

Inside the Voter's Mind: The Effect of Psychometric Microtargeting on Feelings Toward and Propensity to Vote for a Candidate

LENNART J. KROTZEK
Germany

Since the 2016 U.S. presidential election, both scholars and news media have been discussing the impact of technology-driven campaign tools, such as online microtargeting, on the election outcome. Technological developments allow campaigners to analyze voters' psychological profiles and to adapt political advertisements accordingly. However, little is known about the effectiveness of this technique in election campaigns and about the underlying processes behind its persuasiveness. This study examines the effects of congruence between a voter's personality and a candidate's message on the voter's feelings toward and propensity to vote for the candidate. A U.S.-based online experiment ($N = 199$) reveals that ad congruence elicits a more positive feeling toward the candidate but does not significantly affect the propensity to vote for the candidate. The proposed mediators of cognition, emotion, and trust are not significant.

Keywords: political communication, election campaigns, psychometric microtargeting, voter persuasion, advertising effects

When in December 2016, the Swiss magazine *Das Magazin* released a story about the role of the data analysis company Cambridge Analytica in the 2016 U.S. presidential election, reactions ranged from shock to skepticism (Grassegger & Krogerus, 2016, 2017). The article claims that the data company employed a sophisticated system of data exploitation and microtargeting based on personality profiles and thereby decisively changed the election outcome in favor of Donald Trump (Cadwalladr, 2017). Research has shown that it is indeed possible to predict people's personality profiles from their likes and shares on Facebook (Kosinski, Stillwell, & Graepel, 2013). It also has been found that such psychometric microtargeting can improve purchase rates (Matz, Kosinski, Nave, & Stillwell, 2017). However, few studies have investigated the effects of this technique on voting behavior (Kruikemeier, Sezgin, & Boerman, 2016). The present study fills this gap in the field of psychological persuasion (Matz et al., 2017) by answering two research questions. The first refers to the overall effects of psychometric microtargeting—that is, the effects of advertisements that convey a message that is congruent with the receiver's personality (referred to here as ad congruence). The second research question concerns the underlying mechanism of these effects. Previous research on microtargeting in the commercial sector generally focuses on the outcome of such microtargeting techniques. This study investigates the extent to which psychometric microtargeting is an effective tool to persuade voters, and I formulate the following research question: To what extent does

Lennart J. Krotzek: l.krotzek@posteo.de

Date submitted: 2018-05-03

Copyright © 2019 (Lennart J. Krotzek). Licensed under the Creative Commons Attribution Non-commercial No Derivatives (by-nc-nd). Available at <http://ijoc.org>.

congruence between the message of a political advertisement and the receiver's personality affect the receiver's feeling toward and propensity to vote for the candidate?

In addition, this study investigates processes underlying the presumed effectiveness of psychometric microtargeting. To explore the underlying mechanisms of psychometric microtargeting, three factors are predicted to mediate between ad congruence and a voter's feeling toward the candidate and the propensity to vote for the candidate. Cognition is expected to mediate the aforementioned effect based on Lang's (2017) limited capacity model of motivated mediated message processing. The emotional response mediator is based on the hedonic fluency model, which suggests that the positive effect of fluency on evaluation judgments is mediated by a positive affective response (Winkielman & Cacioppo, 2001). Trust is the third mediator tested for in this study. It is expected that ad congruency increases a voter's trust in the candidate, which improves his or her evaluation of the candidate. Hence, the following research question is formulated: To what extent is the effect of ad congruence mediated by cognition, emotional response to the ad, and trust in the candidate?

Political microtargeting is an increasingly interesting topic for campaigners and scholars alike, as demonstrated by a special issue of *Internet Policy Review* on political microtargeting and many other publications (Bodó, Erickson, Katzenbach, Musiani, & van Hoboken, 2017). And yet research in this field tends to take a macrolevel approach that focuses on societal effects or a mesolevel approach that investigates campaign effects on the national, state, or district level (e.g., Dobber, Trilling, Helberger, & de Vreese, 2017; Kruschinski & Haller, 2017). The present study, on the contrary, adds to the existing literature by assessing the effects of psychometric microtargeting on the individual level.

This microlevel approach is an important contribution to public and academic debates about developments in commercial and political targeting, which has been criticized as unethical and potentially manipulative (Matz et al., 2017). By scrutinizing how microtargeting allows political campaigns to sway voters, this study aims to inform the public debate about the implications of campaign regulations and paves the way to uncover the conditions under which effects are expected to be most prevalent.

Theoretical Framework

Political Microtargeting

Targeting has long been practiced in political campaigns—for example, by selecting a specific channel and medium for campaign messages or by targeting specific voting districts (Franz, 2013; for a historical overview of political targeting, see Fulgoni, Lipsman, & Davidsen, 2016; Turow, Delli Carpini, Draper, & Howard-Williams, 2012). In recent years, political targeting has been further developed to microtargeting. The advent of microtargeting was enabled by technological developments that allow campaigners to collect and analyze vast amounts of voter data (Fulgoni et al., 2016) and to address voters directly (Magin, Podschuweit, Haßler, & Russmann, 2017). In the United States in particular, with its lax financial campaign regulations and lenient privacy protection rules, targeting has been able to develop rapidly (Bennett, 2016).

The data that inform the microtargeting process are obtained by tracking citizens' online behavior (e.g., Farahat & Bailey, 2012; Schumann, von Wangenheim, & Groene, 2014; Yan et al., 2009) as well as by employing traditional market research tools such as surveys (Franz, 2013; Schumann et al., 2014). The collected data are then used to compute predictive classification algorithms (Barbu, 2014; Rubinstein, 2014). The increasing relevance—with the 2016 U.S. presidential election—and complexity of these techniques call for an empirical substantiation of microtargeting effects.

Research in the fields of health communication and commercial advertising generally support the notion that microtargeted ads are more persuasive than nontailored ads (e.g., Kreuter, Bull, Clark, & Oswald, 1999; Noar, Benac, & Harris, 2007; Yan et al., 2009). However, more critical voices claim that the effects of microtargeting are overestimated (Farahat & Bailey, 2012) and that mistargeting voters of a specific demographic group can have detrimental effects for campaigns (Hersh & Schaffner, 2013). To assess the effectiveness of microtargeting, it is therefore necessary not only to look at the outcome but also to develop a theoretical framework that explains voters' differential susceptibility to microtargeted ads and the underlying processes.

