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Thin-Slice Decisions Do Not Need Faces to be Predictive of Election Outcomes

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Rapid decisions about political candidates, made solely on the basis of candidate appearance, associate with real electoral outcomes. A prevailing interpretation is that these associations result from heuristic cognitive processing of cues from the face to yield a judgment about the candidate, processing that is shared by both voters and experimental participants. Here, we report findings suggesting that nonfacial aspects of a candidate's appearance are important cues for voter decision making. We asked participants to look at pairs of candidate images and decide (a) whom to vote for (SimVote), (b) who looks more physically threatening (Threat), and (c) who looks more competent to hold congressional office (Competence). When participants saw only the candidates' faces, there was no association between their decisions and electoral outcomes, except for Threat. Yet when participants saw the candidate images with the faces removed, there was a strong association between their decisions and voters' decisions, for all decision types. This suggests that the appearance-related heuristics that some voters use to guide their decisions may include mental schemas for processing appearance cues other than those associated with facial features. Such schema-based processing has implications for understanding the neurobiological system underlying thin-slice decisions from appearance alone.

KEY WORDS: character traits, voter decisions, candidate appearance, emotion

Political heuristics are implicit cognitive processes that aid in political decision making under conditions in which cognitive capacity, politically relevant information, and/or time are limited (i.e., incomplete or bounded; Kahneman, Slovic, & Tversky, 1982; Lau, Andersen, & Redlawsk, 2008; Lau & Redlawsk, 2001). To count as a heuristic (the word comes from the same Greek root as "Eureka!": *heuriskein*, to discover), the cognitive process in question must be beneficial in a majority of cases (Evans & Over, 1996; Goldstein, 2008; Reed, 2007; Sternberg, 2009). Heuristics can also

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combine with deliberative processing in political decision making and need not operate alone to yield a decision outcome. For example, poliheuristic theory in the area of international relations has yielded experimental evidence for multistage processing among high-level decision makers in foreign policy (Mintz, 2004a, 2004b). Decisions proceed by first rapidly eliminating those options that are presented as having largely negative political consequences (i.e., that are "noncompensatory") and then by an increasingly analytical process that more carefully weighs the costs and benefits of the remaining options. Findings showed that the first, heuristic, stage advantageously tracked with the uncertainty of predicted negative consequences, as one would expect of an adaptive system. Beneficial choices were not often rejected when their putative negative consequences were presented as uncertain (Mintz, 2004a).

Even in voter decision theory, there is evidence that heuristics can increase the likelihood of beneficial, or correct, votes in political experts, albeit decreasing this likelihood in politically inexperienced voters (Lau & Redlawsk, 2001). These findings suggest that voter reliance on cognitive heuristics is not as threatening to classic theories of deliberative democracy as previously feared (Bartels, 2008). However, as noted by Lau and Redlawsk (2001), processes sometimes thought to be political heuristics can actually detract from the quality of political decisions, and so should be rethought.

Such rethinking may apply to those "heuristics" that operate on nonverbal information from a candidate's appearance (e.g., face, facial expression, hair, posture, clothing, movement) to influence a voter's decision for or against that candidate. Evidence for the influence of these processes on voter decisions comes from the fact that presentations of 30 msec to 100 msec of an image of a politician elicit decisions (i.e., about a candidate's competence, threat, etc.; Ballew & Todorov, 2007) and neural signals (M. L. Spezio et al., 2008) in laboratory participants that correspond with the decisions of real voters. These so-called "thin-slice" decisions are choices based only on a small amount of information, either in terms of content or in time of exposure (Ambady & Rosenthal, 1992, 1993). Socially relevant decisions from a variety of domains that are thought to require prolonged deliberation associate robustly with thin-slice decisions (Ambady, Hallahan, & Rosenthal, 1995; Ambady & Rosenthal, 1992, 1993; Ballew & Todorov, 2007; Curhan & Pentland, 2007; Hassin & Trope, 2000; Rule & Ambady, 2008; Todorov, Mandisodza, Goren, & Hall, 2005; Willis & Todorov, 2006). Political scientists have noted the often surprising dependence on thin-slice information during voting (Alvarez, 1997) and have proposed that it might be used to influence campaigns (Rosenberg, 1986; Rosenberg, Kahn, Tran, & Le, 1991).

