Pre-analysis Plan: Gender Differences in Emotional Responses to Partisan Cues

Claire Gothreau, Temple University
Bert N. Bakker, University of Amsterdam
Kevin Arceneaux, Temple University

Emotional Attachment to Parties

Recent research asserts that partisanship, rather than being just an instrumental label that reflects policy preferences, functions as an important social identity (Huddy, Mason, & Aaroe 2015). This distinction has important implications for political participation, interest, and polarization. Social identity theory posits that our group identities are a fundamental part of our self-esteem and sense of belongingness (Tajfel 1979). The theory purports that people are motivated to elevate the groups they belong to, and often seek out negative aspects of out-groups. Huddy et al. (2015, pg. 3) state, “The maintenance of positive group distinctiveness is an active process, especially when a group’s position or status is threatened, helping account for the dynamic nature of partisan political activity.”

The idea of partisanship functions as a core part of some individual’s social identity is consistent with earlier literature in political science. In the American Voter, Campbell, Converse, Miller, and Stokes (1960) already put forward that partisanship captures the “affective orientation to an important group-object in his environment” towards a party (Campbell et al., 1960, p.121). Standard measures of partisan identity utilize survey items such as, “Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what?” This is an explicit cognitive evaluation instead of an affective evaluation (Burden & Klofstad, 2005; Neely, 2007). Huddy et al. (2015) use a measure of partisanship that better captures the affective aspect of self-categorization as a Democrat or a Republican. This measure is rooted in social identity theory (Mael and Tetrick 1992). This project seeks to build on this literature and consider the positive and negative emotions evoked by political parties. In particular, we theorize on the potential gender differences in emotional responses to parties.

Greene and Elder (2001, pg. 69) state, “Since women’s socialization and life experiences encourage them to value connections with others more so than men, social identity, and its emphasis on the group, should play a greater role in forming the partisanship of women than men. As men, relative to women, value separateness, social identity should play a lesser role in their psychological construction of partisanship.” Much like Green and Elder (2001), we hypothesize that social identification and the affective nature of partisanship plays a more significant role for women. We have the benefit of being able to compare differences in social identification between men and women using the self-reported eight-item partisan identity strength measure (Brewer and Silver 2000; Greene 2004; Huddy et al. 2015), as well as the emotional response to parties in the form of physiological data. The benefit of collecting the

1 Bert Bakker’s research received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 750443. The research was also supported by the Behavioral Foundations Laboratory at Temple University (Arceneaux and Gothreau). We want to thank Amanda Alvarez and Anthony Del Signore for their help collecting the data.
physiological data is that it is an unobtrusive measure that is not subject to social desirability bias in the way that self-reported measures are.

**Gender and Partisan Attachments**

Are there gender differences in emotionally-laden partisan attachments? Although the literature is scant, there is research that suggests that women psychologically relate to parties in a different way than men. Given the distinct life experiences and socialization of men and women, it would be logical that women would approach the political sphere differently. Women are more likely to be Democrats than men, but are also more likely to affiliate with a political party generally (Burden and Greene 2000). Building off the notion that women’s socialization leads them to value connections with others and community more than men, Greene and Elder (2001) theorize that for women, the group component of partisan identity should play a more significant role in the formation of their partisanship. The authors find evidence that the group component of partisanship does indeed play a significant role in the partisanship of women, but does not for men (Greene and Elder 2001). As Greene and Elder (2001, pg. 64) state, “If men and women have different psychological orientations toward politics, it is reasonable to expect that gender may lead to systematic differences in the affective and cognitive bases of partisanship.” We predict that because women value the affective foundation of partisanship more than men, their emotional responses to political parties will be stronger. This leads to our first hypothesis: **Women have stronger emotional responses to partisan cues than men (H1).**

**Negative Partisanship**

Part of social identity theory is the idea of in-group bias (Tajfel 1981). Once identified with a group, individuals are motivated to advance that group and positively distinguish it from other groups (Huddy et al. 2015). With regards to political parties, this leads to the desire to advance the party’s status through electoral dominance (Huddy 2001). Affective orientations towards parties can be both positive and negative. Greene (1999, p.395) explained that “a clear preference for one party goes hand-in-hand with a negative attitude toward the opposition party.” Indeed, people also experience aversion towards other parties (Greene, 1999; Maggiotto & Piereson, 1977). The literature on negative partisanship aligns with the work on affective polarization which has shown that over time Americans express more animosity to the opposing party (Iyengar et al., 2012; Iyengar & Westwood, 2015).