More specifically, this research examines psychometric online microtargeting—a form of targeting that is based on psychological user profiles. The general assumption of psychometric microtargeting is that the assessment of social media profiles allows us to infer users' personality profiles (Kosinski et al., 2013). This psychometric information is often presented as the Big Five personality trait dimensions, a widely accepted framework to measure personality profiles (Gosling, Rentfrow, & Swann, 2003).¹

One of the ways that psychological targeting can be conducted is by adapting a message's content and formulation to a receiver's personality profile (Dijkstra & de Vries, 1999). Tests of this approach in two experimental studies in the commercial context have revealed that ad congruence improves ad evaluation (Hirsh, Kang, Bodenhausen, 2012) and increases clicks and purchases (Matz et al., 2017). In this work, the level of ad congruence describes the extent to which the advertisement's message matches the receiver's dispositional characteristics—that is, his or her personality profile (Alter & Oppenheimer, 2009; Schwarz, 2004). This matching can be achieved by, for example, addressing issues and concerns that appear to be important to the receiver or by using language and tone in a message to which the receiver is receptive.

Even though this tailoring strategy is understudied in the field of political campaigns, a wider body of research explores voters' personality trait profiles and their correlations with political attitudes and behavior. Personality traits can, for example, predict ideology (Bakker, 2017) and voting for populist parties (Bakker, Rooduijn, & Schumacher, 2016).

¹ The Big Five traits are extraversion, neuroticism, agreeableness, conscientiousness, and openness. Extraversion is associated with characteristics such as sociability and activeness. Neuroticism is often linked to anxiety and anger. Agreeableness describes traits such as tolerance and cooperativeness. Conscientiousness is characterized by an achievement orientation and being hardworking. Finally, openness is associated with intelligence and originality (Barrick & Mount, 1991).

Cognitions and Emotions as Mediators of Microtargeting Effects

Because most research in the field of microtargeting focuses on the outcome of the messages, the question remains: What are the underlying processes behind the effectiveness of microtargeting? Or, why do people react more positively to a candidate ad that is particularly targeted toward their personality?

In this study, the differential susceptibility to media effects model (DSMM) by Valkenburg and Peter (2013) is used as a structural framework to answer this question. The DSMM claims, among other things, that media response states such as cognition and emotion mediate media effects. Furthermore, it suggests that differential susceptibility variables—for example, personality traits—function both as predictors of media use and as moderators of those response states. This research examines the effect of dispositional susceptibility—in this case, personality—on the relationship between media exposure and the emotional and cognitive response state. Further, the mediation effect of these response states on the effectiveness of the ad is examined. The cognitive response state describes “the extent to which media users . . . invest cognitive effort to comprehend media content,” while the emotional response state indicates the emotional reactions to the media content (Valkenburg & Peter, 2013, p. 228).

Persuasiveness of Psychometric Microtargeting

The central theoretical concept in this research is the fluency with which a receiver processes a message. It is assumed that the higher the congruence, the more fluently a message is processed (Alter & Oppenheimer, 2009; Schwarz, 2004). This means that the receiver can extract information from the message more easily and that more positive reactions are elicited (Winkielman & Cacioppo, 2001). To increase fluency based on psychological considerations, the persuasive message can be adapted to the motivational concerns of the receiver—for example, by exposing a neurotic person to a fear appeal—or by addressing issues and concerns that appear to be important to the receiver. Personality profiles can be used to predict voters’ concerns and the issues that are important to them. Here, personality traits are not conceptualized as merely descriptive categories but as predictors of certain motives and needs in social interactions (Denissen & Penke, 2008). Hence, once a candidate knows about a voter’s personality, she or he can predict which issues, narratives, and political topics might be important to the voter. With a congruent ad, a voter is expected to perceive the candidate as more similar to him- or herself, which increases the fluency of the processing. As with other forms of fluency (see Alter & Oppenheimer, 2009), this form of personality fluency leads to a more positive judgment of the content. Based on these theoretical considerations and the aforementioned experimental studies, it should be possible to predict voters’ propensity to vote for a candidate and their feelings toward the candidate in a political advertisement:

H1a: Higher ad congruence elicits a higher propensity to vote for a candidate than lower ad congruence.

H1b: Higher ad congruence elicits a more positive feeling toward a candidate than lower ad congruence.

Further, this research suggests that a voter’s feeling toward the candidate is positively related to his or her propensity to vote for the candidate. Experimental research shows that likeability is an important, yet not the only, factor in voting decisions (e.g., Lodge, Steenbergen, & Brau, 1995; Patton & Kaericher, 1980).

In a study among UK citizens, Shephard and Johns (2008) find, for example, that when voters associate the characteristic of warmth with a candidate, they are more likely to vote for that candidate. Thus, a voter's feeling toward a candidate is expected to mediate the effect of the candidate message:

H1c: The more positive a voter's feeling toward a candidate, the higher the propensity to vote for the candidate.

H1d: A voter's feeling toward a candidate mediates the effect of congruence on the propensity to vote for the candidate.

Cognitive Response

The DSMM predicts that the cognitive response state mediates media effects (Valkenburg & Peter, 2013). Valkenburg and Peter conceptualize the cognitive response state as "the extent to which media users selectively attend to and invest cognitive effort to comprehend media content" (p. 228). Presumably, high ad congruence triggers a higher cognitive response state than low ad congruence. This can be explained by the limited capacity model of motivated mediated message processing (Lang, 2017). This model assumes that media users have a limited capacity to process information and that "the processing of congruent content requires less cognitive effort, which leaves more resources available for the processing of less salient content" (Valkenburg & Peter, 2013, p. 232). Congruent ads are, therefore, expected to require less capacity for the orienting response and to leave more capacity for cognitive evaluations. This model finds support in research on self-schemata, which show that processing is faster and retrieval from memory is improved when the external stimuli are in line with one's own self-schema due to a higher perceived relevance of the message (Hong & Zinkhan, 1995).

Following on from this idea, high cognitive involvement is expected to result in a more immediate persuasive effect, whereas the effects in a low-involvement condition only appear after repeated exposure (Krugman, 1965). Since this experiment does not measure longitudinal effects, one can expect higher persuasive effects in line with the persuasive message when participants are more involved. This notion finds support in social cognitive theory (Bandura, 2001), cultivation theory (Shrum, 2009), and uses and gratifications theory, as Valkenburg and Peter (2013) summarize.²

H2: The cognitive response state mediates the effect of ad congruence on voters' feelings toward a candidate.

H2a: High ad congruence elicits a higher cognitive response than low ad congruence.

H2b: The higher the cognitive response state, the more positive voters' feelings will be toward the advertised candidate.

² Higher message scrutiny resulting in a stronger resistance to the persuasive message in high-involvement conditions is not expected in this experiment because the persuasive messages are designed in such generic fashion that they are not expected to elicit negative attitudes.

Emotional Response

According to the DSMM, emotional responses also mediate media effects (Valkenburg & Peter, 2013). The emotional response state “encompasses all affectively valenced reactions to media content” (p. 228). Higher ad congruence is expected to yield stronger and more positive emotional involvement with the ad. This prediction is supported by the hedonic fluency model, which claims that the positive effect of fluency on evaluation judgments is mediated by a positive affective response (Winkielman & Cacioppo, 2001). According to this model, a fluent message elicits a spontaneous affective response before the evaluation takes place and increases the positive evaluation of the message—in this case, the ad—due to perceptual fluency. Multiple studies support this assumption (e.g., Reber, Winkielman, & Schwarz, 1998; Winkielman & Cacioppo, 2001).³ Transportation theory (Green, Brock, & Kaufmann, 2004) backs the prediction that a more positive emotional response leads to more positive feelings toward the advertised subject.

