

## Supplemental Online Appendix

### Value Extremity Contributes to Affective Polarization in the U.S.

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## **I. Full Question Wording for Items Analyzed in the ANES Cumulative File (1988-2012), Plus the 2016 ANES and 1992-1997 ANES Merged File**

Note: An \* indicates that the variable has been reverse coded so that higher values reflect more conservative attitudes.

1. Partisanship (VCF0301, V161158x, V923634, V960420): Generally speaking, do you think of yourself as a Republican, a Democrat, an Independent, or what? Would you call yourself a strong Democrat/Republican or a not very strong Democrat/Republican? Do you think of yourself as closer to the Republican Party or to the Democratic Party? 1 – Strong Democrat 2 – Weak Democrat 3 – Independent-Democrat 4 – Independent-Independent 5 – Independent-Republican 6 – Weak Republican 7 – Strong Republican
2. Ideological self-identification (VCF0803, V162171): We hear a lot of talk these days about liberals and conservatives. Here is a seven-point scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative. Where would you place yourself on this scale, or haven't you heard much about this? 1 – Extremely liberal 7 – Extremely conservative
3. Egalitarianism battery (note that items E and F below are only used to analyze the 1992-1996 ANES panel data due to the items' inexplicable omission from the 2016 ANES):
  - A. Do whatever is necessary to ensure an equal chance at success (VCF9013, V162243, V926024, V961229): Our society should do whatever is necessary to make sure that everyone has an equal opportunity to succeed. 1 – Agree strongly 2 – Agree somewhat 3 – Neither agree nor disagree 4 – Disagree somewhat 5 – Disagree strongly
  - B. \*Not a big problem if some people have a better chance in life (VCF9016, V162245, V926027, V961233): It is not really a big problem if some people have more of a chance in life than others. 1 – Disagree strongly 2 – Disagree somewhat 3 – Neither agree nor disagree 4 – Agree somewhat 5 – Agree strongly
  - C. \*Worry less about how equal people are (VCF9017, V162244, V926026, V961232): This country would be better off if we worried less about how equal people are. 1 – Disagree strongly 2 – Disagree somewhat 3 – Neither agree nor disagree 4 – Agree somewhat 5 – Agree strongly
  - D. Fewer problems if people were treated more equally (VCF9018, V162246, V926028, V961234): If people were treated more equally in this country we would have many fewer problems. 1 – Agree strongly 2 – Agree somewhat 3 – Neither agree nor disagree 4 – Disagree somewhat 5 – Disagree strongly
  - E. Big problem is that we do not give everyone an equal chance (V926029, V961231): One of the big problems in this country is that we don't give everyone an equal chance. 1 – Strong agree 2 – Agree somewhat 3 – Neither agree nor disagree 4 – Agree somewhat 5 – Agree strongly
  - F. \*We have gone too far in pushing equal rights (V926025, V961231): We have gone too far pushing equal rights in this country. 1 – Disagree strongly 2 – Disagree somewhat 3 – Neither agree nor disagree 4 – Agree somewhat 5 – Agree strongly

4. Moral traditionalism battery:
  - A. \*New lifestyles (VCF0851, V162208, V926118, V961247): The newer lifestyles are contributing to a breakdown of society. 1 – Disagree strongly 2 – Disagree somewhat 3 – Neither agree nor disagree 4 – Agree somewhat 5 – Agree strongly
  - B. Moral behavior (VCF085, V162207, V926115, V961248): The world is always changing and we should adjust our view of moral behavior to those changes. 1 – Agree strongly 2 – Agree somewhat 3 – Neither agree nor disagree 4 – Disagree somewhat 5 – Disagree strongly
  - C. \*Traditional values (VCF0853, V162210, V926117, V961249): This country would have many fewer problems if there were more emphasis on traditional family ties. 1 – Disagree strongly 2 – Disagree somewhat 3 – Neither agree nor disagree 4 – Agree somewhat 5 – Agree strongly
  - D. Different moral standards (VCF0854, V162209, V926116, V961250): We should be more tolerance of people who choose to live according to their own moral standards, even if they are different from our own. 1 – Disagree strongly 2 – Disagree somewhat 3 – Neither agree nor disagree 4 – Agree somewhat 5 – Agree strongly
  
5. Issue attitude questions:
  - A. \*Government spending and services (VCF0839, V161178, V923701, V960450): 1 – Government should provide many more services; increase spending a lot 7 – Government should provide many fewer services; reduce spending a lot
  - B. Government guaranteed jobs and standard of living (VCF0809, V161189, V923718, V960483): 1 – Government should see to job and good standard of living 7 – Government should let each person get ahead on his own
  - C. Health insurance (VCF0806, V161184, V923716, V960479): 1 – Government insurance plan 7 – Private insurance plan
  - D. Aid to minorities (VCF0830, V161189, V923724, V960487): 1 – Government should help minority groups/blacks 7 – Minority groups/blacks should help themselves
  - E. Defense spending (VCF0843, V161181, V923707, V960463): 1 – Greatly decrease defense spending 7 – Greatly increase defense spending
  