Most investigators have implicitly or explicitly identified a candidate's *face* (typically understood as excluding some of the forehead and the hair) as the primary carrier of information influencing trait and voter decisions, especially when the thin-slice information being investigated comes from static images of a person that include the person's face (Antoniakis & Dalgas, 2009; Atkinson, Enos, & Hill, 2009; Ballew & Todorov, 2007; Lawson, Lenz, Baker, & Myers, 2010; Lenz & Lawson, 2007; Mattes et al., 2010; Said, Sebe, & Todorov, 2009; M. L. Spezio et al., 2008; Todorov et al., 2005; Todorov & Uleman, 2003; Willis & Todorov, 2006). Studies have also reached the same conclusion when nonfacial information was clearly present and available to experimental participants, resulting in a "face primacy principle" (Ballew & Todorov, 2007; Mattes et al., 2010; Said et al., 2009; M. L. Spezio et al., 2008; Todorov et al., 2005). That heuristics processing the face would be weighted to the exclusion of those sensitive to nonfacial information is not surprising, given existing evidence. For example, Bailenson, Garland, Iyengar, and Yee (2006) found that men increased their support for candidates whose faces were altered to resemble their own, supporting the view that heuristic processing of the face influences voter decisions.

In response, Todorov and colleagues have proposed a face-processing heuristic to explain how rapid trait inferences about, for example, competence, associate with electoral outcomes. The mechanism highlights proposed evolutionarily older "emotion recognition systems" that use only facial information (Said et al., 2009; Todorov, Said, Engell, & Oosterhof, 2008). According to this mechanism, rapid inferences about complex traits, such as competence, trustworthiness, etc., that are based on appearance alone are illusions based in part on heuristics involving the cognitive processing of facial emotions. The development of this process involves at least two stages, though once established (e.g., via Hebbian association), it is likely that direct links between appearance and traits emerge. In the two-stage model, heuristic processing first associates facial features with a person's emotion, such as fear, anger, or joy. Second, the inferred emotion is heuristically linked to a trait judgment. For example, a candidate whose eyebrows are naturally more drawn together or downwardly angled would elicit inferred anger, which would lead most often to an inference of threat and less often to an inference of trustworthiness. Or a candidate whose eyebrows are naturally more upwardly angled and whose mouth is naturally more similar to a smile than to a frown would elicit inferred happiness, which would lead most often to inferences of trustworthiness and likability, and perhaps competence and electability. Associations between such trait inferences and electoral outcomes arise because the electoral decisions of some voters (i.e., those who have very limited cognitive capacity, information, and/or time) are influenced by heuristic processing at both stages. Candidates whose faces appear angry might be directly discounted (stage 1) or might be discounted after a threat inference is made (stage 2). Similarly, candidates whose faces appear happy might be directly favored (stage 1) or favored after inferring likability or trustworthiness or competence (stage 2). A central claim of this theory is that the intervening heuristic processes yielding the association between candidate appearance and voter decisions operate on facial information alone.

Two lines of evidence suggest that facial information processing has some claim as a heuristic in influencing the decisions of voters who have little or no other information. First, a candidate's face provides signals about her or his physical and mental states. An example of this is how much perspiration a candidate's face shows during appearances or debates. Though sweat is not a facial feature, too much facial sweat can signal ill health (e.g., untreated alcoholism in the case of former British Liberal Democrat leader Charles Kennedy); and lack of full disclosure (e.g., British Foreign Office minister Bill Rammell when questioned about his involvement in freeing the Lockerbie bomber). Second, it may be that certain facial characteristics reflect biological signals that show above-chance association with certain beneficial or harmful traits. Examples are the association between masculine facial characteristics and dominance (Perrett et al., 1998) and the recent finding that men with wider faces show decreased trustworthiness compared to those with narrower faces (Stirrat & Perrett, 2010), an association that naïve participants correctly inferred. While the cognitive processes that operate on these signals may be manipulated via gaming the signals themselves, if the associations yielded by the processes are correct the majority of the time, their status as face-processing heuristics would be defensible. They would not be a substitute for becoming informed. Yet, if the cognitive processes yield beneficial decision outcomes the majority of the time, voters who have little or no information about a candidate could do worse than rely on them.