Building on the literature on negative partisanship, we hypothesize that when exposed to the out-group party, women will have more negative emotions than men (H2). Given the literature on social identity theory and partisanship, we expect that the affective component of partisanship will be stronger for women. This includes negative affect towards the out-party. The strength of the emotions experienced towards the Out-party should be conditional upon the strength of the identification with the In-party.

**Research Design**

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2 In this case we measure emotional response as physiological arousal using electrodermal activity, which is discussed later on in this pre-analysis plan.
**Ethics**

The study was approved by Temple University’s Institutional Review Board (#24882). Participants could stop participation at all points during the study and were debriefed at the end of the study.

**Sample**

The study was conducted in the Behavioral Foundations Laboratory at Temple University starting February 7, 2018 until June 29, 2018. We stopped data collection until at least 199 participants completed the study. The protocol is part of a larger omnibus study and power was calculated upon another part of the study. In that study we observe that the effect sizes sizes in the published literature are small (Dodd et al., 2012; Knoll, O’Daniel, & Cusato, 2015; Oxley et al., 2008; Smith, Oxley, Hibbing, Alford, & Hibbing, 2011a). Using Gpower 3.1.9.2 we calculated the sample size we would need to achieve a power of 0.8 given the alpha (0.05) and expected $\Delta F^2$ of 0.04. This shows us that we need a sample size of 199 respondents.

The study lasted an hour. We rely upon respondents recruited among students from Temple University, advertisements on Craigslist as well as temporary employment agencies. As such, we provide different levels of compensation. Student participants are compensated for their participation with $10.00, which is above an hourly minimum wage; Craigslist participants receive $30.00 and temporary agency participants are compensated in accordance to the rates set by the temporary employment agency ($16.00 per hour). We do this so that participants will not be asked to forgo income as a condition of participating in the study.

**Design**

Upon signing the informed consent, participants filled out a survey – administered via Qualtrics. First, respondents reported their socio-economic background. Age was measured in years. Participants indicated whether they were “male”, “female” or “other” in response to the item “What is your gender?”. Race is measured using the question “What general racial or ethnic category do you consider yourself?” Participants could indicate “Black” (1), “White” (2), “Latino/a or "Hispanic"” (3), “Asian” (4), “Native American” (5) or “Other” (6). If they indicated “other”, participants were asked “How would you describe your racial or ethnic category?” with an open answer category. We measure education, using the item “What was the last level of schooling you completed?” scored on a scale ranging from “Less than high school graduate” (1), “High school graduate (2)”, “Some college” (3), “Currently a college student” (4), “College graduate” (5) and “Post college degree” (6). Income is measured using the question “We want to classify people into broad income groups only. This information is completely confidential. Please indicate the category that corresponds to your family’s annual income?” which respondents answer by picking one of the following answer categories: “under $15,000”, “between $15,000 and $24,999”, “between $25,000 and $34,999”, “between $35,000 and $49,999”, “between $50,000 and $64,999”, “between $65,000 and $79,999”, “between $80,000 and $99,999”, “between $100,000 and $149,999”, “between $150,000 and $199,999” and “over $200,000”.

