

THE INFLUENCE OF POLITICAL CANDIDATES' FACIAL COMPETENCE
ON VOTER PERCEPTION AND BEHAVIORAL INTENT

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by
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DEDICATION

I dedicate this thesis to my Dad. The constant support he has provided during my pursuit of higher education has meant everything to me. Thank you Dad, I love you.

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I would like to acknowledge and profusely thank Dr. Schwartz for all the guidance has provided me throughout the past two years. I consider him not just a good mentor, but also a good friend. I will carry the lessons he has taught me throughout my entire life. I would like to thank the Learning Cognition Instruction and Research Laboratory, especially Allison, Jordan, Eric, and Jessica, for their insightful and thought provoking questions throughout the development of this study. In addition, this research would not have been possible without the help of Neil Jacobson. His positivity helped me see the light at the end of the tunnel. If his brain does not make him famous someday, surely his kindness will.

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ABSTRACT

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The present investigation aims to specifically address three problems underlying the relationship between facial competence and electoral success, (1) how facial competence influences longer-term perceptual measures like one's overall impression of a candidate, and what one remembers about the candidate, (2) how a candidate's competitor influences the degree to which a candidate's competence is perceived, and (3) to establish what accounts for the mixed findings surrounding gender stereotypes in politics. Therefore we created a factorial dosing consisting of a 2 Candidate Gender (Male vs. Female) X 2 Candidate Competence (Low vs. High) X 2 Competitor Gender (Male vs. Female) fixed analysis of variance; systematically varying the independent variables to address all three problems underlying the relationship between facial competence and electoral success.

Results indicated that all three of the problems we aimed to solve during our investigation had similar explanations of the influence of a candidate's facial morphology revealing competence—the competitor. An interesting, and we believe important, finding emerging from the results of this investigation was that same-sex candidate pairings result in more negative perceptions and lower behavioral outcomes than different-sex candidate pairings—specifically female-female pairings. We reason that candidate context needs to be further considered—specifically, the complementary nature of gender biases with different-sex political pairings rather than same-sex political pairings.

CHAPTER I

INTRODUCTION

In 1532, Niccolò Machiavelli published, *The Prince*, which stated, “Men in general judge more from appearances than from reality.” In 1831, Charles Darwin was almost denied the opportunity to take part in the historic *Beagle Voyage* because Captain Fitz-Roy told Darwin that his nose did “not possess sufficient energy or determination.” In 2015, Republican presidential candidate Donald Trump said, “Look at that face! Would anyone vote for that? Can you imagine that, the face of our next president?” when referring to fellow Republican presidential candidate Carly Fiorina. For the past 483 years, all throughout the world, personality traits have been inferred based solely on a person’s facial morphology. This is known as an appearance-based trait inference, and it is the foundation of the current investigation.

Appearance-based trait inferences have been demonstrated to influence people in a number of domain-specific fields, including—business (Rule & Ambady 2008, 2009), military (Mazur, Mazur, & Keating 1984; Mueller & Mazur 1997), law (Porter, ten Brinke, & Gustaw, 2010; Zebrowitz & McDonald 1991), and mate selection (Little, Burt, & Perrett, 2006). In the field of politics, possessing a competent facial morphology is a strong and specific predictor of electoral success. Facial competence has predicted hypothetical vote share, actual vote share, and winning in the Senate, House of Representatives, and gubernatorial elections (Ballew & Todorov 2007; Hall Goren, Chaiken, & Todorov, 2009; Todorov, Mandisodza, Goren, & Hall, 2005). This finding has been shown to be true even when controlling for candidate familiarity, race,

incumbency status, attractiveness, and age (Olivola & Todorov, 2010). In short, the relationship between facial competence and electoral success is robust and reliable.

However, there are three problems underlying the relationship between facial competence and electoral success. First, facial competence has been assessed using perceptual measures where a respondent is simply asked to judge the competency of a face on a Likert-type scale following extremely brief exposure. This is a problem because it is unknown how facial competence influences longer-term perceptual measures like one's overall impression of a candidate, and what one remembers about the candidate. Additionally, it is unknown how perceptual measures such as competency and overall impression influence other behavioral outcome measures. In the present investigation, we aimed to address these problems by including essay prompts designed to solicit the details of a voter's overall impression of the candidate, in addition to the specific characteristics the voter encodes and remembers about the candidate. We were also interested in determining whether a secondary behavioral outcome would be influenced by these perceptions—in this case, the magnitude of financial donations that a voter would make to the candidates' campaigns.

Secondly, in previous research, facial competence has been judged in the presence and absence of a competitor. This is a problem because it is unknown how a candidate's competitor influences the degree to which a candidate's competence is perceived. We suggest that the competence and gender of a candidate's competitor influences the relationship between candidate competence and electoral success; thus, we designed the present investigation to examine this directly.

Finally, independent of competence, gender stereotypes have been shown to negatively affect candidates in some instances, and not others. This is a problem because prior research has been unable to establish what accounts for the mixed findings surrounding gender stereotypes in politics. Thus, in the present investigation, we systematically varied male and female candidates running against both male and female competitors.

Problems Surrounding Perceptions of Competence in Politics

Competence is measured as one of the most valuable traits a political candidate can have (Miller, Wattenberg, & Malanchuk, 1986). In fact, other appearance-based judgments—particularly, attractiveness, familiarity, baby-faceness, and age rarely account for a substantial percentage of the variance of competent candidates' electoral success (Olivola & Todorov, 2010). However, it is unclear as to which variables of a candidate's face voters attend. That is, voters' perceptions of a candidate's competence seem to be the result of a “gut feeling” as to whether the voter believes the politician should be elected to office or not—a quick and intuitive judgment that occurs before conscious awareness. In fact, these judgments are made in as little as 100 MS (Olivola & Todorov, 2010; Todorov, Pakrashi, & Oosterhof; Willis & Todorov, 2006). Thus, voters are unaware why they make the judgments they do, and how their judgments may influence the interpretation of information about the candidate that may be provided to them later.

Because voters can perceive competence so rapidly, it is clear that voters rely on superficial cues in order to infer this competence. That is, rather than make an informed decision regarding a politician's competence, which may take several hours, voters instead rely on appearance, which only takes several milliseconds. Theoretically, reliance on appearance to make a trait-based inference is considered as a System 1 process (Kahneman, 2002). According to Kahneman and Frederick (2002), System 1 processes are part of a dual-system view in which automatic perceptions create an impression and tentative judgment, which will be accepted, corrected, or rejected by a second set of processes—System 2 processes (Kahneman & Frederick, 2002; Sloman, 1996). Furthermore, System 1 processes have automatic properties that are consistent with features in associative memory (Morewedge & Kahneman, 2010). Associative memory is a part of long-term store, which is constructed as an interconnected web of semantic, graphical, and goal-oriented information. The interconnectedness of this information is determined by how strong the associations are; in turn, the interconnected associations are managed by the spread of activation across the web.

Spread of activation across interconnected matching features in associative memory can be a function of framing effects. By framing effects we mean the conceptual perspective or prime that makes salient particular features of a target (Levin, Schneider, & Gaeth, 1998).

Framing effects have been traditionally examined in the context of text processing, where the same words, framed differently, induce different cognitive models of comprehension (Tversky, & Kahneman, 1974; Thaler, 1980; Carmon, & Ariely, 2000). That is, when a text frame is changed a reader will change the nature of the connections

they make within associative memory (Morewedge & Kahneman, 2010). These changed connections result in substantially different models of what is to be learned from the text.

In the present study, we reasoned that since associative connections need not be text-specific, it is plausible to posit that framing effects occur in visual appearances as well—appearances revealed in a candidate’s face.

A number of researchers have investigated how perceiving a person to be a member of a certain social group changes the type of information, typically social stereotypes, others associate with the person (Blair, & Banaji, 1996; Blair, Judd, & Chapleau, 2004; Eberhardt, Davies, Purdie-Vaughns, & Johnson, 2006). For example, perceiving a person as attractive changes the type of information others associate with the person—specifically, attractive people are perceived as strong, intelligent, outgoing, and sensitive (Eagly, Ashmore, Makhijani, & Longo, 1991; Feingold, 1992; Langlois, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000).

However, few researchers have investigated how a person’s facial appearance changes the type of semantic information others remember about the person (Hassin & Trope, 2000). For example, in a series of experiments Hassin and Trope (2000) showed respondents two female faces—one confident, and one unconfident—followed by a text stating that the girl in the picture sat quietly in a meeting as her work was being discussed. The type of face respondents saw, either confident or unconfident, changed their interpretation about the girl’s quietness in the meeting—that is, when the girl was perceived as confident, her quietness was interpreted as powerful; by contrast, when she was perceived as unconfident, her quietness was interpreted as weakness. Nevertheless, there has been little empirical attention directed at whether the competence level of a

candidate's face influences voter's overall impressions of the candidate, or whether voters actually remember more competent, or incompetent, candidate characteristics differently. Furthermore, there has been an absence of work designed to determine whether the competence level of a candidate's face influences the magnitude of financial donations a voter would make to the candidate's campaign.

Competence, as a framing effect from which to attend to competent characteristics, is supported by Schnotz' (2014) Integrated Model of Text and Picture Comprehension (IMTPC). According to Schnotz (2014), pictures and text create a mental model, which is updated as more information is presented to the respondent. The mental model created by the respondent is a product of visual elements of the picture, semantic elements of the text, prior knowledge, and finally, how the respondent makes connections between the picture and the text. Therefore, Schnotz suggests that different pictures, paired with the same texts, influence the type and production of mental models.

In the context of the present investigation, we contend that a candidate's face serves as the picture, while discussions of the candidate in documents accompanying the candidate's picture serve as the text that follows. Schnotz' (2014) IMTPC distinguishes a difference between the perceptual processing of a picture, and the cognitive processing of text in deep semantic structures. Following the IMPTC model, the candidate's competence, as perceived by the respondent, would influence the subsequent cognitive processing within semantic structures. In turn, this cognitive processing influences the construction of a "competent candidate" mental model. Once the mental model has been constructed from newly formed connections within long-term store, the recalled information is filtered based on the respondent's first perception of the candidate—either

as competent or incompetent. Thus, we propose competence, used as a framing effect, may activate matching competent-features in associative memory, in turn effecting behavioral outcome measures.

Problems Surrounding Perceptions of Competence and Gender in Politics

We also contend that the perception of a candidate's competence is influenced by the comparative level of competence of the candidate's competitor, as well as the competitor's gender. For example, Olivia and Todorov (2010) discovered that competence predicts vote share equally for male and female candidates, but only when the candidates were running against a male competitor. On the hand, when competitors were not considered in the prediction of electoral success, there were several inconsistencies in the literature. Poutvaara, Jordahl, and Berggren (2009) found that competence judgments predicted electoral success for male candidates, but not female candidates. Alternatively, Chiao, Bowman, and Gill (2008) discovered an inverse relationship between facial competence and electoral success for male candidates in real-life elections, but no such relationship when the candidates were female. When the elections were hypothetical, rather than real, Chiao et al. (2008), found that competence predicted electoral success for both male and female candidates.

Based on these inconsistencies (Olivia & Todorov, 2010; Poutvaara et al., 2009; Chiao et al., 2008), we designed the current investigation to determine the extent to which candidate gender and competitor gender moderates facial competence in electoral success.

Problems Surrounding Gender Stereotypes in Politics

Gender affects how voters perceive political candidates. For example, female and male candidates are assumed to have different traits of personality, as well as certain capabilities regarding their policies. In regards to gender stereotypic personality traits, female candidates are perceived as more honest, expressive, and compassionate than males; males are perceived as stronger leaders, more competent, better at handling a crisis, and more conclusive than females (Alexander & Andersen 1993; Huddy & Terkildsen 1993a; Lawless 2004; Leeper 1991; Sapiro 1981). These perceptions also align with stereotypic thinking about how male and female candidates associate with policy issues. For example, female candidates are thought to be effective in handling education, child care, environmental issues, and issues of poverty and disadvantage; male candidates are thought to be more effective in handling taxes the military, agriculture, and increasing the economy (Alexander & Andersen 1993a; Dolan 2010; Koch 1997; Huddy & Terkildsen 1993; Rosenwasser & Dean 1989).

Gender stereotypic beliefs affect both male and female candidates because the way a voter perceives a candidate's capabilities may function to bias whether the voter supports or acts against the candidate. That is, these gender stereotypic views could operate to occlude a voter's ability to see a candidate's actual set of capabilities in order to be considered a successful leader (Fox & Smith 1998, Lawless 2004). Alternatively, given the existence of political gender stereotypes, there is also contrasting evidence suggesting there has been a decrease of explicit gender bias in politics (Dolan, 2014; Lawless & Fox 2010; Seltzer, Newman, & Voorhees 1994). To reconcile these two

views, we designed the present investigation to systematically vary male and female candidates running against both male and female competitors.

Overview of the Present Study

In the present investigation, we used identical materials, differing in four key ways. First, pictures of the candidates were varied for both competence and gender. Secondly, competence and gender were varied in the faces of the candidates' competitor. Thus, candidate and competitor gender were both matched and inversely matched, while candidate competence and competitor competence was always inversely matched. That is, a male candidate was run against a male competitor, but a high competent candidate was never run against another high competent competitor. Finally, a high competent candidate was always run against a low competent competitor, and vice versa.

