications and the attributions of details gleaned during social learning.

Try this saccadic eye movement exercise: Go into a darkened room with a flashlight. Leave the flashlight on and set it down on a shelf or table. (Anything that is stationary) Next, be as still as possible and close and open your eyes repeatedly over several seconds. Does the light stay in the same place?

Figure 1.3 Saccadic Eye Movement Exercise

Theoretically any of our senses can be examined by a Scientist hoping to explore the role of the mind or perception in affective responses. Oxley et al. (2008) employed visual affect in relationship to repulsive images. Lodge and Taber (2005) used visual stimulation in relationship to attitude objects. Baron-Cohen (1995) used visual stimulation in relationship to language acquisition. What these Scientist had in common was the use of vision as a function of learning processes in consideration of attention, a basic measurement of appeal or both.

Ekman (1999, 50) posited that when objects are perceived to be moving very quickly directly into the visual field emotion-associated heuristics in the form of metaphors for other events may substitute in appraisals. He advocated for the idea that appraisals tended to function automatically through a variety of previously experienced stimulus events regardless of how frequently they have been encountered. Very obvious similarities can be found in Ekman (1999) and Lodge and Taber (2005). These scholars are somewhat ambivalent about attention and what precipitates the reflexive reactions

that occur in sudden events. For this reason a definition of affect needs to include some accounting for the meaning of sensations.

Chapters Overview

In Chapter Two I bring together a collection of research in psychophysiology. These works represent general categories including, vision research, political behavior research, and affective-centered biophysiology research. It should be noted that these reviews include a smaller compliment of works that were never intended to broaden knowledge in Political Science. Collectively research in these reviews represents the underpinnings of a Political Psychophysiology sub-discipline.

The viewpoints expressed in these findings offer several perspectives of how to confirm certain bio-physical tendencies. Chief among them are the perspectives of Yarbus (1967) and Ekman (1999). Both of those scholars were focused on visual perception and gazing behavior. However, Ekman (1999) is also known for incorporating tests for the perception of emotion. These works provide significant support for my argument that visual perceptions function affectively as surveillance mechanisms and ultimately as components of social learning.

Chapter Two also includes literature that promotes multiple research modes. Prominent among these reviews are works that engage human physiology as a major component of social science research. One very important article is in McDermott (2004, 691-706), "*The Feeling of Rationality: The Meaning of Neuroscientific Advances for Political Science"*. This treatise on interactions with rationality between mind and body deftly conjoins physical and social concepts regarding the affective processing of

political feelings. Rose McDermott may be the most prolific proponent of taking physiology into consideration with political science research. In the course of trumpeting physiologic methodology she has co-authored several other treatises with similarly inclined scholars. Two of them include, Druckman and McDermott (2008, 297-321) and Hatemi and McDermott (2012, 525-53).

Others have engaged an area of research devoted to specific emphases bio-physical emphases in experimentation including but not exclusive to; Oxley et al. (2008, 1667-670) who targeted the thalamic regions of the brain and physical affect, Dodd et al. (2012, 640-49) who addressed the general functions of the central nervous system regarding attention responses in emotions and sensory perception; Lodge and Taber (2005, 455-82) who proposed an alternative to affective primacy as it is discussed in Zajonc (1980, 1984). Additionally, Murphy and Zajonc (1993) found that the brain appears to direct autonomous affective systems across separate neural pathways.

Chapter Three presents a methodology which utilizes visual attention in conjunction with the objective measurements of socially-motivated responses facilitated by the naturally occurring conclusion-jumping mechanisms of System 2 (i.e. Kahneman, 2011, 105). Assuming that visual perception presents replicable effects, the impetus for Chapter Three comes mainly from the notion that appetitive and aversive physical responses can be associated with social contexts. This framework is supported by research involving political affect, physical affect and gaze behavior featured in Dodd, Hibbing and Smith (2010), Oxley et al. (2008) and Dodd et al (2012).

It seemed necessary to combine forms of physical affect and emotion in the field of Political Science research in order to explore what likes or dislikes do to behavior

resulting from interactions with political information. In as much as political likes or dislikes are felt and can be demonstrated on multiple socially interactive levels, affect as well must also be experienced in multiple contexts. In this dissertation affect is generally expected to be manifested through observable physiological phenomena which tend to be relatively easy to replicate. Notable research and original experimental testing of this assumption will be discussed in greater length in the analyses in Chapter Four.

Chapter Four is an analysis of my attempts to translate the physical effects of attention into a relevant political context. In those tests I expected gaze behaviors to reveal noticeable measures of attentions. I expected that attention effort would as indicated in the literature be directly impacted by attitudes, specifically attitudes toward government, bureaucracy and partisanship. In other words, I expected political orientation to govern responses to specific stimuli and that I would be able to rely upon bio-physical measures of physical phenomena linked to exposures to the stimuli. These analyses report on the findings from tests that included 54 subjects who were by virtue of self-reported attitudes, assigned to one of three political orientation groups.

Chapter Five is an analysis of the targeted sample population. These experiments combined attitude variables and physical variables. The accompanying essay describes a rigorous examination of the results of a previous IRB approved political attitude questionnaire that was administered to 405 participants. Results reported in a manuscript titled, "A Battle for the Attention of the Public" (Shanks, 2010, unpublished manuscript) seemed to validate of the survey. Additionally, these data were also explained in Shanks (2013). I wanted to be sure about the survey tool's ability to represent the theoretical components of experiments in this dissertation, namely the assumptions of the stimulus

onset events theorem and the hypothesis predicting that likes and dislikes evoke responses that can be physically measured. After a review of a series of analyses of variance tests, this chapter summarizes several inferential statistics. The chapter concludes with a brief discussion of the inclusion of an altruism component and speculation about how altruism may impact of the relative appeal of certain objects (i.e. sad faces).

The details in the analysis comprise a firmly established rationale for observing likes and dislikes in the context of physical affect as it is herein defined. First, I argue that physical affect is a catalyst for environmental stimuli. Second, I argue that once activated, affective charges (i.e. likes and dislikes) tend to gravitate toward fairly predictable outcomes. For example, it is reasonable to expect that certain political orientations proceed more cautiously (i.e. Oxley et al. 2008, 1669) and that some orientations are initially more attentive to less appealing information (i.e. Dodd et al. 2012, 646).

Chapter Six is a brief essay on the implication of the dissertation with special regard for the potential value of affective measurements. The chapter closes with a summation which encompasses the interrelationships between social, political and physical factors which can offer insights into the individual political experience.

Chapter Seven closes the dissertation with a call to increase attention toward bio-physical investigation noting recent important visual behavior research and proposes directions to pursue bio-physical investigations further.

CHAPTER TWO - GATHERING THE LITERATURE

A Post Positivist Approach: Beginnings

The main challenge for this literature review is to combine for the benefit of Political Science, physiology of the eyes as told by Yarbus (1967) and others, rationalism described by V.O. Key (1961) and affective automaticity as described by Lodge and Taber (2005). Through an inductive process, I expected to be able to explicate relevant physical effects through the logic of online processing as it can be interpreted as a complimenting mechanism in affective automaticity. Simon (1967) related that the "central nervous system is a serial information processor that must serve an organism endowed with multiple needs, and living in an environment that presents unpredictable threats and opportunities" (29). These reviews are my attempt to emphasize the relevant facets of physical perception represented in the serial information processing mechanism referred to in Simon (1985 and 1967).

These works contributed to the goals of the dissertation because they also investigate causal components of attitudes and temperament in information processing models that include (i.e. sensations and perception). In a way, this research follows the early work of Ekman (1999) who anticipated that a number of events may cause specific appraisals for distinct and separate emotions. In this approach to political behavior the hope is that the psychology of physical perception combined with the political orientation tendencies can become complementary sub-disciplines of Political Psychophysiology

The literature supports the notion that there are important cognitive factors involved in affect which do not always involve the conscious mind. Several works

gathered here will demonstrate that likes and dislikes, political tendencies and probably political orientation emanate in a person's behavior prior to, during and also after a person has been exposed to a stimulus. I argue that affect is represented by coordinated interplay between bio-physical and social factors. Alford, Funk and Hibbing (2005) aptly described this in reference to a social learning process in which children predictably inherit specific traits. These authors posited the "correlation between a parent and a child arises from a combination of shared genes, shared environment, and parental socialization (an indirect form of shared environment in which the parent's attitudes provide a path from the parent's environment to the child's environment), all of which are pressures toward similarity in parent–child attitudes (157). I agree with this perspective because it includes the role of bio-physical constants (i.e. genes) interacting with social factors over time. I am also in agreement with Slovic et al. (2003) who viewed affect in experiential contexts.

Slovic et al. (2003, 297) refer to human beings as benefitting from an *experiential system* where "reliance on affect and emotion is a quicker, easier, and a more efficient way to navigate in a complex, uncertain, and sometimes dangerous world. Many theorists have given affect a direct and primary role in motivating behavior. This seemed to be in agreement with what Herbert Simon meant regarding serial information processing and affect's integral role in behavior. Simon (1967) argued: "2 mechanisms: (a) goal-terminating mechanisms, permitting goals to be processed serially without any 1 monopolizing the processor, (b) interruption mechanism, having the properties usually ascribed to emotion, allowing the processor to respond to urgent needs in real time. Mechanisms to control the direction of attention and activity, have been incorporated in

some information processing theories of human cognition, and their further elaboration will permit these theories to explain wider ranges of behavior" (29).

I interpreted the serial information processing model described by Simon (1985) to be an early articulation of psychophysiology. His inclusion of goal-determining factors is a revelation by which the focus of causes of human behavior to shift away from the rationality of utility maximization. I argue that Simon (1985) signals an emphasis in a perspective of behavior in which human behavior is directed by discrete individual goals. In fairly recent history the notion of politics-centered psychophysiology has benefitted from contributions of research from three general approaches to human behavior, including rationalism, empiricism and a period of physiological experimentation. I mainly credit Simon (1967) and Simon (1985) with facilitating the transition from rationalism to several bio-physiological perspectives of political behavior.

Introducing the Era of Psychophysiology

The works featured here include several research approaches encompassing a period of about the last sixty years. During this time roughly three important philosophical trends have transpired. I found that the broader concept of psychophysiology knowledge is mostly understood by the interplay of affect and physical perception with life's daily events.

The approach to the broad range of research that is featured in this dissertation is one of logical positivism. Fischer (2003, 118) was a proponent of this process. He stressed the importance of engaging multiple kinds of contributing knowledge to support ideas as opposed to concentrating on one or a very few theoretical perspectives. Fischer

advocated for an asymmetrical approach to looking toward at research. He wanted to be flexible and to concentrate on the testable propositions. In his view, the goal is largely to "find and apply" common principles among the social sciences with an understanding that there are no hard and fast rules.

Early Years

In the early years of Psychophysiology, a broad range of academic disciplines embraced elitism and rationalism. Affect and emotion did not receive significant attention in political science research. What do appear prominently are views of rationality, the behavior of political elites and the behavior of individuals who were thought to be poorly equipped to interpret the complexities of political environments.

The era began with Berelson, Lazarsfeld and McPhee (1954), Ekman (1967) and Yarbus (1967) and ended with Simon's (1985) treatise on human nature in politics. Darwinism may well have been the most influential explanatory view of individual behavior available at that time. Most notably Simon (1985) emphasized the individual nature of goals and their effect on cognition, Mondak (1993) exposed the mental power of source cues that would be encountered in political environments. Mondak was surely in part driven by a shift in thinking about pervasiveness of socially expectant feelings. As reported in Zaller (2003) V.O. Key Jr. (1961) previously noted a strategic process of politicians seeking to "both anticipate and to shape … to follow … and to lead public attitudes" (264-74).

As early as 1986, the complexity of political attitudes and the brain's ability to process at multiple levels were incorporated into several studies. The approach to

behavior research at that time was more beholding to introspection and what was known about the mechanics of the mind at that time. It would be several years before political science would embrace the brain's physiology as a topic in conjunction with political behavior.

V.O. Key had previously written about the effect the publics' expected actions might have on the decisions of political leaders. Later, Fazio, et al. (1986, 230) noted that latency does not necessarily equal automaticity (i.e. Chong and Druckman, 2007, 643). I argue that the mental processes discussed in these works indicate how motives drive individual political beliefs or attitudes. It seems plausible that political attentions, emotion and political preferences are interrelated.

Mental Systems

The literature shows that people tend to engage the political issues containing recognizable features. There are also indications that people will reconfigure their perceptions to retain familiarity. Perhaps people are simply motivated to modify complexities in information they encounter (e.g. Sniderman and Bullock, 2004, 238; Mondak, 1993, 171; Downs, 1957, 146; and Berelson, Lazarsfeld, and McPhee 1954). The research offers several examples of investigations that address the complex nature of the mind and man's supposed need to utilize multiple levels of mental systems. Petty and Cacioppo (1986) and Tversky and Kahneman (1986) each explored the psychology of the mind's abilities to process various complexities. Perhaps the best example of research approaches concerned with the mind during this time was offered by Fazio et al. (1986). Among other things, these scholars concluded: "An attitude involving a strong

association is apt to be activated upon the presentation of information concerning the attitude object and, as a result, color one's judgments of the information" (236).

The idea that people are particularly un-motivated to innovate and tend to position their beliefs or attitudes with certain identifiable social continuities plays well into the idea that affective relationships are probably disruptive of behaviors that would otherwise be passed down through genetics. Alford and Hibbing (2004) quoted Ostrom (1998) who asserted: "our evolutionary heritage has hardwired us to be boundedly self-seeking at the same time that we are capable of learning heuristics and norms, such as reciprocity." The authors added that Ostrom's perspective of tendencies to maximizing utility selfishly is "genetically driven and can only be countered by the decidedly nongenetic teaching of societal niceties" (708). Human behavior in this context, signals how the uniqueness in individuals manifests through how they express preferences. In this sense, their likes and dislikes are simply products of social learning.

The concept of belief systems infers that people need to manage their beliefs. The literature indicates that people cope by maintaining consistency and congruence with their social environments. Many of these works may have previously not been associated with logical positivism. I argue that there has been a steady shift away from views of reason and behaviorism and movement toward the areas of experimental social and behavioral sciences. This trend includes Feldman (1988) who wrote an article titled *Structure and Consistency in Public Opinion, The Role of Core Beliefs and Values* and much later Feldman and Steenbergen (2001) *The Humanitarian Foundation for Public Support for Social Welfare*.

Feldman (1988, 417) added that people were motivated to form attitudes and beliefs based on three core values; support of equality of opportunity, economic individualism, and the free enterprise system. Feldman and Steenbergen (2001) noted an American ambivalence toward public support for social welfare programs. According to Sniderman and Bullock (2004, 341), political choices and public opinion stand on constraint, congruence and stability. The normalization of conforming intensions and maintenance of congruent options demonstrate the "pivotal role of affect in the maintenance of cognitive consistency" (340).The combining of these components implies that feelings across groups can be consistent and are organized.

In the same publication, Sniderman and Bullock also questioned the utility of core values theory which some scholars touted as a "benchmark of congruence." The authors asserted that the theory of sets of values essentially could not stand the test of scientific measurement. Heuristics theory also suffered the authors' scrutiny. These authors criticized core values theory on grounds questioning whether "the public taken as a whole can make judgments about a problem in public affairs by taking advantage of heuristics that match the judgments they would make if they were to be fully informed about" (343).

Works featured below include Alfred L. Yarbus (1967), Herbert Simon (1985), and Baron-Cohen (1995) respectively. In his early work on visual behavior, Yarbus (1967, 211) argued: "The distribution of points of fixation on the object changes depending on the purpose of the observer, i.e., depending on the information which he must obtain, for different information can usually be obtained from different parts of an object. The order and duration of the fixations on elements of an object are determined by

the thought process accompanying the analysis of the information obtained. Hence people who think differently also, to some extent, see differently."

Yarbus' (1967) argument seems quite plausible and it is also in partial agreement with Simon's (1985) position that science need only to understand a choosing organism's individual goals "and the objective characteristics of a situation" (294). In this context, the visual searches of objects ought to offer objective insights especially with respect for how objects are visually attended. For example, one person may examine a widget and fixate on its rivets, while paying less attention to its other moving parts leading to the assumption that rivets are more important.

By comparison, an individual who fixates more on a moving part may make the perception of movement more important. After reading Herbert Simon, I predicted that knowing the objective elements to which a person will be exposed similarly may allow for rational interpretations to be developed about a person's attention. For example the politicized language depicting the general debate about the merits of big and small government frames, ought to provoke some kind of noticeable reaction.

The broader areas of research in this review are highlighted by important advances in psychophysiology. Work by Yarbus (1967) suggested early on that physical behaviors were studied when people were expected to be rationalizing utility maximizers to the present time where political likes and dislikes as well as rationality are accepted as among several psychological components of affect (e.g. Ekman, 1999; Marcus et al. 2005; Proveti, 2009; Sturgis et al. 2010; and Lodge and Taber, 2013). Most of the literature here is in the form of scholarly articles or book chapters. A few published essays and reviews are also referenced. These particular works represent advances in

methodology which distinguish the major contributions in the evolution of psychophysiology.

The literature indicates that physical behaviors betray feelings. The way information is noticed and internalized represents the subjective value of a stimulus. This means the physical attentions on objects are contextually relevant and therefore objectively definable. As an academic discipline, Political Science has in a way been a gradual association of politics, psychology and physiology.

What we know about political affect and what we can prove is enhanced by well-defined social constructs. These do not need to be complex structures. Lodge and Taber (2013, 1) wrote: "We routinely ask respondents for their party and candidate preferences, their approval of policy proposals, and how they feel toward one or another group and we are often able to relate their explicit measures …"

I argue that the excitation of organs proves a stimulus has occurred and that subsequent related excitations confirm the presence of a social context. I also argue that when contextual stimuli are acted on the resulting phenomena are evidence of likes and dislikes. Therefore, the measurement of a variable that is dependent on multiple physical phenomena is ideal in this approach. In this view objective likes and dislikes cannot be known to be present until an assessment of a certain identifiable socially motivated action has occurred. Sorting out just how to identify causes and effects should begin with what is plainly observable.

Identifying and measuring likes and dislikes separate operations. Tooby and Cosmides (1994) argued: "beneath existing surface variability all humans share the same of set of preference-generating and decision-making devices" (329) Logically, evidence

of interpersonally influenced expectant behavior ought to allow various social factors to be seen as causes and effects of physical affect. If this is true, evidence of concurrent physically affective should also be viewed as potential causes and effects of physical affect.

This assertion relates to a revelation reported in Baron-Cohen (1995, xiii). He asserted: "pre-existing" adaptive organization evolves in the mind and therefore reveals similarly shared cognitive architectures among human beings. Further, as suggested by Alford and Hibbing (2007, 196-98) is the notion that a possible political temperament exists in people and operates independently in much the same way as personal and interpersonal temperaments do is an even more intriguing supposition.

Which elements need to be measured? More importantly, what are the important dependent variables? The literature leads me to believe that when political likes and dislikes are expressed as evidence of political orientation interpersonal and personal factors are relevant to subsequent physical responses. In this respect the traditional methods of gathering political beliefs and attitudes by administering surveys to be much less effective.

I argue as do Taber and Lodge (2013) that thirty years of affect-driven behavioral studies are propped up by a much greater base of knowledge of the neurosciences. I argue that this relatively new knowledge changes the way temperament should be viewed. In one sense, there is a question of whether different temperaments exist. Alford and Hibbing (2004) suggest that at least three temperaments are plausible. I argue that this is less important than what should be used as variables to identify and measure temperament. What is more important is whether the numerous ways decision making

processes can be explained in physical terms. I find the discussion of temperaments cumbersome. This may be because the science of temperaments is more associated with personality theory which is not featured in this dissertation.

Mental Images

The literature indicates that the formation of mental images can include details not acquired with present visual content and also that mental images probably intercede when there is not enough time for a conscious response. Consider that Baron-Cohen et al. (1997) discovered differences in the ways children acquire language. These scholars showed that children with autism learn words and the meaning of objects differently than sighted children who did not have autism. However, this does not necessarily diminish the value of neural pathways associated with language acquisition. Reasonably, a researcher must remain open to other facets of affect which may lead to alternative explanations.

Baron-Cohen (1995, xvii) noted a general agreement among scholars of behavior that humans interpret the behavior of others in distinctly "mentalistic terms because we all come equipped with a "theory of mind"" world view. "We are "mindreaders" by nature, we building interpretations of the mental events of others and feeling our constructions as sharply as the physical objects we touch. Humans evolved this ability because, as members of an intensively social, cooperative, and competitive species, our ancestors' lives depended on how well they could infer what was on one another's minds" (xvii).

These revelations were similar to the "basic emotions" discussed in Ekman (1999) and the "specialized" appetitive devices that are discussed in Cosmides and Tooby (1994) who also issued a stern cautionary note to avoid "too much" dependence on cultural differences. The task at hand for this dissertation is to investigate affective phenomena.

The research collected for these reviews involves three areas of investigation which have received the uneven attentions of researchers over the last sixty years or so. The political science community has demonstrated strong interests in psychology and more recently has invited several novel attempts which incorporate physiology marking an important turning point in psychophysiology research. However, these works do not alone offer a complete picture of how likes and dislikes develop. Informing the political science community about the ways people make sense of things through various affective systems and social constructs requires a decision be made of whether affect and the presence of expectant responses can be defined in physical terms.

Ayers (2003) and Baron-Cohen (1994) offer significant evidence that visual behaviors are indeed capable of revealing that a child's expectations about future, past or desirable interactions with context. An alternative approach would include social science knowledge of individual tendencies. However, those findings are less likely contained in data from physiological outputs. It is highly unlikely that the discipline will return to a brand of investigation that does not embrace physical data on some level.

Approach and Avoidance

If an investigator wants to trace politically influenced emotions and attitudes the logical solution is to trace political likes and dislikes. These should expose appetitive or

aversive tendencies. Likes and dislikes lead people to approach some things and avoid others. But it is not that simple. The research has shown for example that unsophisticated and poorly informed voters may be more inclined to avoid conflict on their positions. As reported by Taber and Lodge (2006, 764) a person can be inclined to stand by even very weak arguments. These authors reasoned: "an unsophisticated person lacks the cognitive resources to counter-argue and is therefore as likely to stand pat as to be buffeted first by one side then by the other " (e.g. Zaller, 1992; Petty, Cacioppo, & Goldman, 1981) .

Ultimately a person's attentions and their choices are determined by attitudes and trust. Kahneman (2012) wrote: "Slovic and his colleagues related their views to the work of the neuroscientist Antonio Damasio, who had proposed that people's emotional evaluations of outcomes, and the bodily states and the approach and avoidance tendencies associated with them, all play a central role in guiding decision making" (139). Sturgis et al. (2010) described a much more conflicted field of scholarly interests in trust (i.e. likes and dislikes). They argued: "Scholars within political science who have set themselves the challenge of addressing the trust enigma have proposed a broad range of causal hypotheses, each with varying degrees of empirical support" (207).

Both Sniderman and Bullock (2004) and Gerber et al. (2011) authored research with affect was a central component. However, neither study included bio-physical variables. Their efforts highlight the effects of evocative inputs which are sources of political expression. In order to more completely address the complexities of whether to approach or withdraw from a stimulus, a more scientific inquiry seemed to be a logical alternative. From this standpoint, perhaps the next logical step should be toward exploring the role of relevant bio-physical phenomena. As was demonstrated in Bullock

(2004) and Gerber et al. (2011), affective implications abound when considering choices and attentions.

I now turn toward actual physical indications of affectively internalized processes. A few notable works have aptly demonstrated the important role of vision in signaling motivations and preferences. Most notably, Yarbus (1967), Ekman (1999) and Ayers (2003), In 2003 Mary Ayers demonstrated how infants and mothers communicated largely through facial gestures. Eye contact between mother and child seems to demonstrate that the facial region is a key component showing how attention can precede arousal and withdrawal.

Using eye contact as a mechanism to seek or refrain from visual stimulation may be a finely evolved controlled reflex. Ayers showed that infants as young as 4 months instinctively use their eyes and on occasion their arms to interact. Hence, infants in repose may precisely *not* use their eyes by averting their gaze in order to withdraw from stimulation. The notion that the eyes could be used as a way of gauging affect was but one useful idea. The literature has also demonstrated that attention has strong implications for social science research.

The literature has also shown that objects and meaning may still be obtained in ways other than social learning experiences. Baron-Cohen (1989a) has noted how children with autism differ from children without out autism in distinguishing meaning in objects. He noted children with autism "do not show a clear understanding of how physical objects differ from thoughts about objects" (e.g. Baron Cohen, 1999; Baron-Cohen et al., 1997; Charman and Baron-Cohen, 1995; Baron-Cohen, 1989a).

This infusion vision as a vehicle for utilizing bio-physical concepts in experimentation of social behaviors has only broadened the field of research by adding opportunities for more discoveries

Bio-physical Concepts

There has been a substantial influx of bio-physical knowledge in political science research. A naturally close relationship with rational choice theory in the discipline fosters much needed fresh new perspectives. Some of these perspectives come from seemingly unrelated research, yet their contributions can be very significant. Quickly, I'll anecdotally summarize where I expect these investigation to take readers.

In the literature, people are seemingly not aware of their own affect yet they are capable of responding with socially contextual consistency to social situations without being socially consciousness or aware (Dodd et al., 2012; Baron-Cohen et al., 1997; Fazio et al., 1989). This dissertation is interested in physical behaviors related to affective contexts. Therefore, the more valuable literature will be supportive of the notion that political environs are capable of evoking related emotional and physical phenomena and these phenomena are capable of manifesting in ways that should promote physiologic evidence that a response has occurred or that attentions have been affected.

