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Implicit candidate traits in the 2016 U.S. Presidential Election: Replicating a dual-process model of candidate evaluations

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ABSTRACT

A major challenge to understanding the causes and consequences of how citizens assess political candidates is the extent to which relevant attitudinal evaluations are accessible at the conscious and unconscious level. The current research examines a dual-process model of candidate trait perceptions in the context of the 2016 U.S. Presidential elections. We expected that implicit evaluations of the warmth and competence of Donald Trump and Hillary Clinton would predict explicit evaluations of the presidential candidates and related political groups, as well as voting behavior. We find that these implicit constructs, especially competence, demonstrated predictive validity for outcomes of interest in the context of the 2016 election, above and beyond explicit analogs, demographics variables, and partisan identification. The larger role of implicit competence, compared to implicit warmth, may be due, in part, to increased assimilation of implicit associations into explicit evaluations on the warmth but not the competence dimension. These findings are suggestive of the possibility that warmth assessments were also consequential in this electoral context, consistent with other research examining the impact of gender stereotypes on evaluations of females in positions of leadership. Implications and future directions for the study of political cognition, gender bias, candidate evaluations, and electoral decision-making are discussed.

1. Introduction

Research in political science investigating voter decision-making traditionally assumes that citizens have introspective access to their attitudes, preferences, and beliefs when making an electoral decision. However, research in psychology indicates that many cognitive processes, associations, and structures that give rise to attitudinal preferences are inaccessible to conscious awareness, either because such mental content is operating at the unconscious level or because it cannot be retrieved through deliberate introspection (Nisbett and DeCamp Wilson, 1977; Winkielman and Schooler, 2011). A major challenge to understanding how citizens assess political candidates, and how these assessments translate into political judgment and behavior, is the extent to which socially and politically relevant psychological processes and attitudinal evaluations are accessible at the conscious and unconscious levels.

Political psychologists have studied how automatic processes relate to attitudes (e.g., Arcuri et al., 2008; Friese et al., 2007; Greenwald et al., 2009; Pérez, 2010, 2013) and have supplemented theories of conscious, explicit processes with theories regarding unconscious,

implicit processes in such areas as voter decision-making (e.g., Lodge and Taber, 2013; Pérez, 2016; for a review, see Ksiazkiewicz and Hedrick, 2013). For example, in the 2012 Presidential Election, Ksiazkiewicz et al., (2018) examined a dual-process model of the unique effects of implicit and explicit trait (i.e., warmth and competence) judgments on vote choice and evaluations of the 2012 presidential candidates, Barack Obama and Mitt Romney. They found that implicit candidate-trait associations, especially competence associations, demonstrate predictive validity above and beyond their explicit counterparts, and that implicit trait associations are more consequential for undecided voters. However, this previous study relied upon a convenience sample of respondents recruited from Amazon's MTurk platform in a single electoral context, so the generalizability of the findings to representative samples and other election contexts and candidates remained untested. More generally, implicit trait perceptions of actual candidates, which are the focus of this study, have largely gone unstudied.¹

The current study seeks to replicate the dual-process model of trait perceptions using a more representative sample and to extend this framework to a new electoral context, a novel set of dependent

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E-mail addresses: joevitriol@gmail.com (J.A. Vitriol), aleksks@illinois.edu (A. Ksiazkiewicz), cfarhart@carleton.edu (C.E. Farhart).¹ Automatic competence perceptions have been studied only in the context of the facial features of unknown candidates (Olivola and Todorov, 2010; Todorov et al., 2005).

variables, and different political candidates—Donald Trump and Hillary Clinton—by recruiting participants during the 2016 U.S. Presidential Election. Given concerns about the replicability of established effects in the social and behavioral sciences (e.g., [Open Science Collaboration, 2015](#)), it is critical to determine whether a similar pattern of results might be observed on an independent, more representative sample. Furthermore, the 2016 U.S. Presidential Election involved the country's first female major party candidate, which might have novel implications for the effects of trait evaluations—both implicit and explicit—on voting behaviors. For example, while men in leadership settings are evaluated primarily along the dimension of competence, women in such settings are judged according to both competence and warmth, potentially creating an additional hurdle for Hillary Clinton on the question of character fitness ([Fiske et al., 2002a,b](#)). Indeed, gender stereotypes characterizing women as warm and nurturing are inconsistent with preferences regarding the kind of traits citizens desire in political leaders, who are expected to be decisive and outspoken ([Eagly and Karau, 2002](#); [Huddy and Terkildsen, 1993](#)). When political communication activates these stereotypes, they can undermine support for female candidates ([Bauer, 2015](#)). In the context of the 2016 presidential election, for example, recent finding suggests that both hostile gender attitudes and preference for traditional gender roles was associated with support for Donald Trump ([Bock et al., 2017](#)). Thus, perceptions of candidates' warmth may therefore be particularly relevant to electoral behavior in the 2016 general election. This possibility is contrary to what has been observed in prior research investigating evaluations of candidates' traits at both the implicit ([Ksiazkiewicz et al., 2018](#)) and explicit level (e.g., [Graefe, 2013](#)), which indicates that competence assessments are more consequential than alternative trait assessments.