Voters were shown two pictures: one candidate with either high or low competence, and either male or female, running against either a male or female competitor of inverse competence level. After exposure to both candidate competence and gender, and competitor competence and gender, participants read three different texts providing personal, competent, and incompetent characteristics of the candidate. To measure perceptions, and mental model construction, we asked voters to write an essay describing their overall impression of the candidate. Then, we asked voters to indicate on a Likert scale: (a) how likely they would be to vote for the candidate, and (b) the magnitude of a financial donation they would be willing to make to the candidate's campaign. We reasoned that the framing effect of competence, relative to the comparative effects of competitor, would prime associative connections within the newly

constructed mental model. This model, in turn, was expected to influence perception—the impression of the candidate formed by the voter, and behavior—(a) the degree to which the voter would be likely to vote for the candidate, and (b) how much money the voter would be likely to donate to the candidate’s campaign.

Research Questions and Predictions

We generated four research questions to empirically contrast the predictions of candidate competence, candidate gender, and competitor gender. Each of the research questions is presented below, in addition to six hypotheses. In all cases, the first four hypotheses represent the perceptual measures, while the final two hypotheses represent the behavioral outcome measures.

Question 1. Would candidate competence affect perceptions of and behavioral outcomes for the candidate?

Based on prior competence ratings (Ballew & Todorov 2007; Olivola & Todorov 2010; Todorov et al., 2005), in addition to pilot testing preceding the current investigation, we hypothesized that high competent candidates would be perceived as more competent than candidates low in competence (hypothesis 1).

Morewedge & Kahneman (2010) suggest that when a text frame is changed, a reader will change the nature of the connections they make within associative memory, while Hassin and Trope (2000) similarly demonstrated that a person’s facial appearance also changes the type of semantic information others remember about the person, thus, we expected voters to cognitively construct more positive overall impressions of high competent candidates, (hypothesis 2a) including: more competent descriptors (Hassin & Trope, 2000, Morewedge & Kahneman, 2010; Schnotz, 2014), (Hypsis 2b), and fewer

incompetent descriptors (Hassin & Trope, 2000, Morewedge & Kahneman, 2010; Schnotz, 2014) (hypothesis 2c).

Based on literature suggesting that facial competence has predicted hypothetical vote share, actual vote share, and winning in the Senate, House of Representatives, and gubernatorial elections (Ballew & Todorov 2007; Hall et al. 2009; Todorov et al. 2005; Olivola & Todorov, 2010), we predicted that high competent candidates would receive a higher likelihood of voting than low competent candidates (hypothesis 3a). Finally, we reasoned that a more positive overall impression and a higher likelihood of voting for a high competent candidate would additionally lead to a high competent candidate receiving a larger financial contribution than a low competent candidate (hypothesis 3b).

Questions 2. Would candidate gender affect perceptions of and behavioral outcomes for the candidate?

Based on inconsistencies in the literature surrounding how gender affects competence ratings (Olivola & Todorov, 2010; Poutvaara et al., 2009; Chiao et al., 2008), we hypothesized there would be no difference between male and female candidates' perceived competence (hypothesis 4).

Given that male politicians are perceived as stronger leaders and more competent than female politicians (Alexander & Andersen 1993; Huddy & Terkildsen 1993a; Lawless 2004; Leeper 1991; Sapiro 1981), we believe male candidates will be given a more positive overall impression than female candidates (hypothesis 5), including: more competent descriptors (Hassin & Trope, Morewedge & Kahneman, Schnotz), (Hypothesis 5a), and, fewer incompetent descriptors (Hassin & Trope, Morewedge & Kahneman, Schnotz) (hypothesis 5b).

We reasoned that although there would be no difference in competence ratings between male candidates and female candidates, male candidates would receive a higher likelihood of voting (hypothesis 6a), and receive a larger financial contribution than female candidates because respondents would have a more positive overall impression of the male candidate (hypothesis 6b).

Question 3. Would candidate competence across candidate gender affect perceptions of and behavioral outcomes for the candidate?

Based on the competence (Ballew & Todorov; Olivola & Todorov; Todorov et al.) and gender (Alexander & Andersen 1993; Huddy & Terkildsen 1993a; Lawless 2004; Leeper 1991; Sapiro 1981) literature, we predicted that the high competent male candidate would be perceived as more competent than any other candidate (hypothesis 7). Similar to hypothesis 7's reasoning, we believe that high competent male candidates would be given a more positive overall impression than any other candidate (hypothesis 8), including: more competent descriptors (Hassin & Trope, Morewedge & Kahneman, Schnotz) (hypothesis 8b), and fewer incompetent descriptors (Hassin & Trope, Morewedge & Kahneman, Schnotz) (hypothesis 8c). Finally, high competent male candidates were also expected to receive a higher likelihood of voting (hypothesis 9a), and a larger financial contribution than any other candidate (hypothesis 9b).

Question 4. Would candidate competence and candidate gender across competitor gender affect perceptions of and behavioral outcomes for the candidate?

Olivia and Todorov (2010) discovered that competence predicts vote share equally for male and female candidates, but only when the candidates were running against a male competitor. However, there has been an absence of research that replicates

this finding. Therefore, we open-endedly hypothesized that there will be differences in perception competence across competitor gender (hypothesis 10). We also hypothesized that there would be differences in overall impression across competitor gender (Olivia & Todorov), including: differences in attribution of competent descriptors (Hassin & Trope, Morewedge & Kahneman, Schnotz) (hypothesis 11a), and incompetent descriptors (Hassin & Trope, Morewedge & Kahneman, Schnotz) (hypothesis 11b). Finally, we further hypothesized that differences in both competence and overall impression would lead to differences in likelihood of voting (hypothesis 11c), and financial contributions across competitor gender (hypothesis 11d).

CHAPTER II

LITERATURE REVIEW

History of Physiognomy

Physiognomy works under the assumption that there is a strong and direct relationship between the way person's face looks, and what their personality is. Individuals have believed in physiognomy since the time of ancient Greece; Aristotle even wrote several such works endorsing practice of physiognomy. However, physiognomy reached peak popularity in the late 1800's and early 1900's. The rise in popularity was due to the influence of a Swiss pastor named Johann Kaspar Lavater. Lavater marketed the idea an art form in which one could literally read from a face. Lavater's newfound art form was so popular that it ended up playing a significant role in the "intellectual climate" of his time (Hassin & Trope, 2000). The ideas of physiognomy even went so far as to inspire the founder of criminal anthropology, Cesare Lombroso, who described that all criminals could be easily identified by the way their face looks (Lombroso, Gibson, & Rafter, 2006). Although seemingly biased, inaccurate, and stereotypical, recent research in the domain of litigation law has supported criminal anthropologist's claims.

Recently, research has shown that facial appearance has the ability to predict criminal punishments regarding sentencing, the severity of the sentencing, and a jury's judgment of guilt for a defendant. In an experiment by Porter, ten Brink, and Gustaw (2010), it was discovered that defendants who have an untrustworthy looking face are

more likely to be tried as guilty even when there less evidence for defendant's guilt rather than innocent. Likewise, experiments studies have shown that defendants who have faces that fit the stereotype for a crime they are on trial for are more likely to be tried as guilty (Dumas & Test'e 2006). Additionally, Flowe and Humphries (2011) discovered that people who have a face that looks criminal are more likely to be chosen out of a police lineup and stand trial.

In regards to the studies of criminal looking faces, one might ask if ethnicity plays a role given that there are more African-Americans serving jail sentences than any other ethnicity. Blair, Judd, and Chapleau (2004) discovered that in the United States, defendants who are perceived to have "Afrocentric" features receive harsher sentences than defendants of other ethnicities. Unfortunately, they are also more likely to receive a death sentence (Eberhardt, Davies, Purdie-Vaughns, & Johnson, 2006). However, this relationship holds true even when controlling for the defendants' ethnicity, which means that the discrimination African Americans face in courtroom may not be a product of their ethnicity, but by independent features of their face.

Standing alone, the non-scientific reputation of physiognomy did not last the test of time. As a result of the scientific revolution in the 1900s, the idea of physiognomy became discredited due to its pseudo-scientific claims, and anecdotal simplicity. However, might there be some truth form the minds of Aristotle, Lavater, and Lombroso? As can be taken from the aforementioned literature, the answer is yes. Lavater may have been wrong about several of his claims, but he was correct in his reasoning that people are influenced by the *idea* of physiognomy. It is simple and sometimes automatic to make

a decision about a person's personality based on their appearance. For example, imagine you are at a party where you do not know anyone. There are two people in the room you are also standing in; which person would you approach? Most likely, you would approach the person who appears to be a friendly, fun, or extraverted person. However, you actually do not know anything about whether the person you chose to approach is actually friend, fun, or extraverted. You make an assumption of their personality based solely on their facial morphology. This is what is referred to as an appearance-based trait inference. The notion of physiognomy has been most recently re-conceptualized as an appearance-based trait inference.

So, the existence of appearance-based trait inferences are based not only in the literature, but also our personal experiences, which goes to show that Aristotle, Lavater, and Lombroso were not completely inaccurate. In addition, evolutionarily speaking, there is adaptive significance for why we are predisposed to make personality judgments based solely on looking at someone's face (Hassin & Trope, 2000).

Evolutionary Basis of First Impressions

When primitive humans were alive they had one goal, to survive. The ones who survived mastered the ability to detect whether another individual looked threatening, or approachable (Andrew, 1963). That is, whether it was safe for one to interact, or even approach, a new person. Not only was this a huge part in the survival of human development, but these evaluations of another person's approachability or threat level are also common occurrences in primates (Pitcairn & Eibl, Eibesfeldt, 1976).

These innate judgments of approachability and threat are in part due to facial cues (Keating, 1981; Spezio, Rangel, Alvarez, O'Doherty, Mattes, Todorov, Kim, & Adolphs, 2008). Once a person has decided whether a certain feature of a face is either safe or dangerous, that judgment is used to make further judgments about the perceived social status of the individual. Determining whether an individual is safe to approach or not has clearly enhanced the survival of mankind not only in primitive times, but due to its adaptive significance it has also enhanced survival of mankind in modern times as well. Imagine you see a person who you perceive as dangerous, so you walk away. It does not matter whether or not this social judgment is correct, or relevant; the point is that is that you have survived. Making quick judgments based on another person's face is one of the reasons humans have survived thus far. It has been suggested that humans, even modern humans, rely on prominent facial cues to make automatic assessments of dominance, trustworthiness, competence, and other traits in order to create a low-effort judgment about another's ability or personality (Olivola & Todorov, 2010). These relative judgments about another person's capability based on one's "gut feeling" are difficult to disregard (Riggio & Riggio, 2010).

An approach-avoidance motivation framework may explain trait inferences such as dominance and trustworthiness. The approach-avoidance motivation framework describes that approach and avoidance motivation differ on one key factor, valence (Elliot & Covington, 2001). Deciding to approach someone or something is directed by a desirable event, or a desirable possibility; whereas deciding to avoid someone or something is directed by an undesirable event, or an undesirable possibility (Elliot, 1999).

Approach-avoidance motivation is an automatic evaluation. This is important because a person can instantaneously know whether or not it is presumed to safe to approach, or whether the situation should be avoided. Several theorists writing works in motivation, emotion, and attitude (Higgins, 1987; Lazarus, 1991) literature have suggested that positively evaluating a stimuli is inherently associated with the tendency to move toward the person or thing, while negatively evaluating a stimuli is inherently associated with the tendency to move away the person or thing. For example, Chen and Bargh (1999) displayed this by instructing participants to either pull a level away from themselves, or toward themselves as quickly as possible when either a positive or a negative words appeared on a screen. Pulling the lever toward them simulated an approach response, while pulling the lever away simulated an avoidance response. The researchers discovered that participants reacted more quickly for positive words when they were instructed to pull the lever toward them; likewise participants reacted more quickly for negative words when they were instructed to pull the lever away them. Bargh and Chartrand (1999) further extended the study by not prompting the participants to respond to the words in any specific way. This led Bargh and Chartrand (1999) to conclude that automatic approach and avoidance motivations appear in behavioral predispositions to either very quickly go toward, or away, from the provided stimulus.

Neurological Evidence of First Impressions

Despite the large amount of information that research has shown regarding first impressions, and making appearance-based trait inferences, the research on their neural basis is just beginning. Only within the past twenty years have researchers began to use

neuroscience to investigate appearance-based trait inference to gain a better understanding of how the brain analyzes a first impression. The use of social neuroscience was thought to be an interesting option in which to conduct research based partly because making these trait inferences takes only a single glance. That is, a person only needs to be exposed to a face for 33 milliseconds in order to make to determine if someone is trustworthy or not (Bar et al., 2006; Todorov et al., 2009).

In regards to testing the biology of trait inferences, researchers will generally show participants with different faces that vary on the respective trait dimension (traits can include competence, dominance, trustworthiness, etc.). Statistical analyses are then completed to compare how brain activity in specific brain regions change depending of what varied facial appearance the participant is being exposed to. Although many of the results published on this topic have been inconsistent, it is still a very new and developing field of research (Todorov, Dotsch, Wigboldus, & Said, 2011).