Next participants completed a series of batteries tapping into their political attitudes.
and beliefs as well as their personality. These batteries were presented in a random order to the participants. Each completed all batteries. Participants were asked to indicate whether they “usually think of themselves as a Republican, a Democrat, an Independent, or something else.” Those in the latter two categories were then asked if they thought of themselves as closer to one party or the other. Pure independents were routed towards the next set of questions (N=XX, XX%), while while Democrats (N=XX, XX%) and Republicans (N=XX, XX%) and those leaning to one of two parties were asked “would you call yourself a strong [Democratic/Republican] or not very strong [Democratic/Republican]” which they answer by indication that they consider themselves a “Strong [Democratic/Republican]” or “Not very [Democratic/Republican]”. Next, all respondents aside from the “pure independents” were administered the eight-item partisan identity strength measure (Huddy et al., 2015). Respondents rated items on a five-point scale (coded: “Strongly agree” (1); “Agree” (2); “Neither agree or disagree” (3); “Disagree” (4); “Strongly disagree”). The eight items were: “When I speak about the [Democratic/Republican] party, I usually say “we” instead of “they”; “I am interested in what other people think about the [Democratic/Republican] party.”; “When people criticize the [Democratic/Republican] party, it feels like a personal insult”; “I have a lot in common with other supporters of the [Democratic/Republican] party”; “If the [Democratic/Republican] Party does badly in opinion polls, my day is ruined.”; “When I meet someone who supports the [Democratic/Republican] party, I feel connected with this person.”; “When I speak about the [Democratic/Republican] party, I refer to them as “my party.”; “When people praise the [Democratic/Republican] party, it makes me feel good.” We averaged the eight items to form the partisan identity strength measure (M=XX, SD=XX, Min=XX, Max=XX).

Vote intention was measured in the survey using the item “If the election for President were tomorrow, who would you vote for?” which respondents could answer on a scale ranging from “Definitely vote for a Republican candidate”, “Probably vote for a Republican candidate”, “ Unsure”, “ Probably vote for a Democratic candidate’ or “ Definitely vote for a Democratic candidate”. We follow Abramowitz and Webster (2016) and recoded the dependent variable into a dummy variable capturing whether the respondent displays “consistent party loyalty” (1) or defects from the party line (0). This was coded using the self-reported party identification.

Ideology is measured using a one-item ideological self-placement scale, a 14-item social principles index (Smith, Oxley, Hibbing, Alford, & Hibbing, 2011b) and a series of items tapping into issue attitudes that are closely resembling the Wilson Pattersen Index items used by Oxley et al. (2008) and four items from the modern racism battery (usually included in the ANES).

We measure sophistication with political interest and political knowledge. Interest is measured using one item: “How interested in politics would you say you are?” Participants could answer “Very interested”, “Somewhat interested”, “Not very interested” and “Not at all interested”. We will recode the scale to range from 0 (“not at all interested”) to 1 (very interested) (M=XX, SD=XX, Min=0, Max=1).

Political knowledge is measured using 10 items: (1) “Who is currently the Chancellor of Germany?” with answer categories “Angela Merkel”, “Marine Le Pen”, “Emmanuel Macron”, “Gerhard Schröder” or “Martin Schultz”; (2) “Who is currently the Managing Director of the International Monetary Fund?” with answer categories “Christine Lagarde”, “Ban Ki Moon”, “Janet Yellen”, “Silvio Berlusconi” or “Theresa May”; (3) “What job or
political office does John Roberts now hold?” with answer categories “Attorney General”, “Chief Justice of the Supreme Court”, “White House Chief of Staff”, “Deputy Attorney General” or “Speaker of the House of Representatives”; (4) “What does the term “Common Core” refer to?” with answer categories “A plan to make English the official language”, “School curriculum standards for language and math”, “An international treaty for dealing with global climate change”, “A set of nutrition standards for school lunches” or “An international peace treaty; (5) “How long is the term of office for a senator in the United States Senate?” with answer categories “2 years”, “3 years”, “4 years”, “5 years” or “6 years”; (6) “Who is the current prime minister of Israel?” with answer categories “Benjamin Netanyahu”, “Shimon Peres”, “Ariel Sharon”, “Hassan Rouhani” or “Recep Erdogan”; (7) “Who is the current United States Secretary of Education?” with answer categories “Rex Tillerson”, “Betsy Devos”, “Kellyanne Conway”, “Nikki Haley” or “James Mattis”; (8) Who is this - (picture showing Antonin Scalia) with answer categories “Antonin Scalia”, “Anthony Kennedy”, “Clarence Thomas” or “John Roberts”; (9) “Which party currently controls the House of Representatives?” whereby participants are required to write down their own answer; (10) “On which of the following does the U.S. federal government currently spend the least?” with answer categories “Foreign aid”, “Medicare”, “National defense” or “Social Security”. We code each item as a dummy variable indicating if a correct (1) or incorrect (0) response is given. We create an additive scale of political knowledge. We recode this scale to range from the lowest observed knowledge in the sample (0) to the highest observed knowledge in the sample (1) (M=XX, SD=XX, _=XX, Min=0, Max=1).