6. Time (VCF0004): 0 – 1988 1 – 1992 2 -1996 3 – 2000 4 – 2004 5 – 2008 6 – 2012 We then construct a year variable from the 2016 ANES and incorporate it into this variable, where 2016 represents 7 for our time variable in the empirical analysis throughout the manuscript
  
7. \*Church attendance (VCF0130, V161245, V923821): 1 – Never 2 – A few times a year 3 – Once or twice a month 4 – Almost every week 5 – Every week
  
8. Political interest (VCF0310, V161004, V925102): 0 – Not much interest 1 – Somewhat interested 2 – Very much interested
  
9. Race (VCF0105a, V161310x, V924202): This variable is coded into three dummy variables representing whites, blacks and Hispanics

10. Age (V0101, V161267, V923903): Age in years
11. Gender (VCF0104, V161342, V924201): 0 – Male 1 – Female
12. Education (V0140a, V161270, V923908): What is the highest grade of school or year of college you have completed? 1 – Less than high school 2 – 9-12 grades 3 – High school diploma 4 – High school plus non-academic training 5 – Some college 6 – Bachelor's degree 7 – Advanced degree
13. Income (VCF0114, V161361x, V924104): This variable ranges from 1 to 6 according to income distribution percentiles
14. South (VCF0112, V161330, V923014): 0 – Non-south 1 – South
15. Democratic Party feeling thermometer (VCF0218, V161095, V923317, V960292): 0 – Cold 97 – Warm
16. Republican Party feeling thermometer (VCF0224, V161096, V923318, V960293): 0 – Cold 97 – Warm
17. Liberals group feeling thermometer (VCF0211, V162097, V925326, V961032): 0 – Cold 97 – Warm
18. Conservatives group feeling thermometer (VCF0212, V162101, V925319, V961031): 0 – Cold 97 – Warm
19. Democratic Party presidential candidate feeling thermometer (VCF0424, V16108, V923306, V960272): 0 – Cold 97 – Warm
20. Republican Party presidential candidate feeling thermometer (VCF0426, V161087, V923305, V960273): 0 – Cold 97 – Warm

## II. Item Analysis of the ANES Values Items

Our value polarization scale's foundation is a summated rating scale of Likert-type responses to eight statements designed to estimate respondents' core values. Traditionally, the ANES values items are thought to elicit individuals' orientations toward equality and moral traditionalism. Intuitively, then, these items are frequently conceptualized as two-dimensional. In this manuscript, we follow Lupton et al. (2020) in recoding the items so that larger numerical values correspond to more conservative positions on the items. Doing so allows us to construct a scale of value orientations ranging from extremely liberal (responses that reflect a relatively high value of equality and low value of moral traditionalism) to extremely conservative (responses that reflect a relatively high value of moral traditionalism and low value of equality).

The sole assumption of the summated rating model, as formulated by Likert (1932), is that the item response functions are monotonically non-decreasing. That is, as responses to a single item become more conservative, so too does one's placement on to the estimated latent dimension—liberal-conservative value orientations. We can estimate these item response functions by plotting responses to each of the eight individual items,  $j$ , comprising the values scale against a scale of each of the  $j-1$  remaining items. This reduced scale, most commonly referred to as “rest scores,” reflect our best estimate of the latent dimension. In the figure below, we have plotted precisely these relationships, and we also include a linear fit line (in red) and a non-parametric scatterplot smoother (in black). If the summated rating scale is an appropriate method of combining these items into a unidimensional scale, then we should observe monotonically non-decreasing scatterplot smoother lines.