The research that has been consistent shows that a trustworthiness inference is inversely related to amygdala activity. More specifically, if a face is perceived to be less trustworthy, then there is an increased response in the amygdala (Winston, Strange, O'Doherty, 2002). Research has shown that the amygdala is an essential brain structure to understand when examining adaptive social behavior. The amygdala is responsible for human emotions and emotional behaviors (Phillips, LeDoux, 1992), and is active in several different major pathways. One of these pathways, from the amygdala to the inferior temporal cortex is of particular interest to researchers studying appearance-based trait inferences.

A common way to conduct neurological studies is to create lesions on an area of interest in the brain, and observe how the non-human behavior changes. These studies can also be conducted for humans, but the cases in which they occur are naturally occurring. An example of the natural occurrences of lesions on the amygdala is the result of a disease called Urbach-Wiethe. People with this rare disease experience lesions in the amygdala where excess calcium has been deposited. People who have these amygdala lesions are unable to differentiate emotions in facial expressions, but can still recognize faces due to the neurological pathway connecting the amygdala to the inferior temporal cortex. It is this connection that explains how emotion in the amygdala is linked with perception in the inferior temporal cortex, in turn creating an emotional perception, or “gut feeling”, simply from looking at a face (Mende-Siedlecki, Cai, & Todorov, 2012). The inferior temporal cortex is involved in holistic visuo-spatial processing of a face.

Prior research has also shown that the amygdala is likely plays a key role in making superficial judgments. Winston et al. (2002) discovered activity in the amygdala is associated with judgments of trustworthiness, which means that the amygdala analyzes nonverbal information construed by a face. Likewise, the amygdala has been thought to determine the emotional significance of nonverbal behavior (Adolphs & Spezio, 2006). However, the amygdala is not the only important structure when it comes to neural activity of facial structures. Several brain areas play a key role when it comes to impression formation, these include: posterior cingulate cortex, superior temporal sulcus, inferior frontal gyrus, and dorsomedial prefrontal cortex (Mende-Siedlecki et al. 2012; Schiller, Freeman, Mitchell, Uleman, & Phelps, 2009).

Specifically, the dorsomedial prefrontal cortex (dmPFC) seems to be one of the most critical areas in regards to social cognition (Amodio & Frith, 2006). Interestingly, it has been suggested that the dmPFC is not necessarily activated by the effect of facial appearance on impression formation, but rather semantic descriptions that are used to form impressions. That is, just adjectives of traits, or descriptions of relevant behavior based on a trait (Kuzmanovic, Bente, von Cramon, Schilbach, Tittgemeyer, & Vogeley, 2012). However, researchers discovered that the dmPFC experiences greater activation when participants are simultaneously exposed to a face, and a description of behavior, rather than the face alone. This suggests that the dmPFC does play a role in the effect of facial appearance on impression formation, but impression formations that occur in the dmPFC may integrate the semantic information with the face. This is noteworthy because it appears that the dmPFC may serve as a meeting place for information provided both by the face, and behaviorally (Schiller et al. 2009; Mende-Siedlecki et al. 2012).

Recent literature has outlined two such examples of the dmPFC's role as a meeting place for facial and behavioral information. First, Ma, Vandekerckhove, Baetens, Van Overwalle, Seurinck, and Fias (2011) conducted a study in which participants read descriptions of behavior about people that obviously implied a particular trait. The last behavioral description about the individual was manipulated to either describe the same trait as the prior examples, or to describe a dissimilar trait. It was discovered that neural activity in the dmPFC was higher when the last behavioral description was dissimilar to the rest of the behavioral descriptions as compared to when it was trait consistent. Second, Cloutier, Gabrieli, O'Young, and Ambady (2011) conducted a similar study, but

this time in regards to political affiliation paired with either similar or dissimilar behavioral descriptions. It was discovered that there was higher neural activity in the dmPFC when people supposed to be a certain political affiliation were paired with behaviors that were dissimilar to the given affiliation as compared to when the behaviors were similar.

Given the interconnectedness brain structures and complexity functional pathways, Haxby and Gobbini (2011) proposed a model of the distributed system for facial perception. The model several different brain areas that are involved in facial perception from either one of two categories, these two categories include, (a) the Core System, and (b) the Extended System. The Core system contain brain structures that reside in the occipital-temporal visual cortex, areas which respond more strongly to viewing faces rather than viewing other visual images such as a landscape. These areas in the Core System include: the Occipital Face Area, the Fusiform Face Area, and the posterior Superior Temporal Sulcus. Likely, the Fusiform Face Area and the Occipital Face Area recognize faces, while the Posterior Superior Temporal Sulcus recognizes differences in facial expressiveness (Hoffman & Haxby, 2000).

The Extended System contains brain structures that reside outside of the visual cortex. These areas in the Extended System include: dmPFC, the Temporoparietal Junction, the Anterior Temporal Cortex, and the Posterior Cingulate Cortex. The Temporoparietal Junction is thought to encode knowledge about people such as personality traits, similar to the dmPFC. Activity in the Anterior Temporal Cortex, and the Posterior Cingulate Cortex may suggest that these areas activate memories of an

episodic nature, as well as factual information regarding the life of the person seen (Haxby & Gobbini, 2011). However, for the Anterior Temporal Cortex, and the Posterior Cingulate Cortex to be activated, the person seen must be a familiar to the perceiver rather than an unfamiliar person.

Trait Inferences From Appearance

As one of the founding fathers of modern social psychology, Solomon Asch (1946, p. 258) once wrote,

We look at a person and immediately a certain impression of his character forms itself in us. A glance, a few spoken words are sufficient to tell us a story about a highly complex matter. We know that such impressions form with remarkable rapidity and with great ease. Subsequent observations may enrich or upset our view, but we can no more prevent its rapid growth than we can avoid perceiving a given visual object or hearing a melody.

A person's face provides is able to provide an abundance of information. It is the primary source of information that we use to recognize people and classify them into social categories that are derived visually (Bruce & Young, 1986). Humans can remember hundreds, potentially more, of faces and know that each face belongs to an individual person. This means that humans have a cognitive ability to extract and encode the information that makes each face unique. The information about a face that is extracted and encoded, going back to evolutionary basis, is the information that we need

to survive the encounter. We remember age, sex, race, and the affective expressions that the face displays (Bruce & Young, 1986).

The facial expressions that differentiate affective expressions, and the trait inferences that follow, is what will be further described. In other words, specific facial features that are prominent in certain facial expressions can influence trait impressions. One example of this is that lowered eyebrows make a face look angry, which in turn creates a trait impression of being dominant, as well as seeming less trustworthy (Todorov, Said, Engell, & Oosterhof, 2008). This type of experimental evidence is what enterprises the research investigating the extent to which facial morphology influences emotional perception because this type of research has been conducted from a more experimentally empirical basis than a theoretical basis.

Based on several experimental studies where participants were only shown pictures of people's faces, it was discovered that people were able to make decisions about others' personality traits and underlying characteristics based solely from the appearance of the person in the picture (Hall et al. 2009; Hassin & Trope 2000; Olivola & Todorov, 2010; Todorov et al. 2008; Zebrowitz & Montepare 2005). These inferences happen so rapidly, and often times spontaneously, which leaves no room for deliberate, or conscious, thought processes to correct the judgment (Bar et al. 2006; Olson & Marshuetz 2005; Todorov 2008; Todorov et al. 2009; Willis & Todorov 2006).

Willis and Todorov (2006) exemplified these rapid inferences when showed that various trait judgments such as trustworthiness, aggressiveness, and competence made after a 100 MS exposure to faces were correlated with judgments made on the same faces

when there was no time constraint. Likewise, Todorov et al. (2009) further exemplified these rapid inferences when they showed that only a 33 MS exposure to a face is sufficient for people to make a trait judgment. Todorov and colleagues aimed to discover the minimal amount of exposure needed for people to make judgments of whether someone was trustworthy or untrustworthy, how judgments of trustworthiness changed as the exposure time changed, and whether trustworthy judgments could be made when the exposure time was low enough for the participant to not have conscious awareness. The researchers discovered that trustworthiness judgments made at 17 MS were no better than chance; however, judgments made at 33 MS were accurate, and judgments made at 100 MS were significantly improved from 33 MS. Interestingly, the increase in trustworthiness judgments from 100 MS to 167 MS was not a significant improvement, and all judgments made after a 167 MS remained unchanged.

The rapidness of these trait impressions are characterized as “single glance” impressions, or “gut feeling” impressions. This is because any exposure less than 100-ms is not sufficient for saccadic eye movements. In other words, without saccadic eye movements, one is not allowed the opportunity to visually explore aspects of the face.

As noted above, these appearance-based trait inferences are rapid and take little deliberate cognitive effort, which means that these judgments likely affect various domains of our life without our conscious recognition. For example, appearance-based trait inferences have impacted the decisions that people make in business (Gorn, Jiang, & Johar, 2008) and finance (Ravina, 2008).

Gorn, Jiang, and Johar, (2008) discovered that the face of a CEO affects consumer judgments during a public relation crisis. Their results revealed that people perceive CEO's who have a baby-face as less likely to deceive than CEO's who have a mature face. These perceptions of deception in turn effect perceived credibility of the CEO, which then effects overall impressions of the company. Gorn, Jiang, and Johar (2008) believed their results had practical implications for businesses that go through a public relations crisis; that is, it is not all about what you say to remedy a crisis, but how you look while doing it. Similar to Gorn, Jiang, and Johar, (2008), Ravina (2008) demonstrated that appearance affects business decisions—specifically, financial decisions. The results revealed that as an attractive person has a 1.44% higher probability of receiving a loan than a person of average attractiveness. In order to get the same probability of receiving a loan as an attractive person, a person of average attractiveness would need to lower the amount they asked for by nearly \$2,500.

In addition, appearance-based trait inferences have impacted the decisions people make about leaders in the military (Mueller & Mazur, 1996). Mueller and Mazur (1996) were interested in determining whether the facial appearance of students at West Point—specifically facial dominance, predicted subsequent promotions to higher military ranks. The researchers used pictures from the students' yearbooks, and had people rate the military students on a variety of different things, just based on the picture. The researchers discovered that facial dominance was a significant predictor for attaining military promotions.

Trait Inferences from Appearances in Politics

As previously mentioned evidence suggests, the way a person looks affects how they are perceived. Given these perceptions seem to depend on the context (e.g. military, business, finance, etc.); it is plausible to imagine that decisions regarding political elections may be affected by facial appearance as well. This an interesting notion to consider given that political elections are such a pervasive context in a democratic society, and if the judgments we make about a person happen without any conscious recognition, it would be beneficial to have this knowledge when casting your ballot.

Inferences of Competence and

Election Outcomes

There have been several studies examining the link between appearance-based trait inferences and political success, and these studies have confirmed that having a competent facial morphology predicts electoral success. Generally, these studies show participants pictures of actual politicians, and ask the participant to judge the politician on a series of traits (e.g. competence, attractiveness, familiarity, etc.). The trait inferences are then compared to hypothetical voting decisions, measured by asking how likely the participant would be to vote the candidate, and outcomes in actual elections. Researchers have been studying the link between competence and electoral success for nearly forty years, and although methodologies may have evolved, the results have not.

Todorov and his colleagues (Ballew & Todorov 2007; Hall et al. 2009; Todorov et al. 2005) are a group of researchers who carried out a wide array of experiments, which

studied multiple political elections in the United States; including, Gubernatorial, Senate, and House of Representative races. This was done by using real political candidate faces, and having participants rate these faces on several different trait dimensions (e.g. attractiveness, and baby-facedness). After the candidates had been judged on these traits, the researchers then waited until the real-life election had taken place, and correlated hypothetical vote share with actual vote share. The researchers discovered that competence was the only trait able to predict how many votes a candidate received, in addition to above chance likelihoods of winning Gubernatorial, Senate, and House of Representative elections. Furthermore, the results failed to yield similar results when the researchers investigated several other explanations; that is, the competence of a candidate's face held significant results even when controlling for: candidate gender, incumbency, age, familiarity, and attractiveness.

Without considering facial morphology, it has been determined that competence is the most esteemed attributes that a political candidate could possess (Miller et al. 1986). As such, it is reassuring that the empirical findings regarding facial morphology have discovered competence to be the only clear predictor of elections, regardless of the fact the judgments were also collected for many other traits. Further lending to the importance of competence, Hall et al. (2009) discovered that viewing a specific trait as important was strongly correlated with the degree of success to which the trait judgment predicted the election outcomes. In other words, traits that were judged as unimportant for a politician did not predict the election outcomes; however, traits judged as important predicted these outcomes, and how successful the prediction were a direct result of how important the

trait was judged. In short, these findings suggest that voters have some sort of conscious idea in regards to the kinds of politicians they believe should be elected to office. However, voters also seem to rely on superficial cues in order to infer these attributes. That is, rather than make an informed decision regarding a politician's competence, voters rely on appearance. Lenz and Lawson (2011) believe that appearance may serve as a heuristic for making a trait inference.