Moreover, Authoritarianism was measured using four items (Feldman, 2003), the Big Five trait Agreeableness was measured using 10 items (Bakker & Lelkes, 2018) and an 18-item reading the Mind in the Eyes test (Feldman, Huddy, Wronski, & Lown, 2016). This was followed by a series of three survey-experiments. The first experiment was the party-cue experiment.

**Party-cue experiment.** Following these survey measures – and in line with other studies (see also, Bakker & Lelkes, 2018; Kam, 2005) – participants received information about a political policy and were informed – based on random assignment – that the policy was supported by either the party with which they identify (i.e., In-party cue), the other major US party (i.e., Out-party cue) or various groups (i.e., control group). In this experiment, we chose the Transatlantic Trade and Investment Partnership (TTIP) issue. We chose this issue because, at the time of the experiment, this was not an issue that was clearly supported by one party and opposed by the other. Moreover, in 2016, 73 percent of a Yougov poll indicated to “don’t know” or “hadn’t heard enough” to make a decision when asked about the TTIP. Hence, by using the TTIP we avoid strong pre-treatment effects (see, Slothuus, 2016). Respondents received the following information about TTIP:

> “Now, for the next part of the survey, please read the following passage and then respond to the question that follows: [Some groups / Republicans / Democrats] believe that we should support the Transatlantic Trade and Investment Partnership (TTIP), a proposed trade agreement between the United States and the European Union which is designed to promote trade and benefit the economy, while [others groups / Republicans / Democrats] believe the proposal will harm American workers and small businesses.”

Upon reading the statement, participants were asked to answer three questions about their opinion towards TTIP, namely: (1) “How much do you agree or disagree with the statement, "We should support the Transatlantic Trade and Investment Partnership”’” scored on scale
ranging from “Strongly agree” (1) to “strongly disagree” (7); (2) “All things considered, TTIP is a good thing,” scored on a scale ranging from “TTIP is bad” (1) to “TTIP is good” (7); (3) “The costs of TTIP outweigh the benefits.” scored on a scale ranging from “Strongly agree” (1) to “Strongly disagree” (7). Upon recoding item 1 and 3, we created a scale ranging from (0) strong opposition to TTIP to (1) strongly support for TTIP (_=XX; M=XX; SD=XX; Min=0; Max=1).

Treatment status was indicated by a set of two dummy variables indicating if the participant read that the party they identify with supported the policy (In-Party Cue) or opposed the policy (Out-Party Cue). A control condition omitted mention of the party label but mentions “various groups” are supportive and opposed to the policy (No Party Cue). The self-reported party identification variable – discussed above – is used to create these dummy variables.

We have chosen this part-cue experiment because pre-test results confirmed the main effects of the treatment. Specifically, we fielded this experiment as part of a larger survey about Americans “political preferences” among a Mturk sample on January 14, 2018. In total 445 respondents completed the experiment. The treatments were exactly the same as in the laboratory experiment, but we only had one dependent variable, namely the response of participants on the item “How much do you agree or disagree with the statement, "We should support the Transatlantic Trade and Investment Partnership".” scored on scale ranging from “Strongly agree” (1) to “strongly disagree” (7). We created a scale from (0) strong opposition to TTIP to (1) Strong opposition to TTIP (M=0.50; SD=0.26; Min=0; Max=1). We tested the main effect of party cues on the policy position. In an OLS model regressing support for the TTIP on cue condition, we find that participants increased their own support of the TTIP by about .12 points (p<0.00) on a 0 to 1 scale when the party they identified with supported the TTIP relative to the control condition when “various groups” supported the policy. We also find that respondents are about 0.05 points (p=0.10) less supportive of the policy on a 0 to 1 scale when the party they do not support (i.e., outparty) supports the policy. When we set the In-party cue as the control condition, then we find that respondents receiving the Out-party cue were 0.17 points less supportive of the policy (p<0.00) then respondents that received the In-party cue. To summarize, the results for the pre-test suggest that party-cue experiment generates the treatments effects in line with the literature (Bakker & Lelkes, 2018; Kam, 2005).