Yet a potential difficulty arises in identifying face-processing heuristics as the primary influence mediating the influence of candidate appearance on voter decisions. As noted above, most of the studies identifying facial information critical for this heuristic processing in fact used stimuli that included substantial nonfacial information (Ballew & Todorov, 2007; M. L. Spezio et al., 2008; Todorov et al., 2005). Information about hair, clothing, and posture was present in the images, though explicit considerations of its influence on voter decisions have been generally lacking. If cognitive processes that influence voting via a candidate's appearance operate on nonfacial information, their status as heuristics may be justified. Since nonfacial characteristics of appearance like clothing and posture (and even hair) were in evolutionary history and are now subject to greater control by people than is facial appearance (outside of facial expression), nonfacial characteristics may associate more strongly with a person's actual social and political control, power, and expertise than that person's face. To be sure, voters who are more influenced by nonfacial characteristics will likely make more voting errors than those who are influenced by information about a candidate's political positions. Yet, as stated above, voters who lack such information do well if they pick a candidate who is at least competent to hold office.

To our knowledge, ours is the first study that investigates the contribution of heuristic processing of candidate appearance to voter decisions while using a condition in which trait inferences were elicited from candidates' faces alone. To do this, we used faces from candidate images already known to elicit robust associations between threat and competence decisions and voter decisions. (M. L. Spezio et al., 2008; Todorov et al., 2005) At the same time, we investigated whether nonfacial information in these images (e.g., hair, posture, clothing) contributes anything at all to the function of heuristic processes influencing voter decisions.

Methods

Participants

All procedures were carried out in compliance with the Belmont Report with the approval of the appropriate licensed Institutional Review Boards. Participants ($N = 66$; 27 male) were undergraduates attending the Claremont Colleges (Age (M $\pm$ SD): 20 years $\pm$ 1 year), all but seven of whom (two males) had voted in at least one election for national office in 2006, 2008, and 2010. All participants reported no neurological, psychiatric, neurodevelopmental, or visual disorders, and each received between \$10 and \$40 for participation in the study. Five of the participants could identify one or more of the candidates in the image set, and these participants were excluded from the analysis, leaving a total of 61 participants (24 males).

Stimuli

Stimuli were images of real political candidates who ran in congressional elections in 2004, paired according to actual electoral races. A total of 60 unmodified images (Full Image Set) were used and were the same as those used in Study 2 of Spezio et al. (2008). These are a subset of the paired images used by Todorov et al. (2005, Fig. 1A) and were selected so that both images in a candidate pair (a) were frontal facing; (b) were of the same gender and ethnicity; (c) were smiling; and (d) had clear, approximately central presentation of faces that were of approximately the same size. Full Images were modified to create two additional stimuli sets, each consisting of 60 images derived from the original, unmodified images. The modification for the first set was the isolation of the face in an image to create stimuli that showed only the candidates' faces (without clothing, background, etc.), for a Facial Only Image (FAI) set (Fig. 1B). The modification for the second set was the removal of the face in an image to create stimuli that showed everything about a candidate except the face, for a Nonfacial Image (NFI) set (Fig. 1C). Because stimuli were always presented in pairs determined by the real elections, there were a total of 30 unique stimuli (an image pair is a unique stimulus) for the conditions of Full Image, Facial Only Image, and Nonfacial Image, respectively, or a total of 90 unique stimuli (see Procedure).