Lending further support to Lenz and Lawson (2011), people often judge unfamiliar individuals based on appearance, and research has indicated that an individual's facial features only influences traits that are ascribed to them (e.g, competence, intelligence, trustworthiness, etc.) (Bar, Neta, & Linz 2006; Hassin & Trope 2000). In other words, people rely heavily on appearance-based trait inferences when they do not know a lot about whom they are assessing and it effects the traits that are ascribed to them. This means that people use appearance as a low-information heuristic (Lenz & Lawson, 2011; Hassin & Trope, 2000).

The information a face presents plays an important role in social cognition. One of these roles is that facial information is used to infer personality, which leads to a source of information about the person given whatever personality they were ascribed. The information of personality, which is inferred from the face, is available to one's cognitive processes, and henceforth used in to interpretation of relative information, evaluations, and judgments. That is, a persons face may change the way one interprets information about them. Hassin and Trope (2000) have described this process as "reading from faces" (RFF). In RFF, the face is used as a source of information in which a person is able to

abstract feelings concerning personality. The information about a person's personality, which is abstracted from the face, is then used to interpret relevant information in later processes. Making a decision about personality that is guided by the inferred personality from a face has also been conceptualized as a low-information heuristic. This low-information facial heuristic serves as a prime to what people attend to about an individual when given a chance to interpret sources of information about the person.

In politics, voters use heuristics to make political decisions. Using a heuristic means that voters will believe they have made a reasonable voting decision with very little cognitive effort due to small amounts of information that provide the voter with a mental shortcut. The heuristics that voters most commonly employ in an attempt to understand and make "informed decisions have been grouped by Lau and Redlawsk (2001) in to three major categories. The first category of a political heuristic is relying on political ideology. Political ideology is arguably the most salient characteristic of a candidate during an election cycle. For example, if I told you that John was a republican presidential candidate—your schema for republican candidates would become activated and you may be able to infer some personality traits he may possess as well as policy issues he may support. Although this mental shortcut saves you some cognitive effort, the likelihood that you created a biased judgment is high. The second category has been described as endorsements. That is, voters make assumptions about candidates based what type of interest groups or companies endorse them.

Third and finally, candidate appearance serves as heuristic when deciding which candidate to vote for. What is interesting about candidate appearance serving as a

heuristic is that it is not specific to just politics. Throughout this review of the literature, several researchers have cited instances in which appearances influence the type of trait ascribed to an individual, and humans do it all the time, in fact it may be innate. Pictures of political candidates provide an incredible amount of information about the candidate such as age, race, gender, and general likeability, which in turn activates several social stereotypes (Riggle, Ottati, Wyer, Kuklinski, & Schwartz, 1992), in addition to activating an affective response (Marcus & MacKuen, 1993). Regarding affective responses, Marcus and Mackuen (1993) discovered that two distinct emotions affect a person's approach to politics when looking at a candidate's appearance—enthusiasm and anxiety. Interestingly, the researchers' model for how people engage in politics is very similar to the previously discussed approach-avoidance motivation. That is, if people feel enthusiastic about a candidate, the further they are willing to engage (approach); while if people feel anxious about a candidate, the more likely they are to become more critical and distance themselves (avoidance).

Appearance is so relevant in the realm of politics because despite the fact that people may not know a lot about politics per say—they do know a lot about making trait inferences that are not necessarily politically appropriate or accurate. However, this is dangerous because similar to political ideology, people have schemas for political candidates. Given that competence is a strong and specific predictor for electoral success, it is plausible to posit that competence serves a low-information heuristic for making a decision about a capable political leader. Furthermore, when a candidate is perceived to be competent, people may remember more information about them simply because the

heuristic is guiding the perception of the candidate when more information is eventually given or discovered. This may similarly hold true for a low competent candidate.

Processing Perceptions of Appearance

The idea that cognitive processes can be categorized into two main groups, typically stated as intuition and reason, is an old concept, but a widely accepted one. These two groups have been labeled as dual-process systems (Chaiken & Trope, 1999; Sloman, 1996). Kahneman & Frederick (2001) use two terms to describe these processes—System 1 and System 2. System 1 processes are associative, automatic, rapid, effortless, affective, and prototypes; while System 2 processes are effortful, controlled, slow, and act on neutrality and statistics (Kahneman & Frederick, 2001). The impressions generated by System 1 processes are monitored, accepted, or rejected by System 2 processes. System 1 processes have the ability to make complicated representations in associative memory, or long-term store, but these representations may not be correct because, if System 2 does not intervene, there is no alternative over system for System 1 on whether the perception was correct or not.

Making an appearance-based trait inference is a System 1 process because these judgments happen so quickly is often not consciously recognized. However, even when participants were given the absence of a time restraint, trait judgments did not change. The only thing that changed given unlimited exposure was an increase in confidence that they were making the correct trait judgment (Willis & Todorov, 2006). This is interesting because given more time, deliberate System 2 processes should be modify or correct the fast perceptual judgments made by System 1 processes. Todorov et al. (2005) believe that

because these trait perceptions occur seemingly unconsciously and are extremely subtle, System 2 processes believe there is no deliberate judgment in need of correction.

Cross-Cultural Effects of Competence

Several studies have replicated the general finding that competence predicts electoral success (Antonakis & Dalgas 2009; Na, Kim, Oh, Choi, & O'Toole, 2015; Poutvaara, Jordahl, & Berggren, 2009). Some of the studies conducted are of particular importance because they eliminate the alternative explanation that competence judgments reflect a politician's media familiarity despite not being able to explicitly recognize them. Several researchers were able to complete the elimination of familiarity by conducting cross-cultural experiments.

Poutvaara et al. (2009) demonstrated non-Finnish participants who made competence judgments regarding Finnish politicians were able to accurately predict the electoral outcomes in Finland above chance. Along the same line, Antonakis and Dalgas (2009) demonstrated the Swiss participants who made competence judgments regarding French parliamentary elections were able to accurately predict the electoral outcomes above chance.

The results demonstrated by Antonakis and Dalgas (2009) are especially prominent because they not only used adults' competence judgments to predict electoral success, but children as well. Through a game in which Swiss children were asked to pick which French politician they would prefer to be the captain of a ship, it was discovered that the children's judgments were highly correlated with the adults' judgments. In addition, the

children's judgments regarding which French politician should captain their ship predicted the election outcomes just as well as the adults.

Na, Kim, Oh, Choi, & O'Toole, (2015) similarly demonstrated that competence is not just a trait that is important for American elections. They discovered that Koreans and Americans both had very similar competency ratings for political candidates, even when Americans were judging Korean candidates, and Koreans were judging American participants. Interestingly, the effect of facial competence predicting real-life vote share was stronger for American candidates than it was for Korean candidates. That is, Americans participants were more likely to vote for the competent candidate than Korean participants were.

These findings have two noteworthy implications. The first is that appearance-based trait inferences occur early in a person's development, and are able to remain stable throughout said person's life. The second is that these findings are somewhat consistent across cultures, which may support the idea that some aspects of facial perception in regards to appearance-based trait inferences may be a world-wide phenomenon.

Male and Female Stereotypes in Politics

In 2008, Senator McCain picked Governor Palin as his vice-presidential running mate. This made Governor Palin the first female to appear on a Republican presidential ballot (Dolan, 2014). In 2016, Secretary of State Clinton became the first female candidate to win the democratic nomination for president. Both Clinton and Palin campaigned throughout the United States, displaying how far American women have

come in the political arena. However, at the same time, Clinton and Palin also served as a disconcerting display for how public thinking about the role of female candidates in politics. It seemed that all of the excitement surrounding these candidates' historical political moments were weakened by discussions surrounding their physical appearance and personality. For example, voters became concerned with whether Clinton was too tough and not warm enough to be president, and whether Palin was smart enough, or too pretty to be serving the United States as key and powerful political figures (Dolan, 2014; Miller & Peake, 2013).

Clearly, the debate regarding Clinton's and Palin's qualifications are entrenched in gender stereotypes about what the appropriate role for females are when they are in the public eye, or political arena. People who run political campaigns, as well as the candidates themselves believe that gender stereotypic conversations matter to the success, or failure, of female candidates. Female candidates who run for an elected office in the United States are subject to a level of scrutiny in that voters rely on gender stereotypes when evaluating these women and whether or not they deemed suitable for office. Empirical results on the occurrence and path of gender stereotypes are useful to be able to understand the type of context in which female candidates are perceived in politics.

Status of Political Gender Stereotypes

Research has shown that American voters often rely on stereotyped thinking about males and females in the political arena (Alexander & Andersen 1993; Huddy & Terkildsen 1993a; Rosenwasser & Dean, 1989). The common thread of the research is that the public's reliance on gender stereotypic attitudes is harmful to female candidates.

This is because voters make negative assumptions about female candidates' traits and abilities. Female candidates are also given certain stereotypic capabilities regarding what policies they can handle and which policies they cannot. They are also stereotypically judged regarding their personality. In regards to gender stereotypic personality traits, female candidates are perceived as honest, expressive, and compassionate; while men are perceived as strong leaders competent, good at handling a crisis, and decisive (Alexander & Andersen 1993; Burrell 2008; Huddy & Terkildsen 1993a; Kahn 1996; Leeper 1991; Sapiro 1981). These assumptions are stereotypes. These assumptions and male and female candidates also align to stereotypic thinking about how candidates associate with policy issues. Female candidates are thought to be concerned with, and effective in, handling policy issues such as education, women's issues, child care, environmental issues, and poverty; while male candidates are thought to be concerned with, and more effective in, handling policy issues such as taxes, developing the economy, military, and agriculture (Alexander & Andersen 1993; Dolan 2010; Huddy & Terkildsen 1993a; Rosenwasser & Dean 1989).

Voter also make these negative assumptions because often times the media will pay particular attention to the female candidate's appearance, which in turn activates a gendered bias schema. This gender bias schema is especially harmful to female candidates because, as Miller and Peake (2013) have discovered, when the media covers anything that has to do with appearance (e.g. their face) female candidates are more negatively affected than male candidates.

On the other hand, some research says that as voters become more familiar with female candidate running for office, media coverage about their appearance is no longer harmful (Hayes & Lawless, 2013). Research has further demonstrated that explicit bias against female candidates is being decreased. Female candidates who run office win at the same rate as equally positioned male candidates. It has been suggested the small number of female candidates is what explains female's being underrepresented (Lawless & Fox 2010; Seltzer, Newman, & Voorhees 1994). Clearly, the empirical evidence above suggests both the existence of political gender stereotypes, and also the decrease of explicit bias and an alternative explanation. However, the connection between these sets of findings regarding female candidate in politics is less understood.

One of the more essential notions in regards to gender stereotypic beliefs of both male and female candidates is that voters' ideas about candidates' abilities and skills may independently and innately serve as a bias for the voter's decision to accept or reject that particular candidate. Much of the previous literature outlined on female candidate stereotypes is a cause for concern because the presence of this gender stereotypic view could just be a result in a voters' failure to see female candidates' right set of policies or skills to be deemed as successful leaders (Fox & Smith 1998, Lawless 2004). This is supported by research done by Sanbonmatsu (2002), who details a concept described as, "baseline gender preference." A baseline gender preference suggests that people have a preference to be represented by either a female or a male candidate, and that this preference is partially determined by gender stereotypic beliefs. However, as previously stated, it is not clear as to how voters who encompass gender stereotypic beliefs end up

choosing, or not choosing to vote for female candidates. That is, under what conditions stereotypic beliefs help or hinder female candidates' campaigns.

Social Dominance Theory

Pratto, Sidanius, Stallworth, and Malle (1994) developed the Social Dominance Theory (SDT) in response to the pervasiveness of group conflict and group based inequality in the world. The behaviors, which stemmed from these conflicts and inequities, were justified by historical injustices, cultural theories of in-group superiority, territorial boundaries, and so on. The SDT posits that societies minimize group conflict by creating an agreement on ideologies that promote the superiority of one group over another (Sidanius, Pratto, Martin, & Stallworth, 1991). Ideologies that promote group inequality legitimize discrimination. In order to work, these ideologies must be widely accepted within a society. That is, appearing as a truth. As a result, these ideologies were named hierarchy enhancing. Other ideologies serve to reduce the amount of inequality. These are inclusive, and egalitarian ideologies that do not divide people into categories or groups. To the extent that such ideologies are widely shared, there should be less group inequality. These ideologies were named hierarchy attenuating.

Given the SDT, the authors found it important to understand the factors that lead to the acceptance or rejection of ideologies that enhance or attenuate inequality. The SDT posits that one of its significant factors is called social dominance orientation (SDO). This is the extent to which one wants one's in-group to be dominating and be superior to out-groups. The SDO is a general orientation about a person's attitude toward intergroup relations, reflecting whether one generally prefers equality or inequality. The theory

states that those who are socially dominant will favor hierarchy-enhancing ideologies, while those who are not socially dominant will favor hierarchy-attenuating ideologies.