**Physiological responses to parties.** Upon completing the survey participants were connected to the physiological measures by trained research personnel and started with the psycho-physiological experiment. This experiment was part of a larger study. Participants were randomly exposed to a series of party symbols (1 per party), party leaders (5 Democrats & 5 Republicans) and the issue-experiment. Afterwards they were exposed to a series of affective stimuli. The order of the exposure to the parties, leaders and issues was randomized between subjects.

In this study, we rely upon the party symbols. Participants were randomly exposed the pictures of the Republican and the Democratic party. Above the images it would mention: “Democratic party” and “Republican party”. We do this because we pre-tested the recognition of the parties. We randomly exposed respondents to the logos of Democratic and Republican party after which we asked them to answer “What is the name of the party associated with this symbol?” We coded the responses to the open-ended question. After exposure to the Democratic party logo 13.07% (N=57) of the 445 respondents did not provide any or provided the wrong answer to the question. Similarly, we find that 13.34% (N=59) of the 445 respondents provided no or the wrong answer in response to exposure to the Republican party logo. While this is not a very large group, it is still a size-able number
of participants. Therefore, we provide the names of the parties to the party logos.

Figure 1 provides the stimuli material. Note that participants are exposed to both pictures and that the order of the pictures is randomized. The exposure to the images is 12 seconds preceded by a blank screen with a “+” for 12 seconds. After the exposure to the party image, participants are asked to report their feelings towards the party – see Figure 1 for a schematic overview of the procedure. Participants received the following instructions: “How do you feel towards this party. Please rate on a 10 point scale from 0 being negative and 9 being positive. Below the item there were 10 numbers listed with an anchor “negative” above the 0 and “positive” above the 9. Participants reported their feeling following this instruction by typing any number between 0 and 9. Upon providing their answer they were automatically routed to the following bank screen. We recoded the feelings towards the Democratic and the Republican party on a scale from (0) very cold and unfavorable to very warm and favorable (1), see Table 1 for the descriptive statistics.

Figure 1. Stimuli material

![Democratic Party](image1.png) A) ![Republican Party](image2.png) B)

**Psychophysiological Measures**

We recorded physiological data using a Biopac system running on Windows 7. The experiment was part of a larger study on psycho-physiological measures to politics. We measured negative affect using electromyography of the corrugator as well as the labii superioris and arousal using electrodermal activity.

In our study, we also measured individual differences in electrodermal response to the two parties using skin conductance levels (SCL). This is a standard approach to gauging physiological sensitivity (Dawson, Schell, & Filion, 2007). SCL is a standard measure of electrodermal activity or the degree to which people sweat which is an index of people’s emotional arousal generated by the sympathetic nervous system. Because the sympathetic nervous system is difficult to control through conscious effort, SCL provides an unobtrusive measure of emotional arousal caused by the two parties.

Participants were exposed to each image for 12 seconds with a blank screen between each one. This interstimulus interval (ISI) was also 12 seconds. Electrodermal response were measured by taking the difference between SCL recorded while participants viewed the parties and neutral and images and the SCL recorded during the ISI that proceeded the specific image. To minimize the effects of extreme values, we follow Oxley et al. (2008) and took the average of
the natural log of SCL during the image and the ISI. We create two separate indices for the Democratic and the Republican party. Equation 1 summarizes this approach:

\[
P_{Si} = \frac{\sum_{j=1}^{12000} \ln [SCL(T)_{ij}]}{12000} - \frac{\sum_{j=1}^{12000} \ln [SCL(ISI)_{ij}]}{12000}
\] (1)