Consider for a moment that human beings are aware of other people's affect. According to Baron-Cohen (1995b, xii) people mistake perceived mental constructs for real objects. "Oblivious to their existence, we mistake the representations they construct (the color of a leaf, the irony in a tone of voice, the approval of our friends, so on) for the world itself". Fazio et al. (1986a) also found that activations of attitudes can be "both

spontaneous and inescapable. Even though attitude activation was irrelevant to the task that subjects were required to perform, we found evidence that evaluations were activated upon exposure to appropriate attitude objects" (229-230).

Ekman (1999, 46) argued that affective phenomena, such as moods or emotional traits are distinguished from emotions. One of the assumptions of this dissertation is that appetitive attentions toward familiar and pleasing content will precede individual subjective interests. Even in ambiguous situations objectivity can precede the apprehension of context (i.e. Ayers, 2003, 53-73 and Shanks, 2013, 123).

In this review of literature psychophysiology research is displayed in a fairly chronological progression of advances in political science research that have benefitted from the contributions of various bio-physical implications.

These concepts have been only gradually realized through the innovations of scholars from a vast field of various research interests and cumulatively represent a pointed upsurge in research that considers either physiologic variables, developmental advances in knowledge of the brain's structure or both. The automatic activation of an individual's attentions does not necessarily require their active attention. Fazio et al. (1986, 229) argued that situational cues carry implications which I interpret as being objective features that are recognizable the individual. This also raises questions about observing attention and what attention to certain information means. Attention that is focused deliberately toward or away from a stimulus indicates something about the role of affective processes in decision-making. As I stated in my introduction, this research presents a novel approach because of its interest in physical attention regarding various political orientations.

The first question is about the notion that attentions toward certain objects can be defined by *when* they occur (i.e. Gerber et al. 2011). Since politics are mainly about what the future holds, perhaps it is possible to analyze politically oriented expectations based on a person's expected goals. This could depend on establishing measurable values based on what is known about the attitudes possessed by those who will be exposed to certain information. This model differs from Downs' (1957) framework because I am interested in motivation as it may manifest in a physical sense as opposed to the actual objectives of motives.

Downs applied an economically motivated focus to political behavior. In my view motives cause affectively-charged behaviors which are effectively bundles of multiple factors of an individual's concern and not limited to political and economic contexts. I argue instead that in a political sense, motives are objectified by a person's real, perceived and immediate goals.

This raises a second question about behavioral impulses. In the somatic experience drives merely persist in nature. Simon (1985) argued that the "mere assumption of rationality provides little basis for the prediction of behavior. To be of much use, that assumption must be supplemented by considerable empirical knowledge about the decision maker" (295) I interpret this to mean that if you know *where* an organism wants to go, *how it will get there* is somewhat predictable. The question is therefore, do the anticipated effects of exposure to certain environmental factors facilitate the ability of an investigator to observe the experience of sensations as they are processed as goals are pursued?

Fazio et al. (1986) argued that the mere presentation of an attitude object activated "despite the lack of any reflection whatsoever on his or her part" (229). In contrast, a controlled process requires the active attention of the individual. "Upon becoming aware of a situational cue implying the importance of considering one's attitude toward an object, the individual might attempt to retrieve a previously stored evaluation of the attitude object or might actively construct such an attitude on the spot. In either case, the process is reflective and active in nature" (229).

These descriptions of affective phenomena are relevant at the bio-physical level because they assume the excitation of sensory one or more apparatus' allowing linkages to be drawn between affective systems and a known stimulus. These stimuli are at the very least temporarily relevant in an experimental sense. For example, while political activities can vary widely when certain issues are the most pertinent, the actual points in time *when* exposure happen can differ.

The literature indicates a more prominent influence of research of the mind. Earlier work by Ekman (1999) regarding 'universal signals' and also Simon's (1967 and 1985) notion of 'individual goals' complimented increasingly more individualized investigations. I argue the years between Simon (1967) and Ekman (1999) are especially important because several works authored during that time bridge the notion of man as primarily a selfishly motivated to the idea that individual psyche is more dependent on changing environmental factors.

For example Simon (1985, 301) noted that an emotional drive can take control of our attention, "determining not only our goals of the moment but also selecting out the sensory and memory facts that we will consider, then behavior can be determined by that

drive or passion as long as its control persists. But passionate behavior in this extreme form is exceptional and not common in human behavior. The control process is usually more complex."

Zaller (1992) argued that people are mostly prone to adopt broad kinds of values based the expectations of others or they are likely to take cues from elites. I argue that this period also brought in new interpretations of cognition where a more complex structure of individual problem-solving sparked a broader discussion of the environment and of the nature versus nurture debate. The literature appears to support the notion that reason and meaning in the more arcane terms of rationality and bounded rationality are not supplanted by new findings rather they are potentially more enhanced.

During the time between Zaller (1992), Klein et al. (1992), Mondak (1993), McDermott (2004) and Druckman and Lupia (2005) research tended to emphasize views of people dependent of cues from elites. These works chronicle limited views of the individual as an independent political thinker. There are distinct reason-centered overtones in Zaller (1992) regarding political choice-making and the concept of latent opinion as expressed by V.O. Key (1962, 274-86).

Affect and Science

Currently Political Science research is much more prone to focus on bio-physical experimentation. It is more attuned to questions of heritability or other biological traits. There also remains continued interest in attitudes and emotionality. I emphasize two essential theoretical camps. One camp is more keenly interested in predictive approaches and bio-physical experimentation. Hibbing and Alford (2004) and Dodd, Hibbing and

Smith (2008) exemplify this in distinctly different studies. The other camp is made up of advocates of biology including Hatemi and McDermott (2012), Sturgis et al. (2010), and McDermott (2004). I consider Rose McDermott to be leading proponent of bio-physical Political Science sub-discipline. She has adroitly advocated for genetic research as well as utilization of neuroscience concepts in general.

Some Political Science researchers have spent nearly ten years conducting research and analysis using the methods which are more common to the natural sciences. Notable works include the articles by Hatemi and McDermott (2012*), "The genetics of politics, discovery, challenges, and progress"*, Dodd et al. (2012) *"The political left rolls with the good and political right confronts the bad, connecting physiology and cognition to preferences",* and recent books by Lodge and Taber (2013) The Rationalizing Voter and Kahneman (2011) Thinking Fast and Slow.

In an effective claim against the utility of Rationalism, Alford and Hibbing wrote: "Rational choice is content to take preferences as given and is not particularly motivated to explore their origins or grounding in reality" (707) Juxtaposed to behavioralism, rational choice has its limits. In rational choice, the meaning of preferences is determined through a deductive process where much is assumed as opposed to the observation of actual preferences (Alford and Hibbing, 2004).

More behavioralist perspectives populated research in affect sciences including Marcus et al. (2005) and Taber and Lodge (2005). These scholars employ arguments for affective intelligence including perspectives on affect automaticity, or cognitions, and anxiety in individual psyche. Marcus et al. (2005, 961) signaled the importance of "sorting out" the relationships between the cognitive and affective processes. Proveti

(2009) touts predictive approaches and the value of bio-physical experimentation in his 2009 book titled: Political Affect. The author noted that an explosion of neuroscientific research in the last two decades has changed the understanding of emotions, cognitions and consciousness (Proveti, 2009, 64). These works combine to mark a time when the nexus of biophysiology research was moving beyond reason and self motivated utility maximization.

Political Affect and Perception

To this point the literature has indicated that biology can even explain rationality and bounded rationality as phenomena which can persist consciously and unconsciously. This part of the chapter discusses some of the most important ways behavioral meaning can be assessed in association with certain exogenous effects. Hatemi and McDermott (2012) noted: "genetic propensity influences the disposition and operation of an emotive condition, which then manifests toward many targets, including strangers and out-groups, when elicited. This does not mean that social environments do not matter or that such genetic influence is fixed" (529).

I argue that physiological explanations should not be limited by or restricted to genetics, personality, temperament or political orientation. In this review multi-level mental processing systems (i.e. dual processing) are more in focus than the research on temperaments or personality theory per se'. For example dual processing models are commonly referred to in the literature. Variously they predict that coordinated perceptual phenomena will result from attentions and cognition. These models tend to persist as

people encounter complexity (e.g. Petty and Cacioppo (1986) Chaiken, 1987; Eagly & Chaiken, 1993).

Part of the confusion stems from classic dual processing theory which argues that two distinct psychological apparatus' manage environmental complexities (e.g. Kahneman 2003, 2011; Strack, 2004; Devine, 1989). Variously they predict that coordinated perceptual phenomena will result from attentions and cognition that meter speed and content of perceptions in the process of navigating social or environmental detail. These models tend to persist as people encounter complexity (e.g. Petty and Cacioppo (1986) Chaiken, 1987; Eagly & Chaiken, 1993). Moreover, *dual* processing infers two systems while multi-level processing may be a more appropriate term when grouping these phenomena.

Strack (1999) associated dual processing with a domain of Attitude persuasion and offered two examples of the ways humans process complex matters. He borrowed from Tversky and Kahneman (1974) which argued that dual processes constituted a "normatively appropriate" procedure and a less accurate "quick and dirty" method: "The dual-process models of persuasion imply a similar dichotomy. On one hand, there is an appropriate strategy that requires some effort but leads to accurate, well-founded, and stable attitude judgments. Alternatively, there also exists a less effortful processing that is inferior on these dimensions. It should be noted that these dual-process models go beyond Tversky and Kahneman's initial notions in that they specify conditions and consequences. In particular, they described the circumstances under which people engaged more elaborate processing and under which they take shortcuts.

I will argue for taking measures from instances where a person's apparent political orientation may impact abilities to perceive objective features. The various situational, dispositional and attitude outputs (e.g. attentions, emotions and preferences) are comparatively lower hanging fruit than the particulars of the models described in Strack (1999). What are more relevant to this dissertation are examples where multiple affective systems can be shown to be working together as people make sense of complex situations. Simon (1967, 29) argued: "Mechanisms of these kinds, to control the direction of attention and activity, have been incorporated in some information-processing theories of human cognition, and their further elaboration will permit these theories to explain wider ranges of behavior. In this dissertation, attention is deemed to encompass both physical and psychological relevance in investigating bio-physical effects and political orientation.

In describing human biology, Proveti found support in Clark (2003, 86) who noted that biology as "inextricably intermingled" with "culture" and "technology". I interpreted this to mean that cultural factors such as language and technological norms would clash with my understanding of perception. In my view the social sciences seemed to use a more cognitive meaning of the word. At the time, affective sciences were only just coming into prominence. McDermott (2004) argued: "New evolutionary and neurocognitive models no longer rest on questionable assertions of social desirability; rather, they rest on the most recent technological advances in brain science, genetics, and biochemistry and warrant reconsideration. The most important research on which this dissertation is based combines views of cognitive processes stemming from the science of affect. This work features trait research which is more likely to consider heritability and

genetics. Indeed, several authors are providing a wealth of bio-physical knowledge. The value of their contributions cannot be understated. The present review is mainly an attempt to display a robust collection of significant research which employs biophysiology or in some way invites interpretative speculation and experimentation of essentially observable physical behaviors linked to politics.

Much of the literature in this review has suggested that affect is bimodal and little else. This chapter represents an important step on the path toward the goal of relating matters of social relevance to certain physical phenomena which represent several multifaceted cognitive abilities. In this dissertation perception is viewed as a fundamental consequence of a physical stimulus. Some of these works fit in between one research approach and another and therefore may not immediately appear germane. For example Alford and Hibbing's (2004, 708-12) "Wary Cooperator", demonstrated an apparent well evolved affectively influenced sense of caution that appears to occur under relatively ordinary conditions. Their study is a novel turn askew of rational choice theory. These two scholars describe an affectively-charged process of reason similar to that discussed in McDermott's (2004) treatise. These works take into account the importance of accepting new knowledge of not only of the brain, but also of more complex environments and social strata.

The literature indicates that in some cases researchers recognized the value of fresh thinking and engaged in multiple methods of inquiry many years before McDermott (2002). Simon (1985), for example mentioned "Lasswell's psychoanalytic probes" and other behaviorist fundaments incapable of satisfying a "balance between reason and passion-'radical' irrationality-in political affairs" (293-94). At the time, Simon probably

had no idea that such a "balance" could later be explained as a multiple mental process approach. It's quite clear in reading the literature that human beings naturally function on one or more levels of affectation (i.e. Ekman, 1999).

There are multiple uses for terms referring to mental processes. The term dual process seemed to be more commonly used. Research in Psychophysiology can easily include other useful terms when describing the complex mental processes observed in human beings. Kahneman's "System One" and "System Two" is one such model. Most multiple mental process concepts allow that emotive content may never be fully thought out, especially when a person is given little time to react. The realization of the details in various heuristics may never transpire in conscious thought. Affect can still be a useful and effective associative potentiate capable of facilitating good decisions (i.e. Kahneman, 2011, 50-51; Stack, 1999, 167; Tversky and Kahneman, 1974, 1124-131) This does not render objective details and objective content to be any less important.

By invoking "goals" of individuals as the most likely drivers of their behavior science enters into an area of research that could take more than one path. A dispositional viewpoint might see goals as motives inspired by a predilection of social learning. Perhaps a more situational view presupposes goals will be responsive to immediate environmental factors.

The need to understand drives as they pertain to the essence of an organism was discussed by Simon (1985) who implied that certain appetitive tendencies are set in motion through nature. In this perspective, goals are inherently reactive. Simon also determined that human behaviors in politics could not be fully understood exclusively through neo-classical economic theory (i.e. utility maximization and rationality). Political

behaviors in his view would thus be more about the how and what individuals learn. Why not then consider that these tendencies are potentially affectively programmed? I would argue that Simon (1985) may have unintentionally opened the door the widest to invite broader humanistic perspectives of behavior in general.

After Simon (1967) the author's discussion of human behavior became more bio-physically friendly. However, Simon also continued to rely on rationality. I viewed the writing in Simon (1985) to be a major transition from reason to perception. For me, this was an invitation to look more closely at behavior in terms of *learning* as opposed to aspects of learned behaviors. For example, affective memory and online processing are concepts that work well in the behavioralist perspective where matters of inquiry engage inductive reasoning. In effect Simon (1985), Ekman (1999) and Yarbus (1967) led me to Chen et al (2006). Chen and fellow researchers for all intents and purposes provided simple a treatise on the tendency to limit or avoid risk.

Using as subjects Capuchin monkeys Chen was able to demonstrate *reasoning* as a function of emotional preservation. This research has largely been challenged however more so on the merits of the science of the endowment effect. For example Silberberg et al. (2008) attempted to replicate the model of experimentation in Chen et al. (2006) and discovered fatal flaws. More importantly the earlier research was focused on *how* reward affects behavior. I argue that loss aversion and altruism are both social concepts against which natural human drives oriented toward goals might best be measured.

Chen and his colleagues experimented with monkeys testing their tendencies to opt for a more likely result apparently to avoid disappointment. Their research was steeped in the notion that primal tendencies to expect and anticipate the behavior or

actions of other people or objects demonstrates a social quality previously believed to only be practiced by humans. In these experiments Capuchin monkeys appeared to maximize gains by avoiding a perceived greater risk, thus accepting the *sure thing*. These scholars concluded: "Our results indicate the loss-aversive behavior is not confined to humans but is present in our closest evolutionary neighbors and is most likely the result of an evolutionary-ancient and common behavioral mechanism" (Chen et al. 2006, 22). It should be noted that while Silberberg et al. and others have failed to replicate Chen et al.'s (2006) tests, the claim of a human tendency toward an aversion to loss is not without merit.

Works by Yarbus (1967) and Ekman (1999) investigated human tendencies evidenced through visual phenomena. The authors represent a largely bio-physical research area devoted to physical processes roughly spans the years between 1967 and the present. The Russian Psychologist Alfred Yarbus is well known for his work in saccadic eye movement and gaze orientation (i.e. trajectory) fluctuations depending on objective context. Yarbus' 1967 book on eye movement[2] is a comprehensive guide to the physiology of the human eye and ocularmotor mechanics. In seven chapters over 220 pages the author explores the capacity of the human eye to see detail in objects under simple and complex conditions. Yarbus' investigations of saccadic eye movement present particularly important revelations especially because of the appetitive and aversive tendencies that are apparent in saccadic eye movement. I argue that saccades are not particularly relevant to an approach and avoid dyad.

[2] For extensive illustrations of eye anatomy and visual phenomena, see Yarbus (1967) "Eye Movements and Vision".

Ekman (1999) and Yarbus (1967) studied visual perception mainly from the standpoint of how the eyes worked as human translators of social context.[3] Ekman's greatest contribution to the science of visual perception is in his work on 'emotion specific physiology' [4] and the role vision can play in identifying basic emotions. Ekman (1999) identified as many as 15 emotions belonging to various emotional families. Ekman (1999) wrote: "Each emotion is not a single affective state but a family of related states. Each member of an emotion family shares the characteristics I have described.

These shared characteristics within a family differ between emotion families, distinguishing one family from another" (51). Ekman (1995, 51) distinguished basic emotions from the families from which they spring. His argument is reminiscent of the notion that attitude objects are capable of evoking fairly complex beliefs (Lodge and Taber, 2005). I also argue that Ekman's (1995) view of emotional families as something akin to heuristics. Moreover, Ekman (1995, 51) implied that emotions are the composite reflections of bodies of conceptual material. Ekman added: "Put in other terms, each emotion family can be considered to constitute a theme and variations" (51).

This model composed of the characteristics unique to that family, and variations on that theme are the product of individual differences, and differences in the specific occasion in which an emotion occurs. The themes are the product of evolution, while the variations reflect learning" (51). The author also proposed emotions, although were distinguishable from one another, they shared various characteristics.

Ekman (1999, 51) proposed a detailed list of emotions, though he noted that evidence was lacking on the subject at the time. He wrote: "Although the evidence is

[3] See Chapter 3 in T. Dalgleish and M. Power (Eds.). Handbook of Emotion, Ekman (1999, 45-60).
[4] Ibid., 48.

certainly not available now. I propose that the following list of emotions will be found to share the characteristics…and to be distinguishable one from another: amusement, anger, contempt, contentment, disgust, embarrassment, excitement, fear, guilt, and pride in achievement, relief, sadness/distress, satisfaction, sensory pleasure, and shame. When it is remembered that each of these words denotes a family of related emotions, then this list of 15 emotions is quite expanded. Clearly, it omits some affective phenomena which others have considered to be emotions" (51). Perhaps it was works like these in which Simon learned of the importance of an organism's tendencies toward certain goals.

The second general research area includes multiple forms of research methodology including some that are grounded in human physiology. Alford and Hibbing (2004, 708) quoted Ostrom (1998) who wrote: "In equating natural selection with inherent selfishness, political scientists reflect views held by mainstream biologists from Huxley's time through about a quarter century ago. The overwhelming focus of evolutionary theorists then was largely compatible with what came to be the rational choice view of the appropriate starting assumption".

Survey research data and papers based on the empirical evidence of rationalistic models are not strongly represented here. However, the foundations of political research are indelibly link to that mode. The major questions in this dissertation relate to how to describe physical phenomena as opposed to focusing on the qualitatively interpreted explanations of mass social phenomena through an empirical lens. This review contains scientific research, essays and treatises on the merits of combining biological evidence, qualifying physiological implications and the like. Works in this area for the most part meander from one aspect of post behaviorism to another.

A major contribution in this area is Marcus et al. (2000). These authors made a concerted effort to acknowledge the bonds between rational theories of behavior and more recent knowledge in social science. These scholars wrote: "We will not attempt an exhaustive literature review or an intellectual history. Indeed, we will turn to the rational choice school of modern science as a contrasting case study to help understand the nature of Affective Intelligence" (5). Fazio et al. (1986, 229) similarly related that people are able to make association "between the attitude object and an evaluation of that object…" These are examples of the kind of research that provides access to a view of ways affect contributes to the internalization of feelings that are experienced when someone is attending politically relevant subject matter.

The inclusion of affective concepts and later bio-physical experimentations blended naturally well with the notion that emotions are also physical and that attentions will work to serve feelings. This point is also relevant to the automatic appraisal systems (i.e. Ekman, 1999) and the concept of mind blindness (i.e. Baron-Cohen, 1997, 50). If we are expectedly unaware of how our attentions are influenced through external means, visual attention can become a uniquely objective measure of affect.

This mixture of scientific inquiries is what was intended in the groundbreaking article by George E. Marcus, John L. Sullivan, Elizabeth Theiss-Morse, and Daniel Stevens titled: *The Emotional Foundation of Political Cognition, The Impact of Extrinsic Anxiety on the Formation of Political Tolerance Judgments*. This article appeared in the twenty-sixth Journal of *Political Psychology* in 2005 and Marcus et al. (2005). Their research proposed that traditional research methods are compatible with experimental methods.

In the pages above I have argued that over time, psychophysiology has contributed to a transition from a preponderance of qualitative subjectivity to the objectivity of more science-based inquiries. Prior to the first decade of the 21st century, few attempts were made to involve bio-physical measurements in political science research. For example, Alford, Funk and Hibbing (2004) noted a lack research of genetics and attitudes. The authors wrote: "Thus, political science debates concerning the source of political attitudes and behaviors have been over timing, over whether attitudes and behaviors are primarily shaped early in life or by more proximate occurrences. Conspicuously absent is consideration of the possibility that certain attitudes and behaviors may be at least partially attributable to genetic factors" (155).

I argue that the larger issue in research is not whether genetics needs to be researched. Indeed genetic research is needed. But, should genetics be a focus when Political Science has spent little more than a decade of engaging bio-physiology in earnest? In this dissertation genetic propensity is irrelevant to the manner in which the eyes move over a field in an ambiguous condition. Because, this design already accounts for political orientation through self-reported survey responses in-group and out-group attitudes are assumed. The effects these traits may have caused were self-evident in the data.

Unlike genetics, affect has been more commonly discussed with respect for political behaviors. However, Marcus et al. (2000) adopted a view in which affect and reason are complimentary faculties. These authors wrote: Drawing on extensive sources in neuroscience, physiology, our research has led us to conceptualize affect and reason not as oppositional but as complementary, as two functional mental faculties in a delicate,

interactive, highly dynamic balance" (2). There are other important works whose methods do not include scientific experimentation but employ bio-physically-friendly language. This category includes research of political attention, preferences and attitudes by Damasio and Bechara (2005), Druckman and Lupia (2000) and Clark (1997).

The Somatic Marker Hypothesis predicts that decisions are strongly influenced by prior affective processing and subsequently there is "a systems-level neuroanatomical and cognitive framework for decision-making and its influence by emotion" on which rational decision-making depends (i.e. Damasio and Bechara, 2005, 336-72).

Unlike genetics, affect has been more commonly discussed with respect for political behaviors. However, Marcus et al. (2000) adopted a view in which affect and reason are complimentary faculties. These authors wrote:" Drawing on extensive sources in neuroscience, physiology, our research has led us to conceptualize affect and reason not as oppositional but as complementary, as two functional mental faculties in a delicate, interactive, highly dynamic balance" (2). There are other important works whose methods do not include scientific experimentation but employ bio-physically-friendly language. This category includes research of political attention, preferences and attitudes by Damasio and Bechara (2005), Druckman and Lupia (2000) and Clark (1997).

Perhaps the most obvious early example of this mindset comes from Ekman (1999) who early on used bio-physical data in conjunction with assumptions about certain emotional universalities. This research area also includes psychological experimentation during a time in which more qualitatively-oriented social psychology was quite prevalent. Although Druckman and Lupia (2000) invoke the term *biological cognition*, in their definition of the objective nature of preference, they also pay tribute to Clark (1997)

which embodies an evolutionary tone toward natural human evaluative strategies and linkages between cognitive and psychological sciences (i.e. Clark, 1997, 81).

Druckman, Green, Kuklinski and Lupia (2006) noted a "drift toward experimentation" (627). This research preceded several attempts to relate biology to attitudes (i.e. Hibbing and Smith, 2007), emotionality (i.e. Marcus et al. 2005), and heritability (i.e. Hatemi and McDermott, 2012). The relationship between biology and attitudes can be both obvious and subtle. In recent years Psychophysiology research has been a mixture of several different types of experimental inquiry. The theoretical relationships between political behavior and biological factors offer a host of speculative scenarios. Inferences about likes and dislikes related to specific behaviors in physiologic contexts ought to require agreement and concessions within several research fronts.

If biological factors are going to be separately measured and assessed as to their effect on social behaviors then the defining elements of social factors need to be very narrowly interpreted. Sniderman and Bullock (2004) viewed social processes as interactions in which individuals are collectively reliant on the political information they are provided. In a comprehensive article about an appetitive social process they provide indirect support for online processing in affectively centered research. They did not conduct experiments in controlled laboratory environments in their research however I challenge others to find research of as effective at explaining affective processes.

Sniderman and Bullock (2004) interpreted the theory of "menu dependence". This theory assumed that affectively driven social constructs ensure the apprehension of what is politically relevant. More importantly, it suggested that human interactions within social networks are basically rational and attitudes would therefore naturally converge or

diverge on conforming political attentions (i.e. Strack, 1999, 166-67). Sniderman and Bullock (2004) predicted that the more people relate issues to impending political competition the stronger the effect of the political information.

This additive effect should not detract from the probability that multi-level mental processing persists when attentions are redirected or otherwise distracted. Petty and Cacioppo (1986) suggested that recipients may adopt either a "central" or a "peripheral" route in processing persuasive information (Chaiken, 1987). Eagly and Chaiken (1993) similarly proposed that information will either be processed in a "systematic" or in a "heuristic" fashion. Both notions are influenced by Tversky and Kahneman's (1974) seminal work on judgments under uncertainty in which it was demonstrated that complicated tasks are often simplified by the use of rough rules of thumb that often result in judgmental distortions (i.e. Strack, 1999, 167).