In our dual-process approach to candidate evaluations, voters hold both conscious, explicit impressions of candidate traits and automatic, implicit candidate-trait associations. At the explicit level, perceptions of candidate traits are common to presidential campaign coverage (e.g., [Heflick and Goldenberg, 2009](#); [Stanage, 2012](#)), are core features of citizens' cognitive representation of ideal and actual candidates ([Kinder et al., 1980](#); [Miller et al., 1986](#)), and are consequential for political behavior (e.g., [Bartels, 2002](#); [Funk, 1997, 1999](#); [Peterson, 2005](#)).² Implicit associations, however, may not be introspectively accessible (and therefore cannot be measured using self-report) but nonetheless influence voter behaviors (cf. [Evans, 2008](#); [Greenwald and Banaji, 1995](#); [Wilson et al., 2000](#); but see [Gawronski et al., 2006](#), who argue that individuals may be consciously aware of the source and content of their implicit attitudes but unaware of its impact on judgment and behavior). Thus, a dual-process model of candidate-trait associations is situated at the interface of research on implicit political attitudes (e.g., [Fries et al., 2007](#)) and explicit candidate-trait perceptions (e.g., [Bartels, 2002](#)) to highlight the importance of implicit candidate-trait associations.

2. Implicit processes in political contexts

The study of implicit political attitudes, including trait associations, can contribute to our understanding of the psychological processes that underlie voter decision-making in a number of ways. First, implicit associations can account for unexplained variance in traditional models of voter decision-making, as in other domains (e.g., [Greenwald et al., 2009](#)). Accounting for implicit associations, then, is valuable pragmatically, insofar as it increases the predictive power of models of voter decision-making.

² Political scientists have debated whether voters simply ascribe positive traits to the candidates they support and negative traits to their opponents (e.g., [Rahn et al., 1994](#); cf. [Huber, 2015](#)), raising concerns about the endogeneity of these evaluations to existing partisan loyalties and candidate preferences. For implicit associations, however, endogeneity may be less severe because voters lack introspective access to change them in a deliberate or motivated way ([Ksiazkiewicz et al., 2018](#)).

Second, this unexplained variance might not be accounted for by self-reported, explicit attitudes ([Hofmann et al., 2005](#); [Nosek and Smyth, 2007](#)). Implicit and explicit processes are psychologically distinct ([Greenwald et al., 2009](#)). Thus, from a theoretical perspective, accounting for both implicit and explicit processes together provide a more complete picture of the factors that influence voter decision-making.

Third, and most importantly for the current work, implicit measures are largely unaffected by social desirability bias ([Banse et al., 2001](#); [Boysen et al., 2006](#)). In the context of an election where one of the major party candidates is a woman, like the 2016 US presidential election, some voters may have concealed their true explicit assessments in order to appear unprejudiced ([Redlawsk et al., 2010](#)). Similarly, some respondents may have felt that it was socially undesirable to express support for Trump (or Clinton) due to some of the controversies surrounding his (or her) candidacy and may, therefore, conceal their true explicit opinions when asked on a survey. Further, some traits (e.g., warmth) may be viewed as normatively less appropriate for judging political candidates ([Conover and Searing, 2000](#); [Funk, 1997](#); [Kinder et al., 1980](#)). Consequently, people may be less willing to communicate these “true” judgments (to researchers and others). These problems can be at least partially circumvented by measuring implicit candidate-trait associations.

3. The present study

The major question we addressed in this study is whether implicit trait associations shape explicit political judgment, preferences, and behavior (i.e., incremental predictive validity) during the 2016 presidential election. We examined the incremental effect of implicit evaluations of the warmth and competence of major party candidates, Donald Trump and Hillary Clinton. This study focused on perceptions of warmth and competence because these traits are influential in the political science literature (e.g., [Funk, 1999](#)) and because social psychological research indicates that both are fundamental features of person perception ([Cuddy et al., 2008](#)). Across many contexts, warmth and competence perceptions operate orthogonally and correspond with beliefs about the targets' intentions and ability to execute those intentions ([Fiske et al., 2007](#)). Indeed, candidates gain votes when they are perceived as likeable (e.g., [Lewis-Beck and Stegmaier, 2000](#)) and competent (e.g., [Graefe, 2013](#)). Thus, we expected implicit warmth and competence assessments to each predict evaluations of the presidential candidates and related political groups, as well as vote intentions in the 2016 election, above and beyond explicit analogs, demographics variables, and partisan identification (Hypothesis 1). Second, consistent with [Ksiazkiewicz et al. \(2018\)](#), we expected implicit competence assessments to be a stronger and more reliable predictor of outcomes than implicit warmth assessments, especially when covariates are included in the model (Hypothesis 2). We also consider the possibility that implicit warmth may be a more important predictor of voting behavior for elections involving female candidates, consistent with other research on perceptions of females in positions of leadership ([Fiske et al., 2002a,b](#)) and the impact of gender stereotypes on female leaders ([Eagly and Karau, 2002](#); [Huddy and Terkildsen, 1993](#)) and political candidates (e.g., [Bauer, 2015](#)).³

³ These predictions, as well as our methodology and analytical strategy, were pre-registered at [Openscienceframework.com](#) in September 10–16, 2016, before Survey Sampling International collected our data. We also pre-registered a hypothesis regarding the role of partisan strength as a moderator for the incremental effect of implicit constructs. We observed an inconsistent pattern of moderating effects across models and outcomes, so we do not focus our discussion or analysis on this test. However, the results of these analyses are available upon request.