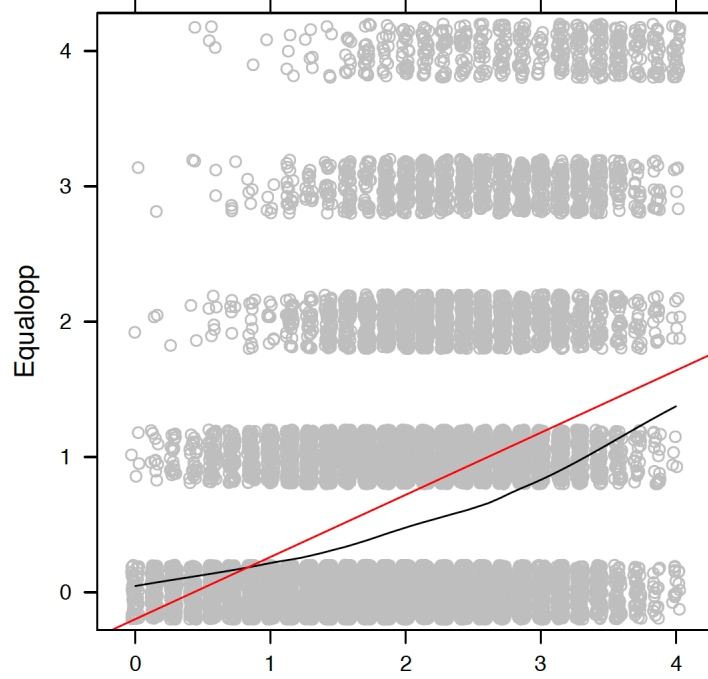
We see below that the monotonicity assumption of the summated rating model is not violated for any of the eight individual values items. Thus, the ANES values items can be summed (or averaged, as we have done) to create a single value orientations scale. As a related, but technically distinct, matter, we also hope that the resultant scale is statistically reliable. The scale has a Cronbach's alpha reliability estimate of 0.71. This means that 71% of the variance in the empirical values scale is shared with the true, but unobserved scale. By most standards, this scale is sufficiently reliable to proceed with our analyses.

Although other scholars have conceived of values as being multidimensional, such conceptualizations are completely contingent on the particular operationalization of values. Jacoby (2006, 2014), for example, employs rank orders of individual values. Sometimes they are treated as distinct (i.e., occupying their own dimension), and other times they are treated as two-dimensional (even though more than two values are considered). Schwartz and colleagues (e.g., Schwartz and Bilsky 1987) famously treat a large number of values as occupying a two-dimensional space called a circumplex. Their model is based on items asking for self-assessed values (Schwartz Value Survey), or an indirect assessment of values whereby a survey respondent is asked to compare oneself to others (Portrait Values Questionnaire). These are but a few examples of the various way that values are estimated in the literature.

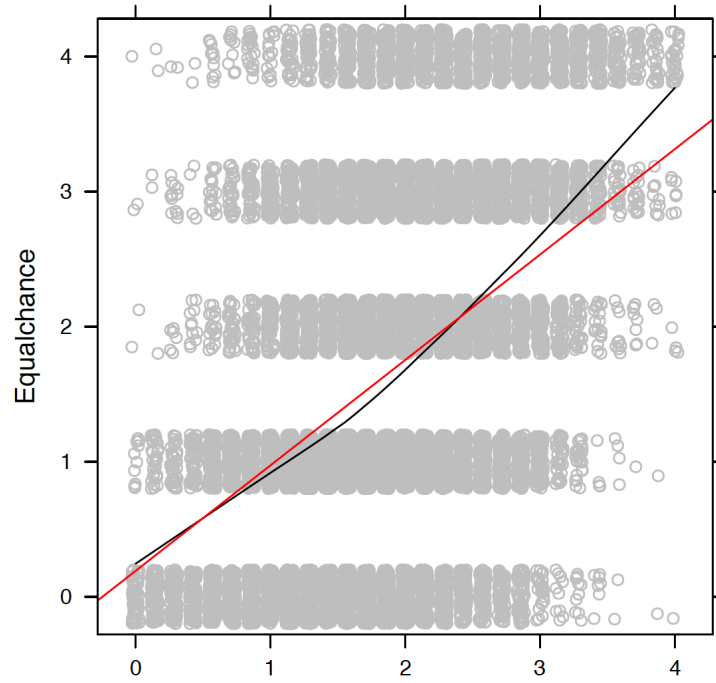
Thus, we reiterate that dimensionality is contingent on developing a strategy for measuring individual values. We find reasonable the prospect that two value orientations can be accurately conceived as unidimensional when others have modeled between seven (Jacoby 2014) and well over twenty (e.g., Schwartz and Bilsky 1987) values as two-dimensional. The fact that we capture two values does not necessarily imply that two distinct dimensions are being captured. Indeed, Jacoby's (2014) two-dimensional model of value structures provides support for our conceptualization of equality and morality as being polar opposites. Jacoby even finds that, on

average, liberals prefer equality most and morality least, whereas conservatives prefer morality most and equality much less.