For example, Strack (1999) proposed that when people encounter a persuasive message they will respond according to situational perceptions stemming from a combination of goals and their view of their own circumstances. “Such a system would have to take people's processing goals and their self-knowledge into account. In particular, when people encounter a persuasive message, it may be met with different processing goals and various degrees of interest. A person is exposed to the content of a message and may want to either form or confirm an opinion. This activity may vary in intensity and may be impeded by the difficulty of the task in its situational context” (Strack, 1999, 167).

Online Processing

Prior to the first decade of the 21st century few attempts were made to involve biological factors in political science research. However, the concept of online processing has strong roots in physical sensation research. "The online model holds that beliefs and attitudes are constructed in real time as people encounter information, and are integrated into existing networks of associations in long-term memory[5] Lodge, Taber and Verhulst (2011, 280).

Affect-driven dual process models dominate contemporary theories about how people think, reason, and decide (e.g. Chaiken and Trope 1999; Wilson Lindsey, and Schooler 2000; Gawronski and Bodenhausen 2006). Although most dual-process models focus on accuracy efficiency tradeoffs, hundreds of more recent experiments document the pervasive effects of unconscious thoughts, feelings and behaviors on attitude formation, attitude change, preferences, and decision making. These studies reveal important differences between the influence of conscious and unconscious processing on how people think, feel and reason.

Taber et al. (2011) noted that people tend to actively glean evocative content from their environments in an updating process as they "spontaneously extract" items of value (283). These scholars argued that new information is combined with stored impressions which stand at the ready to be accessed (i.e. Casino and Lodge, 2007).

"A central tenet of the online model is that the process by which people form attitudes is not routinely mediated by conscious information processing. They do not intentionally form or update tallies, but rather evaluate people, events, and ideas

[5] On this point, Lodge and Taber also cite Anderson and Barrios 1961; Hastie and Park 1986; Lodge, Steenbergen, and Brau 1995).

spontaneously" (Taber et al., (2011, 283). The important aspect of this argument and similar propositions is that the literature offers numerous examples of linear models which reference several processing faculties that aid a person's perceptions and ultimately their attitudes and decisions.

After the turn of the century a body of literature emerged to apply what was known about the human brain. Some scholars forged ahead with psychological investigations of political cognition. Kahneman (2011) describes perhaps the best known multiple mental level system of processing. His model describes "System 1" and "System 2" as thinking systems managing evaluative capabilities across variously complex circumstances. System 1 operates involuntarily, is automatic and fast. System 2 operates judiciously and performs various effortful mental activities (20-21).

A person's associative machine most likely relegates levels of attention according to relevant features in objects based largely on perceptual stimuli. Kahneman (2011, 79-80) gave an example how people appear to actively try to reduce ambiguity. For example it may therefore be reasonable to also expect that when people attend to political content previous perceptions may have already set in motion *when* and also physically *how* their associative machine may draw upon subsequently experienced information. From a political perspective, thinking and actions are largely dependent on the rhythm or intensity at which political information is encountered.

According to Sniderman and Bullock (2004), political actors in competitive formats rally around more hotly contested political issues. They essentially are saying that the "menu" from which the electorate must choose determines when and also to what extent issues are paid attention to. In this respect, the latent potential of salient memory

matter depends on temporal factors from exogenous sources. “The more central an issue is to electoral competition the greater the effort that political actors, including political parties, will make to call the electorate's attention to them and to contrast the alternatives open for choice. The more peripheral an issue, the less attention directed to it, and the more similar the alternatives open for choice will appear” (Sniderman and Bullock, 2004, 348-49).

The pioneers in this area include Amos Tversky and Daniel Kahneman. But others should also be credited for bringing into political behavior research additional psychological knowledge demonstrating the importance of earlier discoveries made by Yarbus (1967) and Ekman (1999). Marcus et al. (2000) argued that the human surveillance system has two functions. One system alerts a person to threats and another system monitors the environment for details in novel features (Marcus et al. 2000, 45-64). These researchers perspective make it more reasonable to speculate about whether it would be possible to replicate a multiple mental process capable of simultaneously sensing and processing multiple sets of information. If the functioning of specific sensory organs can be targeted the notion that the affective role of a single organ offers enormous potential for investigating effects of a single complex criterion thus giving greater theoretical meaning to individual experience.

Strack (1999) encouraged researchers to diversify their views of the way information is processed. He surmised that levels of processing should be thought of as contributing to an elaborate process which at molecular levels comprises “inferences that reduce time and effort” (168). The idea that sensory organs are able to deliver a diverse range of internal data potentially represents a promising opportunity to explore outcomes

that may be related to utility maximizing or perhaps goal seeking. Strack also noted it was important to physically observe sensory processing. Strack's vision of a more "differentiated" base of knowledge of models of information processing strengthens the predictive power of theories of individual behavior (166).

Beyond Online Processing

The literature includes a substantial compliment of research inferring strong linkages to affect and politics. Several of these works borrowed from the model of dual processing in which affective architectures tend to perform multi-level processing which draw on "recollected experiences and schema-guided inferences" (Strack, 1999, 168). I argue that these are naturally-occurring systems which help with appraisals. These collected works represent a transition from the knowledge of on-line processing toward more understanding about neuropsychology.

Marcus et al. (2000), Lodge and Taber (2005), Oxley et al. (2008), Dodd, Hibbing and Smith (2010) and Shanks (2013) collectively inferred that, when certain affectively centered factors freely interact with cognitive systems and specific environmental factors, certain affective phenomena associated with bio-physical connotations can be pervasive. Marcus et al. similarly describe "concurrent emotional assessments" working through a process of an affective system of embedded social cognitions (Marcus et al. 2005, 961). Mainly, these examples of affective systems are interpretable on the basis of how they perform in active anticipation of re-experiencing something previously learned.

Physical perception implies causation and causation implies meaning, which implies context (e.g. Yechiam, E., & Telpaz, A., 2011; Shanks, 2013, 138). It also

seemed very likely that attitude objects in the form of political figures and issue framing may ultimately represent friendly or threatening information to which automatic responses are conditioned to react in response (e.g. Nicholson, 2011, 1166-67; Oxley response (e.g. Nicholson, 2011, 1166-67; Oxley et al. 2008, 1667-70). Prior learned experiences can affectively have broad political connotations. This is especially true in cases where learned features represent threats. It seemed quite plausible that, an affectively-centered primacy effect will prepare in advance positive or negative evaluations.

This process presumably stems from affective relationships which are the combined influences of contextual information coinciding with specific affective associations (e.g. Marcus, 2000, 182-221; Lodge and Taber, 2005, 469). Attitude objects and issue framing can cause triggering of associatively organized factors in long-term memory. These potential excitatory bundles are contained in friendly or threatening information. Information perceived as either friendly or threatening is likely to impact a person's perceptions and may evoke certain impulses that will correlate positively with expected preferences (e.g. Lodge and Tabor, 2005; Oxley et al. 2008).

These works raise questions about how to interpret what happens at the point an object is perceived as well as the cognitive processes that follow. Klein et al. (1992) make political likes and dislikes (i.e. trust) relevant in their approach to political attentions. Their work infers that people have individually felt levels of attraction when they are exposed to the same political information. Further, depending on the flow of political information, their decision-making under conditions of risk, and experienced utility probably elicits effects which will contribute to determining physical differences

between thinking and feeling (i.e. Taber and Lodge, 2005; Kahneman, 2000) . People will presumably demonstrate different strategies to make sense of things suggesting that the political science needs bio-physical evidence to raise awareness about the physical implications of the impact of information on people's actions.

It seemed increasingly obvious that the great value of bio-physical evidence is the validation it can provide traditional forms of research much of which may have already significantly added to general understanding of what can impact a person's political actions. Several studies performed at the University of Nebraska have demonstrated that there is substantial evidence to suggest that physical attention toward political content can be very telling of a person's attitudes and likely preferences (e.g. Oxley et al. 2008; Dodd, Hibbing and Smith, 2010; Dodd et al. 2012).

Notwithstanding the presumption of political orientation, it seemed plausible that conflict frames and the political interests that organize campaigns are geared more toward coordinating information as opposed to appealing to certain political tendencies. The question of whether political campaigns or groups are most interested in political identities or more interested in identifiable bits of information is not the focus here. Documenting physical impulses and bio-physical factors simply offer more relevant paths toward understanding what objects most likely mean. Information gotten by self reporting is also valuable albeit a more subjective way assessing behaviors.

I argue that certain assumptions can be made about the appraisals of people attending to objects. Klein, Kingstone and Pontefract (1992, 47-48) argued that because people are inclined to simultaneously inspect whatever draws their attention, determining the causal sources of eye movements is difficult. In one experiment Klein et al. set out to

investigate the causes of visual orienting. These authors asked whether endogenous and exogenous visual orienting involved the same attention mechanisms. In another experiment the authors asked whether endogenous covert visual orienting was simply "unexecuted" orienting (Klein et al. 1992, 47-53). These authors found that endogenous and exogenous orienting do not necessarily involve the same attention mechanisms (61).

The following chapter will outline a methodology for moving forward into the area of experimentation on the affective nature of physical behaviors and politics. Recent research at the University of Nebraska-Lincoln has investigated the physical nature of affective responses across political identities. One of the assumptions in this work has been that differences in political tendencies may contribute to differences in the perception of threats. In my own experiments I have questioned whether specific objective content is more threatening to some than others. This was accomplished through analyses of visual searching frequencies. The work followed the notion that the identification of objective content precedes judgment or likes and dislikes. This is not to say that likes and dislikes is a static condition. Presumably judgments are imbued with latent potentiates evoked by certain objective content. I anticipated that this allows people to recognize novel familiarity and features as an active affective process.

In the last 15 years the literature has been steadily more direct in linking physical affect to emotional contexts. In the literature, Political Science had been somewhat ambivalent about whether physical measures were effects which needed to be measured. The political scientists who were authors of Marcus et al. (2003) argued for purposeful extraction of bio-physical data from affective measures. However, my reading of the literature finds that the Political Science discipline has only fairly recently embraced

similar views. My own research of the concept of physical affect has required me to borrow substantial numbers of works from psychological research and a smaller body of work focused on vision.

Isbell, Ottati and Burns (2006) discussed affect as an explicit union of mental and physical indications. These scholars wrote: "the affective primacy argument – that emotional evaluations and reactions to symbols, people, groups and events, are generated before conscious awareness" (e.g. Redlawsk, 2006, 57-86; Zajonc, 1980). Without equivocation, these viewpoints embrace affect as a formative phenomenon that occurs in pre-cognition. This is important because in this context, the precognitive effects link to inferences which stem from the formations of various objective features. The existence of these primal effects, lend meaning to observed physical phenomena.

Affective primacy, therefore relates a condition that is context dependent (Zajonc, 1984). Therefore, when considering the potential relevance of certain physical effects the prior knowledge of objects can be applied to prior knowledge of an organism's goals. However, their tests of affect and political behavior are heavily based on the theory of affective primacy. In my view their interpretation of the primacy theory contains an important degree of speculative license about how stored feelings spring from memory. My own research is centered on physical phenomena and is less interested in *why* memories are stored.

In the literature, emotional contexts appear lacking bio-physical bases. In order to make the necessary connections between physical behaviors and politics I needed to incorporate research that was interested in emotions interacting with social ideals. Marcus (2000); Marcus et al. (2003) and Alford and Hibbing (2004) did not unanimously

embrace physical phenomena, however their basic language appeared amenable to a broader conversation about the translation of physical perception as an antecedent process of political affect. I also argue that multiple level mental processing models also accomplish the necessary blend of affectively implicated factors through which physical and affective phenomena appear in concert.

My goal for these reviews has been to facilitate the conceptual transformation of political and social ideals into measurable emotions with physical implications for affect. After which I also hoped to show how the literature transforms emotions into measurable feelings and so on. This has meant that some of the research I employed in the review process may have never been directly intended for the regression of social contexts in physical ways. In the interest of bio-physical research, it seemed quite reasonable however, that some research works would be more useful than others in transforming emotional contexts into physical contexts.

This chapter has provided a brief summary of the history of Psychophysiology and the shifts in thought about affect and political cognition. This essay has asked much of the reader by requesting he keep an open mind toward the accumulation of seemingly disparate research approaches. Several viewpoints have been combined here to draw special attention to the affective sciences and their role in contributing to advancing knowledge of political affect.

In summary, these reviews reflect a post positivist approach grounded in supporting literature that has been introduced over approximately the last sixty years. This period I loosely refer to as the era of Psychophysiology which has shifts from stark divisions between physiology-based research and the social sciences to periods of

significant unions between these foci. The notable theoretical divisions over time have advanced portions of social science knowledge through perspectives in which the knowledge of mental systems became more aware of psychology, especially of perception and affect.

I argue that there are many significant bio-physical concepts that enrich the affective sciences. However, these concepts are by and large preceded by several other equally significant breakthroughs. As examples, I'll assert that rationality, bounded rationality, motivated-reasoning and online processing each contributes greatly to the ability of the current state of knowledge to advance affective science even further. In the next chapter I recount the formulation of a methodology in the course of answering the question of the role affective relationships play in behavior s a consequence of political orientation.

CHAPTER THREE - METHODOLOGY

Background: Hypotheses Leading to this Dissertation

This chapter directly addresses the methodology I employed to investigate relationships between physical affect and perceptions of social consequence potentially manifested in feelings about government, political partisanship altruism. The foundation for this methodology stems from two hypotheses. The first hypothesis predicts that physical behavior can betray feelings. The second hypothesis predicts that various attention mechanisms reveal when contexts are perceived. Here I report the ways I attempted to combine data derived from physical phenomena and the impact of exposures to social content in my attempts to ascertain political differences in physical experiences.

First, I will briefly describe some of my earlier work which led to most of the hypotheses I addressed in this dissertation. Afterward, I will lay the experimental process through which I tested affective relationships.

This methodology investigates how political orientations impact physical attentions toward the objects in a visual field. My own experimental methods have been particularly focused on the physical effects elicited in my own controlled experiments. My intentions in this dissertation are mainly to account for any discernible political differences through the analysis of similarities within political orientation groups and differences between groups them. I frame my analyses on the basis of affective responses recorded in a survey tool, gazing behaviors and combinations of both. It was my expectation that once participants were divided according to their respective political orientations groups, their individual affective experiences would be similar. I anticipated

that certain affective components would have somewhat uniform effects across different orientation groups even though their separate physiological experiences are wholly unique.

This approach began with the notion that the mind and body naturally work together toward the accomplishment of goals. The literature does not suggest bio-physical phenomena occur at random. Therefore, the operative framework in the investigation needed to incorporate physical contexts in conjunction with the incorporation of social contexts. I expected research subject to be environmentally responsive, goal-oriented organisms whose actions would be reflections of their beliefs. In this sense I believed that the physical presence of an actively engaged person is perceptively receptive with and without conscious effort. This work assumes affective systems function on behalf of a person's belief systems and is likely to do so in spite some objective content.

As reported by Zaller (2003), V. O. Key (1962) predicted that political information would be especially evocative. The latency of issues therefore, depends on intensity and timing of political events. According to V.O. Key (1962) the subject of latency from an affective standpoint infers that levels of engagement with information differ depending on proximity (54).

Simon (1985) approached the notion of understanding future individual actions in a slightly different way. He noticed that when people encounter information that the boundaries of individual goals drive the rationality of an influx psyche. "This information is not static; it is continuously being processed and transformed, with one item being replaced by another as new aspects of a stimulus are sensed, new inferences drawn, or new bits of information retrieved from long-term memory" (Simon, 1985, 301). For

example, I may say someone is fidgety or antsy. Obviously, I'm presumptively referring to some apparent appetitive or aversive causation.

I argue that these and other visceral contexts may be intended only anecdotally, yet they can help to make more concrete relevant emotions or other social factors in interactions between people and political information. I anticipated that such contexts might have been predictive of very palpable physical feelings. As we have seen in the reviews of the previous chapter, research has shown that affectively-charged mechanisms are capable of spontaneous contextual reactions to a defined stimulus.

Furthermore, there are two additional components that together frame the way political affect should be assessed. First, the two-dimensional nature of affect as a like or a dislike response is easily adaptable in the context of democratic politics. When participatory systems drive the social contexts of political interaction individual and group positions of support and opposition will become apparent. Second, the notion that on individual levels at least two concurrent neural processes may be operating at any given time (i.e. Kahneman's Systems I and II) implies that affect is a potential consequence of related serial events as opposed to simple isolated phenomena. In this regard affect is functionally associated with causal factors as opposed to being simply a discrete reflection of emotion or thought. For this reason, emotion and affect although they infer similar meanings they cannot always be interchangeable.

I measured individual levels of support and opposition for fictitious policies representing apparent liberal and conservative redistributive policies as well as fictitious democrat and republican congressional policy makers. I included an altruism indicator in conjunction with partisan tendencies to support of certain domestic policies. My

intentions were to derive from survey data, reasonable measures based on the assumption that survey respondents were capable of relating their own opinions. Secondly, the terms used in the survey were crafted in ways that would later facilitate the measurement of their apparent political tendencies. In particular, certain invectives were employed to evoke affective responses. These terms were discussed in focus groups in prior to early dry-run visual tests and tests for the actual experiment. The focus groups were shown and asked to discuss specific invective references to: Size of government, bureaucracy, politician party affiliations of members of congress, and the ways charities were described.

Differences in the visual behaviors (gaze frequencies) on a visual field can be seen in Figure 3.1. Each field contained a photographic image and a textual message. Behaviors were assessed on the political attitude differences in survey responses. The data used in the original investigations below come from a large supply of attitude outputs from survey instruments and an enormous catalogue of visual output data obtained during experiments for which I was the principle investigator at the University of Nebraska between 2009 and 2011. Findings from these efforts inspired dozens of additional statistics tests and analyses including the some of the analyses and findings that appeared in the 2013 American Association of Behavioral and Social Sciences Journal (see Shanks, 2013, 123-43).

Understanding that political preferences may take time to develop, when viewers appear to notice important elements in images, especially when contexts are unclear they may also refer to the "gist" of objects repeatedly return to the parts of images in order to glean familiarity and meanings from visual cues (i.e. Fisher, Karsh, Breitenbach and

Barnette, 1983, 199). Yarbus (1967) surmised that a viewer's attentions to an object "are determined by the nature of the object and the problem facing the observer at the moment of perception (Yarbus, 1967, 196). Given that persistent attention may occur to both familiar and unfamiliar parts of visual images, spatial and temporal metrics are probably going to be useful in finding ways to understand the affective role of vision in political information processing.

Several years prior to Lodge and Taber (2005) it was reported that bio-physical tendencies contributed to conditions that precede certain choices. Marcus, Neuman, MacKuen (2000) noted that the physiological subsystems of emotion needed to be reinterpreted as the biological bases for observing affective intelligence. In her 1997 article "Executing Hortons: Racial Crime in the 1988 Presidential Campaign", Tali Mendelberg shared clear evidence demonstrating that stable racial attitudes were influenced by repeated exposure to specific stimuli that challenged individual attitude stability. Mendelberg showed how the images of a convicted murderer named Willie Horton were used in political ad campaigns were intended to deliberately trigger emotional responses based on his physical appearance. Mendelberg suggested that political attitudes exist as affective states which can be modified through affective means (e.g. Marcus, et al 1995; Marcus, Wood and Thiess-Morse, 1998).

In 2009 and 2010 I tested the notion of whether or not the stability of attitudes is susceptible to affective contagions (i.e. partisan cues). In order to gauge attitude stability I presented experimental test subjects with twenty fictitious policies. Each subject was asked to decide whether to spend "social capital" dollars of their choosing from amounts

of zero to five dollars per item that could be selected by survey participants (i.e. a range of the subject's choosing, anywhere from "0" to "5" bogus dollars).

The design intended to employ a bogus token economy framework that was borrowed from a previously approved IRB protocol, "social capitol" was a term inherited in the investigative process. In coding and analyses, the term 'social capital dollars' was replaced with the term "points".

It should be noted that focus groups conducted in this process were not asked specifically about the terms in the survey. I determined that the term "social capitol" was not particularly politically evocative nor was it divisive. Moreover, I felt that results of its previous successful use in a previous IRB study, had established a degree of probative value for the term and the survey as a whole. I determined the term would not damage impact the objectivity of my experiment design.

I incorporated into the survey increasingly provocative wording of various fictitious government policies. This process meant that policies which appeared to espouse conservative values were supplanted by policies espousing supposed liberal values. The ambiguous inject in this survey was expected to take hold at the midpoint between value extremities.

At this theoretically less evocative midpoint, I expected that policies might be less identifiable in a liberal or conservative sense, perhaps requiring participants to adjust their perception by modifying their gaze indicating that they would be processing items in the visual field differently However, these mid-point policies were expected to evoke feelings about government which I presumed would be perceived as *bureaucratic.*

In Shanks' (2009, an unpublished manuscript) I argued that when comparing within-group survey responses there was some indication of the presence of positive ideological interactions as policies transitioned toward more ambiguous language. In cases in which policies were framed in *legislative* or *bureaucratic* terms some effect was also evident (see Shanks, 2013, 126).

Each policy item was intended to cue or *tip-off* research participants that a policy originated or was promoted by either presumably liberal or conservative ideals. I expected that frequencies in their responses would demonstrate agreement within political orientation groups to which they were assigned. Regardless of the wording of descriptions of various policies, I expected each group to mainly follow a conservative or a liberal path. I also expected that attitudes would remain stable within presumptive political orientations.

I found that subjects were less likely to adopt a conservative or liberal stance when the intended cues transitioned to neutral language. I expected a subject's appraisals to be guided by naturally occurring tendencies toward a liberal or a conservative stance. I was attempting to gauge whether certain physical tendencies were indicative of affect somehow overcoming ambiguity (e.g. Yechiam and Telpaz, 2011; Fazio et al., 1992). I was curious whether gazing would indicate efforts to suppress doubt either by looking for confirming evidence or attending more intently on an object. Any of these behaviors may indicate a person is employing a bias to believe the contravening message.

The tendency to believe what comes from a previously known reliable source implies the relevance of familiarity. I argue that in affective contexts visual attention toward familiar objects may also lead to inferences about gazing behavior that engages

familiarity and also is prone to confirm believability (e.g. Kahneman, 2011, 79; McDermott, 2004, 698). In these tests the contravening message in the sentences may have been a catalyst for believability or refutation of the image depicted in the picture. In one example (Slide #8), the sentence suggests the figure in the picture is male, although gender is not determinable. The caption also states that person in the picture has donated a kidney to grateful white person. Although there is no way to determine why the person in the picture is crying, the sentence: "Was just thanked by a white stranger for donating a kidney to him" suggests that the tears on the face of the person in the picture are tears of joy. A null hypothesis in this case may propose that there would be no difference in gazing strategy on a tearful face under ambiguous suggestions of gender.

Another possible solution to this presentation could be suggested by a hypothesis predicting that *a viewer from a conservative mind-set will be less likely to believe a statement suggesting that a black person has donated a kidney to a white person.*

In one IRB study I compiled data from over 400 individuals using a survey tool designed to represent display examples of big and small government policies, conservative and liberal-sounding policies and also Republican and Democrat-led policies.

One of the things I found was that stronger supporters of Republican policies seemed unable to distinguish between big government and small government when references to *size* were removed from policy statements. In other words, policy statements which contained more neutral partisan language appeared to have stymied the ability of more conservative participants' abilities to identify with "big government"

contexts when framing language changed. I therefore was convinced that affective contents probably dictate the processing of specific emotional contexts.

The idea for those tests was inspired by the prominence of media coverage of public demonstrations of protests against the Obama Administration which seemed to be excessively vitriolic and premature. These seemed to be driven by incredibly strong emotions. I was intrigued by this apparent racially motivated displaced anger. Regardless of my own attitudes about race, I wanted merely to explore political emotions. Although I believed race was a factor in Obama angst, I was more interested in whether angry protestors represented lasting political feelings. I assumed that strong emotions implied the existence of profound physical symptoms. I set out to discover how to tap emotions from intensified public discourse.

The fundamental hypotheses in these experiments predicted that certain physical behaviors will betray certain feelings which are indicated in the way political information is attended to and internalized.

Hypothesis 1

Physical behavior betrays feelings.

Hypothesis 2

Attention mechanisms reveal contexts.

Therefore I needed to frame emotional contexts and cognitive processes in ways that would facilitate objective measurements. The inclusion of relevant bio-physical factors required that the objective value of a stimulus be capable of revealing when and whether physical attentions on an object are contextually relevant. My own definition of

affect argues that the prior knowledge of the physical effects of objects can be applied to the prior knowledge of an organism's goals.

In this context affect is a state that can result emotively resulting from certain physiological traits responding to what attracts the organism. I propose that ambiguity also impacts an organism's goal seeking behavior. As I also mentioned in the introductory chapter of this dissertation I believe affect is dependent on conceptual material because a person's relationships to information are basically the simple effects of positive and negative charges in their likes and dislikes (e.g. Lodge and Taber, 2013, 150-151; Ditto and Lopez, 1992; Rucker and Petty, 2004). Hence, as drives persist removing a stimulus or introducing ambiguousness is likely to strip away objective attentions leaving only noticeable "hot" or "cold" charges.

I anticipated that the perceived meaning in real or implied political objects is a direct reflection of some physical behavior. These experiments sought to address the effects of features in perceived political information to which people actively attended. If there were any noticeable differences in attention patterns, affect and emotion were given more consideration. Following the concept of online processing, the relevance of political attentions reasonably ought to be indicated in detectable perceptions (or affect) whenever political information is encountered. Hibbing and Alford (2007, 197-98) wrote: "political temperament operates on a mass scale … Political temperament … deals with the structure and organization of large-scale social life that extends beyond immediate social environment."