The SDO measures constructs such as intergroup behavior, prejudice attitudes, and sociopolitical ideologies. SDO is defined as one's individual preference for inequality and hierarchy among social groups. Individuals who score high on SDO favor hierarchy-enhancing ideologies and policies, while individuals who score low on SDO favor hierarchy-attenuating ideologies and policies. Extensive reliability and validity studies by Pratto, Sidanius, Stallworth, and Malle (1994) have shown that the SDO predicts individual prejudice and persecution beliefs against Latinos, African Americans, gay people, women, and so on. Additionally, SDO is related to group-relevant ideologies such as political conservatism, noblesse oblige, patriotism, nationalism, militarism, and sexism. SDO is also related to attitudes toward inter-group policies such as support for war, death penalty, social welfare, and humanitarian practices.

CHAPTER III

METHODOLOGY

Participants

Three hundred twenty-seven participants (mean age = 24 years 6 months, $SD = 2.94$, age range = 18 years to 29 years; 49.8% male) were recruited widely across the United States [40 of the 50 states, with the highest and lowest frequency from California ($N = 42$) and Texas ($N = 26$), respectively] using the Amazon Mechanical Turk (MTurk) online survey-participation platform. Participants were monetarily compensated fifty cents for their time. Demographic data revealed the participants' primary language was English (98.8%), and their ethnic composition was White (73.7%), African American (8.3%), Hispanic (7.3%), and Asian (6.7%).

Design

Three factors, Candidate Gender, Candidate Competence, and Competitor Gender were combined to yield eight experimental conditions. The resulting factorial design was a 2 Candidate Gender (Male vs. Female) X 2 Candidate Competence (Low vs. High) X 2 Competitor Gender (Male vs. Female) fixed analysis of variance.

Experimental Materials

The experiential materials consisted of four candidate faces, three contextual source documents, a measure of social dominance, a candidate evaluation questionnaire,

and a demographic data sheet.

Candidate Faces

Twenty faces of political candidates were selected from a database containing photographs of 248 and 302 candidates who had previously run for United States Gubernatorial and Senatorial positions, respectively (Ballew and Todorov, 2007; Olivola and Todorov, 2010; Todorov et al., 2005).

All the candidate photographs from the database were black and white with a gray scale background, measuring 150 x 207 pixels. The selection of the 20 photographs was made on the basis of perceived competence and gender, with five high and five low perceived competent faces chosen for ten male and ten female candidates.

In order to ensure the twenty faces were appropriately assigned to high and low levels of perceived competence for each gender category, each face was evaluated by 81 18-29 year-olds sampled from MTurk. Results indicated that the ten high competent faces were rated as significantly more competent than the ten low competent faces, $t(80) = 11.35, p = .000$; and, there was no difference in competence ratings between males and females within each competence group [low: $t(80) = .974, p = .127$; high: $t(80) = -1.5, p = .127$]. After it was determined the faces varied on perceived competence between groups, but not within groups, one face was selected from each of the four competence-gender groups. Thus, the four selected faces for the present investigation consisted of: one high competent male ($M = 7.2, SD = 1.8$), and female ($M = 6.9, SD = 1.5$), and one low competent male ($M = 4.7, SD = 1.8$), and female ($M = 4.9, SD = 1.6$). (See Figure 1). Paired T-tests indicated no differences in competence ratings comparing the male and

female candidate within their respective competence group [low: $t(73) = .12, p = .254$; high: $t(76) = -1.5, p = .129$]. Results further indicated the final high competent male and female were rated as significantly more competent than the final low competent male and female candidates, $F(12, 67; MSe = 1.64) = 2.27, p = .017, \eta^2 = .289$.



Figure 1.

In order to confirm the competence ratings could not be alternatively explained by other potentially related variables, the faces were also evaluated by the same participants for attractiveness, baby-facedness, and familiarity on a Likert-like scale ranging from zero (*Not at all*) to ten (*Extremely*). Furthermore, the faces were rated for perceived age on a continuous scale, ranging from zero years old to one hundred years old. Results of the evaluations revealed that, for both high competent males and females, competence was not related to attractiveness, baby-facedness, familiarity, or age. However, competence was significantly related to attractiveness for both low competent males and females, [Low male: $r(79) = .358, p = .001$; Low female: $r(79) = .297, p = .007$]. As a result, an attractiveness scale was included in the final procedure as a control variable.

Contextual Source Documents

Source documents were provided as a context and information resource for participants to evaluate each of the four candidates. Three sources of varying perspectives were provided—a document written from the perspective of: (a) the candidate, (b) a supporter of the candidate, and (c) a non-supporter of the candidate.

The document from the candidate's perspective, a 161-word text containing 11 sentences, with a Flesch reading ease = 50.6, and a Flesch-Kincaid grade level = 9.8, was written as the candidate's personal political statement. Information in the personal statement consisted of political issues on which the candidate intended to focus if elected. These political issues were five United States policies selected from Google Trends' top searched policy issues surrounding the 2016 election. These issues included: immigration, education, same-sex marriage, taxes, and the economy. Although some policy issues are associated with one political affiliation more than another, the personal statement was crafted to be as neutral as possible. In order to ensure the statement was neutral, participants ($N = 25$ randomly sampled from MTurk) rated their opinion on a Likert scale ranging from one (*extremely liberal*) to twelve (*extremely conservative*). The results determined the personal statement to be politically neutral ($M = 5.8$, $SD = 1.9$).

The document supporting the candidate was a 168-word text containing 13 sentences, with a Flesch reading ease = 53.6, and a Flesch-Kincaid grade level = 8.7, providing positive candidate descriptions. Alternatively, the non-supporter document was a 165-word text containing 17 sentences, with a Flesch reading ease = 46.7, and a Flesch-Kincaid grade level = 9.1, providing negative information about the candidate.

The supporting and non-supporting documents were designed to include descriptors related to the concept of competence or incompetence, respectively. In order to define these descriptors, participants (N = 41 randomly sampled from an undergraduate Psychology class) wrote down 10 words each related to both competence and incompetence. Thus, 286 competence and 222 incompetence descriptors were collected in total, with some descriptors redundantly listed. Descriptors repeated four or more times underwent further testing, resulting in 25 competent and 25 incompetent descriptors. A different group of participants (N = 37 randomly sampled from an undergraduate Psychology class) then rated the remaining 50 descriptors for their relatedness to the concept of competence on a bipolar scale ranging from -7 (*Extremely incompetent*) to +7 (*Extremely competent*). The results yielded nine competent, and nine incompetent descriptors (See Table 1).

Table 1.

Means and Standard Deviations of Final Nine Competent, and Incompetent Descriptors

Descriptor Type	Descriptor	Mean	SD
Competent	Dedicated	3.19	.97
	Reliable	3.08	.98
	Leader	3.18	.99
	Responsible	2.89	1.01
	Experienced	2.79	1.01
	Kind	2.18	1.09
	Caring	2.30	1.11
	Humble	2.32	1.23
	Courageous	2.27	1.41
Incompetent	Untrustworthy	-3.79	.95
	Prejudiced	-3.13	.99
	Disorganized	-2.64	1.03
	Weak	-2.63	1.13
	Inexperienced	-2.98	1.19
	Close-minded	-2.48	1.53
	Arrogant	-2.56	1.79
	Biased	-2.05	1.86
	Inconsistent	-2.27	1.88

Finally, the 18 descriptors were then paired with a political behavioral example in order to create an ecologically valid supporting and non-supporting document. Thus, the competent and incompetent descriptors paired with their respective behavioral examples were tested to determine the concreteness, memorability, and correspondence between the descriptor and its example on three separate Likert scales ranging from 0 to 10. A 2 Descriptor (Competent vs. Incompetent) X 3 Example (Concreteness vs. Memorability vs. Correspondence) within-subjects ANOVA yielded no significant differences for either the descriptor, example, or descriptor x example conditions, revealing that the descriptors and their examples were satisfactorily and equivalently concrete, memorable, and correspondent.

Social Dominance Orientation

Social dominance was assessed using the Social Dominance Orientation (SDO) scale. The SDO is comprised of 14 7-point Likert scales measuring social dominance orientation, defined as an individual's preference for inequality and hierarchy among social groups. The instrument requires respondents to denote either a positive or negative opinion about 14 statements favoring equality or inequality. Respondents rating inequality statements high and equality statements low are regarded as favoring hierarchy-enhancing ideologies and policies; respondents rating equality and inequality statements in the opposite direction favor ideologies and policies that are hierarchy-attenuating.

The authors of the SDO report internal consistency reliability across 13 samples, averaging $\alpha = .83$, in addition to stability over three months ($r = .81$, $p < .01$) (Pratto,

Sidanius, Stallworth & Malle, 1994). Pratto et al. (1994) also report predictive validity of the SDO with political-economic conservatism ($r = .38, p < .05$), Republican Party preference ($r = .28, p < .05$), chauvinist policies ($r = .34, p < .05$), and women's rights ($r = -.49, p < .05$).

Candidate Evaluation Questionnaire

The candidate evaluation questionnaire was used to assess how participants felt, and what they learned, about the candidate after viewing the contextual source documents. The questionnaire consisted of two essays requiring participants to write their overall impression of the candidate and their likelihood of voting for him or her, as well as three Likert scales—one measuring perceived competence, another measuring attractiveness, and a third measuring likelihood of voting for the candidate—ranging from zero (*Not at all*) to ten (*Extremely*). A fourth continuous scale was included to measure participants' financial contribution to the candidate, ranging from zero dollars (*None at all*) to two hundred dollars (*A great deal*).

The two essays were used to assess what type of evidentiary support participants used from the contextual source documents to determine their justifications for having a positive or negative impression, and why they would or would not vote for the candidate.

Demographic Data Sheet

Demographic data were collected for age, sex, ethnicity, language, geographic region, city size, education, marital status, political ideology, and profession.

Procedure

The procedural sequence began with an age screen in which one 12-item multiple-choice question required participants to identify their age. Only participants between the ages of 18 and 29 were allowed to continue. Following the age screen, participants were presented with a welcome page, an informed consent, a warning page describing how subsequent materials would be timed, and overall instructions. After that, participants were randomly assigned to one of the eight experimental conditions. In all conditions, the two faces were presented for four seconds, with the candidate presented on the left side of the screen, and the competitor placed on the right. After the four seconds, the competitor face disappeared and was replaced with a sentence informing participants that they would read documents associated with the candidate's campaign. Next, the page containing the candidate's personal statement appeared, followed by two subsequent pages containing either the supporting or non-supporting documents in counter-balanced order. One minute and fifteen seconds was allotted for each document.

The procedural sequence ended with the candidate evaluation questionnaire, followed by the Social Dominance Orientation, and finally, the demographic questionnaire. On average, it took participants 12 minutes and 14 seconds to complete the experiment.

Data Source

Essays were scored for the amount of evidentiary support, if any, participants used to formulate their overall impression of, and voting likelihood for, the candidate using a

bipolar coding scheme ranging from negative three to positive three. For the overall impression, the negative side of the scale was characterized as having a poor impression of the candidate. A negative three was awarded if participants had a poor impression for more than one specific reason; a negative two was given if participants had a poor impression with one specific reason; a negative one was given if participants were unable to state why they had a poor impression. A score of zero was awarded if participants had a neutral impression of the candidate. The positive side of the scale mirrored the negative. The same coding scheme was used to score the essay for likelihood of voting for the candidate. Three independent raters, blind to participants' placement in experimental conditions, scored all of the essays for both measures, yielding an intraclass correlation (ICC) of $r(325) = 0.98, p < 0.001$, and $r(325) = 0.99, p < 0.001$, for impression and voting, respectively.

Additionally, the two essays were scored collectively to determine what types of characteristics were attributed to the candidate—that is, how many of the nine competent and nine incompetent descriptors from the contextual source documents were used to describe the candidate across both the impression and voting evaluations. Given there were nine competent descriptors in the supporting document, the coding scheme ranged from zero (no competent descriptors mentioned) to nine (all competent descriptors mentioned). The same coding scheme was used for incompetent descriptors. Again, three independent raters, blind to participants' placement in experimental conditions, scored the count of competence and incompetence descriptors separately, yielding ICCs for competence, $r(325) = 0.95, p < 0.001$, and incompetence, $r(325) = 0.95, p < 0.001$, respectively.

CHAPTER IV

RESULTS

In order to ensure that groups did not vary from one another on fundamental variables underlying the experimental design, four 2-Candidate Competence (High vs. Low) X 2-Candidate Gender (Male vs. Female) X 2 Competitor Gender (Male vs. Female) Analyses of Variance (ANOVAs) were conducted across all eight conditions for political ideology ($M = 5.11$, $SD = 3.12$), social dominance ($M = 63.84$, $SD = 8.5$), education ($M = 11.94$, $SD = 1.68$), and age ($M = 24.56$, $SD = 2.9$). It was discovered that across all conditions participants did not differ in their political ideology ($p = .756$), level of social dominance ($p = .354$), level of education ($p = .194$), or age ($p = .281$).

After group equivalency was established, a series of 2-Candidate Competence (High vs. Low) X 2-Candidate Gender (Male vs. Female) X 2 Competitor Gender (Male vs. Female) Analyses of Covariance (ANCOVA) were conducted to investigate differences among six dependent variables. The six dependent variables included four indices representing peoples' general perceptions of the candidate, and two indices representing peoples' behavioral outcomes for the candidate. The four indices of general perception included: perceived competence, overall impression, attribution of competent, and incompetent descriptors used to describe the candidate; while the two indices of behavioral outcomes included: likelihood of voting, and financial contribution to a candidate's campaign. Each of the below sections outlines six hypotheses, which correspond directly to the six dependent measures. In all cases, the first four hypotheses

represent the perceptual measures, while the final two hypotheses represent the behavioral outcome measures.