Where \(P_{Si}\) is the physiological sensitivity score for participant \(i\), \(SCL(T)_{ij}\) is the skin conductance level recorded every \(j\)th millisecond for participant \(i\) during exposure to the image, and \(SCL(ISI)_{ij}\) is the skin conductance level recorded every millisecond for participant \(i\) during exposure to the preceding blank screen (i.e., the ISI). Because participants were exposed to the blank screen and image for 12 seconds each, we recorded SCL for 12,000 milliseconds for each image and ISI. As such we create an index of physiological responses to the Democratic (\(M=XX\), \(SD=XX\), \(Min=-XX\), \(Max=XX\)) and Republican party (\(M=XX\), \(SD=XX\), \(Min=-XX\), \(Max=XX\)). Note that we failed to collect measures of skin conductance among some respondents (\(N=XX; XX\%\)) because technical problems in the lab.

We measure Corrugator supercilii activity using two reusable shielded Ag-AGl electrodes (4mm). We fill the electrodes with non-irritating, hypo-allergenic gel (Signa gel) and the electrodes are connected to the face with the double-sided adhesive collars. The two electrodes are placed on the corrugator supercilii. Note that the electrodes tapping into EDA activity serve as the ground. We created an index of corrugator activity in response to the Democratic party and the Republican party. This is a standard approach to gauging into negative affect (Dawson et al., 2007). The object of interest of electromyography analyses is the change in the intensity of the corrugator activity during an image or the inter stimulus proceeding the image. To evaluate this we calculated the mean corrugator activity during the 12 seconds that participants watched the image of the Democratic and the Republican party. Again we created the mean corrugator activity (CS) during the preceding InterStimulus Interval that lasted 12 seconds. We subtracted the mean corrugator activity during the preceding ISI from the mean corrugator activity during the image. We create a separate index of corrugator activity in response to the Democratic (\(M=XX\), \(SD=XX\), \(Min=-XX\), \(Max=XX\)) and Republican party (\(M=XX\), \(SD=XX\), \(Min=-XX\), \(Max=XX\)). Equation 2 summarizes this approach:

\[
CorrugatorSensitivity_{i} = \frac{\sum_{j=1}^{12000} \ln [CS(T)_{ij}]}{12000} - \frac{\sum_{j=1}^{12000} \ln [CS(ISI)_{ij}]}{12000}
\] (2)

Corrugator Sensitivity is the corrugator sensitivity score for participant \(i\), \(CS(T)_{ij}\) is the corrugator activity recorded every \(j\)th millisecond for participant \(i\) during exposure to the image, and \(CS(ISI)_{ij}\) is the corrugator activity recorded every millisecond for participant \(i\) during exposure to the preceding blank screen (i.e., the ISI). Because participants were exposed to the blank screen and image for 12 seconds each, we recorded corrugator activity for 12,000 milliseconds for each image and ISI. As such we created an index of corrugator sensitivity in response to the Democratic party and the Republican party. Note that we failed to collect measures of corrugator activity among some respondents (\(N=XX; XX\%\)) because technical problems in the lab. Moreover, among the first eight respondents – which we collected between February 7 and 12 – we did not employ the reusable electrodes but disposable. We will include a dummy variable in our analyses to factor out that these respondents had slightly different measures of the corrugator activity.
Levator labii superioris. We measure levator labii superioris activity using two reusable shielded Ag-AGl electrodes (4mm). We fill the electrodes with non-irritating, hypo-allergenic gel (Signa gel) and the electrodes are connected to the face with the double-sided adhesive collars. The two electrodes are placed on the Levator labii superioris. We created an index of levator labii activity in response to the In-Party. We are here in particular interested in the response to the Democratic party and the Republican party. The object of interest of electromyography analyses is the change in the intensity of the levator labii activity during an image or the inter stimulus proceeding the image. To evaluate this we calculated the mean levator labii activity during the 12 seconds that participants watched the disgusting. We also created the mean levator labii activity (CS) during the preceding InterStimulus Interval that lasted 12 seconds. We subtracted the mean levator labii activity during the preceding ISI from the mean levator labii activity during the party image. We create a separate index of corrugator activity in response to the Democratic (M=XX, SD=XX, Min=-XX, Max=XX) and Republican party (M=XX, SD=XX, Min=-XX, Max=XX). Equation 3 summarizes this approach:

\[
L_S_i = \frac{\sum_{j=1}^{12,000} [LS(T)_{ij}]}{12,000} - \frac{\sum_{j=1}^{12,000} [LS(ISI)_{ij}]}{12,000} \quad (3)
\]

\(L_S_i\) is the levator labii sensitivity score for participant \(i\), \(LS(T)_{ij}\) is the levator labii activity recorded every jth millisecond for participant \(i\) during exposure to the image, and \(LS(ISI)_{ij}\) is the levator labii activity recorded every millisecond for participant \(i\) during exposure to the preceding blank screen (i.e., the ISI). Because participants were exposed to the blank screen and image for 12 seconds each, we recorded levator labii activity for 12,000 milliseconds for each image and ISI. As such we created an index of levator labii sensitivity in response to each party. Note that we failed to collect measures of the levator labii superioris among some respondents (N=XX; XX%) because technical problems in the lab. Moreover, among the first eight respondents – which we collected between February 7 and 12 – we did not employ the reusable electrodes but disposable. We will include a dummy variable in our analyses to factor out that these respondents had slightly different measures of the labii activity.

Figure 2. Procedure of the Party Study
Descriptive statistics

In Table 1 we provide the descriptive statistics (mean, standard deviation, minimum and maximum) and correlations between the indices of physiological responses to the Democratic party and the Republican Party as measured using skin conductance activity, corrugator activity (i.e., CS) and labii activity (i.e., DS). We expect to observe a negative correlation between the self-reported feelings towards the Democratic party and the corrugator activity and labii activity in response to the Democratic party. Moreover, we might observe that corrugator activity and labii activity in response to the Democratic party correlate positively with positive feelings towards the Republican party. Turning to the Republican party, we again, expect to find a negative association between corrugator activity and labii activity in response to the Republican party and the self-reported feelings towards the Republican party. Moreover, we might observe that corrugator activity and labii activity correlates positively with positive feelings towards the Democratic party. Finally, we expect to observe a negative association between self-reported feelings towards the Democratic party and the self-reported feelings towards the Republican party. The results of our pre-test, for instance, showed that among 445 respondents there was a strong and negative association between self-reported feelings towards the Democrats and the Republicans (r=-0.49, p<0.00). This is in line with the results from the 2016 American National Election Studies, where the self-reported feelings towards the Democratic party and the Republican party in the pre-election survey correlated negatively and strongly (r=-0.45, p<0.00).

Results

Statistical significance

Throughout this study we use the $\alpha$-value of 0.05 as the value for statistical significance.

Missing data

In line with the Institutional Review Board regulations of Temple University, respondents are never “forced” to provide their answer. In the Qualtrics survey, participants are encouraged to provide an answer. If they do not provide an answer, then they received a pop-up screen indicating “There are XX unanswered questions on this page. Would you like to continue?” and they can choose between “Continue without answering” and “Answer questions”. If respondents do not provide their vote intention, then they will be excluded from the analyses. Similarly, if respondents do not complete the experiment, they will be excluded from the analyses.

Truly independent respondents are not asked to report their party identification. And following work in this line of research (Bakker & Lelkes, 2018; Kam, 2005; Petersen et al., 2015), the truly independent respondents (XX%, N=XX) are not included in analyses where we rely upon party identification strength and/or the cue-taking experiments.

Likewise, we experience some drop-out due to failed readings of the physiological data (N=XX, XX%) and people who want to abort the protocol for other reasons (N=XX, XX%). These persons drop-out the analyses for that specific physiological measure. In all these instances, we will test if the persons that drop-out of the analyses differ from the respondents that complete the experiment on a set of covariates, namely sex (logistic regression), age (OLS regression), race (multinomial regression), education (ordered logistic regression) and income (OLS regression). We will report these analyses in the appendix. If there are systematic
differences between those that complete and those that do not complete the experiment, then we will discuss the limitations in the discussion of the paper and control for the variable in our statistical models.