4. Methods

4.1. Data

We utilized data collected as part of a large, multi-investigator study of the 2016 presidential election by the Center for the Study of Political Psychology at the University of Minnesota, utilizing a 4-wave panel design. Specifically, 3557 U.S. citizens were recruited using Survey Sampling International (SSI) for an online survey investigating beliefs about current events and political affairs, and were offered monetary compensation upon completing each wave of the study. Sample size at T1 was determined to increase the likelihood that approximately 1500 participants would be retained across all 4-waves, based on estimated attrition provided by SSI. Attrition for the full sample across the four waves was 49%, with 1730 participants responding to the Time 4 survey. For the analyses reported below, we relied exclusively on measures administered at Time 2 (T2; September 10–16, 2016). However, we also examine the bivariate relationship between these measures and political behavior at Time 4 (T4; November 7–10, 2016). Attrition from T2 ($n = 1565$) to T4 ($n = 1054$) for participants who responded to all of our measures was approximately 33%. The final sample used in the analyses below included 247 U.S. citizens (63% female; mean age = 57.80, $SD = 13.71$), which was a subsample of participants who completed the IAT. T2 sample weights were applied to improve the extent to which these data are nationally representative of the U.S. population. Unweighted estimates are reported in the online appendix.

4.2. Procedures and measures

At the end of T2, a subset of participants was randomly assigned to complete either a competence IAT or warmth IAT. The IATs used a version of the Brief IAT protocol (Sriram and Greenwald, 2009) with practice trials. Participants completed six blocks of trials (12 trials in each of the first two practice blocks; 20 trials in each of the four test blocks). The blocks alternated associating the positive trait (warmth or competence) with each candidate (Trump and Clinton), with the first block randomly chosen to associate the positive trait with Trump or Clinton. The items that were being sorted consisted of four photos of each candidate (matched on expression, background colors, and head orientation) and four positive and negative terms for each of the trait categories.⁴ The response latencies were transformed into D-scores following the recommended procedures (Sriram and Greenwald, 2009; Greenwald et al., 2003).

Before the implicit measures were administered, all participants completed explicit measures of candidate trait evaluations, partisan identification, evaluations of Democrats, Republicans, Liberals, Conservative, and both candidates, Donald Trump and Hillary Clinton, and vote preferences and intentions. Online Appendix Table 1 reports the distribution of vote preference at each wave and Table 2 contains the weighted means, standard deviations, alphas and correlations among all measures used in these analyses. The exact language of all measures is available in the online appendix. All measures used in analyses were obtained at T2, unless otherwise noted, and include implicit (IAT, Greenwald et al., 1998) and explicit candidate-trait measures of warmth/competence of Hillary Clinton or Donald Trump; feeling thermometers about political parties (Republicans vs. Democrats), ideological groups (Conservatives vs. Liberals), and the two major party candidates (Trump vs. Clinton); likelihood of voting for Hillary Clinton or Donald Trump; T2 vote preference Donald Trump

Table 1

Distribution of vote preference at each wave.

	T2 (N = 245)	T4 (N = 138)
Donald Trump	112	66
Hillary Clinton	108	61
Gary Johnson/Third Party/No Vote	25	11

(45.71%), Hillary Clinton (44.08%), or third party candidate Gary Johnson (10.20%); T4 vote preference Donald Trump (42.04%), Hillary Clinton (38.85%), or a third party candidate, which we coded together with respondents who did not vote (19.11%); partisan identification ($M = 0.50$, $SD = 0.37$); gender (0 = female, 1 = male), income, age, education, and race (0 = nonwhite, 1 = white).

4.3. Data analysis plan

4.3.1. Data transformation

IAT response times were recoded into D-scores using the standard techniques (i.e., Greenwald et al., 2003). D-scores were recoded to run from 0 to 1, where 0.5 indicates no association, 0 indicates the maximal Clinton association (i.e., a D-score of -4) and 1 indicates the maximal Trump association (i.e., a D-score of 4).⁵ Vote choice was treated as a multinomial logistic regression with categories including Trump, Clinton, and third-party voting. Scale variables were calculated as additive indexes. Candidate evaluations (e.g., feeling thermometers) were differenced to provide a single scale (degree of preference for Trump/Hillary). All continuous and ordinal variables were rescaled to run from 0 to 1 for easier comparison and estimation of effect sizes. Higher values will either indicate greater presence of the trait or greater support for Trump, conservatism, and Republicanism, as appropriate.