In the general context of multiple mental processing models, unless the information is not recognized, mere existence of political information infers that

interpersonal temperaments will be involved in regulating appetitive and aversive affects related to social and organizational structures. Hence, the general overriding question about politically affective relationships between emotion and perceptions of social consequence needed to be framed in a way that would facilitate a test of interactions between feelings and beliefs.

Method of Inquiry

The method of inquiry guiding the process of this dissertation is reflected in a logical inductive process. I began with several assumptions about behavior and drew up hypotheses based on what the literature seemed to be telling me. Briefly, the literature was demonstrating that affect was a concept not easily associated with physical phenomena in political science research. Ironically, the broader body of social science research was saying that bio-physical phenomena are marked by certain social contexts. Main my quandary at that point was rooted in transferring the language of affect into a bio-physically friendly conversational context. That way, inferences about the effects of social contexts on the human body would be much easier to justify in the testing of hypotheses.

My experiments were conducted entirely through resources and facilities at the University of Nebraska College of Arts and Sciences, Political Science and Psychology Department facilities. These experiments are a culmination of my studies in psychophysiology and American government which have followed three main levels of inquiry. The dissertation and this chapter especially are milestones in the course of my investigations of political affect and bio-physical phenomena. In the paragraphs

immediately below I will summarize what I have learned to this point about affect and will outline how affect is related to political likes and dislikes.

The first level of inquiry primarily included a very basic initial snapshot of political attitudes toward American contemporary politics and altruism within a sample population as a part of an IRB study I conducted from 2009 to 2010. The research resulting from this unpublished manuscript assumed that the intentions of major political interests emanate through association that can be cultivated through the political frames with which they are associated. Chong and Druckman (2007) noted that, "In the 1980s and 1990s, for example, proponents of hate speech regulations on college campuses made considerable headway by drawing a parallel between racial harassment in the university and sexual harassment in the workplace" (Chong 2006, 108).

The political frames of interest in these experiments were focused on views of government intervention, partisanship and bureaucracy. These experiments sought to test the ability of information to represent "big" or "small" government frames. I also expected partisan attitudes and attitudes toward government bureaucracy to impact affective responses. My expectations were that political affect is predictably impacted by various objective features (i.e. size of government and partisan identification) would reveal detectable feelings toward political objects. I also expected that the variability of responses would be due to unique physiological experiences.

It seemed logical to conclude that the ability of a person to remain consistent with their stated convictions (i.e. responses to some survey questions) ought to be indicated in their emotional behavior while attending to objects and information associated with or in conflict with their convictions. Hence, a second level of inquiry also sought to measure

attitudes toward domestic policy across the sample population. In that case, I assumed that the most prominent policy topics (i.e. in the form of prevalent political frames and attitude objects) would be represented across certain ideological frames. Further, I expected that certain evocative cues written into the survey choices could elicit fairly consistent variations between presumptive political orientations. The third level of inquiry included bio-physical factors taken from within the sample. In this phase, I prepared visual stimuli for experimental purposes to factor in the affective responses of human subjects under controlled experimental conditions. I felt it was imperative to blend emotional and physical contexts in ways that would not offend practical sensibilities about emotive behavior.

One way to approach this was to consider what people naturally tended to focus on. For example Yarbus (1967) extensively studied gaze patterns on faces and determined that the eyes and the mouth were more attended to (i.e. Tatler et al. 2010). Lodge and Taber (2005) experimented with the notion of hot cognition and subjects' reaction times. These authors tested the effects a priming element had on the speed and accuracy participant's responses (i.e. Fazio et al. 1986). Both approaches infer that feelings about certain objects and the objects themselves relevant to the physical effects that can be experienced.

In my approach, I tested the relationship of physical affect to attitudes by establishing general attitude structures based on several variables; strength of support for republican-led domestic policies, support for democrat-led domestic policies, support for disaster-related urban renewal, non-disaster-related urban renewal, cap on flat tax rate,

limits on lobbyist access to Congress, and an altruistic indicator in participants tendencies to support various types of charities.

Sampling Process

Participants in this study were enrolled University of Nebraska students age 18 and older. Participants were recruited from the College of Arts and Sciences academic program in Ethnic Studies, Political Science, Psychology or Sociology graduate and or undergraduate courses. Recruitment announcements were posted on a University maintained web-based service that listed available research projects approved by the IRB. Participants were selected after registering online and contacting the Lead Investigator via email or a phone call. Participants were vetted to determine whether they could fulfill the research study requirements which entailed the completion of a questionnaire and visual attention tests.

Attitude Variables

Figure 3.1 shows the "Political Attitude Survey"[6] that was administered prior to visual testing. Data from responses in this tool were used to establish assignments to their most likely political orientation. However, participant's respective political orientation groups were mainly established through a process of determining a participant's attitude toward big government.

[6] These ten questions were administered for this research exactly as they appeared as part of a twenty question online survey tool. A research paper on which the survey and visual tests were based is titled: "Hot and Cold Selective Visual Acuity" (Shanks, 2010, unpublished manuscript). A larger version of the survey which contained an additional 17 questions was previously administered in an IRB experiment titled: "Political Attitude Research". The research paper on the earlier survey is titled: "A Battle for the Attention of the Public" (Shanks, 2009, unpublished manuscript).

Political Attitude Survey Part A (Political Attitudes)

1. If I had five dollars* of social capital to spend on government policies which distribute public goods equitably, I would spend at least dollars.
2. If I had five dollars of social capital to spend on government policies reducing penalties for past due tax returns, I would spend at least _____ dollars.
3. If I had five dollars of social capital to spend on government policies that would downsize the number of bureaucrats, I would spend at least _____ dollars.
4. If I had five dollars of social capital to spend on government policies emphasizing funding for urban development in areas blighted by natural disasters, I would spend at least _____ dollars.
5. If I had five dollars of social capital to spend on government policies which directed funds to be allocated to restore neighborhoods in the inner city, I would spend at least _____ dollars.
6. If I had five dollars of social capital to spend on support for government policies which devote spending to social programs, I would spend at least _____ dollars.
7. If I had five dollars of social capital to spend to support new laws which come from a democratic party-controlled Congress, I would spend at least _____ dollars.
8. If I had five dollars of social capital to spend to support new laws which come from a republican party-controlled Congress, I would spend at least _____ dollars.
9. If I had five dollars of social capital to spend, I would spend _____ dollars to support Congressional efforts to cap income tax levels at a maximum percentage which everyone would pay regardless of income.
10. If I had five dollars of social capital to spend, I would spend _____ dollars to support Senate Investigative Panels and eliminate private companies from doing work for the Senate until they have applied through the Department of Labor.

Figure 3.1 Political Attitude Survey Questions[7]

Politically conservative oriented participants were determined to be those who offered 4-5 points on the zero to five-point scale. Politically moderate participants were classified as those participants who offered 3 points on a six point scale (i.e. 0-5). Politically liberal participants were those who offered 1 or zero points on the scale

[7] In later coding and analyses the term 'social capital dollars' has been replaced with the term "points".

The exclusion of "2" dollars of "social capitol" allowed the investigation to highlight participants on the presumptive affective strength of their attitudes toward the evocative "big government versus small government" debate.

It should also be noted that in several previous analyses of the data, a score of two *was* included for within and between group comparisons. This was also the case for the portion of the survey that was also used in my earlier IRB project. I realized that this was a calculated risk and may call into question the objectivity of later measurements that would be made of responses.

Attention Variables

The attention variables I used for these tests were obtained through the collection of visual behaviors in a controlled laboratory setting. Response data were excluded if any Participant's release was not signed or if their questionnaire was incomplete or contained errors. Results of the visual tests were also excluded if there response data was incomplete or contained errors or voids that rendered any variable in their test session unusable. 74 participants from the original group of participants were administered a test of visual affect. One participant was excluded because response data was incomplete and unusable. Data obtained in these tests were derived from individual sessions comprised of randomized presentations of the same twenty-four photographic slides. Each slide contained a picture and the sentence positioned at the bottom of the slide.

For the test of pupil area size differences across the presumptive political orientation groups, removing participants who indicated two points reduced the eventual treatment sample size from fifty-four to forty-seven participants.

Coding the Variable Data

These experiments report on ninety-eight participants who completed identical surveys and who were also administered identical visual tests. Both were administered in the winter of 2010 and spring of 2011. All of the subjects were administered the questionnaire through an online web-based service approved for use by the standards of the Internal Review Board. The visual tests were administered according to IRB approved protocol at facilities in the Psychology Department of the University of Nebraska.

These data were the basis on which the political orientations of participants were established. Participants were determined to be conservative, moderate or liberal based on their support or opposition to republican or democrat-led policies, support or opposition to redistributive (i.e. big government) policies, and support or opposition to bureaucratic actions. Presumptive political orientations and an altruistic indicator were separately measured. Political orientations were assessed according to the strength of their responses on a scale from 0 to 5. The more politically moderate participants were designated as those who answered "3". Participants were excluded from data analysis if they answered "2" on the question regarding their support or opposition to big government policies.

This was done to create more separation between liberal and moderate participants. Participants who selected "0" or "1" regarding their support for big government policies were determined to be liberally-oriented in their political attitudes.

Participants who selected "4" or "5" were determined to be politically liberal in their orientations.

An altruism indicator was assessed according to responses to survey questions regarding which types of charity organizations participants preferred to support. Table 3.1 shows the altruism portion of the survey. Participants were given the opportunity to support for various foreign and domestic charity types.

Table 3.1 Attitude Variables

Big Gov't Attitude	Partisan Attitude	Social Programs Attitude	Food Programs Attitude	Foreign Aid Attitude
Support for Policies for a Downsized Government	Support for Democrat-led Congressional Policies	Support for Government-based Social Programs	Support for Non-Faith Based Charity Program	Support for 3rd-World Government-based Charity Program
Support for Non-disaster-related Urban Renewal	Support for Republican-led Congressional Policies	Support for Faith- Based Charity Program	Support for American Feed the Poor Charity Program	Support Foreign Feed the Poor Charity Program

Equipment

Participants were fitted with head gear from the EyeLink® II System. Experiment sessions were conducted with the aid of a Pentium IV PC Desktop computer. All of the participants who were administered visual tests viewed the same twenty-four pictures for ten seconds each. Fitting participants with the head gear involved reaching a snug fit of a device that allows two cameras (one trained on each eye) to lock on and subsequently

track movement of the eyes pupils. The head gear device also holds a third camera which assists the system in monitoring the participant's physical orientation to the visual field by validating gaze differential and saccadic deviations.

Each participant was positioned directly in front of the desktop monitor and keyboard at approximately 18-20 inches from the viewing screen. Participants were told that during their test session they would see of 24 ten-second randomly ordered slides followed by a blank screen with a dot at the center. Instructions were to wait after each exposure or manually advance slides pressing the space bar on the keyboard in front of them, otherwise a blank screen and dot would be display for another 10 seconds until the next slide appeared.

Table 3.2 Attention Variables and Coding Symbols

Faces Attention (Fixations)	Sentence Attention	Dwell Attention	Gaze Rests (Eyes Stop)	Eyes Potential Capacity to Absorb Light
Interest Area Fixations Face Region	Interest Area Fixations Text Region	Dwell Time Average	Number of Fixations	Pupil Area Size

Testing Procedures

Attitude Testing Procedure - Using the responses of participants who completed identical surveys their responses were separated by their having selected zero, one, two, three, four, or five dollars of fictitious social capital, as it was called in the survey instructions and choices offered. Figure 3.1 shows the actual survey text as it was presented in an online questionnaire. Based on their responses to the policy proposed in

Question 3 *(If I had five dollars of social capital to spend on government policies that would downsize the number of bureaucrats, I would spend at least _____ dollars*) they were identified a belonging to one of three test groups.

Respondents who were identified as conservatively oriented selected four or five dollars to support the policy proposed in Question 3. This was considered a very strong indicator of support. The respondents who selected three dollars on question 3, were considered to be more moderate than respondents who selected four or five dollars and those who selected zero or one dollar. Those who selected zero or one dollar were considered to be more liberal in the sense that political liberals presumably would resist reducing the size of government.

CHAPTER FOUR - ATTITUDE AND ATTENTION

Tests and Results

This chapter includes extensive discussion on the process of developing ways to transform factor derived from survey items (e.g. political attitudes, political orientations and physical phenomena associated with visual attention). The Chapter begins with several ANOVA test reports that were performed to develop a sense of the ability of the survey to obtain measurable political orientations from research participant responses. I follow that discussion with a report of several ANOVA tests that were performed to ascertain the most likely implications of attentional phenomena derived from the visual tests that were administered.

Attitude Statistics

Orientation Groups' Partisan Differences (Between-groups ANOVA)

In this test subjects in the three political orientation groups were compared based on their level of support for legislation authored by Republican and Democrat congressional representatives. These results of 47 participants tested demonstrated differences between the three political orientation sub-groups. In the sample population, between-group differences across support for downsizing government and partisan congressional support levels revealed that there were indeed differences among the responses between orientation groups.

Figure 4.1 shows that there were differences between political orientation groups' partisan support. These subjects were tested across their self-reported partisan support and respective conservative, moderate and liberally-oriented political tendencies.

Null Hypothesis (HØ) There is no between-group difference among participant's responses across their support for downsizing government and their support for Republican and Democrat-let Congressional legislation. Per a One-way ANOVA, *F,*(3, 259)= 15.63, *MSE=2*.183, *p*=.0001, η^2=.1547. Therefore, the null is rejected.

Figure 4.1 No difference between orientation groups' partisan support (false).

Strong Partisan Supporters' Between-groups ANOVAs

These results show that there were differences among participants within this sub-group of relatively more ardent partisans. ANOVA results indicated that stronger partisan supporters in this sub-group varied significantly in their partisan support when that support was 4 or 5 points. Figure 4.2 shows results of a test of 56 participants' support for government downsizing who were also comparatively stronger partisans. These participants demonstrated noticeable differences in their supports for Republican-led or Democrat-led policies.

HØ = There will be no difference within the sample between levels of support indicated on support for government downsizing and strong support for Republican and Democrat-

led Policies. Per a One-way ANOVA, $F(2, 167)= 56.47$, $MSE=1.712$, $p=.0001$, $\eta^2=.0463$. Therefore, the null is rejected.

Figure 4.2 No differences within group between downsizing and partisan support (false).

Strong, Moderate, weak supporters' differences Between-groups ANOVAs

This group of 47 subjects was administered visual tests to compare differences between strong, moderate or weak partisan supporters of government downsizing. This within-group ANOVA tested a null hypothesis predicting that these participants were not different in the strengths of their individual support for downsizing as a group.

Figure 4.3 shows an ANOVA test indicating that there are differences within the sample population based on differences in support for government downsizing. This test yielded the null hypothesis false. Results of this test indicate significant differences in political attitudes with respect for support or opposition to government downsizing when comparing the levels of support for downsizing. In this test the difference between the sample means (F-ratio) was unusually large. This may imply that variation in this sample is greater than might ordinarily be expected.

HØ = There will be no difference within the sample between levels of support indicated on support for government downsizing between participants indicating "strong", "moderate" or "weak" support for government downsizing. Per a One-way ANOVA, $F(2, 285)= 1006$, $MSE=0.2458$, $p=.0001$, $\eta^2=.8802$. Therefore, the null is rejected.

Figure 4.3 No differences within the group for downsizing (false).

Summary

These tests infer that the survey tool probably is allowing differences between groups to become evident on the sheer basis of *support* and *opposition* to big government in general. Additionally, the results seem to confirm that partisan attitudes somewhat predictably align with political policies as they would be expected to, where for example politically conservative participants are least supportive of big government and democrat-led policy. Similarly, politically more liberal-oriented participants are more likely to support big government and democrat-led policy.

Focus Groups

The process of developing visual stimuli for the purpose of measuring affect began with considering how best to select the images that would be used in the experiment. Focus groups were formed through the IRB recruitment protocol. Three group sessions were scheduled in which participants were offered the opportunity to discuss a collection of photographs as members of informal discussion groups.

Every slide used in these tests was vetted by the three focus groups on the basis of whether the photographs were deemed by the groups to be positive or negative. Focus group participants were asked to work in groups of up to six students and simply decide whether a slide was political or not political and whether it was a positive or negative image. The focus group participants saw only pictures. They were not shown the contravening messages that would be eventually placed in the slides for the visual tests. None of the focus group participants were administered visual tests

During participant recruitment two students volunteered to assist with the research. Psychology Major Undergraduates Shantel Gassman and Scott Barnes assisted

with the focus group discussion sessions, and also with a few of the preliminary visual test sessions. Together, we proposed various hypotheses largely derived from the focus group discussions but also from our own informal conversations.

We addressed several questions and made cursory assessments based on the calculations of a few inferential statistics and ANOVA statistics tests. None of these results were remarkable or statistically significant. Ultimately, we presented a poster which displayed those hypotheses with brief summaries at the 2011 Annual Nebraska Symposium on Motivation.

In the following four tests, research participants had been exposed to twenty-four randomly presented slides. The focus groups had established whether a slide was "positive" or "negative". This would prove important when analyzing movements of the eyes between the facial areas and the sentences. The focus groups overwhelmingly agreed that all of the slides depicting sad faces were negative images. Similarly, slides showing smiling faces were assessed as positive images. In fact, only slides with sad faces were deemed "negative". For example, slides in which faces were neither sad nor happy were also deemed "positive" images.

In Oxley et al. (2008) a conservative political orientation appeared to correlate with more profound physical responses to unseemly visual images. Defining images as positive or negative followed the assumption that politically conservative types would be more averse to negative images.

I expected that there would be differences in visual reactions to both positive and negative images. If Oxley et al.'s (2008) findings were valid a person's visual perception

should exhibit differences in affective response, at least in cases where the visual image is unappealing.

Once the focus group discussions and preliminary visual tests were completed, the next step was to develop hypotheses that would address the questions gleaned from the focus group sessions. In the process, I and the two undergraduate research assistants agreed to settle on one or two questions each to test. The poster we presented addressed four of those hypotheses.

Ms. Gassman asked the first question: *How does appeal affect the way faces are scanned?* The data used were from two subject's viewings of three slides wherein each slide had a markedly different visual appeal form the other two slides.

The implications of the inferential statistics that resulted indicated that participant views of the least appealing slide showed more fixations on regions of the face and comparatively fewer on the sentence at the bottom of the picture frame. A comparison of viewings revealed that slides #3 which contained the sentence: "Toxic waste is buried here" and #5 which contained the sentence: "Was always faithful to his wife" caused more sentence reading while slide #7 which contained the sentence: "Newlywed has herpes" caused a circuitous and more even distribution of gaze. The probability of this non-significant result, assuming the null hypothesis, was 88%.

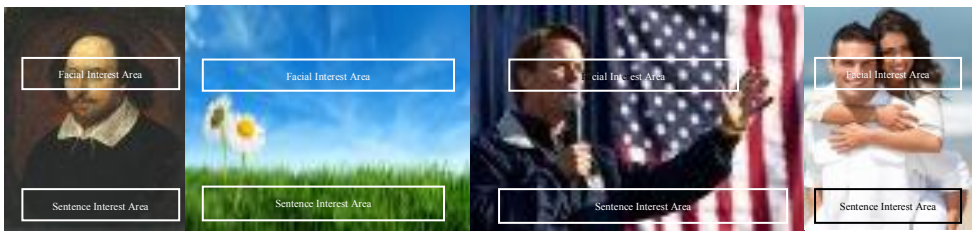
Mr. Barnes was curious about the effect of believability and asked: *What is the relationship between image believability and tendency to read accompanying text?* The question was focused on the distracting element of the contradictory sentence in the picture frame which by design was drafted to contradict the picture with which it appeared. Mr. Barnes asked this question assuming that more attention to the

contradictory sentence would occur if the sentence was too far-fetched. The results of ANOVA statistical tests of views of Slide #5 ("Was always faithful to his wife") revealed that gaze directionality indicated a fairly strong chance that subjects demonstrate similar scanning strategies nearer the areas that contain text. Gaze direction during views of more incongruent picture and contradictory sentence pairings tended to have more left to right tendencies. This implied that reading may have been more prevalent. The probability of this result, assuming the null hypothesis, is 98%.

I asked: *What if any is the effect of incongruity on search aggressiveness?* This test asked whether searches would be more vigorous when incongruence is profound. This test compared searching vigor across two images. One image was deemed by the focus groups to be "positive" and the other was deemed to be "negative". Slide #2 the positive image contained the sentence: "Borrowed his story lines from Asian literature" and Slide #8 contained a negative image which contained the sentence: "Thanked by a white stranger for donating a kidney to him" (See Slide #8 in the first chapter in Figure 1.0 on page 17). The results of an ANOVA statistical test of gaze direction fixations indicated a probability of this result, assuming the null hypothesis would be 57% likely to occur by chance. I surmised that searching vigor was not particularly affected by the apparent profundity of an incongruent sentence.

Additional inferential statistics were computed to obtain a quotient of strength based on eye movement away from mean and medial zones in the field. Those calculations did not appear to render anything conclusive. In the case of Participant #1208, gazing was more horizontal but also more widely distributed across the field. This subject also demonstrated a strong tendency toward reading the sentence in Slide #15

which was the slide containing the least sad face (See Slide #15 in Figure 1.0 on page 17). However, none of the other subjects in this test displayed a particularly remarkable gazing distribution.



Slide 2 Slide 3 Slide 5 Slide 7

Figure 4.4 Preliminary Visual Test Slides

Attention Testing Procedure

The process of setting up the visual tests was mainly defined by the operational limits of EyeLink® II System. All of the participants in these tests viewed the same 24 randomly presented photographic slides. The pictures in the slides were selected from various internet-based websites that offered images in public domain that were available free of charge to anyone and devoid of watermarks. Each subject was positioned directly in front of the desktop monitor and keyboard at approximately 18-20 inches from the viewing screen.

The visual test subjects were informed that each session would consist of 24 ten-second exposures followed by a blank screen with a dot at the center. Subjects were also told that after each exposure they could elect to advance to the next picture by pressing

the space bar on a keyboard. Subjects were advised that the blank screen and dot would be displayed for another 10 seconds unless they elected to advance to the next picture.

Assuming that pupils are different sizes, these experiments focus on pupillometric variance as an indication of ocularmotor stasis (i.e. Jain, 2011). Pupil Size Mean (M), Maximum and Minimum (min/max) Pupil Sizes, were calculated by the EyeLink® II System as "pupil area", this unit of measure was defined in the EyeLink® II System User's Manual. Hence, participant's pupils were assessed in terms of the changes in size during tests.

The results in Table 1.0 (on page 22) display the minimum and maximum pupil size on views of sad faces. Participants in this test were divided into their presumptive political orientation sub-groups. The comparative ranges of changes in pupil area size of each orientation sub-group were also were also assessed. Ultimately, each group's cumulative within-group overall minimum and maximum pupil area size ranges were combined with their support for government downsizing. Minimum and maximum sizes and averages of pupil sizes across the three orientation groups are shown in Table 5.11 (on pp. 142-43).

Participants were identified as moderately-oriented if they indicated three points on the survey tool in support of downsizing government, conservatively-oriented participants were identified as those who indicated four or five points and liberally-oriented participants were identified as those who indicated no points or one point in support of downsizing government.

The slides were comprised of three general formats, including, a "Full Face" format in which the front of a person's face filled the majority of the picture frame, a

"Head and Shoulders" format, which displayed a person whose body was visible above the waist, and a "Foreground/Background format in which area in front of the subject's feet and a horizon behind them were visible.

For every ten-second viewing of a slide the number of gaze resting points was usually between 20 and 30 or about 600 potential gaze resting points per participant. The EyeLink® II System provides innumerable variables which can be extracted from virtually every second of every participant's individual session. Choosing the right variables from such a large selection of potential variables required that each visual field and all of their contents be contextualized in the necessary framework of the political attitude survey.

The process of determining the political proclivities of the sample population began with a review of inferential statistics related to the political attitudes of participants. Since the survey tool had been used previously, the research for this dissertation gained additional support as to the validity of the survey.

HØ = "There will be no difference in gaze strategy between interest areas of sad face images" (Slides #8. #15, and #24).Variables Tested: Eye Movement Direction -Up, down, left and right, eye placement in the interest area regions of face or sentence area.

Participant #1208
Per one-way ANOVA, $F(2, 81) = 6.1486E\text{-}02$, $MSE = 9.0589E+06$, $p = .094$, $\eta^2 = .362$, demonstrated no statistically significant difference between the viewing strategy of this subject. Therefore the null hypothesis is accepted.

Participant #2207
Per one-way ANOVA, $F(2, 97) = 9.7576E\text{-}02$, $MSE = 8.0414E+06$, $p = .091$, $\eta^2 = .326$, demonstrated no statistically significant difference between the viewing strategy of this subject. Therefore the null hypothesis is accepted.

Participant #2209

The one-way ANOVA, $F(2, 91) = .0330$, $MSE = 94863E+06$, $p = .72$, $\eta^2 = .428$, demonstrated no statistically significant difference between the viewing strategy of this subject. Therefore the null hypothesis is accepted.

Participant #2210
The one-way ANOVA, $F(2, 110) = 5.3707E-02$, $MSE = 9.1075E+08$, $p = .095$, $\eta^2 = .451$, demonstrated no statistically significant difference between the viewing strategy of this subject. Therefore the null hypothesis is accepted.

Participant #2013
The one-way ANOVA, $F(2, 85) = .3058$, $MSE = 8.9654E+06$, $p = .074$, $\eta^2 = .426$, demonstrated no statistically significant difference between views within this sub-group. Therefore the null hypothesis is accepted.