H3: The emotional response state mediates the effect of ad congruence on voters’ feelings toward a candidate.

H3a: High ad congruence elicits a more positive emotional response to the ad than low ad congruence.

H3b: The more positive the emotional response state toward the ad, the more positive the voter’s feeling toward the advertised candidate.

Trustworthiness

A third factor that is expected to be positively affected by ad congruence is not part of the DSMM yet seems relevant for the study of the persuasiveness of political ads. While scientific evidence on the effect of trust on voters’ feelings toward a candidate is being scrutinized by some scholars (for a critical review of the role of trust in politics, see Levi & Stoker, 2000), studies that establish trust in politicians as an independent variable suggest a positive relationship to candidate evaluations (e.g., Hetherington, 1998; Parker, 1989). Olivola and Todorov (2010), for example, find that even a short exposure to a candidate’s image can influence voters’ beliefs about the candidate’s personality traits such as trustworthiness, which then affects important evaluation categories such as competence.

Referring back to the central concept of this study, fluency increases trust in the source—that is, “the honesty, integrity and believability of an endorser” (Erdogan, 1999, p. 297; McCroskey & Mehrley, 1969). In addition, according to the source credibility model (Hovland & Weiss, 1951), higher perceived trust as one dimension of credibility of the source (McCroskey & Mehrley, 1969) increases the effectiveness of a message (Erdogan, 1999). Furthermore, similarity leads to higher trustworthiness (Erdogan, 1999). As mentioned before, similarity occurs when the candidate’s message matches the issues and concerns that are important to the receiver. Research on patients’ trust in care providers shows, for example, that an

³ The positive effect of positive emotions is even stronger when the receiver is unfamiliar with the stimuli, as Machleit and Wilson (1988) show in a study on attitudinal change toward brands.

important predictor of trust is fidelity—that is, “caring and advocating for the patient’s interests or welfare and avoiding conflicts of interest” (Hall et al., 2002, p. 298).

Generally, interpersonal trust in a candidate is one of the most important attributes on which U.S. voters base their voting decision (e.g., Miller, Wattenberg, & Malanchuk, 1986). Therefore, it can be expected that trust is positively related to voters’ feelings toward a candidate.

H4: Trust mediates the effect of congruence on voters’ feelings toward a candidate.

H4a: High ad congruence elicits higher trust in the candidate than low ad congruence.

H4b: The higher a voter’s trust is in a candidate, the more positive the feeling toward the candidate.

All predicted effects and investigated variables are summarized in Figure 1.

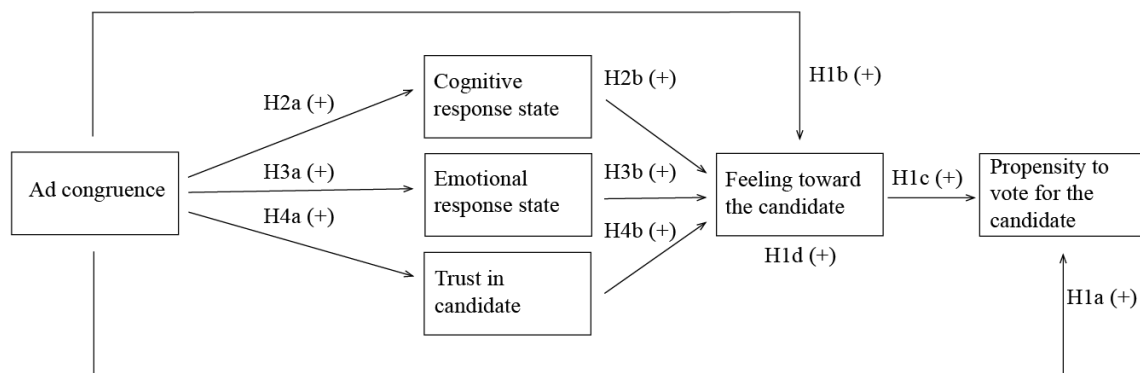


Figure 1. Psychometric targeting effects model based on Valkenburg and Peter's (2013) differential susceptibility to media effects model.

Method

Research Units

The sample population for this study is people from the U.S. aged 18 or older. The choice of U.S. participants stems from considerations concerning the stimuli design—that is, the creation of a suitably realistic ad—and cross-national differences in campaign communication and electoral systems (Swanson & Mancini, 1996). The United States was selected due to the high degree of personalization in majority systems (Garzia, 2011) and the presence of a feasible election case close to the time of the experiment—the November 2018 congressional elections. In addition, privacy and campaign regulations in many countries would not allow campaigners to conduct psychometric microtargeting, but such techniques are possible in the United States.

A total 205 participants took part in the experiment. Six were excluded because they did not meet the age criterion. The questionnaire was disseminated via social media channels. The data collection took place between November 16 and November 30, 2017.

Research Design

This study uses a between-subjects experimental research design. An online experiment with five experimental conditions was conducted. Participants were informed that the survey was related to the field of communication science. They first completed a personality test. After some buffer questions, each participant was randomly assigned to one of the five conditions. Next, participants' response state, level of trust, attitude toward the candidate, and propensity to vote for the candidate were assessed. Before demographic data were collected, a manipulation check was conducted. The questionnaire closed with a short debriefing. The questionnaire can be found in the supplementary material to this study.⁴

Dependent Variables

Emotional Response State

A self-assessment manikin test was employed to measure the emotional response state (Bradley & Lang, 1994). This test measures three dimensions of emotional states: (dis)pleasure, (non)arousal, dominance/submissiveness. The (dis)pleasure category indicates the emotional response state. The dimensions and their levels are presented in a graphic character, an icon resembling a human body and face, that yields 9-point scales on each dimension, where 1 = *displeased/nonaroused/submissive*, and 9 = *pleased/aroused/dominant* (Bradley & Lang, 1994). Self-assessment manikin tests have been used in multiple studies on advertising effects (e.g., Meagher, Arnau, & Rhudy, 2001; Morris & Boone, 1998) and are quick and easy measures of affective response that account for participants' inability to judge their own emotional reaction (Bradley & Lang, 1994; $M = 5.30$, $SD = 1.62$).

Cognitive Response State

To assess the cognitive response state, participants were asked to write down all thoughts that were elicited by the ad, as proposed by Cacioppo and Petty (1981). No time limit was set, and participants could use as many as 25 open field boxes to record their thoughts. A dimensional distinction as suggested by Cacioppo and Petty (1981) was not deemed necessary for this experiment since the only relevant factor is the number of thoughts triggered by the stimuli. A scale from 0 to 25 indicates the cognitive state. The more thoughts a participant wrote down, the higher the cognitive response state ($M = 4.54$, $SD = 3.06$).