Procedure

Stimuli were presented on an LCD monitor, situated approximately 30 inches from a participant's eyes. Three stimulus sets were used: Full Image, Facial Only Image (FAI), and Nonfacial Image (NFI), and each set was comprised of 30 image pairs whose pairing was determined by actual electoral races. Each image in a pair on screen was ~1.6 inches wide, subtending ~3° of visual angle. Stimuli were

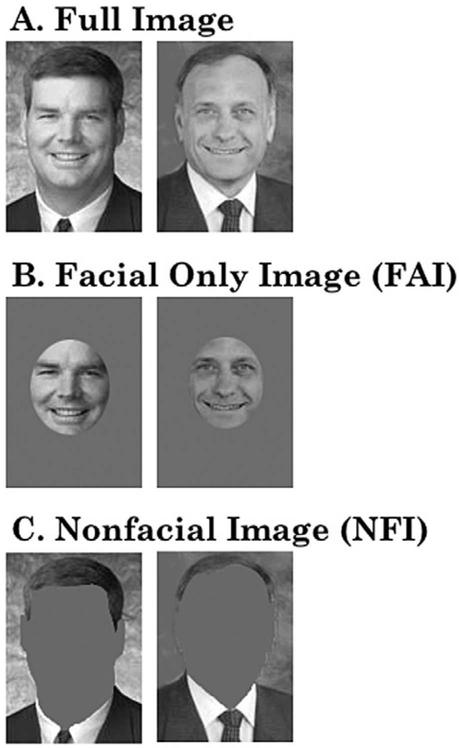

Figure 1. Examples of images used in the experiment. Shown are the original images of a real electoral pair that ran against one another for a House seat in the 2002 election (A; Full Images), the images with only faces present (B; FAI), and the images with no facial information except for the silhouette (C; NFI).

always presented off-center by ~2° of visual angle, one image to the left and one to the right, against a gray background. Image pairs were on screen for 2 sec. Participants were required to make rapid decisions (i.e., within a limit of 3 sec. following stimulus offset), based only on the candidates' appearance, about which candidate in an electoral pair (a) they would vote for (SimVote); (b) looked more likely to act in a physically threatening manner towards them (Threat); and (c) looked more competent to hold federal congressional office (Competence). Each experimental session involved only a single image type (Full, FAI, or NFI) and a single judgment (SimVote, Competence, or Threat). Participants completed one experimental session when they had evaluated all 30 pairs for a given image condition and a given judgment. Each participant thus completed nine sessions (3 image types × 3 decision types), with 30 candidate pairs in each session. For each image type (i.e., Full Image, FAI, NFI), all participants first made decisions about whom they would vote for (i.e., simulated vote, or SimVote), while the order of the other two decisions (i.e., threat, competence) was counterbalanced. Similarly, all participants were presented with the Full (unmodified) images last, while the order of NFI and FAI images was counterbalanced. One example of an ordering is as follows: FAI first (SimVote, Threat, Competence), NFI second (SimVote, Competence, Threat), Full Image third (SimVote, Competence, Threat). Each participant first completed all judgment types (SimVote, Competence, Threat) for a given image condition (Full, FAI, NFI) prior to moving on to the next image condition. Each participant saw each pair of images in a given image condition set (Full, FAI, NFI) a total of three times. The left and right placement of images in a pair was counterbalanced across sessions and participants, and the ordering of pairs in a session was newly randomized prior to each session. There were no effects of image type order (NFI vs. FAI), decision type order (Threat vs. Competence), side of presentation (Left vs. Right), or pair order. Experiments were programmed using the Psychophysics Toolbox v. 2.54 (Brainard, 1997; Pelli, 1997) in Matlab (The Mathworks, Natick, MA).