Participant #2014
The one-way ANOVA, $F(2, 96) = .2699$, $MSE = 8.6325E+06$, $p = .76$, $\eta^2 = .397$, demonstrated no statistically significant difference between the viewing strategy of this subject. Therefore the null hypothesis is accepted.

Figure 4.5 Sad Face ANOVA Individual Attention Tests Results

Measuring Attention: Plotting Gaze Interest Areas

The implications from focus groups and preliminary visual test results of individuals whose data were not analyzed in the dissertation provided valuable information that helped to determine how to implement the data generated by the survey and visual test sessions. One simple technique used number of fixations which logically seemed to show that when subjects were presented the least appealing or saddest images, gazing behavior attention effort was greater. The manner in which subjects needed to attend to two interest areas (face region and sentence region) would be assessed on behaviors within a fairly restricted visual field surface.

The strategy for plotting these limited gaze fields was done by dividing the visual field into four quadrants. The EyeLink® II System is designed to monitor and document

the location of the eyes over a visual plane. I determined that analyses would be conducted with respect for the physical attentions within and between two laterally defined interest areas that were positioned on separate horizontal planes. Eye movement between interest areas could then be interpreted geometrically based on context.

The implied social content of the pictures was not easily determinable. However, the designation of two qualitatively distinct interest areas facilitated an objective analysis based on movement across the four quadrants. In this way the potential affective implications of each subject's gaze behavior over each 10-second view could be accomplished by comparing gaze toward facial features as well as words.

Based on the political orientation groups derived from the survey I anticipated that any detectable physical phenomena would offer considerable insight. It was my expectation that the effects of political feelings would be visible in observed attentions. In the literature political information is assumed to be processed largely through the evolution salience and heuristics. For example, in several of the statistics tests reported here, affective relationships demonstrated statistical stability when a detectable stimulus onset event was presented in the form of an evocative social context (i.e. Republican or Democrat-led legislation in Congress). Those tests combined survey research data which would be used to extract the discrete effects of individual affections or disaffections. My chief task was to define attention variables in terms of the affective process and deploy them in experimental designs.

Attentional Implications

The three images used in these tests were selected because they seemed to present different levels of appeal. After I examined several individual's vertical and horizontal

eye movements in the two interest areas I realized that there was noticeably more gazing of facial regions and comparatively less sentence area gazing. I conducted more ANOVA tests of the scanning directionality on several individual views of the slides with a sad face. The results of these tests are shown in Figure 4.5. I expected that the attentional differences would implicate differences in political orientation.

Table 4.3 Political Orientation Means & Averages Min/Max Differences

Political Orientation	Mean Pupil area size	Average min/max Difference
Conservative n=5	M = 442.025	m = 123.815
Moderate n=6	M = 494.866	m = 138.537
Liberal n=12	M = 461.058	m = 101.967

In the context of what might have been gained by the use of the contravening message, gaze behavior was observed as an extension of System 1 might engage an endorsement by System 2 (i.e. Kahneman, 2011, 415). The decision to design the sentence as a contravening message was to further distract viewers to create an ambiguous condition. I had hoped that the added distraction of a contravening message would further test the notion that congruence is a naturally sought context (e.g. Yechiam and Telpaz, 2011; Lodge, Taber and Verhulst, 2011). The sentence area was intended to create a distraction away from a supposed positive or a negative image.

I wanted to determine if aversive behaviors would be detectable in visual behaviors. According to Kahneman's dual process theorem, if either the the picture or the sentence contained familiarity, attention to the other interest area may indicate a process

of endorsement or rationalizing was in effect. Further, based on what was learned from the focus group sessions, the subjects were most likely going to self-direct from the interest area in the main body of the slide toward the interest area containing the contradictory sentence and so on.

These statistical tests measured the relative attentions toward interest areas based on the viewing sessions of a group of 54 participants. The group was divided into three political orientation groups that were tested in a series of two-tailed one-way ANOVA's. The individual tests in Figure 4.5 each addressed the following Null hypothesis:

There will be no difference in gaze strategy between interest areas of sad face images

Among these six participants, the results of four approached a rejection of the null with p values of .074, .091, 094 and .095 respectively. However the results only imply that individuals may be fending off tendencies to deviate from a general process that is detectable through the use of the EyeLink II® system. These findings led to a determination that it was very likely that participants in the sample population shared similar gaze strategies.

Assessing Physical Attention

Physical attention was assessed by observing various combinations of several physical effects under test conditions. The following physical effect variables were investigated: total fixations, dwell times, interest area percentages of fixations in the facial region, number of fixations inside the facial region, and fixations on the horizontal plane in the region of the contradictory sentence interest area spanning most of the

bottom width of each slide. The tests below show only a few of the tests that were performed.

The images in each slide were originally expected to elicit an element of relative alarm. Incongruence in each 10-second slide presentation was expected to be perceived through a subject's awareness of the sentence some distance away from the facial area. Therefore the physical effort that participants would need to gaze on the sentence was substantial. Additionally the distracting element of incongruence was expected to interrupt or cause activation of additional affective resources to make sense of the objects.

When comparing fixations on the sentences it was anticipated that some subjects would demonstrate more horizontal gazing and others would exhibit comparatively more vertical gazing. The spatial allocations of gazing under the ambiguous condition were analyzed with the assumption that the function of a person's associative motor would be represented in affectively discrete physical iterations indicating reading perhaps or indicating attention *away* from the sentence.

My interpretations of the iterations I observed relied on patterns of attentions. My analyses of those patterns depended primarily on ANOVA test data which helped to frame attentional tendencies within certain socio-political contexts (e.g. more reading, less reading).

Summary

This chapter comprises the joint analysis of political attitudes and physical attention. A series of analyses of variance were performed and compared to inferential

statistics of political attitude. The analyses of orientation group's attitudes and physical attentions were compared across political orientation groups. In this analysis, stronger partisans across all groups exhibited only minor differences in conservative, moderate and liberal orientations in support of social programs. Results indicated that the sample is probably overall politically conservative. Findings in these tests support the idea that participants in the sample population employ similar gazing strategies.

CHAPTER FIVE - PARTICIPANT POLITICAL ORIENTATION ANALYSIS

The Tables and Figures in this chapter display several statistics tests that were obtained from 417 research study participants over approximately three years of investigations involving two IRB studies. The first study involved an online survey tool. The second study involved an online survey and visual tests for measures of physical attention.

The first study's data are included here to add support to the veracity of the survey tool. The relatively large N allowed for a fairly robust examination of the reliability of the tool and of its ability to aid in the defining of political orientation groups. The tool was administered three separate times over the course of approximately 36 months.

320 of these participants formed the largest group, Group A. This group responded only to an online survey call for research study participants. The survey was part of a study titled: "Political Attitude Research".[8] 74 participants formed the second group, Group B[9]. All of the participants in Group B answered the same survey questions as Group A.[10] However, for reasons that will be explained, Group B data was combined with survey data from individuals who also were administered visual tests for measures of physical attention.[11] A third group of 23 participants formed Group C. All of the participants in this group were administered both the survey tool and visual tests.

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[8] The IRB study: "Political Attitude Survey" produced the manuscript "Battle for the Attention of the Public" (Shanks, 2009, unpublished manuscript).
[9] One participant in this group of 74 was excluded due to incomplete data.
[10] Participants in Group "A" completed a much longer survey. However, all subjects answered the same 20 questions in the studies reported here.
[11] Data and findings from that research were reported in Shanks (2013).

As noted, the variables used in these experiments sought to measure presumptive political orientations and included partisan support for congressional policies, support for urban renewal and support for different types of foreign and domestic charities. These data offered the opportunity to do a critical analysis of political and social proclivities contained in the sample population.

The survey tool offered participant's the choice of selecting between zero and five points (aka social capital dollars). Their responses were recorded alongside other participants in the treatment group. A participant's selection of points on the question asking about their support for "big government" was the main variable used to assign participants to their respective political orientation sub-group.

Assignments to orientation groups were made based on the relative conservative, moderate or liberal viewpoint of each participant. The survey tool allowed respondents to select no points (zero) to five points per question.

The data from Group A (N=320) followed cut-offs of 0-1, 2-3, and 4-5 to assign participants to groups. Data from Group "A" did not include any visual tests. Nor were responses of "2" points excluded in this group. The data from Group B (N=74) and Group C (N=23) followed cut-offs of 0-1, 3, and 4-5.

In the review and analyses of Group A, those data were mainly used to explore the ability of the survey tool to express veracity in the political orientation group divisions used in these experiments. The differences in orientation group sizes were determined by a participant's support for government downsizing. Those data led to participants being divided into groups of 55, 180 and 85. There were 55 participants

assigned to the conservatively-oriented group, 180 were assigned to the moderately-oriented group and 85 were assigned to the liberally-oriented group.

The conservatively-oriented participants very strongly supported downsizing by indicating an average of slightly more than 4.0 points of a possible 5. 180 moderately-oriented participants group average level of support for government downsizing of slightly below 2.5 of 5 possible points. 85 liberally-oriented participants indicated an average level of Republican-led congressional policy-making at approximately .75 points of a possible 5 points. This was a relatively low level compared to the support for downsizing indicated by conservatively-oriented group. Anecdotally, these levels appear to represent substantial moderate support for government downsizing.

Group A Survey Results

Figure 5.1 shows the in-group points of each political orientation group's support for government downsizing. The X Axis shows the respective political orientation groups and "n" size. The Y Axis shows the respective totals of in-group points in support of government downsizing for each political orientation group.

Figure 5.2 shows each orientation group's average support for Republican-led policymaking. Political orientation was assigned to conservative types who had indicated strong support for government downsizing. The X Axis shows the total point levels of orientation groups and "n" size. The Y Axis shows average in-group points in support of Republican-led policy.

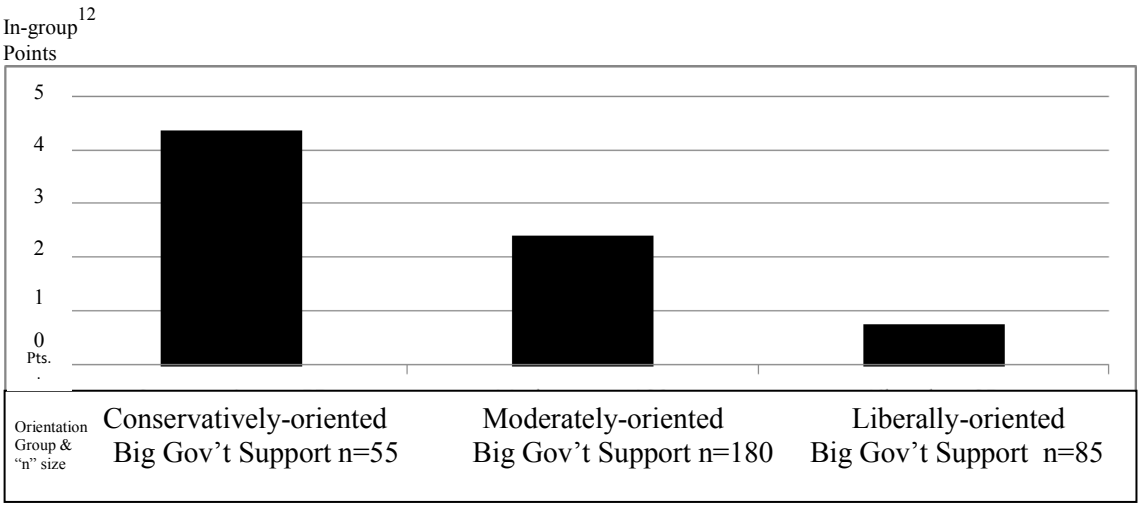

Figure 5.1 Group A Supporting Government Downsizing

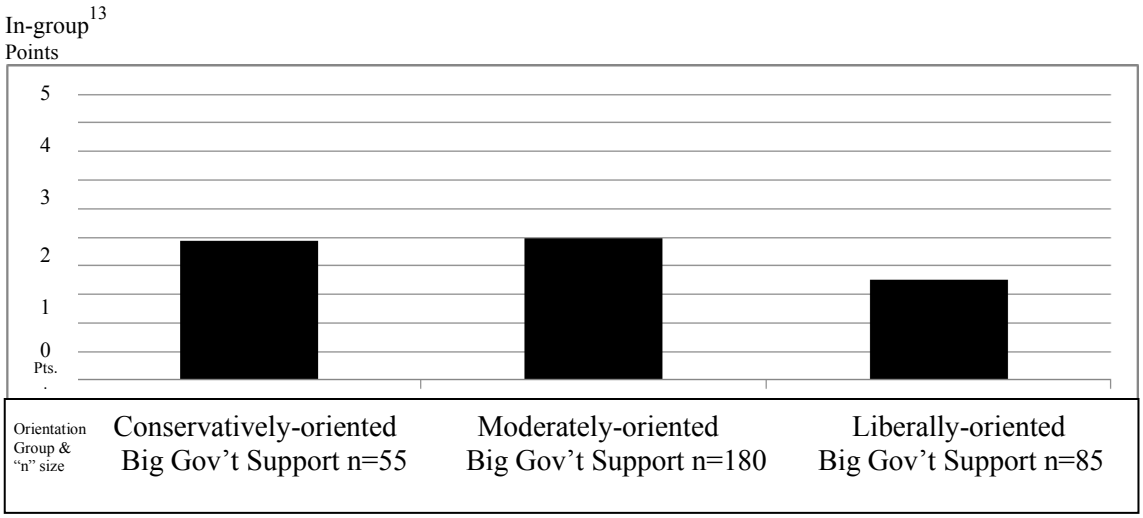

Figure 5.2 Group A Supporting Republican-led Policy

[12]Average "In-group" points.
[13]Average "In-group" points.

While significantly more moderate types appeared to support Republican-led policymaking, their average support is only slightly higher than that of the conservatively-oriented group average. As expected, the liberally-oriented group indicated the lowest average support level for Republican-led policy.

Figure 5.3 below shows the levels of support for Democrat-led policymaking for each orientation group. The X Axis shows the total points of each group and "n" size. The Y Axis shows average in-group points in support of Democrat-led policy.

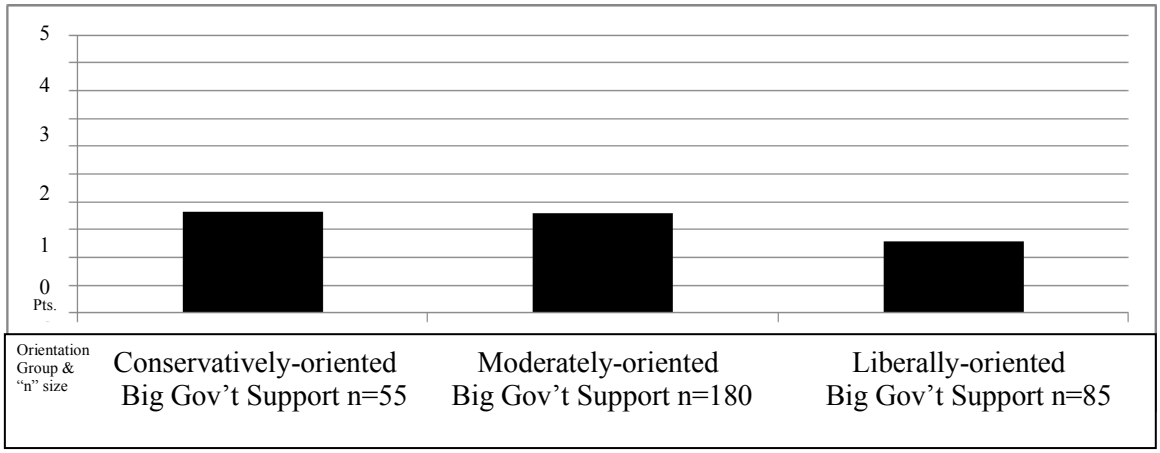

Figure 5.3 Group A Supporting Democrat-led Policy

Figure 5.4 below shows side-by-side comparisons across the three political orientation groups' support for government downsizing and Republican-led policies. This graphic display shows averages of survey points for Government downsizing and Republican-led policy.

Figure 5.5 below shows side-by-side comparisons across the three political orientation groups' support for government downsizing and Democrat-led policies. This

graphic display shows averages of survey points for Government downsizing and Republican-led policy.

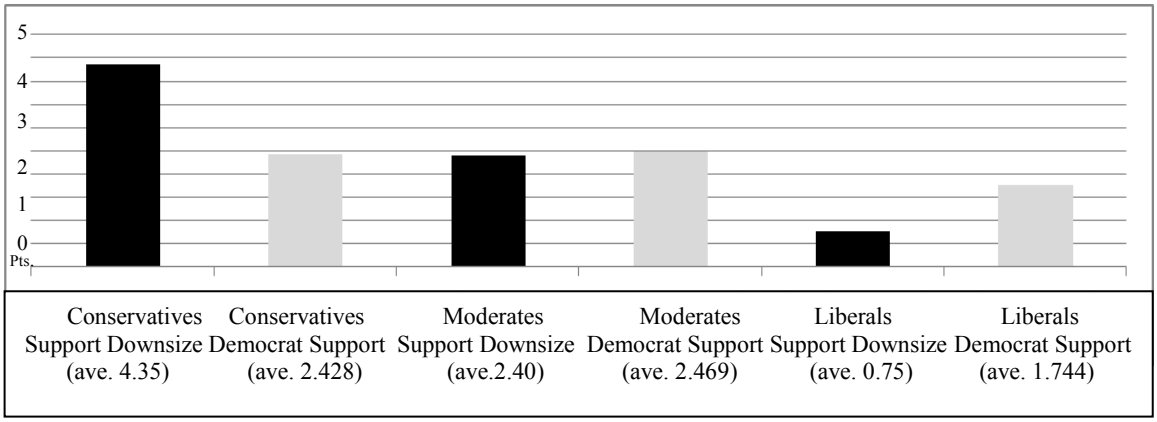

Figure 5.4 Group A Support for Downsizing/Republican-led Policies

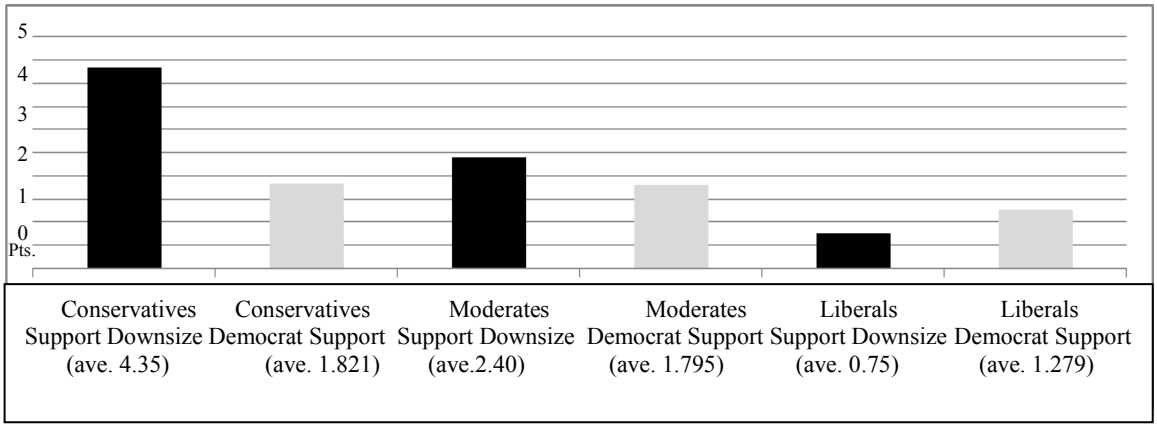

Figure 5.5 Group A Support for Downsizing/Democrat-led Policies

Group B Survey Results

After reviewing the levels of support from the 320 participants in Group A the next step was to incorporate data from participants who also were administered visual tests. The idea was that a more robust understanding of the sample population would in turn facilitate a more robust critical analysis of the visual test data planned for the dissertation. These additional 74 participants are the focus of visual tests performed for

this dissertation. These participants completed the same a pre-screening questionnaire tool that was also administered to Group A.

Figure 5.6 below shows results of Group B which in one test also incorporated attitude data of 16 participants from the original 320 surveyed. One participant in Group B was excluded due to incomplete data. Therefore only 73 participants in this group were administered visual tests to be analyzed here. It is important to note that these surveys contained identical questions and were administered through the same IRB approval processes.

I also performed an ANOVA test on the mean scores of each group's indicated support for social programs. The null predicted that there would be no difference between mean response scores between groups support for social programs. Figure 5.5a shows the mean differences in political orientation group support for social programs.

Analysis of Variance Test for Differences between the mean values of three political orientation groups support (or opposition) to social programs.

HØ = "There will be no difference between political orientation mean scores in support for social programs."

Per one-way ANOVA, $F(2,9) = 5.589$, $MSE = 0.5307$, $p = .026$, $\eta^2 = .552$, demonstrated no statistically significant difference between political orientation group's mean scores in support of social programs. Therefore the null hypothesis is accepted.

Figure 5.5a Mean Differences in Social Program Support

As is shown below, the support for social programs across orientation groups is predictably patterned in that conservatives appeared less inclined to support stronger support social programs. However, the relationships between conservative and moderate orientations reveals that moderate orientations offer numerical strength in support to of a general lack of strong support among the strongest supporters of downsizing within the sample to support government programs.

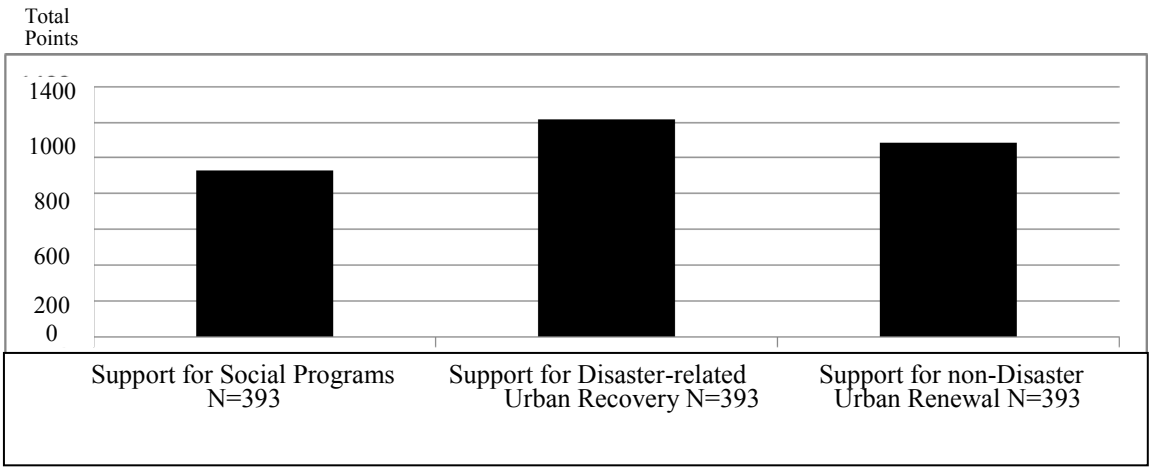

Figure 5.6 A & B Supporting Social, Urban Programs

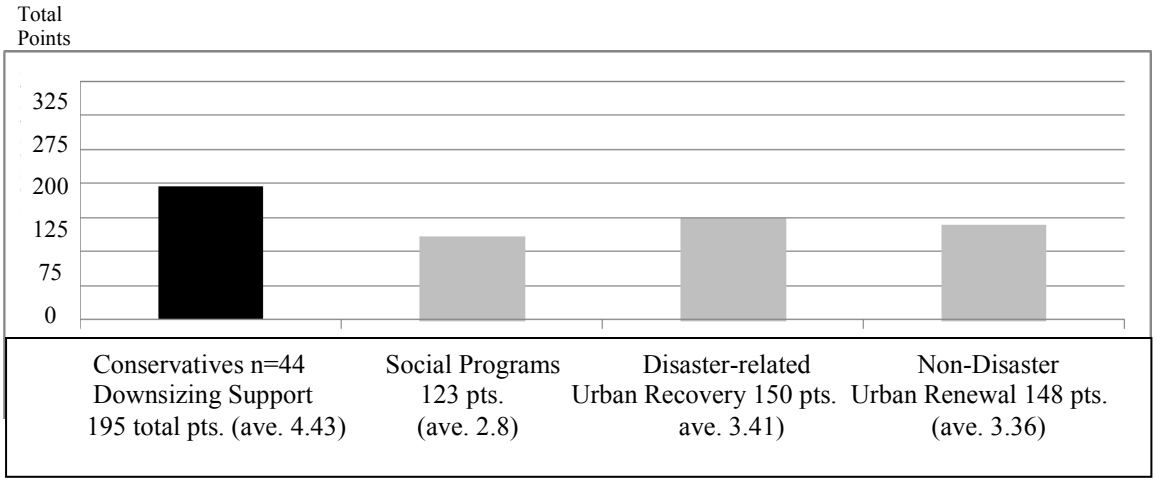

Figure 5.7 Conservatively-oriented Support

The data in Figure 5.6 which combined Group A and Group B, show supports within the group (N=393) for social programs, urban recovery and urban renewal

policies. Due to incomplete responses on the survey one participant's responses were excluded. The X Axis shows in-sample support levels in total points. The Y Axis shows support totals for social programs, disaster-related and urban renewal programs.

Figure 5.7 shows results of 44 conservatively-oriented participants in the sample. These data show the conservatively-oriented group's support for social programs, disaster-related and non-disaster-related programs. The X Axis shows in-sample support levels in total points. The Y Axis shows support totals for social programs, disaster-related and urban renewal programs.