⁴ The supplementary material to this study can be found at https://www.dropbox.com/s/mba953t9iusrq1w/Krotzek_Supplementary%20Material_Inside%20the%20Voter%27s%20Mind.pdf?dl=0.

Trustworthiness

To assess the candidate's level of trustworthiness, participants were asked to indicate how much they trust the candidate on a 7-point scale, where 1 = *not at all trustworthy*, and 7 = *very trustworthy* ($M = 3.24$, $SD = 1.51$; see, e.g., Garramone & Smith, 1984).

Feeling Toward the Candidate

Feeling toward the candidate was measured with a feeling thermometer similar to that used in the American National Election Study Time Series Studies (American National Election Studies, University of Michigan, & Stanford University, 2017). Participants were asked to indicate their attitude toward the candidate by moving a slider from 0 to 100, where 0 = *not feeling favorable toward the candidate*, and 100 = *feeling most favorable toward the candidate* ($M = 48.09$, $SD = 24.83$).⁵

Propensity to Vote

The propensity to vote for the candidate was measured by asking participants how probable it is, on an 11-point scale, that they will ever vote for this candidate, where 0 = *not at all probable*, and 10 = *very probable* ($M = 4.17$, $SD = 2.42$). This measurement was used in the European Election Studies (Schmitt, Popa, & Devinger, 2015).

Independent Variable: Ad Congruence

The independent variable ad congruence describes the congruence between the receiver's personality profile (and her or his consequent motivational concerns) and the candidate message. It is measured on a 5-point scale, where 1 = *low ad congruence*, and 5 = *high ad congruence* ($M = 3.58$, $SD = 0.99$). The variable was calculated by selecting the participant's personality score of the dimension that corresponds with the experimental condition to which he or she was assigned. For participants who, for example, were exposed to the neuroticism ad, their score on the neuroticism dimension was selected.

Stimuli

Each participant was randomly assigned to one of five tailored ads for a fictional political candidate.⁶ A tailored ad was designed for each personality dimension. To ensure comparability, only the textual claims in the ads differ. All ads were designed in the style of a sponsored post on the social media platform Facebook. The formulations and content of the ads were adapted to the five dimensions' characteristics—

⁵ In the original data set, 16 cases were coded as missing. These cases have been recoded with a value 50. It can be assumed that participants who did not change the position of the slider—and were therefore registered as missing—actually intended to evaluate the candidate with the value 50, which was the slider's default position.

⁶ Participants ($N = 199$) were distributed among conditions as follows: openness $n = 40$, conscientiousness $n = 37$, extraversion $n = 41$, agreeableness $n = 41$, and neuroticism $n = 40$.

that is, the characteristic motivational concerns of each personality dimension (Dijkstra, 2008).⁷ The extraversion ad focuses on rewards and social attention (Denissen & Penke, 2008; Lucas, Diener, Grob, Suh, & Shao, 2000); the agreeableness ad focuses on cooperation and interpersonal harmony (Denissen & Penke, 2008; Graziano & Eisenberg, 1997); the conscientiousness ad focuses on goal pursuit, order, and efficiency (Denissen & Penke, 2008; Roberts, Chernyshenko, Stark, & Goldberg, 2005); the neuroticism ad focuses on threats, uncertainty, and sensitivity to social exclusion (Carver, Sutton, & Scheier, 2000; Denissen & Penke, 2008; Hirsh & Inzlicht, 2008); and the openness ad focuses on creativity, innovation, and the reward value of cognitive activity (Denissen & Penke, 2008; McCrae & Costa, 1997). Hirsh, Kang, and von Bodenhausen (2012) conducted a similar experiment with tailored ads for a cellular phone. Their manipulations worked successfully, which is why their general tailoring strategy was adapted for the political context in this study (the stimuli are provided in the supplementary material).

To increase the experiment's external validity, a 30-second time limit for the exposure to the stimulus was set. In this way, a social media experience was simulated. The stimuli were pilot-tested and adjusted in line with the received feedback.

For the manipulation check, participants were asked to rate the candidates on a 10-item personality inventory scale (Gosling et al., 2003). Participants indicated how much they agree with the statements on a 5-point scale, where 1 = *disagree strongly*, and 5 = *agree strongly*. For each dimension, the mean of both items was calculated, resulting in a scale ranging from 1 to 5 with nine possible values.⁸

Personality Trait Measure

There is a wide variety of personality trait measures. Some very short measures with only two items per dimension do not seem adequate, but long measures can take up to 60 minutes, which is not feasible for an online experiment. Hence, participants' personality profiles were assessed with the 20-item mini-IPIP (international personality item pool) scale introduced by Donnellan, Oswald, Baird, and Lucas (2006) based on Goldberg's (1999) 50-item IPIP. Participants indicated their answers on a 5-point scale, where 1 = *disagree strongly*, and 5 = *agree strongly*. Based on the answers for the four items of each personality dimension, an index score between 1 and 5 was computed for each dimension, where 1 = *low score on dimension X*, and 5 = *high score on dimension X*.

⁷ Participants were briefed about the political context of the ad. They were told that the candidate would run as an independent candidate in the 5th congressional district in Oregon (U.S.) in the November 2018 congressional elections.

⁸ For each condition, an independent *t* test was used to compare the means of the candidate evaluation on the dimension toward which the ad was tailored between those exposed to this condition and those who were not in this condition. The manipulations worked as desired, with the exception of the conscientiousness condition. The difference is not significant in any of the five cases. This article reports the results for all cases, including the conscientiousness condition. An analysis excluding the conscientiousness condition ($n = 162$) reveals that the effect for H1b is slightly larger, $b = 4.42$, $t = 2.17$, $p = .031$, 95% CI [0.30, 8.44]. Further, the effect of emotion on feeling toward the candidate (H3b) is slightly larger, $b = 3.78$, $t = 1.22$, $p = .002$, 95% CI [1.34, 6.19]. For all other hypothesis tests, no substantial differences were found.

Control Variables

To control for demographic characteristics, participants were asked to indicate their gender (80 men, 105 women, and 14 participants identify as neither male nor female), highest level of education reached (17 answer categories, *Mode* and *Mdn* = bachelor's degree), interest in politics on a 7-point scale, where 1 = *not interested at all*, and 7 = *very interested* ($M = 5.24$, $SD = 1.69$), political orientation on an 11-point scale, where 0 = *left* and 10 = *right* ($M = 3.61$, $SD = 2.60$), and party affiliation (87 Democrats, 33 Republicans, 18 third party, and 61 do not feel close to any party).