4.3.2. Hypothesis testing

For each dependent variable and each implicit trait construct, we present four models, which differ based on the inclusion of covariates. First, we regress dependent variables on either implicit competence or implicit warmth, without any covariates (Model 1). Second, we regress dependent variables on implicit competence or implicit warmth with corresponding explicit trait assessments included in the model (Model 2). Third, we swapped explicit trait assessments for demographic variables and party identification as covariates (Model 3). Fourth, we regressed each dependent variable separately on each implicit construct, and included corresponding explicit assessments, demographic variables, and partisan identification as controls (Model 4). We used weighted OLS regression to estimate the incremental effects of implicit constructs on continuous dependent variables, and a multinomial probit model to estimate vote choice. Figs. 5 and 6 in the online appendix graphically represent the relationship between implicit-explicit trait dimensions for Clinton and Trump supporters, separately for warmth and competence evaluations.

5. Results

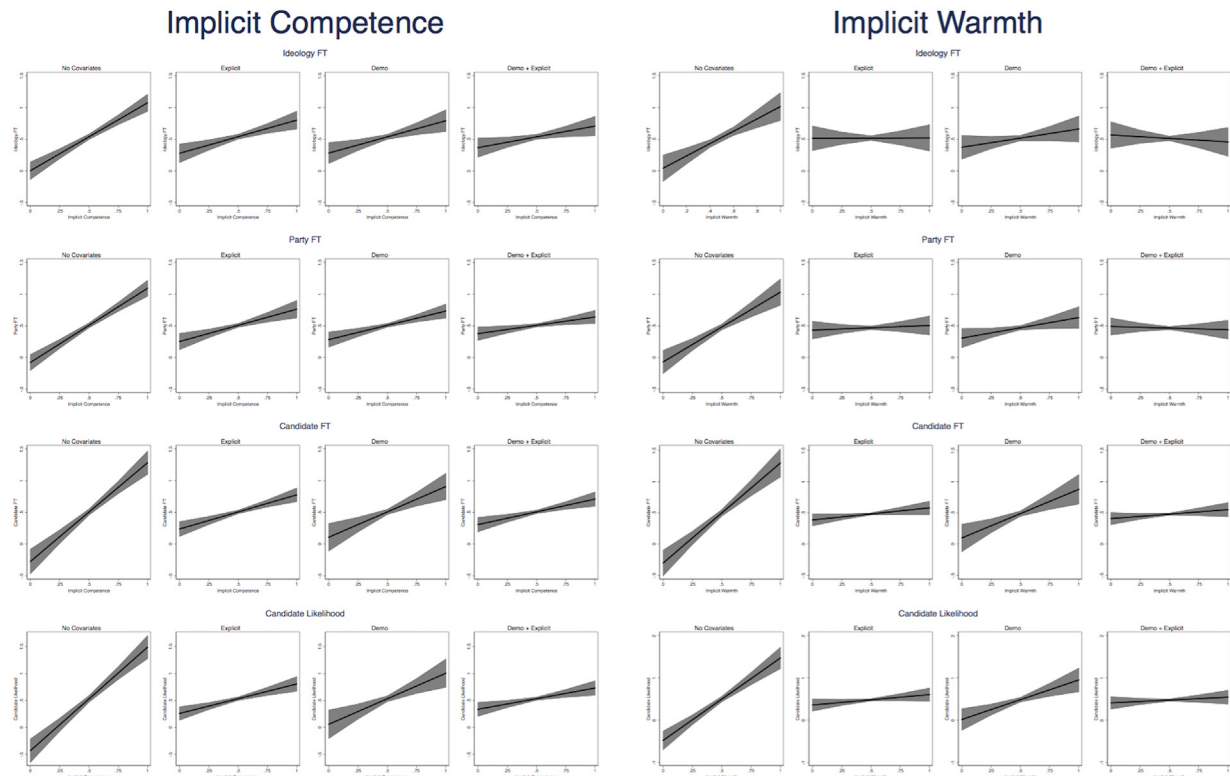
5.1. Evaluations of political parties, ideological groups, and candidates

We began by considering the relationship between each implicit measure and three dependent variables: evaluations of the two major parties, ideological groups, and candidates. Fig. 1 represents, and Tables 3–5 and 8–10 of the online appendix summarize, the estimates

⁴ For competence, the terms were Efficient, Intelligent, Confident, and Capable. For incompetence, the terms were Disorganized, Stupid, Insecure, and Unqualified. For warmth, the terms were Friendly, Well-intentioned, Good-natured, and Sincere. For coldness, the terms were Hostile, Manipulative, Deceptive, and Mean-spirited.

⁵ Although the typical range of IAT scores is -2 to 2 , in this case we utilized a brief IAT that led some participants to respond high error rates that generated D-scores outside of this range. However, following the procedures recommended by Greenwald et al. (2003), we retained these participants. The model estimates when omitting respondents with IAT scores outside -2 to 2 range did not meaningfully or substantively differ from the estimates reported here.

Incremental Effects of Implicit Candidate Evaluations



Error Bars Represent 95% CI

Fig. 1. Weighted incremental of implicit trait associations on continuous DVs.

for the relationship between each implicit construct and each dependent variable across Models 1–4.