Figure 5.8 shows results of 50 liberally-oriented participants in the sample. These data show the moderately-oriented group's support for social programs, disaster-related and non-disaster-related programs. The X Axis shows in-sample support levels in total points. The Y Axis shows support totals for social programs, disaster-related and urban renewal programs.

Figure 5.9 shows results of 127 liberally-oriented participants in the sample. These data show the moderately-oriented group's support for social programs, disaster-related and non-disaster-related programs. The X Axis shows in-sample support levels in total points. The Y Axis shows support totals for social programs, disaster-related and urban renewal programs.

Group C Comments

Group C was eventually analyzed on both visual data output and political survey attitude data. This group was comprised only of participants who were tested and also completed the political attitude survey. The cursory analysis of variance of mean scores across political orientation groups only indicated that the differences between political

orientation groups support for social programs was predictably patterned. For example, conservatives appeared less inclined to support social programs.

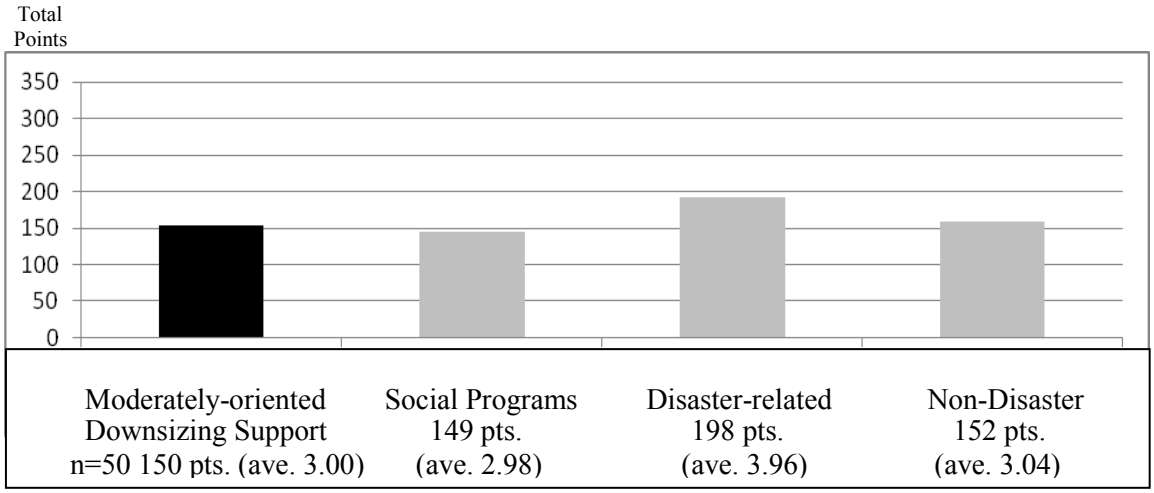

Figure 5.8 Moderately-oriented Support

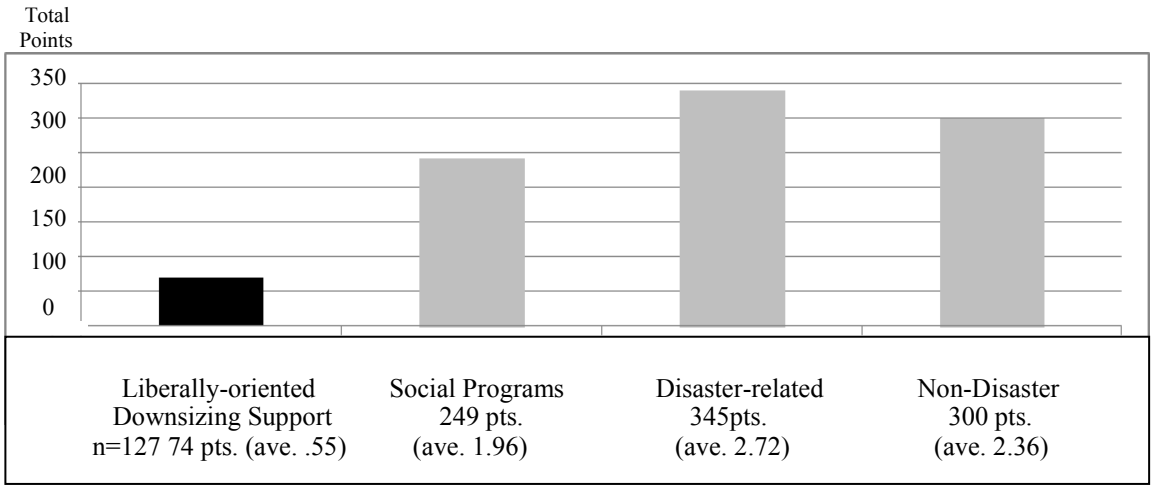

Figure 5.9 Liberally-oriented Support

Summary of Inferential Statistics

There are several notable revelations in these data. One remarkable feature is the apparent strong conservative tendencies of those assigned to the group of moderates.

When compared to the other groups their support for partisan congressional policy gives the impression they are considerably more conservative than most liberals and only somewhat more conservative than some conservatives. Figure 5.2 shows how the moderate group's response to partisan policy led by Republicans exceeded that of both the conservative group and the liberal group.

Perhaps this group is more averse to all things government. Their strong support of Republican-led policy and opposition to big government may simply be a view point based on the presumption that smaller government and republican policies are mutually dependent factors amenable to more conservative orientations. In this respect, moderates may also rightfully be deemed to hold conservative views and may be expected to act from a conservative political orientation. This assessment is also supported by the revelation that the conservative group outpaced the moderate group in support for democrat-led policy. Figure 5.3 shows that the moderate group is more conservative when partisan factors are also included in analysis.

As shown in Figure 5.4, the liberal group was more than twice as likely to support Republican-led policy when compared to the other groups. By comparison, Figure 5.5 shows their support for Democrat-led policy on average was a full ½ point less than their average support for Republican-led policy. This may be an indication that the liberal group has more overall confidence in government to get things done. However, it is more likely that the core values of the group are strongly politically conservative.

The conservatively oriented participants predictably indicated the strongest support for government downsizing. They also demonstrated markedly less support for Democrat-led policy making. Figure 5.3 shows that while moderately-oriented

participants showed slightly more support for Republican-led policymaking, neither the conservative or moderate-oriented group average exceeded two points of the five points that were possible to choose on the survey tool. It should also be noted as indicated by their weak support for government downsizing, liberally-oriented types also indicated the weakest support for both Democrat-led and Republican-led policymaking.

Figure 5.2 shows that the average level of Republican congressional policy support indicated on the survey tool by the moderates was highest across the three orientations but not quite half the value of the total possible points respondents could have chosen in support of that question.

The bar charts in this chapter seem to show fairly subtle political differences in support between orientations. The support of orientation groups for social programs and urban development and disaster-related urban renewal told a different story. As might be expected, Figure 5.9 shows that support for policies helping urban areas was highest with the liberal group where support for downsizing was also the lowest. Predictably, the support levels indicated by the conservative and moderate groups were very similar. Both groups showed a slightly stronger support for disaster-related urban recovery and slightly more support for non-disaster urban renewal. This result was somewhat expected. I felt these revelations could also serve as bases for expectancies of indicators of altruistic tendencies given that empathy and sympathy may also be features of various political orientations.

Earlier in this process I speculated politicized language should provoke noticeable reactions. These results offer some support my expectations that the evocative nature of language in the survey and also its construction. Wording in these statements gradually

obscured the political orientations and partisan involvements in an attempt to pull affective responses from the respondents or otherwise drew their attentions toward certain aspects in the questions.

These phenomena were variously predicted by Klein et al. 1992; Strack, 1999; Sniderman and Bullock, 2004 and Kahneman, 2011. A common element shared by these investigators is that associations are made through a form of online processing probably before and most assuredly during cognitions. Klein (1992) however, suggested a dual or multiple level of neural processing. He noted that orienting capabilities did not necessarily involve the same attention mechanisms. Similarly, Strack (1999) noted that attitudes probably converge via a rule of thumb tendency yet may also result in distortions of information thus diverging on conforming attentions. To this point attitudes about policies have mainly been discussed with interest in how representative individual responses are of the presumptive conservative, moderate or liberal political orientations.

Sniderman and Bullock (2004) argued that motivations to modify complexities are innately metered by constraint, congruence and a sense of conformity. This emphasizes what Kahneman (2011) called the human associative machine (i.e. Zak et al. 2005, 360-363). I argue that any definition, if well grounded and administered in a controlled manner can retrieve aspects of the associative machine by which people are affectively guided.

Altruism Component

In online processing theory, a resultant attitude would be formed from various additive qualities. Simon (1967) argued that organisms' multiple needs logically infer a

central nervous system exists that is capable of serial information processing. Hence, introducing other social factors to look for effects on attention and behavior is a reasonable next step in this research. I now move to the notion that generosity or altruism may instructively symbolize facets of political attitudes which may deflect attentions and perhaps change minds. While sympathy and empathy may not necessarily reverse a person's opinion, perhaps these qualities are capable of eliciting behavioral tendencies.

By incorporating an altruism component I hoped to incorporate additional contexts on which to base behavioral assessments. I assumed that the stability of partisan attitudes and attitudes toward big government would be challenged by what I deemed to be an ambiguous condition of the survey which expressly names certain types of government policies, all of which are government based and arguably bureaucratic. However, participants were not asked specifically to distinguish one from the other.

In this case, I was interested in findings from my earlier research which seemed to reveal that survey participants were not always able to distinguish "government" when due to ambiguous survey language it was possibly conflated with the actions of a bureaucracy. Therefore, a description of a policy to restore urban areas may receive different responses based on the simple use of the word "government". There was also some evidence that large big government policies were not recognizable to conservatives when framed as policy authored by Republicans.

As indicated in the literature I assumed that objective features will reveal affective adjustments when interpreting a person's likes and dislikes about a political object (e.g. Key, 1962, 264; Devine, 1989). Therefore positive or negative attitudes are most likely products of heuristic processing (i.e. experiences) and from processing individual objects.

Both Conservatives and Liberals showed comparatively low support for charity which might indicate these groups are less altruistic. If that is the case, it may imply that the subject pool is on the whole quite conservative. The two types of charities used for these comparisons were qualitatively different. Yet neither Conservatives not Liberals appear to have much interest in supporting any of them. Considering that in the survey respondents were offered the choice to give or not give to charity it's reasonable to assume that any response to a charity seemed to be a reasonable indication of a person's charitableness. No response in turn seemed to be a reasonable indication of lack of charitableness. Further, the support in the sample for public welfare and public services is arguably also a telling indication of altruism.

In order to code the responses for discernible altruism measures, the "0" response for charity types was calculated as zero points and an indicated "yes" response was coded as 2.5 points. Inferentially, the average within political orientation groups included only "0" and "2.5" responses. However, these orientation groups were assigned based on an average of 2.5 points or higher. This technique allowed for participants to be further assessed as to what social tendencies resided in the sample population of these experiments.

As I speculated above, this sample population tended toward a fairly prominent conservative orientation. Figure 5.10 shows survey data from results from 36 individuals of the 74 participants from Group C. These date depict frequencies from the 8 strongest pro-downsize and 26 of the weakest pro-downsize (pro big-government) participants. Table 5.9 shows the in-group averages for the 36 participants depicted by the lines

graphed in Figure 5.9. The bottom of Table 5.9 shows actual average for Group C on the variables depicted.

The Y Axis shows the level of average within group points indicated on the survey questions. The X Axis shows the variables from the survey from left to right, including "Support Gov't Downsize, Support Democrats, Social Programs, Non-faith-based Charity, and Third-World Gov't Charity".

These data trend downward from comparatively stronger support for government downsizing in a general lack of support for social programs. The comparisons of these participants include only data from the strongest downsizing conservative and weakest downsizing liberal supporters. These participants were expected to show an affinity for big or small government. Interestingly, the conservatives exhibited comparatively stronger support for social programs while the pro big government participants demonstrate only a modest boost in support for social programs. The relatively steep downward trend showing little support for such programs diverges only at support for "Third-World Gov't Charity".

I suspected that this effect was evidence of the evocative native of the survey wording in that conservatives at least anecdotally may be less likely to support a third-world charity than liberals. In this survey tool respondents were also given opportunity to support other evocatively-worded charities. In the test below, data from the selection, "Non-Faith-Based Feed the Poor Program" was included. Another selection was also offered; "Faith-Based Feed the Poor". However, frequencies on that variable were not used in this comparison.

Assessing Altruistic Tendencies in the Sample Population

These data demonstrated an obvious conservative trend for this portion of the sample. Support for non-faith-based charity was least for the liberal group. The conservative group demonstrated noticeably lower support for "Third World" charities. Neither Conservatives nor Liberals indicated as much as 1 point average within their respective groups in support of either a "non-faith based" charity or an "undeveloped nation government-based" charity. I found this interesting on two counts.

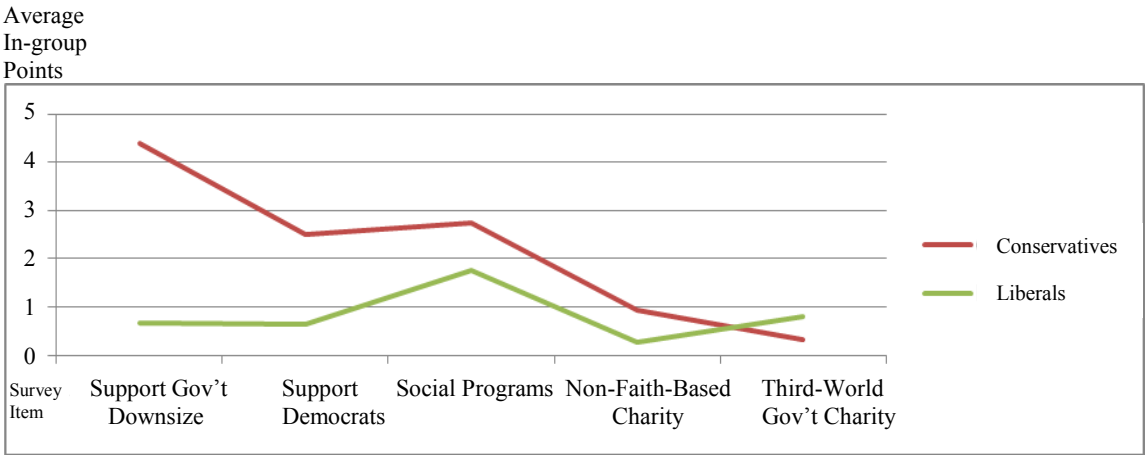

Figure 5.10 Altruism Trends Pro-Downsize Pro-Big Gov't

Table 5.10 Pro-Downsize Conservatives and Pro-Big Gov't Liberals n=36

Support Downsize Government	Support Democrat-led Congress	Support Government Social Programs	Support Non-Faith Based Charity	Support 3rd-World Government-based Charity
Strongest Supporters of Downsizing n=8				
4.4	2.50	2.75	0.94	0.31

Lowest Supporters of Downsizing Gov't n=28				
0.66	0.64	1.75	0.27	0.80
Main Group C Overall Average (N=23)				
2.63	1.57	2.80	2.14	2.40

First the phrase "feed the poor" appeared in conjunction with each survey item which one might think would evoke pity. Secondly, levels of charitable support were so low that even by manipulating an original binary code from "1" to "2.5" did not boost charitable support within either political orientation group.

Perhaps the most remarkable aspect of these data has nothing to do with altruism at all. When looking at support for Democrats, the members in this liberal group were assigned that label based on support for government downsizing by indicating 3 points or less in support for downsizing. In this comparison the more liberal group actually demonstrated less democrat support than the conservative group. One possible explanation is that since these data did not separate out a moderate orientation group, conservatives gained in their number. Or perhaps separations between conservative and liberal orientations are qualitatively dissimilar to differences between moderate and conservative difference. Regardless of how these data are interpreted, what remains is a test that would fully incorporate political attitude data with data from physical attentions. In those tests the altruism component will be added to the attitude variables discussed previously in this chapter.

Objective Appeal

Anecdotally, the value of an object's appeal or the value of its aversive quality depends on a person's associative capacity during their individual perceptions (e.g. Simon, 1985; Fazio et al. 1992). This notion follows my early assumption that likes and dislikes stem from the configuration of objects a person encounters as opposed to an object as a whole. Hence, in this equation a positive or a negative attitude is theoretically equivalent to the *product* of affect combined with hypothetical heuristics effects. For example the heuristic 'Supporting Smaller Government policies means lower taxes ...' is combined with other heuristics such as, 'Republican Congressional Representatives want lower taxes ...' and 'Social programs mean higher taxes...' a primary hypothesis is that likes and dislikes is equivalent to what happens when a person's conservative, moderate or liberal political orientation impacts a political preference.

In the context of this dissertation political orientation leads to certain social and political preferences which are expected to constitute or manifest contextually bound likes and dislikes. Recalling that the main variable used to determine the political orientations of my research subjects was based on their self-declared support and opposition to government downsizing as indicated on a survey tool. Partisan support and opposition for congressional legislation were also considered factors contributing to the political orientation of research subjects as well as an altruism component.

Consequently, a secondary hypothesis can be formulated according to the expectations that ideological framing of objective content bonds exigent cues in the form of heuristics or other objective features. Therefore, the political and objective factors in

these examples are at least theoretically, the hypothetical antecedents of various likes and dislikes.

I expected that a person's preferences will follow certain social or political contexts. Therefore, when encountered in a particular framing context the presence of certain factors theoretically infers that a certain decision (or like) is inevitable as long as supposed attitudes guide a person's actions as expected.

These experiments were based on the expectation that when confronted by a particular political frame, a person's political attitudes follow certain identifiable social norms. For example a person who generally favors smaller government may, if given the choice, will support policies intended to reduce the size of government. It follows that a person who supports smaller government policies *may* also favor Republican representatives in congress as opposed to Democrat representatives because the normative expectation of Republicans is to keep government small, and so on.

The political framing context in the survey tool that have been repeatedly referenced in these tests as questions of big government, partisan support and public policies revolve around intensified public debate about ideals regarding governance during the years including the Obama Presidential candidacy until the present time. Whereas a preference for *small* government is anecdotally conservative and a preference for *big* government is anecdotally a liberal value. Political attitudes towards big and small government and partisan support for congressional policy-making are constructive objective indicators of political attitudes.

I have suggested that the directionality of a clinically hypothesized political attitude (i.e. support or opposition to certain kinds of government activity) can be

observed and measured in affective terms. In the next step in this process I'll look to some of the more physical aspects of a personal or group encounter with the political objects used as variables in these tests.

Ideally, it would seem that an effective test should combine compatible affective and physical variables. In order to tests responses to a specific stimulus across a group the stimulant must have discernible features. This raises the question of whether a certain stimulus can be relied on to possess the qualities that can reasonably infer reactions in particular contexts. Moreover, can consistently appearing frequencies of response between identifiable groups be monitored and documented? From the frequencies depicted in the bar charts in Chapter Four that appears to be the case.

Combining Attitude and Physical Variables

This next phase of the dissertation begins the process of combining attitude and physical attention variables. During some of the many tests in which I combined attitude and physical variables I noticed what appeared to be subtle differences in pupil area size. I discovered that changes in the pupil sizes when viewing sad faces were noticeably different between groups of conservative, moderates and liberally-oriented. The EyeLink II® system does not employ an exact measurement of pupil sizes. Although the system is programmed to document the ongoing changes in pupil size, it will only set an arbitrary unit of measure. These values are represented in the dilation at any given moment where pupil size is calculated as "pupil area", is an arbitrary unit of measure identified as ".pa.".

In the proportional ranges of pupil sizes I observed the most remarkable feature was that participants who indicated comparably weak support for government downsizing

(for these tests were coded to meet the classification of politically liberal in their political orientation) also demonstrated the smallest average minimum pupil size area. However, their overall mean pupil size was greater when compared to the mean of the combined groups of Conservatives and Moderates.

Tables 1.0 and 5.10 illustrate the fact that maximum and minimum average pupil area quotients belie indications regarding size. This is another instructive aspect of bio-physical phenomena where affect is concerned. For example, consider that political moderately-oriented participants use comparatively more light to view sad faces than do conservative and liberals. Further as a testament to the importance of understanding the organic qualities of affect especially within groups a fluctuating range endemic to a particular subgroup is more telling. In this case, while the largest and smallest pupil areas plainly show the variances among the three political orientation groups, computations of the fluctuations of individual pupil sizes within the groups tells a far more interesting story. My intuitions were that these data told a story that will need to be extracted by different methods than have been utilized thus far in the inquiry. The data appeared to demonstrate within group positive correlations regarding support for big government.

The literature has suggested that a heightened affective response may be due to differences in surveillance mechanisms that are controlled by automaticity or perhaps "multiple mental" processes in which the effects of disruptive symptoms will be evident in various physical phenomena (e.g. Oxley, 2008; Dodd, 2012). The literature also shows that a more reactive affective response (i.e. pupillometric variation) correlates with a smaller pupil size in a felt loss condition (i.e. Table 5.11 shows the pupil sizes of a portion of Group C). The gaze patterns of twenty-three research participants were

analyzed on the basis of the apparent effort participants demonstrated while fixating. In addition to *mean* (M) pupil area and the Average min/max Difference (m) compared across the three political orientation groups other attention variables were also used. These included pupil size and pupil size in one of two interest areas. Also included were dwell times (in interest areas), average fixations and maximum fixating pupil size. The values in the table represent the actual output from the EyeLink II® system and conversions in parentheses.

The rationale for these variables began with what variable were made possible by The EyeLink II® system and also from findings in the literature reviews in the dissertation. For example, there is a muscular component to consider when looking at attention and also in looking at how the eyes work.

Partisan Differences in Attention Effort

These subjects have been thoroughly assessed in their assigned political orientation groups. Their response patterns to a survey tool that was administered for the purpose gleaning political attitudes indicate that the tool is capable of realizing effects of evocative social and political information. The survey results have offered a degree of confidence that results from the tool's use will yield data of potential value in terms of inferences that may be realized through the observation of other affective phenomena.

Table 5.11 Attention Measures on Photographic Images of Sad Faces

Attention Variable Values Converted* The EyeLink II® system Data are in parentheses				
Interest Areas Average Pupil Size	Sentence Region Average Pupil Size	Dwell Time During Fixations	Average Number of Fixations	Average Maximum Fixating Pupil size

Conservative Group n=5				
Mean Pupil area size			Average min/max Difference	
M = 442.025			m = 123.815	
3.92 (392.87)	5.58 (558.00)	4.09 (4089.30)	1.54 (15.44)	3.85 (385.61)
Moderate Group n=6				
Mean Pupil area size			Average min/max Difference	
M = 494.866			m = 138.537	
4.41 (441.53)	5.37 (537.50)	5.96 (5967.33)	1.87 (18.67)	5.08 (508.33)
Liberal Group n=12				
Mean Pupil area size			Average min/max Difference	
M = 461.058			m = 101.967	
4.30 (429.29)	5.98 (597.62)	3.76 (3761.29)	1.44 (14.39)	4.90 (489.87)

Specifically, the following ANOVA series tests null hypotheses in an attempt to eliminate speculation about effects that are not present in the visual stimuli presented to participants in these tests.

The null hypothesis test in Figure 5.11 shows that there were no significant differences in attention effort between political orientation groups.

Null Hypothesis (HØ) There is no between-group difference among participant's attentional effort when looking at sad faces.
Per a One-way ANOVA, $F,(2, 18)= .2379$, $MSE=3.006$, $p=.079$, $\eta^2=.0258$. The null is accepted.

Figure 5.11 Null Ø - Orientation groups' attentional effort differences

Average

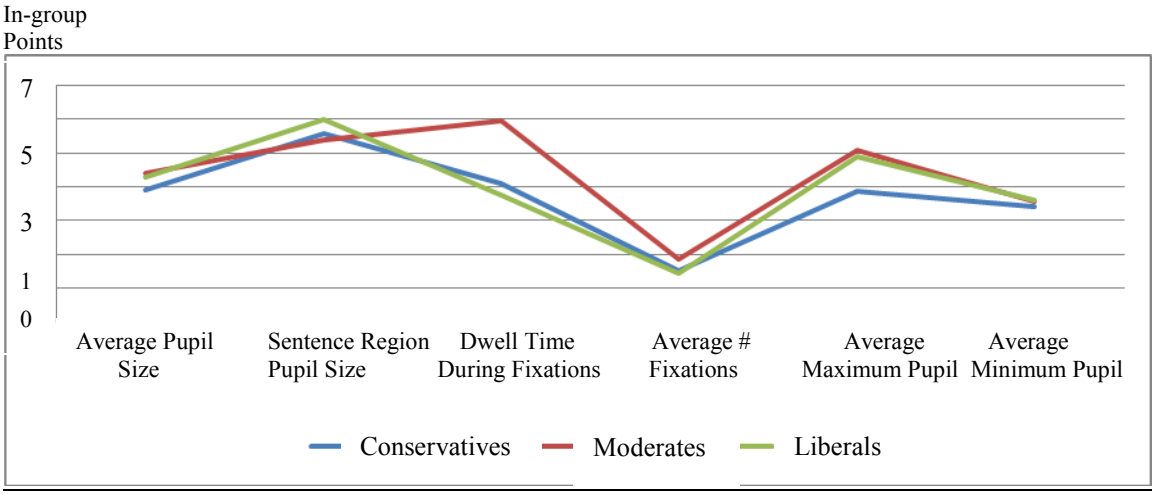

Figure 5.12 Attention Data Views of Sentence Region in Sad Faces

The result in Figure 5.11 implies that when participants are looking at sad faces their attentional effort reveals no differences between political orientation groups. This first test for attentional effort included seven independent variables with political orientation being a dependent variable.

Figure 5.12 demonstrates the average frequencies of attention across six variables of Group C. In this graphic representation, attentions on the sentence region interest area are recorded second from the left.