Results

The analysis of the model was conducted in two steps. For both steps, I used model four of Hayes's (2017) PROCESS macro for SPSS. First, I assessed the relationship of ad congruence on the participant's feelings toward the candidate and the three hypothesized mediators cognition, emotion, and trust. The control variables were included to rule out third factors. A second step tested for the effect of ad congruence on the participant's propensity to vote for the candidate, including the hypothesized mediator feelings toward the candidate and the same control variable as in the first model.⁹ Instead of using Baron and Kenny's (1986) causal steps approach, the choice for bootstrapping to test for the significance of mediations is based on research conducted by Shrout and Bolger (2002), who claim that a nonsignificant effect of the independent on the dependent variable is no exclusion criterion for predicted mediations.

The results of the analyses are summarized in Figure 2. The analyses reveal a significant total effect of ad congruence on participants' feelings toward the candidate, $b = 3.66$, $t = 2.03$, $p = .044$, 95% CI = [0.10, 7.22]. A participant whose personality is highly congruent with the candidate's message evaluates the candidate on average approximately 15 points better on the feeling thermometer than a participant whose personality is not congruent, controlling for the control variables but not for the mediators. The model also shows that the direct effect of congruence on participants' feelings toward the candidate—that is, the effect when controlling for the tested mediators—is not significant, $b = 2.22$, $t = 1.60$, $p = .111$, 95% CI [-0.52, 4.94]. The model is significant, $F(11, 187) = 14.863$, $p < .001$.

⁹ The same tests were also conducted for each experimental condition individually and revealed no significant effects.

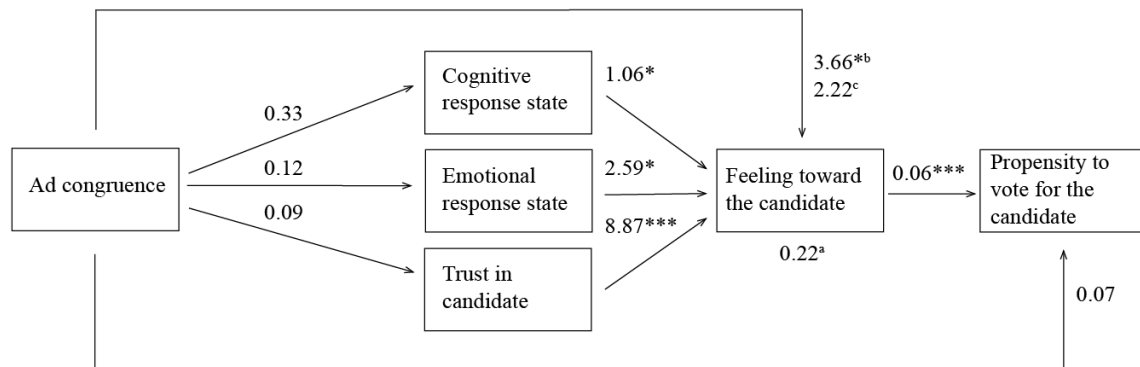


Figure 2. Psychometric targeting effects model with unstandardized effect sizes (b) and significance.

^a Confidence interval does not contain the null hypothesis value.

^b Total effect.

^c Direct effect.

* $p < .05$. *** $p < .001$.

The PROCESS mediation analysis reveals that none of the three variables for cognition, emotion, and trust significantly mediates the effect of ad congruence on participants' feelings toward the candidate (see Table 1). Thus, H2, H3, and H4 are rejected. In all three cases, the effect of ad congruence on the mediating variable is insignificant while the effect of the mediating variable on participants' feelings toward the candidate is significant (see Table 2). Therefore, H2a, H3a, and H4a must be rejected. For H2a, $F(8, 190) = 1.430$, $p = .186$; for H3a, $F(8, 190) = 2.459$, $p = .015$; and for H4a, $F(8, 190) = 1.401$, $p = .198$. H2b, H3b, and H4b are supported.

Table 1. PROCESS Mediation Analysis of Mediators Between Ad Congruence and Voters' Propensity to Vote for a Candidate.

Variable	b^*	BootSE	LL	UL
Cognition	0.334	0.35	-0.19	1.16
Emotion	0.311	0.40	-0.31	1.28
Trust	0.797	1.00	-1.14	2.85

Note. $N = 199$. Independent variable is congruence. Dependent variable is propensity to vote for the candidate. BootSE = standard error; LL = lower limit, bootstrapped 95% confidence interval; UL = upper limit, bootstrapped 95% confidence interval.

The second PROCESS mediation test with ad congruence as an independent variable and the participants' propensity to vote for the candidate as the dependent variable, including control variables as well as the predicted mediator of feelings toward the candidate, shows that the relationship between ad congruence and propensity to vote is not significant, $b = 0.07$, $t = 0.38$, $p = .707$, 95% CI [-0.27, 0.40], $F(9, 189) = 2.745$, $p = .005$. Therefore, H1a cannot be confirmed. Yet participants' feelings toward the candidate positively affects their propensity to vote as predicted in H1c at a 99.9% significance level, $b =$

0.06, $t = 10.43$, $p < .001$, 95% CI [0.05, 0.07].¹⁰ Therefore, the positive effect of a participant's feelings toward the candidate on his or her propensity to vote for the candidate is significant and moderate. This result supports H1c.

The indirect effect between congruence and propensity to vote was tested by employing a bootstrap estimation approach with 5,000 samples, revealing that the variable of feelings toward the candidate is a significant mediator, $b = 0.22$, $SE = 0.105$, 95% CI [0.01, 0.43]. The completely standardized indirect effect is weak, $b^* = .09$, $SE = 0.043$, 95% CI [0.01, 0.17]. H1d, therefore, is supported.¹¹

Table 2. Predictors of Participants' Feelings Toward the Candidate.

Variable	<i>B</i>	<i>SE</i>	<i>t</i>	LL	UL
Constant	5.82	9.36	0.62	-12.65	24.29
Congruence	2.22	1.38	1.60	-0.51	4.94
Cognition	1.06*	0.45	2.36	0.17	1.94
Emotion	2.59*	1.06	2.44	0.50	4.68
Trust	8.87***	1.12	7.91	6.66	11.08
Male	-12.55*	5.81	-2.16	-24.02	-1.09
Female	-13.45*	5.60	-2.40	-24.49	-2.40
Interest	-0.24	0.84	-0.28	-1.89	1.42
Political orientation	0.14	0.74	0.18	-1.32	1.59
Democrat	-1.22	3.43	-0.36	-7.99	5.55
Republican	-0.92	4.87	-0.20	-10.52	8.68
Third party	7.79	5.10	1.53	-2.27	17.85

Note. $N = 199$. Dependent variable is feeling toward the candidate. Model: $F(11, 187) = 14.863$, $p < .001$, adjusted $R^2 = .440$. LL = lower limit, 95% confidence interval for *B*; UL = upper limit, 95% confidence interval for *B*.

* $p < .05$. *** $p < .001$.

Conclusion

To the best of my knowledge, this research is the first to assess differential effects of personality targeting in the field of political communication using manipulations for all Big Five personality dimensions. Therefore, it contributes to the field of media effects and can be the starting point for the development of a theoretical framework for microtargeting effects. This research yields four main insights.