We found clear evidence for the effect of implicit competence associations for each dependent variable ($p < .001$). However, when demographic variables, ideological self-placement, and explicit competence assessment are included as covariates (Model 4),⁶ we find that implicit competence only uniquely predict evaluations of the two major party candidates ($b = 0.39$, (95% CI = 0.14, 0.65), $p = .003$). Given that these variables were rescaled to run from 0 to 1, substantively, these findings from Model 4 indicate that, moving from the highest level of observed Clinton-competence associations to the highest levels of Trump-competence associations corresponds with an increase in more positive assessments of Trump (vs. Clinton) 39%.

In contrast, while implicit warmth was a stronger predictor than implicit competence for Model 1 (i.e., without covariates), when explicit warmth was included in the model, implicit warmth was a weaker and less reliable predictor of these dependent variables than implicit competence. Indeed, implicit warmth was a significant predictor of party evaluations ($b = 1.10$, (95% CI = 0.72, 1.48), $p < .001$), ideological group evaluations ($b = 0.97$, (95% CI = 0.56, 1.39), $p < .001$), and candidate evaluations ($b = 1.60$, (95% CI = 1.18, 2.02), $p < .001$) with no other covariates in the model, it only approached significance for candidate evaluations when explicit warmth was included in the model ($b = 0.78$, (95% CI = 0.33, 1.23), $p = .001$). For all other

dependent variables, the effect of implicit associations was overwhelmed by the inclusion of either explicit warmth or demographics (see Fig. 2 in the main text, and Fig. 4 and Tables 8–10 in the online appendix).

In sum, these results demonstrate that implicit competence-associations are a robust, unique predictor of political evaluations above and beyond the impact of explicit competence, demographic variables, and partisan identifications. Implicit warmth associations, while significantly related to candidate evaluations, however, appear to carry little predictive value above and beyond the role of explicit associations, demographic variables, or partisan identification. Thus, for political evaluations, we obtain support for hypothesis 1 and 2. Implicit competence associations, and to a lesser extent implicit warmth associations, are consequential and substantive for political evaluations among both weak and strong partisans, and individuals with both high and low levels of confidence in their preference for the presidency. It is important to note that implicit warmth demonstrated a *stronger* bivariate relationship than implicit competence with these dependent variables, which is consistent with research on the impact of gender stereotypes on evaluations of females in positions of leadership. However, that implicit competence demonstrated a more robust effect with covariates in the model is consistent with prior research on the electoral impact of candidate trait evaluation but inconsistent with work on the impact of gender stereotypes on evaluations of females in positions of leadership. One potential implication of these findings is that warmth assessments are, in fact, more consequential for political judgments in this electoral context, but that implicit associations have been more thoroughly incorporated into explicit judgments for the warmth dimension than the competence assessments. We consider this possibility more in the discussion section.

⁶ Without sample weights, we find significant incremental effects of implicit competence across all continuous dependent variables for Model 1–4 ($p < .05$). These estimates are summarized in Tables 13–16 in the online appendix. Estimates with or without sample weights yield a similar pattern for implicit warmth, and are summarized in Tables 18–21 in the online appendix. Fig. 3 in the online appendix graphically represents the unweighted effects.

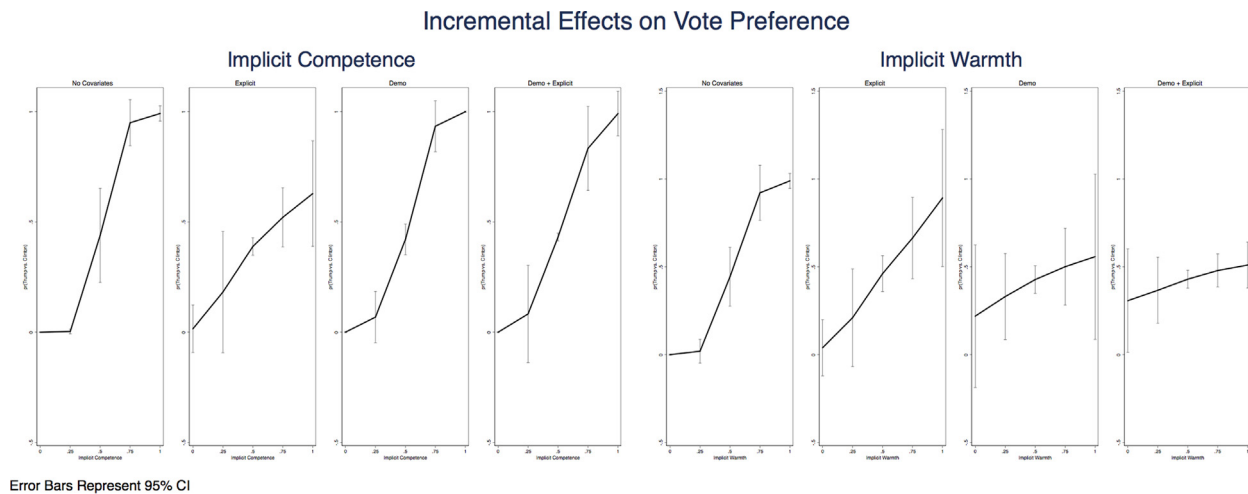


Fig. 2. Weighted incremental of implicit trait associations on vote preference.