Data Analysis Strategy

Correlation between decisions. Our first aim in this analysis was to determine the degree to which our participant group made consistent decisions within a given image condition. If our participants followed our instructions and made consistent decisions, we expected them to show a positive correlation between their SimVote and Competence decisions, and a negative correlation between their SimVote and Threat decisions, for each image type. For each candidate image (60 total), we calculated the "decision share" within a given experimental session (i.e., a given decision type and image type). This was just the share of the participant group that decided that a candidate was their choice for (a) SimVote, (b) Competence, or (c) Threat. Each image received its own decision share. Missing data (47 out of a total 11,340 trials) were ignored for all analyses and ties in decision share were allowed. We calculated Pearson correlation coefficients between the different decisions, within a given image type. Our second aim in this analysis was to determine whether the participant groups' consistency was affected by image type. To answer the question of whether different image types yielded the same outcomes for a given decision (i.e., SimVote, Threat, Competence), we again used these group decision shares, and we calculated the correlation of decision shares between the image types, but within a given decision type.

Correspondence between participant and voter decisions. We calculated the average correspondence between individual participants and voters, as in Todorov et al. (2005) and Spezio et al. (2008). For each participant, and for each experimental session, we calculated the percent agreement across all 30 image pairs between (a) the decision of the participant and (b) the electoral outcomes. For example, for a session in which Threat was inferred (from any of the image types), a participant would have a perfect 100% agreement with real voters if they chose all of the electoral losers as appearing more threatening and 0% agreement if they chose all of the winners as more threatening. The same participant inferring Competence or SimVote would have a 100% agreement with the voters if they chose all electoral winners as appearing more competent, or as candidates they would vote for, and 0% if they chose all of the losers as more competent. Mean correspondence values for each session were calculated by averaging across the group. A simple t-test across the group showed whether the average individual correspondence with voters was greater than 50%. We also examined gender differences for this correspondence by comparing the average correspondences among females and males in our study. All reported significance levels incorporate the Bonferroni correction (Miller, 1981, pp. 6–8).

Results

Correlation Between Decision Types and Image Types

To determine whether the participants were making decisions as instructed, we tested the correlation between decision types, expecting that the participants' own choices for whom to vote (SimVote) would be positively correlated with candidates viewed as more competent and negatively correlated with candidates viewed as more threatening. This was found, as shown in Table 1. For all image types, SimVote and Competence were significantly and highly positively correlated, while Threat was significantly negatively correlated with both SimVote and Competence. In all cases, correlations accounted for at least 25% of the variance, and the correspondence between SimVote and Competence accounted for 50% to 80% of the variance.

Table 1. Correlation Between Group Majority Decision Within Stimulus Types

Stimulus Type: Full (Unmodified)		
	SimVote	Competence
Competence	0.91*** (0.77, 0.97)	
Threat	–0.68 (–0.87, –0.30)	–0.62*** (–0.84, –0.20)
Stimulus Type: FAI		
	SimVote	Competence
Competence	0.81*** (0.55, 0.93)	
Threat	–0.62*** (–0.84, –0.20)	–0.70 (–0.88, –0.33)
Stimulus Type: NFI		
	SimVote	Competence
Competence	0.92*** (0.80, 0.97)	
Threat	–0.67*** (–0.87, –0.29)	–0.79*** (–0.92, –0.50)

***, $p < 0.0001$ (corrected)
Confidence intervals provided for $\alpha = 0.0001$.

Table 2. Correlation Between Group Majority Decision Across Stimulus Types

Decision: Simulated Vote		
	Full	FAI
FAI	0.42 (n.s.)	
NFI	0.59*** (0.16, 0.83)	0.05 (n.s.)
Decision: Competence		
	Full	FAI
FAI	0.37 (n.s.)	
NFI	0.75*** (0.42, 0.90)	0.06 (n.s.)
Decision: Threat		
	Full	FAI
FAI	0.63*** (0.22, 0.85)	
NFI	0.69*** (0.33,0.88)	0.42 (n.s.)

*, $p < 0.005$; **, $p < 0.001$; ***, $p < 0.0001$ (corrected)
Confidence intervals provided for $\alpha = 0.0001$.