¹⁰ In this model, congruence also significantly affects participants' feelings toward the candidate, $b = 3.77$, $t = 2.09$, $p = .038$, 95% CI [0.20, 7.35], $F(10, 188) = 15.749$, $p < .001$.

¹¹ All hypothesis tests were also conducted excluding participants who needed less than five or more than 30 minutes to complete the experiment ($n = 180$). These tests reveal no substantial differences for any of the hypotheses, except H1d. The exclusion of cases yields an insignificant mediation effect, $b = 0.18$, $SE = 0.102$, 95% CI [-0.02, 0.39].

First, ad congruence can significantly improve voters' feelings toward a candidate. But a voter's propensity to vote is not affected by ad congruence. Hence, microtargeting has great potential to sway candidate evaluations on the personal level but not as much potential to change political convictions—at least not after a single exposure.¹² Future research should, therefore, further investigate the role of emotions in microtargeting effects.

Second, the hypothesized mediators of cognitive response, emotional response, and trust do not mediate the effect of ad congruence on voters' feelings toward candidates, as predicted by the DSMM. Differences between this study and previous evidence by Valkenburg and Peter (2013) might stem from the way emotions and cognitions were measured. Future research might attempt to elucidate the true extent of such mediation processes by using, for example, mechanical and electrophysiological measurements that detect unconscious effects (Potter & Bolls, 2012) and by relying on larger and more representative samples.

Third, this research contributes to the mixing console analogy introduced by Valkenburg and Peter (2013). The analogy concerns the combination of the suggested response states. Based on the present results, the effect is highest when the cognitive response state (H2b) and emotional response state (H3b) are high, as suggested by Valkenburg and Peter.

Fourth, trust was not significantly influenced by ad congruence. More background information about the candidate or a repeated exposure to contents concerning the candidate could increase the weight of this factor. Despite this insignificant effect of congruence on trust, the predicted effect of trust on participants' feelings toward the candidate was confirmed.

This study yields a mixed answer to the first research question: Candidate messages are more effective in improving a voter's feeling toward a candidate when the messages are congruent with the voter's personality profile, but they do not result in a higher propensity to vote for the advertised candidate. The second research question asked about the mediation effect of cognition, emotional response, and trust in the candidate. This study finds no significant mediation effects of these variables. Therefore, the question about underlying processes behind the effects of congruent messages remains unanswered and is open to further investigation.

The main shortcomings of this study are the constitution and size of the sample. A larger sample would have enabled an examination of how personality profiles differ in terms of susceptibility to microtargeting effects and how this susceptibility differs by age, level of interest, and education. Another limitation of this research is that it does not directly test for the effect of ad congruence on fluency—one of the study's main theoretical concepts. Therefore, a direct assessment of this variable would increase the explanatory power of this research.

Notwithstanding these limitations, this research shows the persuasive potential of psychometric microtargeting. Small modifications of the textual stimuli were sufficient to increase the messages'

¹² Research shows that the effects of familiarity and similarity on personal evaluation increase after repeated exposure (Moreland & Zajonc, 1982).

effectiveness. It can be expected that tailoring design elements will sway voters' attitudes even more toward the desired direction (for a successful adaptation of design elements, see Matz et al., 2017).

On a final note, it should be mentioned that, at the time of writing, it is not known whether Cambridge Analytica employed psychometric microtargeting in the 2016 Trump campaign. Although its claims were debunked by journalists (Taggart, 2017), new allegations about the abuse of personal data in 2014 caused concerns among researchers, journalists, and politicians in March 2018 (Rosenberg, Confessore, & Cadwalladr, 2018). Previous research shows that what Cambridge Analytica claims to have done is realizable. And the present research demonstrates the technique's potential to influence voters on an emotional level—a result that should inform the discussion about privacy and data regulations, especially in political campaigns.

References

- Alter, A. L., & Oppenheimer, D. M. (2009). Uniting the tribes of fluency to form a metacognitive nation. *Personality and Social Psychology Review, 13*(3), 219–235. doi:10.1177/1088868309341564
- American National Election Studies, University of Michigan, & Stanford University. (2017). *ANES 2016 time series study* (ICPSR 36824). Ann Arbor, MI: Inter-university Consortium for Political and Social Research. doi:10.3886/ICPSR36824.v2
- Bakker, B. N. (2017). Personality traits, income, and economic ideology. *Political Psychology, 38*(6), 1025–1041. doi:10.1111/pops.12349
- Bakker, B. N., Rooduijn, M., & Schumacher, G. (2016). The psychological roots of populist voting: Evidence from the United States, the Netherlands and Germany. *European Journal of Political Research, 55*(2), 302–320. doi:10.1111/1475-6765.12121
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*(1), 1–26. doi:10.1146/annurev.psych.52.1.1
- Barbu, O. (2014). Advertising, microtargeting and social media. *Procedia—Social and Behavioral Sciences, 163*, 44–49. doi:10.1016/j.sbspro.2014.12.284
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182. doi:10.1037/0022-3514.51.6.1173
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*(1), 1–26. doi:10.1111/j.1744-6570.1991.tb00688.x

- Bennett, C. J. (2016). Voter databases, micro-targeting, and data protection law: Can political parties campaign in Europe as they do in North America? *International Data Privacy Law*, 6(4), 261–275. doi:10.1093/idpl/ipw021
- Bodó, B., Erickson, K., Katzenbach, C., Musiani, F., & van Hoboken, J. (Eds.). (2017). Special issue: Political micro-targeting. *Internet Policy Review*, 6(4).
- Bradley, M. M., & Lang, P. J. (1994). Measuring emotion: The self-assessment manikin and the semantic differential. *Journal of Behavior Therapy and Experimental Psychiatry*, 25(1), 49–59. doi:10.1016/0005-7916(94)90063-9
- Cacioppo, J. T., & Petty, R. E. (1981). Social psychological procedures for cognitive response assessment: The thought listing technique. In T. V. Merluzzi, C. R. Glass, & M. Genest (Eds.), *Cognitive assessment* (pp. 388–438). New York, NY: Guilford Press.
- Cadwalladr, C. (2017, May 7). The great British Brexit robbery: How our democracy was hijacked. *The Guardian*. Retrieved from <https://www.theguardian.com/technology/2017/may/07/the-great-british-brexit-robbery-hijacked-democracy>
- Carver, C. S., Sutton, S. K., & Scheier, M. F. (2000). Action, emotion, and personality: Emerging conceptual integration. *Personality and Social Psychology Bulletin*, 26(6), 741–751. doi:10.1177/0146167200268008
- Denissen, J. J., & Penke, L. (2008). Motivational individual reaction norms underlying the five-factor model of personality: First steps towards a theory-based conceptual framework. *Journal of Research in Personality*, 42(5), 1285–1302. doi:10.1016/j.jrp.2008.04.002
- Dijkstra, A. (2008). The psychology of tailoring-ingredients in computer-tailored persuasion. *Social and Personality Psychology Compass*, 2(2), 765–784. doi:10.1111/j.1751-9004.2008.00081.x
- Dijkstra, A., & de Vries, H. (1999). The development of computer-generated tailored interventions. *Patient Education and Counseling*, 36(2), 193–203. doi:10.1016/S0738-3991(98)00135-9
- Dobber, T., Trilling, D., Helberger, N., & de Vreese, C. H. (2017). Two crates of beer and 40 pizzas: The adoption of innovative political behavioural targeting techniques. *Internet Policy Review*, 6(4). doi:10.14763/2017.4.777
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment*, 18(2), 192–203. doi:10.1037/1040-3590.18.2.192
- Erdogan, B. Z. (1999). Celebrity endorsement: A literature review. *Journal of Marketing Management*, 15(4), 291–314. doi:10.1362/026725799784870379