5.2. Vote preferences

Here, we examine the relationship between each implicit measure and two dependent variables: expressed likelihood of voting for Donald Trump (vs. Hillary Clinton) and preference for Trump (vs. Clinton or Johnson). Fig. 1 (in the main text) and Fig. 3 (in the online appendix) graphically represents, and Tables 5–6 and 11–12 of the online appendix summarizes the estimates for, the relationship between each implicit construct and both dependent variables for Models 1–4.

We again find clear evidence for the effect of implicit competence associations for each dependent variable. Specifically, when demographic variables, ideological self-placement, and explicit competence assessment are included as covariates (Model 4), we find that implicit competence uniquely predict expressed likelihood of voting for Trump (vs. Clinton; $b = 0.45$, (95% CI = 0.17, 0.72), $p < .01$). For Model 3, we find a significant effect of implicit competence when predicting preference for Trump (vs. Clinton; with explicit competence ($b = 23.66$, (95% CI = 11.86, 35.47), $p < .001$). For Model 4, implicit competent approached significance ($b = 40.85$, (95% CI = -4.12 , 85.82), $p = .075$). Substantively, these findings indicate that, implicit associations between competence-Trump corresponded with a dramatic increase in support for Donald Trump.⁷ However, in contrast to before, implicit warmth assessments were a weaker and less reliable predictor of candidate preferences and vote intentions than implicit competence. Specifically, Model 1 and 2 estimates of the impact of implicit warmth obtained significance for both dependent variables ($p < .05$), but these effects were washed out in Model 3 and 4 ($p > .5$).

Together, these results demonstrate once again that implicit competence-associations are robust, unique predictors of vote preferences, above and beyond explicit competence measures, demographics, and partisan identification. Because actual vote choice at T4 was significantly related T2 preference for Trump (vs. Clinton or Johnson; $p < .001$), these implicit effects are clearly consequential for electoral outcomes. Implicit warmth associations, while significantly related to vote preferences, however, are less consequential for vote preference when explicit warmth assessments are included in the model.

6. Discussion and conclusion

This study replicated a dual-process model of candidate trait perceptions in the 2016 US presidential election. Furthermore, these findings make several important and novel contributions to this

framework by extending our analysis of implicit trait evaluations to another electoral context beyond 2012, to assessments of different political candidates, and to a broader range of political evaluations than previously considered. Specifically, we find that both implicit competence and warmth candidate-trait associations about Hillary Clinton and Donald Trump were consequential for political evaluations and vote preferences in the 2016 US presidential election. Automatic associations of candidates' competence were observed to be a more reliable and substantial predictor of these outcomes than warmth associations, evidencing consistent incremental effects above and beyond the role of explicit competence assessments, demographic variables, and partisan identification. These findings emphasize that understanding the link between trait judgments and political behavior requires consideration of both implicit and explicit processes.

While prior research has extensively investigated the political relevance of candidate trait perceptions (e.g., Goren, 2002; Hayes, 2005; Klein, 1991, 1996), most of this work has focused on explicit, self-reported trait judgments, with less consideration given to unconscious, implicit trait inferences or associations that citizens may nonetheless incorporate into their overall evaluations of these candidates or their voting preferences. In our opinion, this limits existing understanding of how citizens perceive and evaluate their political leaders, since it is inconsistent with contemporary perspectives on person perception phenomena in psychology. For example, the process by which people draw inferences about the characteristics of another individual often occurs spontaneously and outside of conscious awareness (Schiller et al., 2009). People quickly and readily form lasting impressions about one another based on the mere appearance of their face (Zebrowitz and Montepare, 2008), which are often difficult, but not impossible, to “correct”, “revise”, or “update” based on new information. Importantly, spontaneous trait inferences have been found to hold significant implications for electoral outcomes (e.g., Ballem and Todorov, 2007; Hall et al., 2009; Mattes et al., 2010; Todorov et al., 2005; for a review see Olivola and Todorov, 2010). This work has generally found that the appearance of political candidates spontaneously triggers meaningful inferences about the candidate's competence and fitness for office, which was predictive of electoral outcomes in U.S. congressional and gubernatorial races.

These findings remind us that citizens associate trait characteristics with political candidates spontaneously, automatically, and outside of their conscious awareness. When these associations are encoded in memory, they may form the earliest impressions of political candidates and serve as a framework for organizing subsequent information relevant to political judgments. These implicit knowledge structures likely feed—and are influenced by—more consciously accessible, explicit evaluations in a bidirectional interplay that unfolds over the

⁷ Implicit competence was a significant predictor of both dependent variables for unweighted estimates in Model 1–4 ($p < .01$). See Tables 16 and 17 in the online appendix.

course of the political campaign (see [Ksiazkiewicz et al., 2018](#)). Indirect, implicit measures of these associations provide a window into unconscious trait associations that, when paired with explicit measures, provide scholars with the tools necessary to investigate the formation and updating of automatic trait inferences, its dynamic interplay with explicit assessments, and the conditions under which, individuals for whom, and mechanisms by which implicit associations are incorporated into explicit judgments and political behavior (or not).