Additionally, it was hypothesized that, for any given decision type, decisions made across different image types would be correlated, especially between Full images (containing all information) and the other two image types. This was only partially supported (Table 2). For both SimVote and Competence, decisions based on NFI stimuli were correlated with decisions based on Full images, accounting for 35%–50% of the variance. However, decisions based on FAI stimuli were not correlated with those based on NFI images or on Full images, except for Threat. Not surprisingly, decisions based on FAI images correlated more strongly with Full images than they did with NFI images. For all comparisons, decisions based on FAI stimuli showed the weakest correlation with decisions based on other image types, indicating that facial information across stimulus types contributed least reliably to thin-slice decisions, with the exception of decisions about Threat.

Table 3. Fractional Correspondence Between Thin-Slice Decision and the Winner in Real Elections

DecType/StimType	SimVote	Competence	Threat
Full	0.56*** ($t(60) = 4.00$)	0.58*** ($t(60) = 5.35$)	0.43*** ($t(60) = -5.33$)
FAI	0.51 (n.s.)	0.52 (n.s.)	0.44*** ($t(60) = -4.07$)
NFI	0.61*** ($t(60) = 10.16$)	0.65*** ($t(60) = 11.72$)	0.40*** ($t(60) = -7.24$)

*, $p < 0.005$; **, $p < 0.001$; ***, $p < 0.0001$ (corrected)

Correspondence Between Participant and Voter Decisions

In order to probe relative contributions of facial and nonfacial information to the association between thin-slice decisions and voter decisions, across decision category, we asked whether FAI or NFI stimuli would elicit decisions that corresponded more closely to real voters' decisions. We found that facial information did not elicit strong associations between participants' decisions and those of real voters (Table 3), except for decisions about Threat. NFI-based SimVote decisions and Competence decisions corresponded to winners of real elections at a rate of 61% and 65%, respectively, while Threat decisions corresponded to losers of real elections at a rate of 60%. By way of comparison, the FAI stimuli elicited agreement with real elections only for Threat decisions, where 56% of candidates judged as more threatening actually lost in real elections.

Discussion

Using an experimental approach similar to and analyses identical to recent investigations of the influence of thin-slice decisions on electoral outcomes (Spezio et al., 2008; Todorov et al., 2005), we found that nonfacial information, consisting primarily of a person's hair, clothing, and background context (Fig. 1C) elicited rapid decisions that associated with decisions made by real voters. When participants cast a simulated vote (SimVote), decided which candidate looked more threatening (Threat), or decided which candidate looked more competent to hold congressional office (Competence), nonfacial information more clearly elicited trait inferences that agreed with decisions by real voters, compared to facial information. Facial information alone elicited an association between our participants' decisions and voter decisions in the condition of Threat judgment, and then only for women. It should be noted that we did not detect any difficulty among our participants to make decisions when only facial information was available. Indeed, Table 1 shows that participants were strongly consistent in the FAI condition, as in the other conditions, in that their SimVote decisions correlated positively with Competence and negatively with Threat decisions. Also, their Threat and Competence decisions were significantly negatively correlated. Thus, the lack of correlation between FAI-based decisions and voter decisions is unlikely to be due to unreliable decision making in the FAI condition.

There are two caveats that weigh against the argument that facial information plays no role in associations between trait inferences and voter decisions. First, our study followed previous work in using images of established political candidates of both major parties. Our study, again similar to previous work, focused on general elections and their outcomes, not on primaries or initial stages of campaigns, when the field of competitors is much more crowded. It may be possible that the facial information differential (i.e., the difference that facial appearance alone makes in elections) between general election candidates is much less than that between candidates vying for their parties' nomination. Due to the fact that a candidate's face has been largely positively evaluated by a substantial portion of the voters prior to that candidate becoming a party's nominee, it may be that the nonfacial information differential between candidates in general elections becomes important for thin-slice effects on voter decisions.