- Farahat, A., & Bailey, M. C. (2012). How effective is targeted advertising? In *Proceedings of the 21st International Conference on World Wide Web* (pp. 111–120). New York, NY: Association for Computing Machinery. doi:10.1145/2187836.2187852
- Franz, M. M. (2013). Targeting campaign messages. Good for campaigns but bad for America. In T. N. Ridout (Ed.), *New directions in media and politics* (pp. 103–117). New York, NY: Routledge.
- Fulgoni, G. M., Lipsman, A., & Davidsen, C. (2016). The power of political advertising: Lessons for practitioners. *Journal of Advertising Research, 56*(3), 239–244. doi:10.2501/JAR-2016-034
- Garramone, G. M., & Smith, S. J. (1984). Reactions to political advertising: Clarifying sponsor effects. *Journalism Quarterly, 61*(4), 771–775. doi:10.1177/107769908406100404
- Garzia, D. (2011). The personalization of politics in Western democracies: Causes and consequences on leader–follower relationships. *Leadership Quarterly, 22*(4), 697–709. doi:10.1016/j.leaqua.2011.05.010
- Goldberg, L. R. (1999). A broad-bandwidth, public-domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. J. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality psychology in Europe* (pp. 7–28). Tilburg, Netherlands: Tilburg University Press.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the big-five personality domains. *Journal of Research in Personality, 37*(6), 504–528. doi:10.1016/S0092-6566(03)00046-1
- Grassegger, H., & Krogerus, M. (2016, December 3). Ich habe nur gezeigt, dass es die Bombe gibt [I only showed that the bomb exists]. *Das Magazin*. Retrieved from <https://www.dasmagazin.ch/2016/12/03/ich-habe-nur-zeigt-dass-es-die-bombe-gibt/>
- Grassegger, H., & Krogerus, M. (2017, January 28). The data that turned the world upside down. *Motherboard*. Retrieved from https://motherboard.vice.com/en_us/article/mg9vvn/how-our-likes-helped-trump-win
- Graziano, W. G., & Eisenberg, N. (1997). Agreeableness: A dimension of personality. *Handbook of Personality Psychology, 18*(2), 185–213. doi:10.1016/B978-012134645-4/50031-7
- Green, M. C., Brock, T. C., & Kaufman, G. F. (2004). Understanding media enjoyment: The role of transportation into narrative worlds. *Communication Theory, 14*(4), 311–327. doi:10.1111/j.1468-2885.2004.tb00317.x

- Hall, M. A., Zheng, B., Dugan, E., Camacho, F., Kidd, K. E., Mishra, A., & Balkrishnan, R. (2002). Measuring patients' trust in their primary care providers. *Medical Care Research and Review*, 59(3), 293–318. doi:10.1177/1077558702059003004
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). New York, NY: Guilford Press.
- Hersh, E. D., & Schaffner, B. F. (2013). Targeted campaign appeals and the value of ambiguity. *Journal of Politics*, 75(2), 520–534. doi:10.1017/S0022381613000182
- Hirsh, J. B., & Inzlicht, M. (2008). The devil you know: Neuroticism predicts neural response to uncertainty. *Psychological Science*, 19(10), 962–967. doi:10.1111/j.1467-9280.2008.02183.x
- Hirsh, J. B., Kang, S. K., & Bodenhausen, G. V. (2012). Personalized persuasion: Tailoring persuasive appeals to recipients' personality traits. *Psychological Science*, 23(6), 578–581. doi:10.1177/0956797611436349
- Hetherington, M. J. (1998). The political relevance of political trust. *American Political Science Review*, 92(4), 791–808. doi:10.2307/2586304
- Hong, J. W., & Zinkhan, G. M. (1995). Self-concept and advertising effectiveness: The influence of congruency, conspicuousness, and response mode. *Psychology and Marketing*, 12(1), 53–77. doi:10.1002/mar.4220120105
- Hovland, C. I., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, 15(4), 635–650. doi:10.1086/266350
- Kosinski, M., Stillwell, D., & Graepel, T. (2013). Private traits and attributes are predictable from digital records of human behavior. *Proceedings of the National Academy of Sciences*, 110(15), 5802–5805. doi:10.1073/pnas.1218772110
- Kreuter, M. W., Bull, F. C., Clark, E. M., & Oswald, D. L. (1999). Understanding how people process health information: A comparison of tailored and nontailored weight-loss materials. *Health Psychology*, 18(5), 487–494. doi:10.1037/0278-6133.18.5.487
- Krugman, H. E. (1965). The impact of television advertising: Learning without involvement. *Public Opinion Quarterly*, 29(3), 349–356. doi:10.1086/267335
- Kruikemeier, S., Sezgin, M., & Boerman, S. C. (2016). Political microtargeting: Relationship between personalized advertising on Facebook and voters' responses. *Cyberpsychology, Behavior, and Social Networking*, 19(6), 367–372. doi:10.1089/cyber.2015.0652