Thus, that evaluations of political candidates operate at both the conscious and unconscious levels—and that the effects of these assessments may persist independent of, in relation to, or potentially inconsistent with each other (e.g., [Fazio, 1990](#); [Nosek, 2005](#)) – raises several theoretical questions of central importance to the study of political cognition and electoral decision-making. How do citizens form unconscious impressions and change their evaluations of political candidates over the course of the political campaign? For example, in addition to facial appearance, stereotypes about political parties (e.g., [Hayes, 2005](#)) or other kinds of social groups (e.g., women or minorities; [Fiske et al., 2002a,b](#)) might promote certain kinds of spontaneous trait inferences for specific political candidates. Similarly, implicit associations may bias information search, constrain media exposure, or qualify the effects of campaign messaging in ways that shape the construction and stability of candidate evaluations (e.g., [Peterson and Bittner, 2015](#)). That is, do implicit, automatic trait associations anchor explicit processes, such that subsequent information is incorporated into these frameworks? If so, under what conditions might explicit processes lead to change in implicit associations and vice versa, and with what consequence? In short, there are many fruitful avenues for the study of dual-process candidate evaluations, especially for programs of research that investigate implicit trait associations at the earliest stages of impression formation, using panel data that can track these processes and their interplay with explicit judgments and behavior over the course of political campaigns, and as a function of individual differences and campaign events.

While the current research did not, unfortunately, evaluate implicit trait associations at the earliest stage of impression formation—both major candidates were well known to the public and had won major party endorsements before our measures were administered—we did explore one potential individual difference moderator for the incremental effect of implicit constructs identified by prior research. However, we found weak evidence to suggest that the incremental effects of implicit trait associations were greater among weak partisans or undecided voters, which is inconsistent with many other investigations of implicit attitudes in politics (e.g., [Arcuri et al., 2008](#); [Frieze et al., 2007](#); [Galdi et al., 2008](#) but see [Frieze et al., 2012](#)), and implicit trait associations ([Ksiazkiewicz et al., 2018](#)). That we failed to observe a moderating role of partisan strength on the impact of implicit trait associations using a more representative sample in a novel electoral context serves as an important reminder of the importance of replication in developing theory of complex social and political phenomena ([Open Science Collaboration, 2015](#)).

Nevertheless, it is possible that with a larger sample, recruited earlier in the political campaign, before implicit associations were incorporated into explicit judgment, and before such attitudinal preferences or voting intentions were crystallized and absorbed into long-term memory ([Frieze et al., 2012](#)), we would have observed these moderated effects more reliably. Alternatively, it is possible that the 2016 U.S. presidential election was unique to other political campaigns in that explicit trait associations overwhelmed the incremental effect of implicit associations across all levels of partisanship and strength of preferences. Both major party candidates have a long history in public space and pre-existing public reputations, unlike some candidates in prior elections. Consequently, a closely contested and confrontational campaign may have induced uniquely polarized assessments, especially given broad public perceptions that both candidates were in possession of undesirable character traits. Thus, the 2016 electoral environment

may have been exceptional in prompting strong, consciously accessible impressions that translated into well-elaborated, explicit convictions for all citizens.

Additionally, based on prior research investigating the impact of both implicit ([Ksiazkiewicz et al., 2018](#)) and explicit (e.g., [Graefe, 2013](#)) trait evaluations of political candidates, we expected that competence would be more consequential for political attitudes and behavior. Results confirmed this prediction. However, this election was met with the country's first female major party presidential candidate. This raised the possibility that implicit warmth would also be an important predictor, perhaps explaining more variance in outcomes than implicit competence, consistent with other research on perceptions of females in positions of leadership ([Bauer, 2015](#); [Eagly and Karau, 2002](#); [Fiske et al., 2002a,b](#); [Huddy and Terkildsen, 1993](#)). This would also be consistent with recent findings that gender attitudes were associated with support for Donald Trump ([Bock et al., 2017](#)). While implicit warmth evidenced a robust relationship with our dependent variables, demonstrating a stronger bivariate relationship with most dependent variables than implicit competence, its effects were nonetheless reduced by explicit assessments of warmth in the model. This finding stands in contrast to implicit competence, which reliably demonstrated an incremental effect beyond the role of explicit competence.

One interpretation of this finding is that implicit warmth judgments of Hillary Clinton—a well-known and polarizing public figure—was fully incorporated into explicit evaluations, leaving little explanatory power for implicit warmth associations, whereas implicit and explicit competence assessments nonetheless evidenced independent effects on judgments. Two testable predictions arise from this proposition. First, if implicit-explicit assessments were more fully assimilated on the warmth than the competence dimension, we would expect stronger associations between implicit-explicit constructs for the former than the latter when controlling for partisan identification and demographics (i.e., Model 3). Indeed, with these covariates, implicit warmth was a more robust predictor of explicit warmth ($b = 0.79$, 95% CI[0.35, 1.23], $p = .001$) than the relationship between implicit-explicit competence ($b = 0.52$, 95% CI[0.15, 0.89], $p = .006$). The second implication of this hypothesis is that explicit warmth, because it is less likely to promote evaluations that are potentially inconsistent with implicit associations than for competence, would be a more robust predictor of political judgments, even if mean-level assessments do not differ across candidates. Consistent with this hypothesis, the effect of explicit warmth was larger than explicit competence for Model 4 for four of the five models. Nevertheless, participants' explicit judgements of Clinton's warmth ($M = 0.82$, $SD = 0.20$) were marginally higher than that for Trump ($M = 0.79$, $SD = 0.19$; $t(242) = 1.37$, $p = .09$). Even at the implicit-level, where one would expect socially desirable responding to be less likely to influence responses, participants more strongly associated warmth with Clinton than Trump ($M = 0.49$, $SD = 0.12$), although this did not differ significantly from what would be expected for participants without an implicit preference for a given candidate on this dimension ($t(121) = -0.04$, $p > .5$).