When it comes to missing values in the covariates, we employ the following set of criteria. (A) If 10% or less of the values on the covariate are missing, then we recode the missing values to the overall mean. (B) If 11% or more of the values on the covariate are missing, then we recode the missing values to a constant (for instance 0) and include a dummy variable indicating whether the response on the covariate was missing or not (Gerber & Green, 2012).

**Emotional Responses Towards Parties**

We hypothesized women have stronger emotional responses to partisan cues than men (H1). We measure emotional response using skin conductance levels (SCL). Although this measure tells us nothing about valence, SCL provides an unobtrusive measure of emotional arousal caused by the two parties. We are interested in the emotional arousal experienced towards the partisan cue. At this point in the analysis, we are not concerned with whether the cue was an in-party or out-party cue. We estimate this model using OLS regression—note that we do check if the assumptions of the OLS model are met in each model, and where necessary re-adjust our modeling decision based upon the regression diagnostics. We will code gender as a dummy variable such that male is the reference category. In line with our expectations, the coefficient ($B_1$) will be positive and statistically significant (contrary to our expectations the coefficient will be negative and not statistically significant). In model 2, we also control for the covariates age (in years), race (categorical variable with different races), education (categorical variable with different educational levels), and income (continuous variable). We also include a dummy variable indicating whether respondents were recruited among Temple University students or the temporary employment agencies.

\[
SCL_i = B_1 \text{Gender} + \epsilon \quad \text{(Model 1)}
\]

\[
SCL_i = B_1 \text{Gender} + \text{covariates} + \epsilon \quad \text{(Model 2)}
\]

**Negative Affect Towards the Parties**

We hypothesize that when exposed to the out-group party symbol, women will have more negative emotions than men (H2), and this effect is stronger for those that strongly identify with In-party (H3). To test these hypotheses, we need to explain the negative affect experienced towards the Democratic and the Republican party. Starting with the negative affect experienced towards the Democrats, we regress the index of corrugator activity in response to the Democratic party on dummy variables indicating whether respondents are self-reported Republicans ($B_2$) or Independent ($B_3$). In doing so the self-identified Democrats are the reference category and this provides us a test whether Republicans, compared to Democrats, experience more negative affect towards the Democratic party. As in models 1 and 2, we will code gender as a dummy variable
such that male is the reference category. We include an interaction between gender and party identification. In line with our hypothesis, we expect $B_4$ to be positive and significant.

Next, we rerun these two models specified in equation 3 and 4 but now we use the indicator of negative affect towards the Republican party.

\[
\text{CS}_{\text{Democrats}} = B_1 \text{Gender} + B_2 \text{Republican} + B_3 \text{Gender}\times\text{Republican} + \epsilon \quad \text{(Model 3)}
\]

\[
\text{CS}_{\text{Democrats}} = B_1 \text{Gender} + B_2 \text{Republican} + B_3 \text{Gender}\times\text{Republican} + \text{covariates} + \epsilon
\]

(Model 4)

We rerun Models 1 and 2 using the index of labii activity. We expect to find similar findings.

We also want to test whether negative affect is conditional on party strength. To this end, we will run models with a three-way interaction between gender, party ID, and party ID strength.

\[
\text{CS}_{\text{Democrats}} = B_1 \text{Gender} + B_2 \text{Republican} + B_3 \text{Gender}\times\text{Republican} + B_4 \text{Gender}\times\text{Republican}\times\text{PID Strength} + \epsilon \quad \text{(Model 5)}
\]

\[
\text{CS}_{\text{Democrats}} = B_1 \text{Gender} + B_2 \text{Republican} + B_3 \text{Gender}\times\text{Republican} + B_4 \text{Gender}\times\text{Republican}\times\text{PID Strength} + \text{covariates} + \epsilon \quad \text{(Model 5)}
\]
References