All analyses were controlled for facial attractiveness, and evaluated at the .05 level with simple effects tests adjusted for alpha inflation using a Bonferroni correction.

Candidate Competence

In regards to question 1, “would candidate competence affect perceptions of and behavioral outcomes for the candidate?,” six competing theoretical predictions were empirically contrasted:

Hypothesis 1: High competent candidates will be perceived as more competent;

Hypothesis 2a: High competent candidates will be given a more positive overall impression;

Hypothesis 2b: High competent candidates will attributed more competent descriptors;

Hypothesis 2c: High competent candidates will attributed fewer incompetent descriptors;

Hypothesis 3a: High competent candidates will receive a higher likelihood of voting; and,

Hypothesis 3b: High competent candidates will receive a larger financial contribution

Results indicated that perceived competence differed significantly across candidate competence, $F(1, 318) = 8.19$, $MS_{error} = 5.1$; $p = .004$; partial $\eta^2 = .025$. Low competent candidates were perceived as significantly less competent ($M = 5.08$; $SD = 2.55$) than high competent candidates ($M = 5.69$; $SD = 2.61$). This confirms Hypothesis 1a. Results failed to yield reliable differences in both overall impression ($p = .416$) and attribution of competent descriptors ($p = .103$), which does not support Hypothesis 2a or

Hypothesis 2c. However, results revealed that attribution of incompetent descriptors differed significantly, $F(1,318) = 6.89$, $MS_{error} = .018$; $p = .009$; partial $\eta^2 = .021$. Low competent candidates were attributed significantly more incompetent descriptors ($M = 12.1\%$; $SD = 15.7\%$) than high competent candidates ($M = 8.3\%$; $SD = 11.4\%$). This confirms Hypothesis 2c.

Results furthermore indicated that likelihood of voting differed significantly, $F(1,318) = 6.37$, $MS_{error} = 5.83$; $p = .012$; partial $\eta^2 = .020$. Low competent candidates were significantly less likely to be voted for ($M = 3.16$; $SD = 2.87$) as compared to high competent candidates ($M = 3.70$; $SD = 2.96$). This confirms Hypothesis 3a. Results failed to yield reliable differences in financial contribution ($p = .486$), which does not support Hypothesis 3b.

Candidate Gender

In regards to question 2, “would candidate gender affect perceptions of and behavioral outcomes for the candidate?,” six competing theoretical predictions were empirically contrasted:

Hypothesis 4: There would be no difference between male and female candidates perceived competence;

Hypothesis 5a: Male candidates will be given a more positive overall impression;

Hypothesis 5b: Male candidates will attributed more competent descriptors;

Hypothesis 5c: Male candidates will attributed fewer incompetent descriptors;

Hypothesis 6a: Male candidates will receive a higher likelihood of voting; and,

Hypothesis 6b: Male candidates will receive a larger financial contribution

Results failed to yield reliable differences in perceived competence across candidate gender ($p = .058$), which supports Hypothesis 4. However, results indicated that overall impression differed significantly in the same design, $F(1,318) = 5.32$, $MS_{error} = 3.5$; $p = .022$; partial $\eta^2 = .016$. Participants were more likely to feel neutral toward a male candidate ($M = -.27$, $SD = 2.07$), while feeling negative toward a female candidate ($M = -.55$, $SD = 2.02$). This partially supports Hypothesis 5a. Results failed to yield reliable differences in attribution of competent descriptors ($p = .916$), which does not support Hypothesis 5b. Although, results did indicate that attribution of incompetent descriptors differed significantly, $F(1,318) = 4.36$, $MS_{error} = .018$; $p = .038$; partial $\eta^2 = .015$. Female candidates were attributed significantly more incompetent descriptors ($M = 11.4\%$, $SD = 14.8\%$) than male candidates ($M = 8.9\%$, $SD = 12.7\%$). This supports Hypothesis 5c.

Results failed to yield reliable differences in likelihood of voting ($p = .062$), which does not support Hypothesis 6a. However, results revealed that financial contribution to a candidate differed significantly across candidate gender, $F(1,317) = 4.70$, $MS_{error} = 1836.65$; $p = .031$; partial $\eta^2 = .015$. Participants donated significantly more money to a male candidates campaign ($M = \$29.19$, $SD = \$50.35$) than a female candidate's campaign ($M = \$23.33$, $SD = \$45.51$). This supports Hypothesis 6b.

Candidate Competence across Candidate Gender

In regards to question 3, “would candidate competence across candidate gender affect perceptions of and behavioral outcomes for the candidate?,” six competing theoretical predictions were empirically contrasted:

Hypothesis 7: High competent male candidates will be perceived as more competent;

Hypothesis 8a: High competent male candidates will be given a more positive overall impression;

Hypothesis 8b: High competent male candidates will attributed more competent descriptors;

Hypothesis 8c: High competent male candidates will attributed fewer incompetent descriptors;

Hypothesis 9a: High competent male candidates will receive a higher likelihood of voting; and,

Hypothesis 9b: High competent male candidates will receive a larger financial contribution

Results failed to yield any reliable differences across the perceptual measures, perceived competence ($p = .491$), overall impression ($p = .278$), attribution of competent descriptors ($p = .978$), and incompetent descriptors ($p = .566$) across candidate competence and candidate gender, which do not support hypothesis 7 through 8c.

Results further failed to reveal any differences across the behavioral outcome measures, likelihood of voting ($p = .204$), and financial contribution ($p = .520$), which does not support Hypotheses 9a or 9b.

Candidate Competence and Candidate Gender across Competitor Gender

In regards to question 4, “would candidate competence and candidate gender across competitor gender affect perceptions of and behavioral outcomes for the candidate?,” six competing predictions were open-endedly contrasted:

Hypothesis 10: There will be differences in perception competence;

Hypothesis 11a: There will be differences in overall impression;

Hypothesis 11b: There will be differences in attribution of competent descriptors;

Hypothesis 11c: There will be differences in attribution of incompetent descriptors;

Hypothesis 12a: There will be differences in likelihood of voting; and,

Hypothesis 12b: There will be differences in financial contribution

Results failed to yield any reliable differences across the perceptual measures, perceived competence ($p = .763$), overall impression ($p = .420$), attribution of competent descriptors ($p = .150$) and incompetent descriptors ($p = .555$), across candidate competence, candidate gender, and competitor gender, which do not support hypothesis 10 through 11c.

Results further failed to reveal any differences across the behavioral outcome measures, likelihood of voting ($p = .899$), and financial contribution ($p = .732$), which does not support Hypotheses 12a or 12b.

Given the fact that candidate competence and candidate gender did not interact with any of the variables, and because candidate competence and candidate gender did not interact on either level of competitor gender, we became interested in the influence of

candidate competence relative to the relative to the competitor's gender, as well as candidate gender relative to the relative to the competitor's gender

Candidate Competence across Competitor Gender

In regards to question 5, "would candidate competence across competitor gender affect perceptions of and behavioral outcomes for the candidate?," six competing predictions were open-endedly contrasted:

Hypothesis 13: There will be differences in perception competence;

Hypothesis 14a: There will be differences in overall impression;

Hypothesis 14b: There will be differences in attribution of competent descriptors;

Hypothesis 14c: There will be differences in attribution of incompetent descriptors;

Hypothesis 15a: There will be differences in likelihood of voting; and,

Hypothesis 15b: There will be differences in financial contribution

Results failed to establish any reliable differences in perceived competence across candidate competence and competitor gender ($p = .671$), which does not support Hypothesis 13. However, results demonstrated that overall impression differed significantly, $F(1, 318) = 5.04$, $MS_{error} = 3.5$; $p = .025$; partial $\eta^2 = .016$. Participants were more likely to feel negative toward low competent candidates running against a high competent male competitor ($M = -.81$, $SD = 2.23$), while feeling neutral toward high competent candidates running against a low competent male ($M = -.17$, $SD = 2.04$) (See Figure 2). This partially supports Hypothesis 14a.

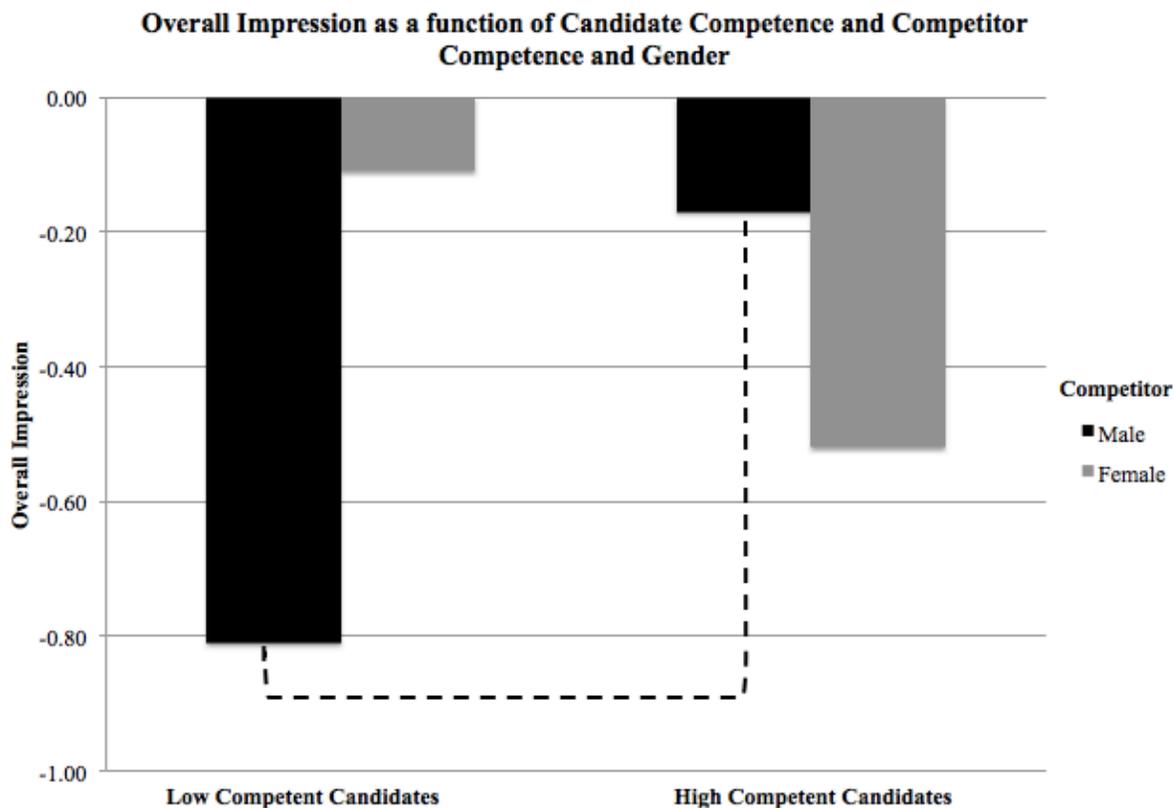


Figure 2.

Additionally, attribution of competent descriptors differed significantly, $F(1, 318) = 7.65$, $MS_{error} = .007$; $p = .006$; partial $\eta^2 = .023$. High competent candidates running against a low competent female competitor were attributed fewer competent descriptors ($M = 4.1\%$, $SD = 7.5\%$) than high competent candidates running against a low competent male ($M = 7.9\%$, $SD = 11.1\%$). Furthermore, low competent candidates running against a high competent male competitor were attributed fewer competent descriptors ($M = 3.7\%$, $SD = 6.3\%$) than high competent candidates running against a low competent male ($M = 7.9\%$, $SD = 11.1\%$). This supports Hypothesis 14b.