Secondly, while our NFI images removed the most critical facial features (e.g., eyes, eyebrows, nose, mouth, skin), we did not, strictly speaking, eliminate all facial information. All NFI images retained some aspect of a facial silhouette (Fig. 1C). Thus, it may be that the overall shape of a person's face played a role in our findings. This is unlikely, since in this case one would expect the full facial information to have played a larger role than it did in leading to a correspondence between thin-slice decisions and voter decisions. However, one might expect an influence of facial silhouette if our participants relied on heuristics that associate a particular face shape (e.g., square vs. round jaw), which itself could result from biological influences such as testosterone levels, with competence or threat. Importantly, information about face shape was present in the Full and NFI images, but removed by using an oval cropping in the FAI images (see Figure 1). As discussed earlier, heuristics that make use of face shape might be expected to play a role in quick estimation of leadership ability in the absence of other information. If so, additional theory is needed, since prevailing theories to explain the association between candidate appearance and electoral outcome identify facial *features* (e.g., eyes, eyebrows, mouth) and their configuration, and not overall face shape. Thus, we plan to test the hypothesis that facial silhouettes alone are enough to drive trait decisions that associate with electoral outcomes.

It should be clear that our findings do not necessarily suggest that a candidate's face is unimportant for mediating thin-slice influences on voter decisions. Rather, these findings suggest the possibility that, at least for elections between candidates who have already had great visibility and who have enjoyed support by a significant portion of the voters, faces matter less than do characteristics over which people have more control (e.g., hair, clothing, posture, context of appearance). As noted above, it also may be that early in the electoral process, when candidates campaign in greater numbers, voters are more strongly influenced by candidates' facial cues than when two, well-vetted candidates face off against one another. Indeed, Atkinson et al. (2009) find evidence to support the hypothesis that in close elections, out-parties choose candidates with faces that elicit higher ratings. These are intriguing possibilities, and need to be investigated further, with image manipulations that allow systematic recombination of candidate faces, hairstyles, clothing, and contextual backgrounds.

While it is taken as a given that the influence of the face on social decisions has roots in human evolution (Jones & Hill, 1993; Rhodes, 2006), research also suggests that the influence of other biological characteristics, such as cranial and facial hair, act similarly, while also being more susceptible to developmental and cultural influences (Mesko & Bereczkei, 2004; Muscarella & Cunningham, 1996; Rhodes, 2006; Terry & Krantz, 1993). Even more susceptible to such influence are aspects of appearance such as clothing and contextual background. Thus, the findings in this article lead to a novel interpretation of the findings linking brain activation elicited by negative cues in a candidate's appearance and decisions made by real voters (Spezio et al., 2008). In that article, the insula, a brain area known to be associated with face processing, was interpreted as processing cues from appearance (again, largely originating in the face) and producing an affective signal that fed into the anterior cingulate cortex, leading to action. Based on the work presented here, the previous interpretation seems to leave aside critical cognitive aspects of emotional processing for decision making, placing all of the emphasis on affective signaling from the insula alone. Instead, it is more likely that the associations between brain activation and voter decisions found in Spezio et al. (2008) were due primarily to nonfacial rather than facial information. Given that this nonfacial information is more greatly affected than facial information by cultural context, it is possible the activations in the insula and anterior cingulate indicated emotional processing inclusive of rapid activation of conceptual schema (Adolphs, 2009; Izard, 2009). The insula is known to increase activation under conditions of spontaneous trait retrieval (Todorov, Gobbini, Evans, & Haxby, 2007) and has been implicated in perceptual learning and recognition (Dijkerman & de Haan, 2007). Considering the possibility of rapid emotional processing in the insula and anterior cingulate as involving the activation of conceptual schema, rather than as solely a punishment signal, is suggested by the data here and is more consistent with multidimensional models of emotion (Scherer, 2003) that seek to overcome extreme dual-processing approaches in decision making (Spezio & Adolphs, 2007). Thus our findings may motivate a set of new neuroscientific experiments to identify more completely the role of emotional processing in linking a candidate's visual appearance to electoral success or failure.

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