- Kruschinski, S., & Haller, A. (2017). Restrictions on data-driven political micro-targeting in Germany. *Internet Policy Review*, 6(4). doi:10.14763/2017.4.777
- Lang, A. (2017). Limited capacity model of motivated mediated message processing (LC4MP). In P. Rössler, C. A. Hoffner, & L. van Zoonen (Eds.), *The international encyclopedia of media effects* (pp. 1–9). Hoboken, NJ: Wiley.
- Levi, M., & Stoker, L. (2000). Political trust and trustworthiness. *Annual Review of Political Science*, 3(1), 475–507. doi:10.1146/annurev.polisci.3.1.475
- Lodge, M., Steenbergen, M. R., & Brau, S. (1995). The responsive voter: Campaign information and the dynamics of candidate evaluation. *American Political Science Review*, 89(2), 309–326. doi:10.2307/2082427
- Lucas, R. E., Diener, E., Grob, A., Suh, E. M., & Shao, L. (2000). Cross-cultural evidence for the fundamental features of extraversion. *Journal of Personality and Social Psychology*, 79(3), 452–468. doi:10.1037/0022-3514.79.3.452
- Machleit, K. A., & Wilson, R. D. (1988). Emotional feelings and attitude toward the advertisement: The roles of brand familiarity and repetition. *Journal of Advertising*, 17(3), 27–35. doi:10.1080/00913367.1988.10673121
- Magin, M., Podschuweit, N., Haßler, J., & Russmann, U. (2017). Campaigning in the fourth age of political communication. A multi-method study on the use of Facebook by German and Austrian parties in the 2013 national election campaigns. *Information, Communication & Society*, 20(11), 1698–1719. doi:10.1080/1369118X.2016.1254269
- Matz, S. C., Kosinski, M., Nave, G., & Stillwell, D. J. (2017). Psychological targeting as an effective approach to digital mass persuasion. *Proceedings of the National Academy of Sciences*, 114(48), 12714–12719.
- McCrae, R. R., & Costa, P. T., Jr. (1997). Conceptions and correlates of openness to experience. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 825–847). Cambridge, MA: Academic Press.
- McCroskey, J. C., & Mehrley, R. S. (1969). The effects of disorganization and nonfluency on attitude change and source credibility. *Speech Monographs*, 36(1), 13–21. doi:10.1080/03637756909375604
- Meagher, M. W., Arnau, R. C., & Rhudy, J. L. (2001). Pain and emotion: Effects of affective picture modulation. *Psychosomatic Medicine*, 63(1), 79–90. doi:10.1097/00006842-200101000-00010

- Miller, A. H., Wattenberg, M. P., & Malanchuk, O. (1986). Schematic assessments of presidential candidates. *American Political Science Review*, 80(2), 521–540. doi:10.2307/1958272
- Moreland, R. L., & Zajonc, R. B. (1982). Exposure effects in person perception: Familiarity, similarity, and attraction. *Journal of Experimental Social Psychology*, 18(5), 395–415. doi:10.1016/0022-1031(82)90062-2
- Morris, J. D., & Boone, M. A. (1998). The effects of music on emotional response, brand attitude, and purchase intent in an emotional advertising condition. *Advances in Consumer Research*, 25, 518–526. Retrieved from <http://www.acrwebsite.org/volumes/8207/volumes/v25/NA-25>
- Noar, S. M., Benac, C. N., & Harris, M. S. (2007). Does tailoring matter? Meta-analytic review of tailored print health behavior change interventions. *Psychological Bulletin*, 133(4), 673–693. doi:10.1037/0033-2909.133.4.673
- Olivola, C. Y., & Todorov, A. (2010). Elected in 100 milliseconds: Appearance-based trait inferences and voting. *Journal of Nonverbal Behavior*, 34(2), 83–110. doi:10.1007/s10919-009-0082-1
- Parker, G. R. (1989). The role of constituent trust in congressional elections. *Public Opinion Quarterly*, 53(2), 175–196. doi:10.1086/269502
- Patton, G. W., & Kaericher, C. E. (1980). Effect of characteristics of the candidate on voter's preference. *Psychological Reports*, 47(1), 171–180. doi:10.2466/pr0.1980.47.1.171
- Potter, R. F., & Bolls, P. (2012). *Psychophysiological measurement and meaning: Cognitive and emotional processing of media*. New York, NY: Routledge.
- Reber, R., Winkielman, P., & Schwarz, N. (1998). Effects of perceptual fluency on affective judgments. *Psychological Science*, 9(1), 45–48. doi:10.1111/1467-9280.00008
- Roberts, B. W., Chernyshenko, O. S., Stark, S., & Goldberg, L. R. (2005). The structure of conscientiousness: An empirical investigation based on seven major personality questionnaires. *Personnel Psychology*, 58(1), 103–139. doi:10.1111/j.1744-6570.2005.00301.x
- Rosenberg, M., Confessore, N., & Cadwalladr, C. (2018, March 17). How Trump consultants exploited the Facebook data of millions. *The New York Times*. Retrieved from <https://www.nytimes.com/2018/03/17/us/politics/cambridge-analytica-trump-campaign.html>
- Rubinstein, I. S. (2014). Voter privacy in the age of big data. *Wisconsin Law Review*, 5, 861–936. doi:10.2139/ssrn.2447956
- Schmitt, H., Popa, S. A., & Devinger, F. (2015). *European Parliament election study 2014, voter study, supplementary study*. Cologne, Germany: StudyGESIS Data Archive. doi:10.4232/1.5161

- Schumann, J. H., von Wangenheim, F., & Groene, N. (2014). Targeted online advertising: Using reciprocity appeals to increase acceptance among users of free web services. *Journal of Marketing, 78*(1), 59–75. doi:10.1509/jm.11.0316
- Schwarz, N. (2004). Metacognitive experiences in consumer judgment and decision making. *Journal of Consumer Psychology, 14*(4), 332–348. doi:10.1207/s15327663jcp1404_2
- Shephard, M., & Johns, R. (2008). Candidate image and electoral preference in Britain. *British Politics, 3*(3), 324–349. doi:10.1057/bp.2008.8
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods, 7*(4), 422–445. doi:10.1037/1082-989X.7.4.422
- Shrum, L. J. (2009). Media consumption and perceptions of social reality. In J. Bryant & M. B. Oliver (Eds.), *Media effects: Advances in theory and research* (pp. 50–73). New York, NY: Routledge.
- Swanson, D. L., & Mancini, P. (1996). Politics, media, and modern democracy: An introduction. In D. L. Swanson & P. Mancini (Eds.), *Politics, media, and modern democracy: An international study of innovations in electoral campaigning and their consequences* (pp. 1–26). Westport, CT: Praeger.
- Taggart, K. (2017, February 16). The truth about the Trump data team that people are freaking out about. *BuzzFeed News*. Retrieved from https://www.buzzfeed.com/kendalltaggart/the-truth-about-the-trump-data-team-that-people-are-freaking?utm_term=.jpyr09WrGj#.yqZ7z5y7D3
- Turow, J., Delli Carpini, M. X., Draper, N. A., & Howard-Williams, R. (2012, July). *Americans roundly reject tailored political advertising*. Annenberg School for Communication. Retrieved from <http://graphics8.nytimes.com/packages/pdf/business/24adco.pdf>
- Valkenburg, P. M., & Peter, J. (2013). The differential susceptibility to media effects model. *Journal of Communication, 63*(2), 221–243. doi:10.1111/jcom.12024
- Winkielman, P., & Cacioppo, J. T. (2001). Mind at ease puts a smile on the face: Psychophysiological evidence that processing facilitation elicits positive affect. *Journal of Personality and Social Psychology, 81*(6), 989–1000. doi:10.1037/0022-3514.81.6.989
- Yan, J., Liu, N., Wang, G., Zhang, W., Jiang, Y., & Chen, Z. (2009). How much can behavioral targeting help online advertising? In *Proceedings of the 18th International Conference on World Wide Web* (pp. 261–270). New York, NY: Association for Computing Machinery. doi:10.1145/1526709.1526745