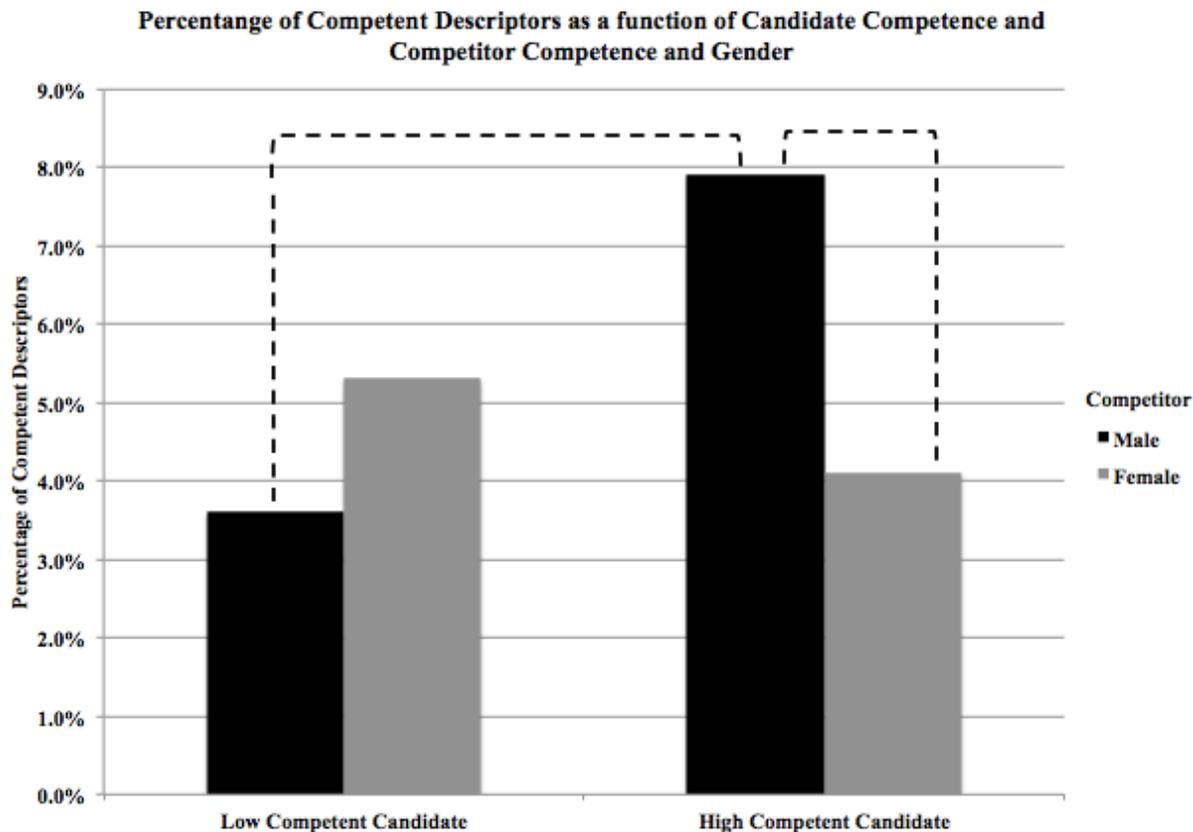


Figure 3.

Results failed to yield reliable differences in attribution of incompetent descriptors ($p = .175$), which does not support Hypothesis 14c.

Likewise, results failed to reveal reliable differences in both voting likelihood ($p = .588$) and financial contribution ($p = .134$), which does not support Hypothesis 15a or 15b.

Candidate Gender across Competitor Gender

In regards to question 6, “would candidate gender across competitor gender affect perceptions of and behavioral outcomes for the candidate?,” six competing predictions were open-endedly contrasted:

Hypothesis 16: There will be differences in perception competence;

Hypothesis 17a: There will be differences in overall impression;

Hypothesis 17b: There will be differences in attribution of competent descriptors;

Hypothesis 17c: There will be differences in attribution of incompetent descriptors;

Hypothesis 18a: There will be differences in likelihood of voting; and,

Hypothesis 18b: There will be differences in financial contribution

Results signified that perceived competence differed significantly across candidate gender and competitor gender, $F(1, 318) = 3.89$, $MS_{error} = 5.1$; $p = .050$; partial $\eta^2 = .012$. A female candidate running against a female competitor was perceived as less competent ($M = 4.89$, $SD = 2.79$) than a male candidate running against a female competitor ($M = 5.78$, $SD = 2.39$). This supports Hypothesis 16.

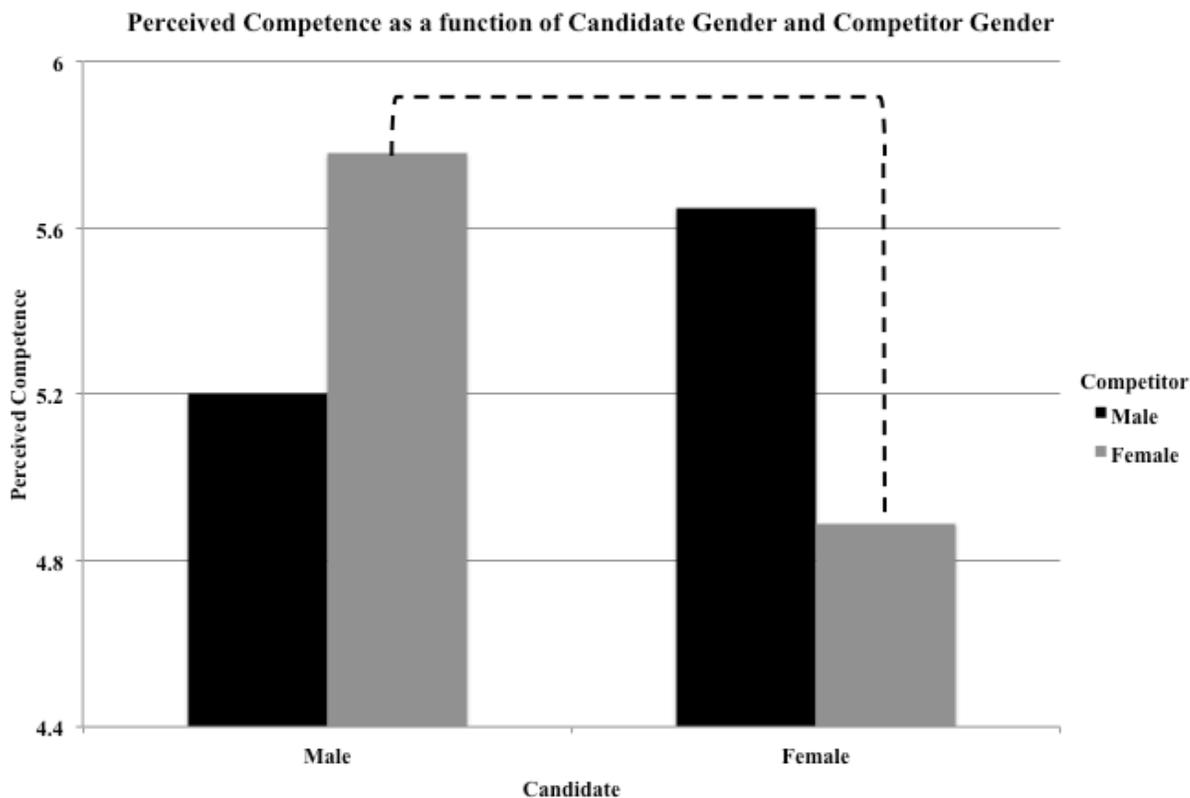


Figure 4.

Results also revealed that overall impression differed significantly, $F(1, 318) = 7.24$, $MS_{error} = 3.5$; $p = .008$; partial $\eta^2 = .022$. A female candidate running against a female competitor was given a more negative overall impression ($M = -.80$, $SD = 1.81$), while a male candidate running against a female competitor was given a positive impression ($M = .14$, $SD = 1.92$). Additionally, a male candidate running against a male competitor was given a more negative overall impression ($M = -.67$, $SD = 2.13$), while a male candidate running against a female competitor was given a positive impression ($M = .14$, $SD = 1.92$). This supports Hypothesis 17a.

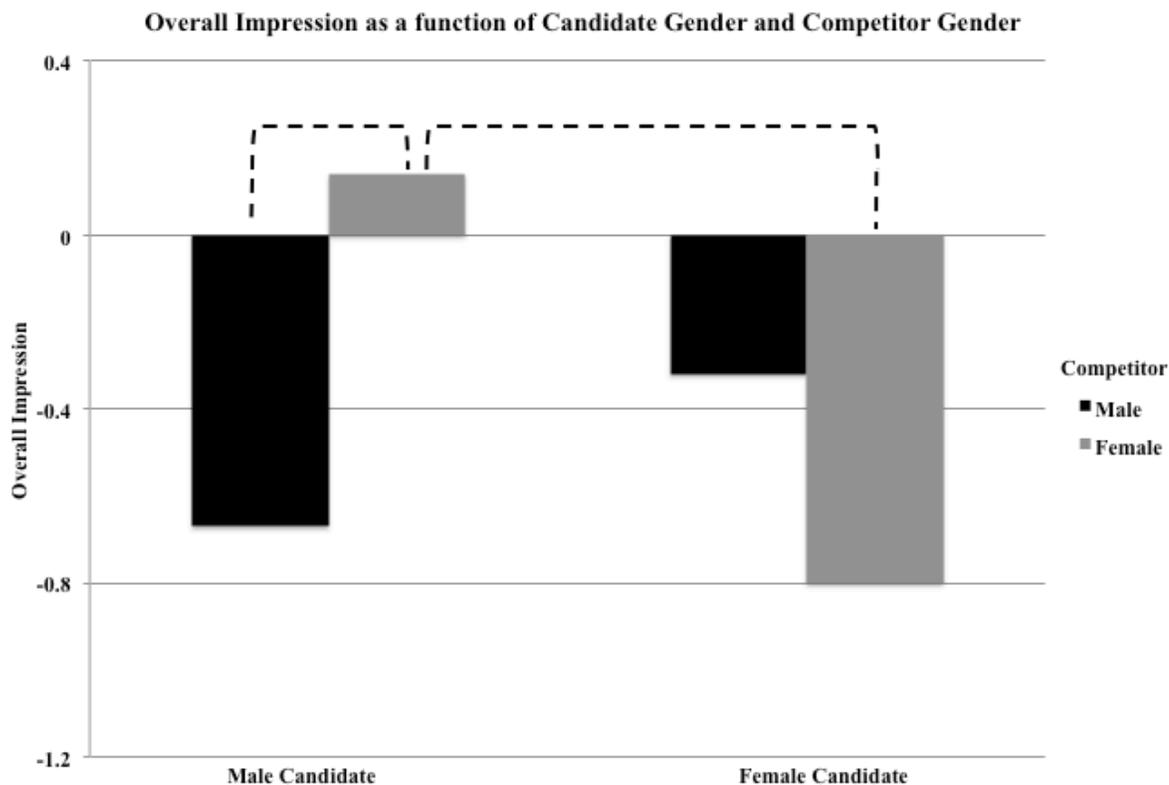


Figure 5.

Results failed to yield reliable differences in both attribution of competent descriptors ($p = .217$) and incompetent descriptors ($p = .886$), which does not support Hypothesis 17b or Hypothesis 17c.

Results reflected that likelihood of voting differed significantly across candidate gender and competitor gender, $F(1,318) = 7.33$, $MS_{error} = 5.84$; $p = .007$; partial $\eta^2 = .023$. A female candidate running against a female competitor was less likely to be voted for ($M = 2.82$, $SD = 2.60$) than both a female competing against a male ($M = 3.84$, $SD = 2.98$), and a male competing against a female ($M = 3.96$, $SD = 2.94$). This supports Hypothesis 18a.

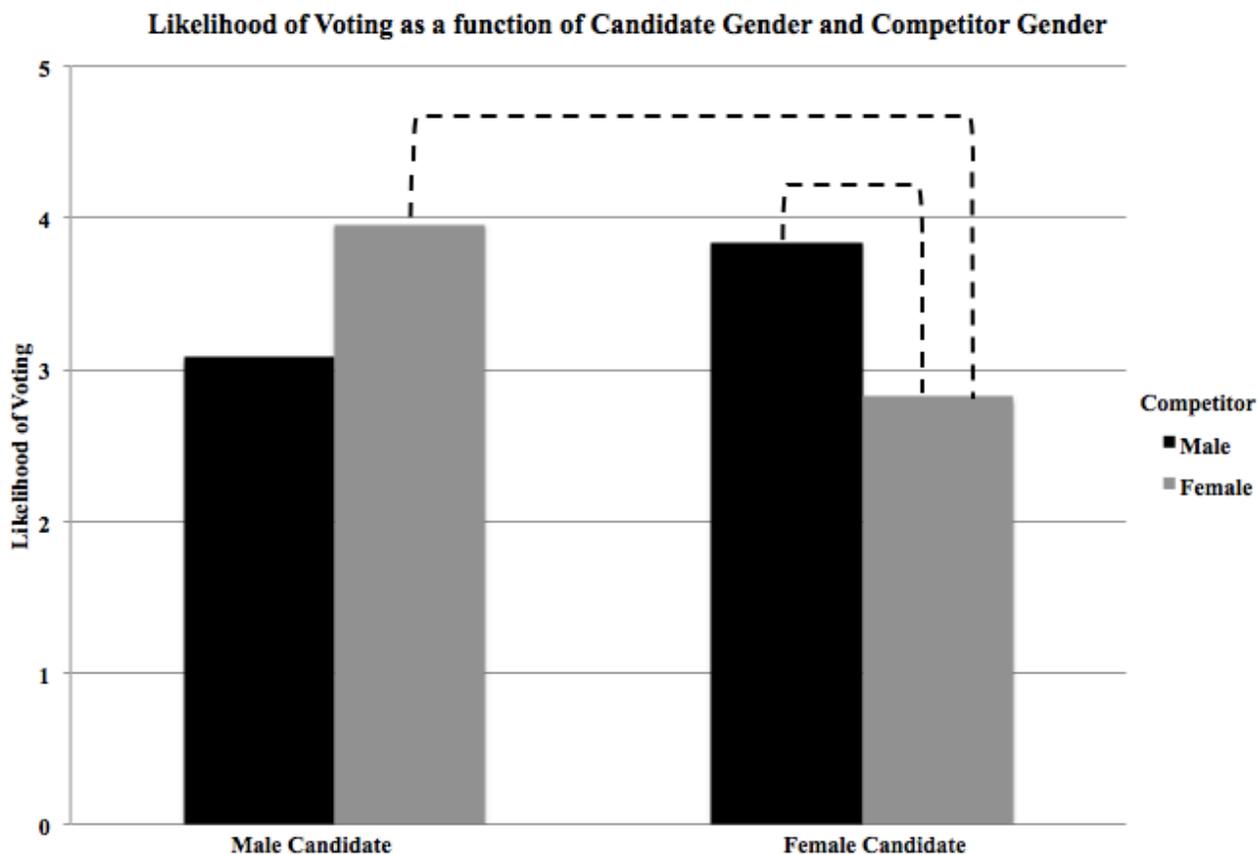


Figure 6.