Thus, at both the implicit- and explicit-level, we fail to observe evidence of differences in mean-level evaluations of Clinton's (vs. Trump's) warmth. Perhaps more importantly, however, we do find that *variability* in explicit or implicit warmth (but not when both are included in the same model) were more consequential for political judgments than competence assessments, suggesting that explicit warmth assessments were more critical than explicit competence assessments in evaluations and support for the two major party candidates. Further, implicit-explicit relationships were stronger for warmth compared to competence. While we did not predict these findings, we interpret this pattern of results as evidence of increased assimilation of implicit associations into explicit evaluations for the warmth (vs. competence) dimension.

Importantly, it is possible that this increased assimilation of implicit warmth associations into explicit warmth judgments is a consequence

of gender bias, such that stereotypes about females in leadership positions were salient in this electoral context. The salience of gender stereotypes may have promoted relatively increased introspection of “gut-level” assessments of the candidates’ warmth in such a way as to render these evaluations more consciously-accessible than competence and therefore relatively more congruent with explicit judgments. Consistent with this proposition, some research suggests that the salience of gender stereotypes can lead to negative evaluations of female political candidates (e.g., Bauer, 2015), and Trump’s rhetoric and issue-positions in particular were widely perceived to be hostile towards females (Denton, 2017). That implicit competence was more consequential for judgments than implicit warmth and evidenced effects independent of explicit competence also supports this reasoning. Nevertheless, with these data, we cannot conclude decisively that higher-levels of assimilation on the warmth (vs. competence) dimension is due to the salience of gender stereotype in this electoral context, is particular to characteristics of Hillary Clinton as a candidate, or due to an alternative factor not considered here. Additional research is needed to adjudicate between these alternative hypotheses by, for example, more directly measuring both implicit and explicit gender *stereotypes* (not just trait-associations), accounting for the role of the broader campaign contexts (e.g., candidate messaging/rhetoric), and measuring unidimensional assessments of each candidates’ traits, instead of relative assessments of the degree to which one candidate possesses each trait compared to the other, as was done here.

Recently, some scholars have criticized the meta-analytic evidence for incremental effects of implicit constructs in socially sensitive domains (e.g., Oswald et al., 2013), arguing that implicit constructs perform no better than explicit measures in predicting criterion behaviors in intergroup contexts. However, as Greenwald et al. (2015) argue, Oswald et al. (2013) underestimated the independent effects of implicit constructs by including in their meta-analyses studies for which there was no theoretically expected attitude-behavior relationship (but see Oswald et al., 2015 for a response). Furthermore, even if the effect size for the relationship between implicit constructs and behavior in intergroup domains are relatively small, in the aggregate, these effects are nonetheless socially consequential and can account for meaningful discriminatory impacts (e.g., Fisher and Borgida, 2012).

We share similar concerns about the diagnostic value of the IAT in predicting individual-level behavior in political domains, and caution against any interpretation of our results as lending support to the view that individual-level scores on the IAT is *deterministic* of underlying attitudinal preferences and its downstream implications for judgment and behavior. However, we maintain that even small incremental effects of implicit constructs are nonetheless theoretically relevant for a scientific understanding of political cognition and practically consequential for electoral outcomes. While our analysis utilized the IAT as a measure of implicit candidate-trait associations, we observe clear evidence that these implicit constructs predict both judgment and actual behavior independent of explicit measures, which is consistent with other research in the political domain.

Perhaps of more theoretical interest is the finding that procedures that induce variability in implicit constructs do not appear to induce stable, long-term change in attitudes and behavior or account for much variability in these outcomes (Forscher et al., 2016; Lai et al., 2016). Clearly, additional work is needed to better understand the conditions under which implicit constructs predict real world behavior independent of explicit process. We strongly believe that political contexts are a rich domain to explore these hypotheses. Future research should continue to investigate dual-process candidate trait perceptions using alternative measures of implicit constructs, across multiple electoral contexts, for different candidates and campaigns at both the state and federal level, with additional consideration given to features of individuals and electoral environments that may mediate or moderate the incremental effects of unconscious trait associations and their relation to explicit preferences. Investigating the formation and interplay

between implicit and explicit trait associations promises to advance our theoretical perspectives of political cognition and electoral decision-making. In doing so, we stand to gain a deeper understanding of how ordinary citizens form their beliefs and how voters choose their leaders.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <http://dx.doi.org/10.1016/j.electstud.2018.04.009>.

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