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Summary

As reported here, the moderate group exhibited the largest mean pupil sizes and the greatest difference between minimum and maximum pupil size. These data indicate that the moderate group used potentially greater effort when viewing afield containing an interest area that featured a sad face and an interest area containing a contravening

message in the form of a sentence. This raised a question of whether people who moderately support government downsizing also tend toward a more active visual attention scheme.

This chapter has provided analyses of this sample population based on two essential questions. The first question was whether results from an original survey tool were valid. For this part of the investigation, results were assessed as to their relevance to the political orientations defined in this dissertation. Second, the social implications of those responses were considered in the context of the impact political orientation may have on visual behavior. Interestingly, when strong Republican support moderates were assigned to the conservative orientation group and strong Democrat support moderates were assigned to the liberal orientation group, on the whole, the group tended to lean toward politically conservative values after all. See Figure 5.10.

The fact that the politically moderate participants experienced a more active pupil implies that this group may work emotionally harder to adjust to a conservative viewpoint. This revelation of a more active ocularmotor response is misleading. Wijnen and Ridderinkhof (2007) also addressed what happens when a distracting element causes the eyes to move away from a salient stimulus. These authors reported that shifting gaze from a salient object caused "inhibition of the automatic response towards the stimulus". The authors also noted the existence of a perpetuating reflexive drive. This revelation infers that attentions are likely to simultaneously affect multiple factors in cognitive processing. "Ignoring highly salient information in the environment while attending to objects that do not automatically capture attention places similar demands on human information processing" (260).

In this case a larger overall pupil actually indicated relative calamity. The expected effects of the sad faces actually caused an affectively *less* stressed viewing experience for moderates. This may be revealing an apparent ability of moderates to dispense fairly conservative viewpoints with greater ease. In a bio-physical context, perhaps moderates are less affected by sadness and are less conservative than liberals about social programs and less generous toward charity.

The introduction of an altruism component in turn was expected to help determine whether the charitable tendencies in the sample population would correlate positively with political attitudes. A noticeable downward trend throughout the sample toward less support for social programs and charities was perhaps not affected by elimination of the participants who scored "2" points in support for downsizing.

The decision to eliminate those respondents may have been somewhat validated because when the participants who had also been administered visual tests, were later divided into only either the conservative or liberal group the conservative-oriented political attitudes persisted. However, there was no concerted effort to determine the statistical the effect of this manipulation.

The use of data from views on sad faces facilitated a test of dual processing theory as well as the theory of automaticity. In the context of dual level processing, I expected that respondents may adopt strategies which would demonstrate noticeable differences in effort. Specifically, I have taken measures from experimental conditions in which participants were observed as members of political orientation groups. The emotive content in each 10-second viewing of the slides was expected to prevent impressions of the images to be fully thought out. I expected that the realization of details

would have been equally precipitated by heuristics processing which could be faster under these circumstances.

In this experimental design the faster top-down processing would appear to be all that was possible since viewings of each slide only lasted ten seconds each. However, the introduction of the ambiguous content in the second interest area allowed pupillometric measures to be drawn from the impact of the distracting element (the sentence) to have affective meaning. One on hand, pupil size indicates the ease at which visual stimuli were viewed. On the other hand, as the investigator I was able to observe physical effects of the distraction.

The deflection allowed physical measures to be assessed on the basis of the physical nature of attentions. These attentions would presumably lead to inferences about the emotions expressed on the facial expression in the pictures, the potential effects of the incongruent message in the sentence and patterns of attendance to either interest area or both.

The introduction of an altruism component was intended to help determine whether altruistic tendencies in the sample population had a noticeable impact on the behaviors within political orientation groups. These combined experiments and analyses provided a method for translating physical variables into relevant social contexts. In this case, the perception of the social context of sadness when observed across three political orientation groups appeared to be differently affected when comparing moderate supporters of government downsizing to strong (conservative) and weak (liberal) supporters of government downsizing. Put more simply, when the objective features of

viewing frames were assessed as to how attitudes impacted physical attentions gaze patterns differed.

When looking at the patterns of pupil sizes and changes in pupil size, the implication is that moderates take in more light because the features in the objective details are not as prominent in their gaze strategy as perhaps gleaning gist (e.g. Fisher, Karsh, Breitenbach and Barnette, 1983; Kahneman, 2011). Moderates also demonstrated a comparatively larger average maximum pupil size. This means that compared to Conservatives and Liberals their pupils functioned at an overall larger size. This inferred a strong likelihood that Moderates trended toward the potential for more slower bottom-up processing .When considering other gaze factors, moderates were also distinguished in a more profound measure of dwell time and also number of gaze resting points. See Figure 5.12. In these tests dwell time constituted when the eyes were at rest and probably fixating.

The revelation that moderates fixated in interest areas more times *and* fixated more in one particular interest area comparatively longer seems mathematically impossible. To the contrary, the higher numbers of fixations by moderates were in the facial interest area. This means that Liberals and Conservatives were more inclined than Moderates to fixate longer in the sentence region of the viewing field. I argue that the individual attention tests results displayed in Figure 4.5 infer that gaze strategy on an individual level probably remained geometrically consistent within the sample.

When the participants from Group C were divided into strong pro-downsize and pro-big government group's survey responses in support for social programs indicated a strongly conservative trend by all participants. However, even the strongest supporters of

government downsizing exhibited more support for social programs in general than did the pro big government types. In other words, strong support frequencies were expected to be exhibited by those who tended to show stronger support for the main variable which was support for downsizing and partisan support. This result may be evidence of the survey tool was succeeded in eliciting varied emotions depending on the individual.

CHAPTER SIX - IMPLICATIONS OF THIS DISSERTATION

These tests have followed the assumption that affect is mainly a process in which a conceptual cue sends information to working memory and al lows encounters with political information to make sense (Lodge and Taber, 2005). During analysis I viewed affective responses as having been generated in the controlled conditions of the experiments I anticipated that multiple simultaneously occurring emotional and physical phenomena would offer insights into how physical attentions might reflect current feelings.

Because I discovered differences in pupil sizes across political orientation groups I realized that the perceptual process of gazing could be measured in physical effects. The implication was that, different political orientations will engage environment in ways typical of their political orientation. Also, since perceptual apparatus across political orientations operate differently while essentially performing the same tasks, the implication is that perceptions probably do not create political differences within groups. It seems much more likely that individual perceptions work to maintain political sameness.

There is also the matter of the eye's ability to engage the properties of objects. Henderson (2007) wrote: "Furthermore, because image properties are easier to model than knowledge structures, initial attempts to generate computational models and quantitative predictions of human eye movements have tended to focus on bottom-up input" (219). Similarly, I have argued that gaze behavior manifests from stored knowledge and that image properties can embed features which can be drawn upon

during surveillance or when a person is cued to attend to an object (e.g. Henderson, 2007; Torralba et al. 2006). The implication is that differences in pupil size within political orientation groups infers that a simple liked or disliked quality in an image is capable of informing investigations of the state of mental processes in the moment of exposure.

For a peer reviewed article published online in 2013 I had hypothesized that it was likely spatial relationships would be evident when attentions on specific objects were measured (e.g. Shanks, 2013, 137-138). To test the hypothesis I used combinations of four and five physical affect variables, dropping one of the original five to ascertain whether physical attentions were spatially interactive. In the tests for this dissertation I used combinations of several physical variables to gauge physical attentions after a much more extensive review of the literature. The previous tests in Shanks (2013) investigated supposed cumulative physical effects. The present tests took into consideration the potential value of specific individual phenomena regarding goals and motives of the test subjects.

The task of translating physical effects of attention depended on being able to establish a degree of purpose in the observed behaviors. In this case political orientation and attitudes toward social programs seemed to manifest differently in the way people look at sad faces. While observing the perceptual responses in these tests it was expected that participants were performing voluntary gaze behaviors spurred on by cues from the instructions they were given and involuntary behaviors and effects based on what propensities and proclivities accompany their modus operandi. These assumptions bear out through the literatures reviewed here.

Measuring Physical Affect

The notion of measuring physical phenomena does not seem extremely complicated. However, establishing relationships between physical effects complex social factors is a considerable challenge. Most of this research is concerned with the affective relationships between attitudes and feelings. The literature suggests that politically conservative people are more physically reactive and more affectively averse to threatening and unseemly images. My research has demonstrated that politically moderate subjects tend to use a more active ocularmotor response to gaze upon sorrowful facial expressions. This seemed to agree with the literature which teaches that negative and threatening images evoke more profound effects in conservatives.

Moreover, the larger question is whether a measure of threat or aversion was actually perceived during views of the three sad faces. I would expect that saddened facial expressions would not ordinarily foster positive affectations. The definition of threat in these analyses identified no specific emotional effect. My course of inquiry assumed that certain affective stimulations are countered by certain evocative contexts which in turn would lead a person's attentions toward the recognizable features of objects. I assumed that perceptual affect, emotion and likes and dislikes are interrelated and each is integral to the processing of political information.

My predictions for physical affect expected that physical attentions would be drawn toward familiarity in objective features. My experiments were limited to physical affect which arguably could also be described as physical effects mainly contextualized by political orientation. The literature employed here was not intended to contribute

directly to the wealth of existing research dedicated to Political Attitudes per se'. Rather, the emphasis was on the impact of dual or multiple processes on physical attention.

In these tests, the attentions on an object were expected to continue automatically until voluntarily suspended or when the object of focus was removed from view. The presumed neural effects which led to certain preferences in the survey were probably attuned to some of the features comprising the various political likes and dislikes of the participants. However, in my analyses, political and social attitudes required a different set of analytical criteria that were only briefly mentioned in this work. To accomplish this I included the variant of an altruism component which only lent minor support to the broad analysis of attention data and only a modicum of import to political attitude data.

Measuring Political Affect

The notion that a political affect can be quantified is perhaps the most far-reaching concept in this work. Clearly, the literature provided ample support for the task. However, the notion of assigning a political element to a bio-physical effect was a bold proposition. While testing the theoretical measurability of political affect I attempted to observe emotions and document the effects of likes and dislikes in hypothetical socio-political situations. This was largely an exercise in assessing the potential presence and possible impact of factors which I assumed ought to lead to a person's positions of political support and or opposition.

The dyadic paradigms of big government versus small government and partisan competition helped establish that perceptions and effects of the social meaning was associated with attitudes toward political objects and gaze behavior to some extent.

Preferences that were most likely or least likely to occur in individuals and groups seemed to stem from simple likes and dislikes as indicated in the survey tool. As the literature has taught us, conscious thought is not required for a person to respond with a preference in agreement with their political orientation nor does it have to factor into the expression of preferences.

Summary

In the course of these investigations I performed dozens of various tests. Ultimately, the objective was to find out whether artificial affective components in the form of variables would exhibit identifiable effects. Tables 3.1 and 3.2 show the measures of potential effects taken from the affective and attention components in these tests. I surmised that when certain affective variables were combined with variables taken from physical attentions noticeable variations types of in response patterns would appear between the political orientation groups. My expectations were that participants who scored highest (i.e. spent more dollars) in support for Republican-led policies and also indicated comparatively higher support for government downsizing would also show noticeably weaker support for Democrat-led policies and comparatively weaker support for Government-run social programs.

Although participants were specifically separated according to the strength of their support for (i.e. dollars spent) for downsizing government, I also considered their strength of their support for Republican-led or Democrat-led policies. Consideration was also given to levels of support indicated for other variables.

In preparation I reviewed data from approximately 100 survey participants and cross-referenced their questionnaire responses with the twenty questions from the main body. By the time I performed these tests I was convinced that certain automatic activations operated affectively different than slower forms of information processing. Harkening back to Kahneman (2011) I fully expected that a person's use of System 1 or System 2 was determined mainly by the timing of exposures. I also believed that timeliness, emotive impact of objective contents would be impacted by political orientation. Hence, the major questions about the relationships between affect and perceptions of social consequence (i.e. bias) relied substantially on the validity of results from the survey research I conducted in 2009 and 2010. It was also my expectation that bio-physical outputs collected in my experiments as well as the attitude data from the survey tool were adequate tools for assessing psycho-physiological phenomena in new statistical tests on those data.

Assessing Attitude Differences

In order to further assess whether attitude differences might be detectable within the larger sample, the survey response data from a group of eighty-two participants in the earlier political attitude research was selected analyze differences in strength of support. Stronger supporters of Republican-led or Democrat-led policies who also indicated strong support for government downsizing were set apart as a characteristically "high support" group. When overlaying support for either Democrat-led or Republican-led policies obvious juxtapositions appeared in the frequencies of responses regarding support for government downsizing.

If the frequencies of responses on Republican or Democrat support levels were not consistent the Null Hypothesis predicting "no difference" between support levels for Republican or Democrat-led policies and level of support for downsizing government more rigorous testing was also needed. Assessing within-group differences of attitudes using AVOVA tests only provides evidence of ordinal variables which provide only displays of frequencies. Therefore, supposed response frequencies within the subject pool could only be objectively derived from the presumption of political orientation, tendencies to like or dislike a policy or some other attitude measure.

Bringing together various affective elements in order to test the mutual relevance of physical and attitude variables requires the definition of an event in which those factors are expected to occur. This is a question of the utility of combining of effects of multiple affect forms in the hope that physical attentions are able to reveal whether attitudes emanate through the perception of objects. Where feasible I have tried to observe and document the formulation of preferences stemming from a person's presumed attitudes.

I expected that when affective relationships materialized as physical perceptions, emotional attentions or both, at least one evocative social factor would represent one or more of the cognitive or perceptual associations a person was likely to make. These phenomena may also be deemed as naturally physical and caused by perceptions of a stimulus. For example "big government" and opposition to social programs is one such hypothetical association. But I also mean that associations will elicit more complex reasoning and that memories that may be recalled via a heuristic can also be involved in these affective associations. Moreover, the competitive aspect of a political discourse

may cause the association of "big government" and social programs to be perceived not only as linear "like" or "dislike" equations but also as gateways to more complex reasoning. For example, political conflict may also evoke deeper previously sublimated social attitudes.

Once a detectable event has been onset by a specific stimulus attentions may become predictors of associative mechanisms and of what attention mean to individuals experiencing the event. The tests in this chapter will explore the possibility that the meaning an individual gleans from their observations of objects stems from their perceptions of various appealing and aversive associations yes, but also that bias fueled by the perception of social consequences probably influence the adjustment of attitudes (Devine, 1989). I speculated that affective phenomena can betray attitude intensity and also that social consequences or the perception of social consequences preemptively moderate choices. I believe this happens even under the most intense emotional scrutiny of an object. Some of the results mentioned below were also reported in an article I wrote titled "Political Affect" (Shanks 2013, the Online AABSS Journal, 2013, Volume 16). The gist was that "memories and sensation remind people of what they want and how they feel…" and that "…calculations of attentions toward objects could signal the most likely responses to specific aspects of a political environment" (Shanks, 2013, 123).

As Simon (1985) predicted, the essence of the behavior of an organism is in the goals of the organism. The cause of a detectable stimulus-onset event contributes a contextual point of reference for the manner in which objective features are perceived. This has been interpreted in the literature by Ayers (2003) who noted ways infants develop a sense of context through interactions with a parent and by Fazio et al. (1992)

who explain the involvement of objective features in the perception of social contexts as attended to by associative mechanisms functioning in connection with affect.

In political terms, this happens if political information gains a person's attentions and through their own unique experience, their physical perceptions of the information reflect their own attitudes toward certain political ideals or values. Perceptions in this sense are a neurological process which can be observed through the observations of certain bio-physical phenomena. I expect that political ideals and values cause unique and distinguishable effects which can be observed.

The more recent analyses of gazing behaviors in this dissertation were initially intended to compare the visual behaviors of politically moderate, conservative and liberal participant's from sessions of experiments using the EyeLink® II System. Preliminary results in these new statistics tests indicated differences between groups in pupil size range variations. The manual for the EyeLink® II System offered a measure of *pupil area size* that is derived from changes in pupil size of each individual slide presentation during the visual testing sessions. Pupillary unrest is known to correlate with arousal. Jain et al. (2011) wrote: "Pupillary unrest is influenced by neural structures which underlie arousal" (1347). The revelation was a partial validation of the portion of my thesis that anticipated physical affective components could be translated into physically measurable phenomena.

At this point, it seemed reasonable to look specifically for affective relationships that appeared to be associated with changes in pupil size rather than actual size. In that the EyeLink® II System manual instructions and settings were designed to gauge fluctuations in pupil area, this seemed a very capable way to quantify the implicit values

of the apparent visual affective process that regulated ocularmotor potentials. I settled on the notion that pupillometry was iconic of attentional effort because it appeared to require conscious visual effort and sheer physical properties which indicated various potential to absorb light. This phenomena seemed be an independent biological system. I surmised that it ought to freely respond to the various evocations of any and all perceived visual stimuli.

Measuring Attention Effort

I explain my predictions for the SOE theorem in terms of the apparent relative ease at which moderate participants appeared to view sad faces. When looking at the levels of support for social programs when comparing just one conservative group and one liberal group, these participants appeared to contribute to noticeably weaker support for social programs. Even strong pro big government types seemed unwilling to contribute to those causes.

When looking at the data from pupil size changes, what can be characterized as a generally conservative the political moderate types exhibited two important behaviors. First, moderate dwell time is by far the most profound between group difference in the sample. Second, a greater average fixation count (within interest areas) indicates a more active gaze strategy.

These factors defy assumptions I had for the impact of the experimental conditions. I had thought that my predictions for political affect would be explainable in the context of relationships between the attentional deflection (contradictory sentence) and the emotive facial expressions. What I found was that while although conservatively oriented participants demonstrated restraint toward redistributive policies as expected,

they demonstrated a markedly judicious gaze strategy under ambiguous circumstances and in the presence of an unappealing stimulus.

I expected that physical attentions are prone to either attend to familiar features, display biases or both. To devise a formula for gauging attention s I selected several variables that would be made available by the EyeLink® II System equipment. I viewed attention effort simply as eye movement dynamics based on fixation and release on an object. Henderson (2007) noted that attention was time-locked and argued that in order to acquire high-quality visual input from a region of a scene fixations must be directed to it. Henderson (2007) wrote: "In a sense, we can think of fixation as being "pulled" to a particular scene location by the visual properties at that location, or "pushed" to a particular location by cognitive factors related to what we know and what we are trying to accomplish" (219).

I argue that in this sense the temporal nature of attention is reminiscent of Simon's (1985) assertion that identifying the goals of an organism was essential to understanding its behavior. I believed that specific visual effects would reveal interaction between physical behaviors and attentions on objects in a viewing field because a person needs to observe physical features or otherwise ascertain objective value. Further, I assumed that is research participants appeared to similarly react to a visual stimulus, the objective features of that stimulus can become reliable behavioral predictors.

Pupil size is more than an indication of light absorption capacity. It is also a concrete measure in the form of a physical component of various affective processes. In this case it is also a discrete measure of a physical response impacting the perception of objective features.

Moreover, the movement of the eyes and on what they are trained at any given moment infers a social context is also being processed. These phenomena can feed inquiries into how attentions on objects can have meaning and also provide fodder for what attentions themselves actually mean. This makes intuitive sense because the absorption of light is an implicit function especially when the eyes are open. And larger pupils are generally associated with less emotional stress. Whatever the object of the eyes attentions may also be, at least in part be explainable in terms of the impact of certain known features. Objective feature may have varied degrees of relevance from one moment to the next. Therefore, an investigator who is also aware of certain bio-physical implications is more equipped to understand each individual experience.

These tests did not consider combined pupil size data and movement in depth. However, participant gaze was assessed in part by comparison between the three defined political orientation groups.

The differences in pupil size are still very interesting. In order to test whether a physical response (i.e. pupil size) is related to an affective process the individual attentions of the study's participants needed to be closely observed and analyzed to determine whether there were indications that emotive tendencies were evident in perceptual processing. Furthermore, in the context of *how* a person feels about perceived objects it's quite reasonable to speculate that perceptual nomenclature is actively engaged in that process. Therefore, an experiment that would utilize physical perception may help define emotional responses and feed quantifiable details to an objective viewpoint of the object of a participant's attentions. But more importantly, where affective effects appear

to have been elicited by a stimulus, it was more valuable to first ascertain affective tendencies.

In other words a basic measurement of appeal and aversion depend on the associations made during perceptions of what has gained an individual's attention. Likes and dislikes can therefore emanate from the features of objects, not only from the objects themselves. In theory affective associations are guided by attitudes, not by information. However, when information is encountered affective associations generate a linear template of how information is affectively and emotionally processed. Therefore, when an investigator implants contextual information into a subject's encounter with politics the expectation is that certain affective triggers will interact with preprogrammed affective heuristics and will lead to a certain preference. The challenge is to identify whether attentions on objects reveal a person's feelings and how the features of an object are perceived.

When attitude data and visual stimuli were combined in these experiments, friendly, sad and threatening information were expected to influence the spontaneous perceptions of experimental subjects. It was also expected that a person's individual responses would reflect the attitudes they had previously expressed in a survey tool and that their political orientations would lead to certain preferences (e.g. Marcus, 2000; Lodge and Taber, 2005; Oxley et al. 2008). With the aid of the survey tool, I attempted to measure and document hypothetical intensities, coinciding attitude and physical phenomena associated with what would be experienced when a person encountered political information. The result was that deliberately evocative stimuli did not detract moderates from a more deliberative gaze.

Physical Affect

This work explored the physical experiences associated with certain political contexts to ascertain whether there would be any physiological indication of the affective ease at which the values on which a person's political tendencies are managed. My main hypotheses predicted that likes and dislikes follow cues from a person's presumptive political orientation and those likes and dislikes are bound by context. Consequently affective phenomena involved in a person's attentions to certain objects should make good and reliable variables in the measurement of physical affect. I am not now prepared to make this claim, however.

I also hypothesized that the framing of objective content bonds the salient exigent cues which precede certain likes and dislikes (i.e. Henderson, 2007, 220-21). I argue that this bonding represents important affective relationships in political consciousness. These relationships can be partially introspective and also self-reflective. In the main, political consciousness is about liking some ideas and disliking others. The stability of relatively conservative convictions were at times so well affirmed, that a future effort should be made to create orientation groups with more vast orientating differences.

I would argue that Political Scientists are more likely to understand perception as an organism's apprehension of certain environmental factors that happen to be of a particular interest. Dodd et al. (2012, 641) tested the assumption that "individuals will take steps to shape their environment into one that is as consistent as possible with their pre-existing physiological and cognitive tendencies. In this sense, the central nervous system is in league with social factors comprising the temperament and attitudes of

individuals. It follows that in theory, the central nervous system dispatches sensory information to either an area of consciousness where cognitive architectures make use of it or to affective storage as a component of contextual memory.

Following this assumption, a person's perceptions probably form when a stimulus has been experienced by a receiving organ which subsequently dispatches input in some way. Political memories are similarly processed and distinguishable as multiple levels of individual concerns anticipating change or conflict. They are either acted upon immediately or recalled when environmental circumstances necessitate their retrieval. From the perspective of a political behavior researcher the psychology of individual feelings can be at once elusive yet plainly visible.

Research in visual perception has captured several ways people are thought to respond to a stimulus. Yarbus (1976) explored the ways the eyes respond to various scenes. Ekman (1999) studied perceptions of emotion, especially as those perceptions are influenced by what the eyes see in the facial expressions of others. Henderson (2007) sought to understand why people look at certain objects in a scene. More recently, research in political science has captured ways politics are thought to affect visual behavior. Oxley et al. (2008) tested people's sensitivities to perceived threats. Dodd, Hibbing and Smith (2010) sought to understand differences in gaze behavior with expectations that political temperament moderates the effects of cue cuing. Dodd et al. (2012) explored how cognitive tendencies related to individual differences in political orientation.

Cognition is simply the perceived reality of form or as Jacobs (1996) argued: "Cognition is the conceptual actualization of form" (282). The important distinction

needed here is to note that perceptual mechanics preserve effects of various stimuli, meanwhile environmental factors draw attention toward or away from certain events and therefore what effects are stored will be systematically prioritized based on attention.

Hence, the importance of identifying pertinent qualities of cues within the environment which will further enable investigators to predict what environmental aspects influence the direction and intensity of political attentions rather than the actual thoughts about those aspects. If an investigator already has prior knowledge of the political tendencies of individuals then any conceivable affect cue could be represented as having quantifiable potential value or at the very least, such cues ought to provide reason enough to be considered useful as variables to use for my experiments. Any reasonable expectation about the potential effect of an affective cue carries with it some justification assuring some level of effect. This notion exponentially increases the empirical weight of research and experimentation which take into account bio-physical data known to coincide with socially manifested proclivities such as party affiliations, candidate likes and dislikes and choice or news sources.

Representative Democracy

The idea of representative democracy raises questions about whether and how government performs as a surrogate to its citizens. However, political representation only infers that engaged participants are primarily concerned with the perception of representativeness. The literature demonstrates that Political Science researchers perform multiple types of investigation in order to learn about the effects of perceptions. I argue that it is the responsibility of Political Scientists to inform the body politic about the

nature governmental representation. This means it is necessary to reconcile perceptions about representativeness with the reality of it.

The experiential nature of political engagement implies that participation, democratic participation in particular ought to expose how values are assessed and either set aside or implemented depending on the opinions of groups. Political Science is more completely informed when these and other empirical facts about individual tendencies are included in the broader discoveries of mass political behavior. Democratic participation can qualitatively assessed when on one hand, individual participation levels are analyzed. Also, the extent of political engagement in elections is informative. However, the emotions leading to participation are altogether different qualitative components. Traditional research on public opinion and political attitudes need the extra added value offered by affective science.