Finally, results failed to reveal any reliable differences in financial contribution ($p = .179$), which does not support Hypothesis 18b.

CHAPTER V

DISCUSSION

In the present investigation, we outlined three problems underlying the relationship between facial competence and electoral success. Broadly, we aimed to determine whether the facial morphology of a candidate—specifically, facial morphology conveying competence—would influence voters' impressions of a political candidate. In general, the results revealed that differences in overall impression, in addition to different characteristics remembered about the candidate, were reliably influenced as a function, in part, of the candidate's level of facial competence, but only when the presence of the candidate's competitor was considered.

In the first problem, we outlined the lack of thoroughness regarding measurement techniques of facial competence perceptions—specifically, how competence influences longer-term perceptual measures like a voter's overall impression of a candidate and what the voter remembers about the candidate. We aimed to further expand the findings of Hassin and Trope (2000) who demonstrated that a candidate's facial appearance changes the type of semantic information voters remember about the candidate. We aimed to expand this finding by assessing whether the strength of competence, known to be a predictor of electoral success in the domain of politics (Ballew & Todorov 2007; Olivola & Todorov 2010; Todorov et al., 2005), influences the type of semantic information voters remember about the candidate. Therefore, in the present investigation, we asked mock voters to write a brief essay describing their overall impression of the candidate. We reasoned that a candidate's facial competence would influence the overall

impressions of voters as a result of the voters' newly constructed mental model created by primed associated connections in long-term store (Morewedge & Kaneman, 2010; Schnotz, 2014). In addition to the likelihood of voting, we were also interested in determining whether a secondary behavioral outcome would be further influenced by the facial competence of the candidate—specifically, how much a voter would be inclined to donate to the candidate's campaign.

The results of the first problem revealed that none of the four perceptual measures—perceived competence, overall impression, and competent and incompetent descriptors used to describe the candidate—were independently influenced by the candidate's facial competence. Instead, only when the candidate's competitor was taken into account were the four perceptual measures affected. Thus, facial competence, alone, is not always a clear predictor in hypothetical elections—a finding in opposition to the results of Ballew and Todorov (2007), Hall et al. (2009), and Todorov et al. (2005).

The second problem we outlined aimed to further understand how the candidate's competitor would influence voters' perceptual and behavioral reactions to the candidate. Previously, researchers asked voters to make judgments of candidate competence both in the presence, and in the absence, of a competitor. However, presence of the competitors was not systematically controlled (Ballew & Todorov, 2007; Olivola & Todorov, 2010; Sussman, Petkova, & Todorov, 2013). This is problematic because it reveals that the relationship between competence and electoral success was potentially confounded. That is, since the candidates' competitor was neither considered nor controlled, it is impossible to determine whether a candidate's facial competence was solely responsible for the influence on electoral success. We also considered the problem to be one of ecological

validity since candidates rarely run unopposed; and if they do, the relationship of their competence to their electoral success is moot.

Similar to the first problem's findings, the results of the second problem further revealed that candidate competence only influences perceptual and behavioral outcome measures when the competitor's competence level and gender are taken into account. Specifically, our findings partially supported the results of Olivola and Todorov (2010), who discovered that competence predicts vote share equally for male and female candidates, but only when considering the gender of the competitors against whom the candidates were running.

One reason our results do not fully support the findings of Olivola and Todorov (2010) is because they failed to account for the competence level of the candidate's competitor; while we determined that the competence of the competitor does play a role in the perception of the candidate. That is, high competent candidates were attributed more competent descriptors when they were running against a low competent male competitor, as opposed to a low competent female competitor. Based on priming effect literature, it is expected for high competent candidates to receive more competent descriptors as a function of the newly formed "competent candidate" mental model (Hassin & Trope, 2000; Morewedge & Kaneman, 2010; Schnotz, 2014); however, we were able to further reveal that the construction of the "competent candidate" mental model, and subsequent retrieval, was affected by the competitor.

These findings suggest that the associative connections formed when viewing the candidate and competitor photographs were not independently influenced by candidate competence or candidate gender. This means that the associative connections were

influenced by a mere four-second exposure to the candidate's competitor. Therefore, it is plausible to assert that appearance-based trait inferences can occur as a relative judgment. In short, our results clearly show that it is methodologically inappropriate to compare the effects of candidate competence when the candidate was rated both in the presence and the absence of a competitor.

As can be seen from the results in both problems one and two, gender plays a significant role in some perceptual measures of the candidate—thus, the third problem: why gender stereotypes of political candidates negatively affect candidates in some instances, and not in others (Alexander & Andersen 1993; Dolan, 2014; Huddy & Terkildsen 1993a; Lawless 2004; Lawless & Fox 2010; Leeper 1991; Sapiro 1981; Seltzer, Newman, & Voorhees, 1994).

Independent of competence, the results of the third problem yielded differences in candidate perceptions and behavioral outcomes based solely on the competitor's gender. This difference suggests that the discrepancies arising from gender stereotypes of political candidates may have less to do with the candidates themselves, and more to do with the context in which the candidates are featured. We found that a female candidate running against a female competitor was perceived as significantly less competent than a male candidate running against a female competitor. Likewise, voters had a significantly more negative impression of both a female candidate running against a female competitor, and a male candidate running against a male competitor as compared to a male candidate running against a female competitor. In addition, a female candidate running against a female competitor was significantly less likely to receive votes than

both a female candidate running against a male competitor and a male candidate running against a female competitor.

When we examined male and female candidates independently, we found no differences in perceptions of competence, overall impression, or voting likelihood. However, when we systematically varied the gender of the candidate's competitor, voter perceptions reliably changed. Thus, the role a candidate's competitor plays may be more influential in voter perceptions and behaviors than researchers may have previously realized. After Olivola and Todorov's (2010) seminal study citing differences between male-female and male-male pairings, there have been no further investigations testing this gendered bias of competitor effects. Likewise, none of the studies citing the differences in gender stereotypes of political candidates (Alexander & Andersen 1993; Dolan, 2014; Huddy & Terkildsen 1993a; Lawless 2004; Lawless & Fox 2010; Leeper 1991; Sapiro 1981; Seltzer, Newman, & Voorhees, 1994) took into account the perceptual effects of the candidate's competitor. Therefore all three of the problems we aimed to solve during our investigation had similar explanations of the influence of a candidate's facial morphology revealing competence—the competitor.

Research examining the biases of male and female candidates alone show that men are likely to be perceived as competent, but not warm; women, on the other hand, are likely to be perceived as warm, but not competent (Fiske, Cuddy, Glick, & Xu, 2002). Johns & Shepard (2007) further revealed that male candidates received a more positive impression when they were perceived as warm, but female candidates received a more positive impression when they were perceived as competent. Thus, the findings of these two studies may reveal that male-female and female-male pairings complement each

other's biases. The findings may also explain that the voters in our study perceived the female-female pairing as too warm, and not competent enough. This may also explain why the female-female pairings had a higher quantity of negative perceptions and behavioral outcomes than the male-male pairing. It is possible that biases of female candidates were magnified when they were paired with a female competitor—hindering their potential success.

Independent of competitor effects, candidate gender did have a reliable influence on the magnitude of financial donation voters were likely to make. Male candidates received a significantly larger donation than female candidates, regardless of competence or competitor. Notably, the difference in the amount of money intended to be donated to male candidates' campaigns, as opposed to a female candidates' campaigns, is about the same as the gender wage gap of females—a value difference of 79 cents for every dollar earned by males; that is, a difference of 21 percent. (Costello & Hegewisch, 2016) Given that the voters in this investigation had an opportunity to donate no money, it is interesting to realize that both male and female voter's willingness to donate to a female candidate 21% less than males is almost identical to the monetary discrepancy females face in the professional workforce.

Practical Implications

Given very little and ambiguous textual information, voters used a facial morphological cue (e.g. competence), and a contextual clue (e.g. competitor), to make perceptual and behavioral decisions about a candidate. Whereas previous literature has heavily focused on specific candidate attributes that contribute to the success of the

candidate (Ballew and Todorov 2007; Hall et al. 2009; Miller et al. 1986; Todorov et al. 2005), the current investigation was designed to include how contextual factors contribute to the success, or failure, of candidates.

An interesting, and we believe important, finding emerging from the results of this investigation was the hindrance surrounding perceptions and behavioral outcomes for female-female candidate pairings. There has been a dearth of literature regarding perceptions of same-sex political competitors, excluding Olivia and Todorov (2010). However, we reliably found that same-sex candidate pairings for both males and females result in more negative perceptions and lower behavioral outcomes than different-sex candidate pairings. Independent of competence levels, female-female pairings were: (a) perceived as less competent, (b) given a more negative overall impression, and (c) less likely to be voted for compared to male-female pairings. This may suggest that the discrepancies found in both the gender-competence literature, and the gender-stereotype literature may need to consider the context in which a candidate is presented. Based on our findings, paired with the findings Fiske et al. (2002) and Johns and Shepard (2007), we reason context needs to be further considered—specifically, the complementary nature of a gender biases with different-sex political pairings rather than same-sex political pairings.

Given the current pervasiveness of both male and female candidates and competitors, the results of this study further expose a relevance to the democratic nature of the United States. As American citizens, people have the power to vote for leaders they deem fit. The elected leaders then shape the policies that directly affect the citizens, and ultimately world politics. However, the results of our study reveal that whom voters'

deem as fit is deeply biased. Researchers have yet to discover how voters can remedy the impact of candidate appearances, both singular and contextual, in politics. Despite the unknown solution, we reason that conscious awareness of one's implicit biases will decrease voters' engagements in explicit biases. Nevertheless, awareness of biases by itself may not be enough to remedy them; in fact, Plant and Devine (2009) argue that in addition to awareness, people need to care about the outcome of their biases in order to break them. While we acknowledge that motivation is difficult to instill, we believe that voter motivation may increase if voters were to read reliable and valid political information from multiple sources, especially sources that directly conflict with their personal views, in order to become a more informed voter. Once a person becomes an informed voter, cognizant of their biases, they may be more likely to engage in rational voting behavior.

One group of researchers has discovered two moderating factors between appearances and its role in political persuasion, these include: (a) limiting exposure to television, and (b) being politically knowledgeable (Lenz & Lawson, 2011). Similar to Lenz and Lawson (2011), we also believe that becoming more politically knowledgeable will decrease the contextual effects of gendered biases in politics.

Limitations

One limitation in the present investigation is the number of candidate pictures used to symbolize each factor-level of gender and competence. There were only four photographs total, one high competent male, one high competent female, one low competent male, and one low competent female. The lack of diverse representation for

each gender and competence group minimizes the generalizability of the current findings. However, the addition of more candidates to each factor-level, or changing the experiment to a within-subjects design would have negated the nuanced framing effects we achieved. Furthermore, if we had created additional experimental cells in order to preserve the framing effects, we would have decreased the statistical power we were able to achieve. Future investigations may consider partially replicating this study by using different candidate faces in order to determine if the same perceptual effects and behavioral outcomes are present.

Another limitation of the study is also in regards to one of the selected candidate photographs. The high competent male candidate is wearing eyeglasses on his face, whereas none of the other candidates contain an additive feature. Prior research has determined that faces with eyeglasses are perceived as being more intelligent than faces without eyeglasses (Thornton 1943). However, intelligence has also been shown to be associated with competence (Eagly et al. 1991), and there was no difference in competence ratings between the high competent male and high competent female candidate during pilot testing. Future research may want to use more homogenous photographs, and if possible, more sensitive measures of perceptions of intelligence if eyeglasses are present in a candidate photograph.

Conclusion

Our findings have challenged the extent to which candidate competence can be used independently to predict electoral success. Our investigation discovered that the context in which a candidate is presented primes how voters perceive the candidate; in

addition to priming hypothetical voting behaviors. Our results partially replicate the findings of Hassin and Trope (2002) by discovering that priming effects of facial morphology influence the type of semantic information remembered, but only when specific competitor characteristics are taken into account.

Despite our discoveries, the question of how strong this initial impression is still remains. It is unknown under what conditions a voter will be able to modify, or change the initial priming effect of candidate and competitor characteristics. Given the experimental procedure was a short duration of time, we question whether deliberate System 2 processes would have corrected the perceptual System 1 processes had more time been provided (Kahneman & Frederick, 2002; Morewedge & Kahneman, 2010; Slovic, 1996). As such, we suggest future researchers to conduct studies that include a longitudinal feature, such as a week delay between initial exposure to the candidate-competitor pairing and contextual source documents, and the perceptual and behavioral outcome measures.

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