It is not always necessary, nor is it always appropriate to describe publics as monoliths. It may be of practical use at times to describe political publics using metaphors to enhance the effectiveness of some explanations. For example, although it is practically impossible to prove whether a group behaves in a manner similar to a single rational actor, explaining the political behaviors or groups necessarily must adopt analogous language. If in practical terms it is necessary to explain group actions in somewhat individualistic terms, it is reasonable to expect that those sorts of explanations may not be based on relevant scientifically derived facts.

Simply put, it behooves investigators to use as much empirically justified evidence as is available. Yet, in describing group behavior some stylistic license may be afforded authors who may for example need to employ metaphors in their anecdotes.

Unfortunately, in order to employ physiology, the practical use of metaphor and analogous phrases may detract from the purpose of the dissemination of physiological data. Where rational actor models may be appropriate in certain phases of political science research, displays of physiological data must be a distinctly different art. Informing political science through the use of physiological empiricism also implies facts are necessarily distinguished from speculation. The beauty of science is that in it there is no abstractness.

An individual's reaction to something will not make sense unless there is a basic understanding of how they are likely to respond when presented with a stimulus. For example; you may assume that a person looks at a dog because they are frightened or are a dog lover. However neither assumption informs a broader understanding of the relationship between humans and pets. Fear or adoration of that particular dog is impossible to know at the moment the dog is perceived. Moreover, the presentation of or the awareness of a stimulus is also to believe that aspects of the stimulus hold a level of significance in terms of what may or may not be relevant to an individual.

In my tests moderates seemed to attend to the images of sad faces with greater because a *smaller* pupil size is associated with alarm while a larger pupil size is associated with greater calamity. Conservatives in this test may also partially confirm Oxley et al (2008) who assessed that conservative orientations seemed to be physically more adversely affected physically when presented unappealing images. However, it should be noted that moderates also demonstrated conservative attitudes. Moreover, when compared to the most pro big government liberals conservatives were noticeably more

conservative towards supports for government downsizing and lack of support for Third-world Gov't Charities.

Which aspects of political science are compatible with bio-physical sciences? How might such compatibilities improve ability to govern? There is no aspect of a human being that does not go with her/him as she/he encounters daily experiences. Because our physical body also contains our consciousness, it makes sense that as each new environment presents itself to an individual so too do physical states exist in full presence of each environment. Political environments as well, have cognitive as well as physical qualities. Thoughts about policies, beliefs and values are meaningless unless they are expressed in the presence of others or unless they are exercised in some way to express or declare their value. Hence, voting, debate and electioneering have physical qualities which also call into question the extent of a person's physical engagement in political processes. No one can separate their conscious mind from the physical strata of their brain and nervous system.

Consequently, *where* a person is ensures that some aspects of their conscious mind will reflect *how* information will be received. Assuming that the human form is replete with receptors of environmental stimuli the conscious mind must function in direct response to conditions of environments in which the body is placed. If bio-physical knowledge holds any value for politics it is surely as important to employ bio-physical knowledge as it is important to apply other concepts. Perhaps the greatest challenge of seeking bio-physical measures in political science is to understand that source cues associated with political objects interact with affective states.

This interaction produces neural signals demonstrating that certain environmental cues have a demonstrative impact on the behavior of organs. This interaction is evident in situations where conditions in the environment cue a person's attention to objects. If the object and cues are related from the perspective of the individual their gazing will be contextually guided. For example, audible cues may lead to specific gaze behavior and subsequent cognitive activity thus primed to attend to a certain political frame. Visual behavior is important in this process because where the eyes gaze can lead to important inferences about perception and cognition. However, it is also important to recognize individuals will perform highly individualized scans of the same objects under similar conditions and time constraints. I suspect that multiple forms of expertise are what are really going to enlighten the social sciences. That would mean scholars will have to embrace the opposition as well as members of the choir.

In 2011, Peter K. Hatemi and Rose McDermott wrote a brief retort denouncing past ills of bad social science research and they allude to a supposed *ethical need* for righteous purveyance of biologically focused research concerning behavior. Hatemi and McDermott offered a terse and factual indictment of a list of now debunked myths. Eugenics is mentioned and cast as an "unquestionable moral stain on the history of scientific efforts" (325). As righteous as their admonitions are, Hatemi and McDermott can only scratch the surface of a very large problem.

Ross Corbett argued in a 2011 essay on political theory and political science that "It is difficult to define politics in a way that does not rely on strong theoretical commitments. Many definitions of politics actually describe the scholar's conception of *legitimate* politics-that is, what we think *should* pertain to politics" (568). I argue that it is

also the case that defining science is similarly difficult as evidenced by the historical and ongoing academic consternation about eugenics. Essentially, I find it equally troubling that the ridiculous notion that cranial measurements constitute a need for further refutation. Indeed, anatomical theories related to behavior (i.e. intelligence) do well enough to discredit themselves. Science and science knowledge are better served by bio-physical inquiries based on empirical findings and which reject any monist viewpoint that is not inclusive of complementing or critical qualitative and or quantitative contributions.

Consider a point raised by Ahmed and Sil who illuminate an ironic twist in the debate about multi-method approaches. In their 2012 APSA Journal article titled "*When Multi-Method Research Subverts Methodological Pluralism-or, Why We Still need Single-Method Research".* These scholars noted that since the ascendance of multi-method research, the "growing acceptance" and "proliferation" of multi-method frameworks "degrees of commensurability" demand scientific compartmentalization and expertise (939).

Ahmed and Sil (2012) wrote: "MMR can take a number of forms reflecting the many possible permutations of methods drawn from the broad categories of qualitative, quantitative, and formal approaches" (935). Gould (1981) logically concluded that there are genetic bases for adaptive behaviors. Biological modeling is necessary to move science beyond the deterministic theories of human behavioral evolution. I propose that multiple method research (MMR) approaches in political science research will raise several questions about investigative modalities and the appropriateness of various scientific inquiries.

I have pursued a research course based on the assumption that physiology informs social science and its inclusion in political science research can only lead to rational determinations about the cultural implications of physical behaviors. I argued that a rational form of cultural determinism[14] persists because "the human psyche has advantageously evolved socially and politically in ways that can be explained by also incorporating behaviorism and rational choice. In this case, *rational* refers merely to a given measure of scientific utility (as opposed to a personality trait and not as the term might be used to explain the proclivities of groups or the dispositions of individuals).

In a review entitled: "Interpretation and Method: Empirical Research Methods and the Interpretive Turn" Bernhard Kittel (2012) forcefully argued for a truce of sorts. In his assessment of the co-edited volume by Peregrine Schwartz-Shea and Dvora, Kittel notes that the isolation of specific traits by experimentalists implies that interpretive expertise is expectedly necessary. I interpret this to mean and I am in agreement with the premise that searches for meaning inevitably include methodically defined experimental isolations under the best controlled conditions as a way of addressing several different questions at once. Further, these are likely to include inquiries far beyond the interest and expertise of many if not most experimentalists.

In a sense, multi-method research becomes a fairly reasonable and decreasingly novel approach within the realm of social science. To reach this point however, much larger and more complicated debates have tended to, and will likely continue to dominate discussions between researchers. Kittel concluded that "in order to make sense of our

[14] Presenting at the 15th Meeting of the American Association of Behavioral and Social Sciences Shanks defined Rational Cultural Determinism©: "A theoretical approach that assumes political science literature is further informed where physiologic measures are viewed as complementary to political behavior empiricism" (Shanks, 2012, unpublished manuscript).

social world, interpetivists and experimentalists generate complementary knowledge, and only the combination of both elements can provide a fuller account of human interaction" (11).

This research has looked at the ways affect manages perceptions of environmental stimuli in the form of political information. This process involves observing human perceptual mechanisms to determine to what extent people pay attention to politically related information. This work assumes that people are likely to alter their behavior when they are aware of the presence of others and further that politics specifically encourages certain individual behaviors that would otherwise be unrecognizable as pertaining to any specific context.

The psychological basis for observing how perception is involved in politically influenced affective states stems from the assumption that bits of political information first reach an individual through their senses and therefore can be represented as simple acute sensory activity. The political basis for observing sensory mechanisms during human exposures to political information is rooted in the assumption that political behavior is a manifestation resulting from human interactions involving innate physiological responses that are responsible for all social behavior. This means that politics can *only* be a social activity and all social activity emanates from individuals being aware that others exist and assumes that knowledge of the existence of others influences individual behavior in very specific ways.

In his study about candidate ambivalence Rudolph (2011, 571) remarked that among other things, information processing biases can impact attitudes to the point where people are moved to reconcile ambivalent feelings toward political candidates. Other

factors including partisan reasoning, political sophistication, information heterogeneity, and defensive reasoning and attitude polarization will influence the stableness of attitudes. “Human inquiry builds on these biological processes, adding the important components of language, including inference capacity, symbolization, and highly discriminating forms of reasoning of both analytic and synthetic dimensions” (Demetrion, 2004).

Within the context of political affect, the present research proposes that these effects are the observable elements of affective intelligence which can be scientifically defined and quantitatively measured. Stone (2002) added that in the symbols of social concepts, some of the most important features are potentially those features which are *not* present. This point speaks to Stone’s understanding that human perceptions are appetitive, at least in the sense that people have expectations of objects beyond what is immediately apparent. Further, when *nothing* or less is readily apparent human faculties seemingly persist just the same. The final chapter below will put to the test the operative hypotheses of this dissertation in demonstrate the applicability and scientific viability of taking measure of physical behavior in the context of personal encounters with political information.

CHAPTER SEVEN - THE NEED FOR BIO-PHYSICAL RESEARCH

The work of this dissertation searches for the purpose in certain physical responses. The hope has been that when these affective processes are examined in reverse chronology details will reveal how a person most likely comes to a preference. Presumably, the person is driven by matters of social consequence. There is little evidence in the literature that a person's physical responses are relevant outside of the consequences of interactions and feelings about others. I expect the mechanics of likes or dislikes to be evidence of what has been learned.

Bio-physical research in social behavior continues to expand and test increasingly more diverse behavioral causes. Dodd et al. investigated patterns of physiological and cognitive responses across possible variations in political orientations (Dodd et al. 2012, 640). The following year I investigated "physical attention"[15] wherein the movements of eyes from point to point were analyzed geometrically (i.e. Shanks, 2013, 133). Much earlier Oxley et al. (2008, 1667-9) investigated level of skin conductivity and socio economic factors, support and opposition to "socially supportive" policies across reactions to unappealing visual stimuli.

In a recent bio-physically-based research study, Dodd, Hibbing and Smith (2011, 26) specifically asked whether a preferential bias would occur across participants apparent political orientations. What they found was that the magnitude of gaze cuing

[15] Shanks (2013, 133) tested gaze patterns where subjects were for ten seconds each presented with an ambiguous stimulus containing two simultaneously presented "interest areas" and posited that "strength of attention" could be derived of "total fixations divided by ten seconds, or perhaps a comparative ratio of interest area fixations between two areas of interest (i.e. facial area versus text area)."

effects[16] between liberals and conservatives was markedly different. Lodge and Taber (2005) and Dodd et al. (2011) brought together theories about affective concepts and hypothetical corresponding physical effects of specific known stimuli. This brand of research is a legitimate facet of the Political Psychophysiology sub-discipline, because physical variables are operatively explained. I believe that this is largely what Hatemi and McDermott (2012) intended.

Behavioral science has known for some time that affective responses tend to be fast and automatic (Slovic et al. 2003). This revelation has not been lost on political science research. For example, hot cognition has been a suitable launching point for the investigation of political affectations. However, as a factor that relies heavily on reaction time it seems to be a finitely limited variable when considering the broad implications various political objects might have on individual beliefs.

I have only touched on recent research based in investigations of social and physical differences in responses. These cases are only the tip of the iceberg of a larger discussion of the merits of bio-physical research in political science. To indict these works in depth may not be as productive a pursuit as is immediately needed to champion this new aspect of psychophysiology where bio-physical variables are utilized in conjunction with research into their relevance to various social structures. Such works above are related in their origins whereby social situations logically are preceded by

[16] The term gaze cueing effect refers to equal measures upon which subjects' reactions to a visual stimulus occur. Lodge and Taber (2005) refer to "stimulus onset asynchrony (SOA)" as elapsed time from the onset of the prime to the onset of the target…"Since conscious expectancies take at least 500 ms to develop (Neely, 1977; Posner & Snyder,1975), any influence of the prime on response times to the target for SOAs significantly shorter than 500 ms must be 'attributed to an automatic, unintended activation of the corresponding attitude' (Bargh et al. 1992, p. 894)." Dodd, Hibbing and Smith (2011) employ "gaze cueing effect" in their research as a variable measure of SOA (i.e. 100, 500 and 800 ms) in order to gauge the affective reaction to a stimulus to measure the manner in which the eyes move in the presence of a stimulus. The authors consequently compared these effects across political temperaments.

physiological dispositions and predispositions whose particulars can lead to informing social science about where humans come from in terms of socio political learning. The next logical step in this process is to explicate the direct physical factors of affect.

What precisely is affect? Is it a feeling or sensation? Is it a facial expression? Ekman (1999) described affect as multi-faceted where emotions were generally accepted as affective phenomena comprised of "a family of related states" (52). Slovic et al. (2003) defined affect as a quality of goodness" or "badness" wherein affect is also "experienced as a feeling state (with or without consciousness)…" Slovic et al. also argued that affect means the goodness or badness of feeling. They added that affect was also capable of occurring "with or without consciousness" and capable of identifying "a positive or negative quality of a stimulus" (397). Ekman (1999) posited that the many features of different emotions were organized in an emotion-specific central nervous system where unique physiological patterns dwelled for the express purpose of serving only emotions (48-49). Ekman was aware that newly discovered techniques were being introduced to measure brain activity and he correctly predicted their scientific utility. Twenty years later it was no stretch of the imagination that the brain's functions would be charted to aid political science research.

Political interactions probably trigger one or more of thoughts or feelings of one or more attitude objects. In politics particular issues can evoke a wealth of reactions on individual levels and group levels. Meanwhile, something that is politically relevant has recognizable features, regardless of the opinions people hold for the object in question. I propose that politics, much like wealth are facets of life in which the utility of gains are made through various comparisons. Kahneman (2011, 279) More importantly however, I

suspect that with political tendencies perceptions of gains or losses are affectively-charged. Further, as demonstrated in Oxley et al. (2008, 1669) and Lodge and Taber (2005, 463) affective charges probably exist in ways not directly associated with fully conscious decision-making. They instead may arrive via priming effect unconsciously or perhaps in response to generic threats previously embedded in a person psyche.

One way of looking at these phenomena is to interpret physical responses as the antecedents or predictors of political attitudes, including political attentions, general and specific emotions and social or political preferences. In this context even the most primordial impulse might contribute to measuring actual political likes. I suggest that the way people approach risky choices represents naturally occurring reflexes similar to tendencies to maximize the perceptions of one's own circumstances. Chen et al (2006, 533) experimented with a capuchin monkey colony and demonstrated human like utility maximizing behaviors using a fiat currency.

Consider this analogy: When a person goes in to a voting booth they are most likely aware that their votes can represent very broad political and government concerns. Most people probably realize that the act of voting is an opportunity to represent one's own preferred policies and preferences in the process of choosing similar views of other likeminded people. Consider that the act of voting itself is also generally accepted as a necessary sort of collectively cooperative social component.[17] Consequently, the investigator is also well-positioned to identify what the social and political implications are at stake perhaps the expectations of an ordinary voter will be more predictable. A

[17] According to Simon (1985, 298) Downs' "sophisticated" voter wants his vote to contribute to a selection. (Downs, 1957, 48)

Political Scientist who observes behavior is likely to gain some understanding of among other things, the most likely real or perceived consequences on the mind of a voter.

Inferences about political likes or dislikes seem plausible because political issues naturally may cause people to either support or oppose certain issues. If those views are positively associated with affect, physical perceptions seem to be integral to the pathology of political likes and dislikes. One of the problems researchers should expect to encounter is that the lexicon of affect has not emphasized bio-physical factors. Affect has instead generally been discussed more normatively.

In this dissertation the revelation of certain attitudes was anticipated to be derived from various factors related to attentions, emotions and preferences. These factors may unintentionally open a discussion of the established area of research in the science of attitudes per se'. This will not serve the purpose of my research. This chapter includes only a few more details about the "Big Five" personality trait taxonomy and theory based in the science of attitude formation. Alford and Hibbing (2007, 196) list the five factor model with alternative expressions for neuroticism, which note is also sometimes called emotional stability and openness, which is sometimes called intellect/imagination. John and Srivastava (1995, 105) recount a similar list of identifiers; Extraversion or urgency (talkative, assertive, energetic), Agreeableness (good-natured, cooperative, trustful), Conscientiousness (orderly, responsible, dependable), Emotional Stability versus Neuroticism (calm, not neurotic not easily upset), Intellect or Openness (intellectual, imaginative, independent-minded).

Because of the specific bio-physical focus of this dissertation there are bigger fish to fry, namely the role of Science in political Science research. John and Srivastava

(1995) attributed the term "Big Five" to Goldberg (1981) and who was mindful of the extremely broad nature of certain traits which encompass arrays of "distinct, more specific personality characteristics" (John and Srivastava, 1995, 196). It follows that if a researcher is to invoke expectations of how personality differences play into political differences or political interactions it will be appropriate to credit to the science behind it the Big Five. Unfortunately, the characteristics of its most fundamental parts (e.g. extroversion, agreeableness, conscientiousness, neuroticism, and openness) are not important to emphasis of physical behavior in this work. It is however, not to confuse the language of Personality theory.

Failure to question disunity in works intending to relate the science of personality would be fatal to the overall objective view of the present research which among other things predicts that certain bio-physical attributes can reliably be expected to precede certain social characteristics.

The real power in expanding the reach of political science knowledge through the use of bio-physical factors is in the ability to tailor the various interpretive lexicons of several prominent investigations while also introducing a new methodology that remains recognizable to the social science community at large. This work did not intend to directly enter the academic debates about the value of multi-method approaches or applicability of the Big Five per se. Works combining human physiology, individual or group behavior and personality are technically multi-method approaches. Especially works which include qualitatively dissimilar variables. One of the broader objectives of this research is to consider the value of multiple types of research in order to analyze the

interplay of social factors physical factors. I am especially interested in explicit investigations of bio-physical factors related to political behavior.

With that in mind, I do not intend to suggest that physiological concepts can be easily translated directly into group etiologies or that multiple methods are irreplaceable. Instead I proposed that individual behaviors can reasonably be understood in simple approach-avoidance dyads which function affectively until experience enables consciousness to take control (i.e. Homburg (2009, 22). This view of affect hopes to explain how certain affective components contribute to likes and dislikes that represent the level of trust a person feels at a given time. I argued that political support or opposition as well as other social tendencies related to political feelings are influenced by a person's political orientations.

In this perspective, political behavior is little more than an affective component in the psychology of attraction or aversion. Hence, this research has been focused on the appetitive proclivities of individuals whose social tendencies can be framed affectively and factored as such. Therefore, physiological data-gathering in the course of understanding affect as a component of social learning was expected to provide useful knowledge with empirical support from one or more scientific foundations.

Hatemi and McDermott (2012) have suggested the field of genetics as one such source. For example they stated that social traits in particular had historically been deemed socially determined. They noted that "social learning approaches stipulated that the intergenerational transmission of political preferences could only occur through social mechanisms. Culture and nature were considered to be separate and opposing forces, despite the research that found otherwise. However, there has been a recent shift in

perspective by both life and social scientists that emphasizes the interplay between genes and the environment, and gene–culture coevolution, which has proven more accurate than any position favoring either nature or nurture" (525).

This work also expects that such revelations might reasonably be extended to the behavior of groups. This assumption is based on the presence or absence of known aversive tendencies. It should also be stressed that this work is somewhat attuned to the findings by Hibbing and Smith (2007) and also Alford and Hibbing (2007) in which political behavior might be explainable in part by facets of the science of attitudes and personality theory. Some multi-method approaches in political science research include more interpretive modes of inquiry that may otherwise stand alone or might only be used alongside qualitatively similar research. Amel Ahmed and Rudra Sil (2012) noted that multi-method research can ultimately reflect diverse permutations drawn from "the broad categories of qualitative, quantitative, and formal approaches" (935).

In a review of the book Interpretation and Method: Empirical Research Methods and the Interpretive Turn by Peregrine Schwartz-Shea and Dvorak (2006), Bernhard Kittel (2012, 11) noted that the isolation of specific traits by experimentalists implied that interpretive expertise is expectedly necessary. Kittel (2012) also stressed that there is a mutually detrimental need for inclusiveness that is shared across methodologies. He noted that making sense of things can include combining complementary knowledge that may offer more complete examples of human interactions and expressiveness. The author wrote: "It is a truism that interpetivists and experimentalists have different views of the world. But because they also ask different questions, neither covers the full range

of possible questions and answers; even more, both systematically blind out those questions that are relevant to the other" (11).

The observational summaries used in interpretive research are of no less value than data derived from the hard sciences. For example, Kittel (2010, 10) argued that such data becomes more useful when experimentalists simply concentrate on making sense of experimental results. I argue that investigations into the meaning of things people perceive needs to include specially designed experimental approaches that are needed to isolate traditionally poorly understood or previously overlooked phenomena. These new efforts are mindful of the relevance of natural interactions which is the "opposite problem of interpretive work" (10).

In this analogy, a complete approach may require a little of both, interpretation through observation and experimentation. As Kittel rightly points out, approaches of this type are likely to include inquiries far beyond the interest and expertise of many if not most experimentalists. Kittel seemed to be bent on limiting the role of experimentalists, perhaps because he felt they are ill-equipped to expose broader implications of larger and more complicated debates.

In order to explain the bio-physical nature of affective relationships between sociopolitical situations and attitudes I have identified three important contributing factors. Perceptual affect, emotions, and likes and dislikes which serve in integral roles in attention.

Key (1962) argued: "The citizen is equipped with ingrained sets of values, criteria for judgment, attitudes, preferences, dislikes – pictures in his head – that come into play when a relevant action, event, or proposal arises. To know how the public will respond to

a contemplated course of action, those in positions of leadership and authority need only to relate that action to their estimate of the pictures in people's heads – and adjust their strategy accordingly" (264).

Key (1960) argued: "The focus on voter attitudes tacitly assumes that voters are to be regarded as willing persons with likes and dislikes who express them at the ballot box" (58). If that is true much of what people do inside a voting booth is reasonably determinable. However the tendencies for a person to act on their expectations of other are less concrete than say, their political party identification or their political orientation. I argue that both examples represent a framework for predicting political behavior however a person's true expectations are not so easily quantifiable. They first need to be contextualized as either, real or expected likes and dislikes.

Hibbing and Alford (2007) pointed out that among other things, likes and dislikes and generosity are inherently social and "as such are distinct form risk taking or paranoia as well as from liberal or conservative attitudes (168). Further discussion below will more closely look at the individual differences in people.

Greenstein (1992) questioned whether personality and politics could even be jointly studied. When people are jointly engaged in politics, it seems logical that their personalities would be involved in the process. *Personality,* however, is a potentially nebulous concept and can be difficult to grasp. Green wrote that researchers "tend to concentrate on impersonal determinants of political events and outcomes, even those in which the participants themselves believe personality to have been significant. Greenstein added that if individual action is important in those works, "they posit rationality,

defining away personal characteristics and presuming that the behavior of actors can be deduced from the logic of their situations (cf. Simon, 1985)" (106).

I hypothesized that what people like or do not like evokes measurable responses. I also argued that physical phenomena can infer meaning. Therefore, revelations about the affective associations in physical behaviors are integral to predicting the effects of an evocative stimulus.

This dissertation has been a novel approach to Political Science inquiry because of its unique interest in the bio-physical aspects of attention. The bulk of this work reported on my numerous attempts to determine the impact of political orientation on visual attention. I assumed that gaze behavior would be informative of political feelings in certain situations hence my discovery of differences in pupil minimum and maximum size areas appeared to be an affirming consequence of my investigative approach. I expected that political affect would impact physical behavior and discovered that political orientation is related to the way some images are physically perceived.

The literature seemed to support the notion that the phenomenon of more active visual searches could be reliably measured in terms of social context. In simple terms, attentional effort proved to manifest differently across political orientations. Briefly, as will be discussed at length in later chapters, politically moderate subjects were often strongly conservative on some attitude measures. However, when presented with sadness, moderates appeared to use more visual effort in their gazing.

Toward this end, I have reasoned that other physical responses or physical effects could eventually be found to be related to political feelings. The literature was certainly supportive of the idea that a more active ocularmotor response may be linked political

feelings. My ensuing experiments also offered some limited support. Anecdotally, the idea of a more intense affective response at the very least has temporarily confirmed my expectations that physical attentions directed toward some objects could be used to measure affective responses. The question of whether political orientations cause differences in physical responses now seems very reasonable to pursue further as an extension of psychophysiology.

Final Concluding Comments

These data serve the purpose of combining emotional and attitude outputs that can be later applied to broader social contexts. Because of the inclusion of bio-physical measures, the affective sciences can be more robust. Say for example that the assumption that conservative political orientations present more viscerally affected responses. Then, differences in gazing behaviors may demonstrate that there is a relationship between political orientation and the physical experience of affect. That is of course, assuming that appeal influences gaze strategies as the literature suggests. These differences might imply that people who are more ardently partisan in their political beliefs will exhibit more profound effects in the presence of an aversive stimulus.

I envision my next endeavor to be an exploration of the quantifications of some of the formulae discussed here. The advent of combining physical, bio-physical and attitude data is full of possibilities. Not the least of which are the musculoskeletal implications of eye movement as it is related to attention effort and the energy one expends in the balancing of their political beliefs.

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