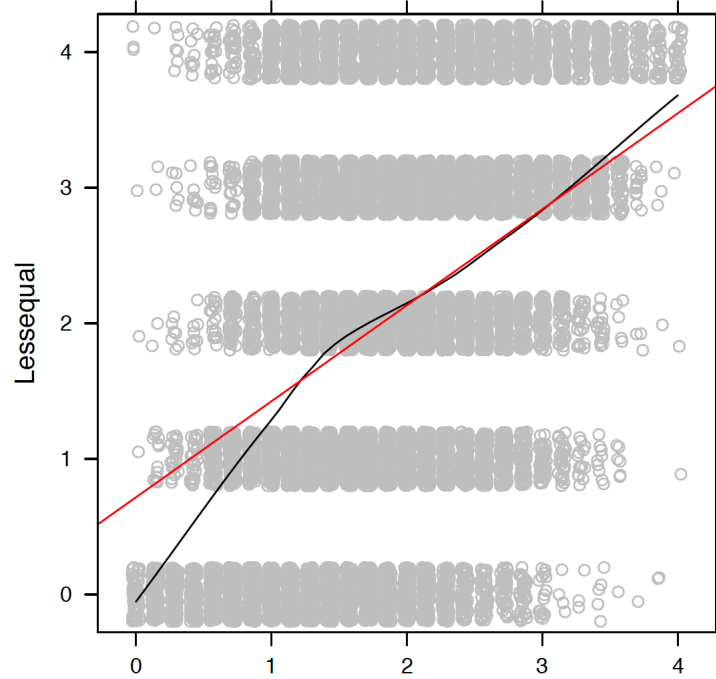
**Figure A1: Item Analysis of the “Equal Opportunity” Value Item**



**Figure A2: Item Analysis of the “Equal Chance” Value Item**

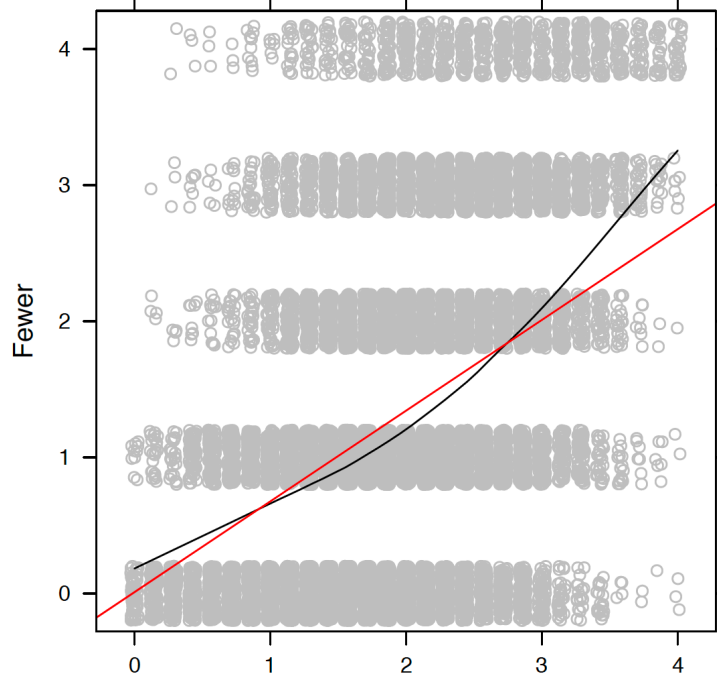


**Figure A3: Item Analysis of the “Less Equal” Value Item**

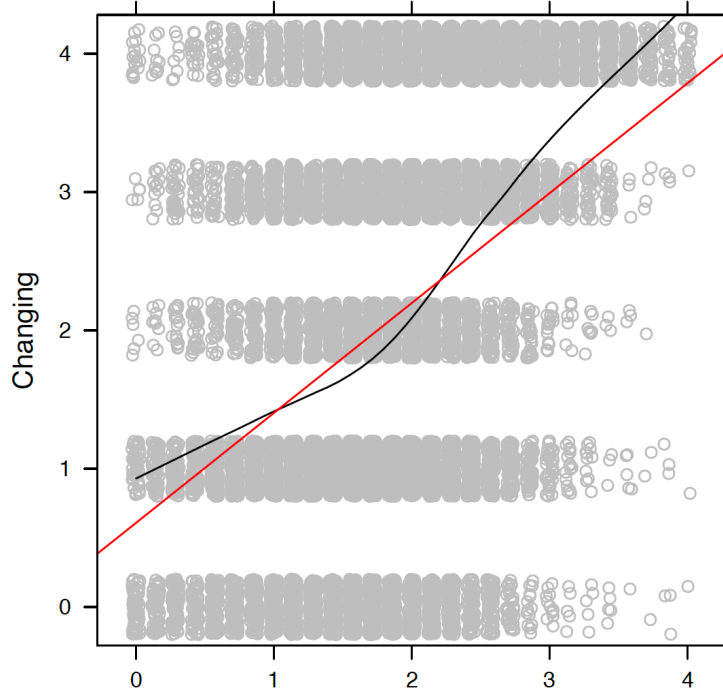




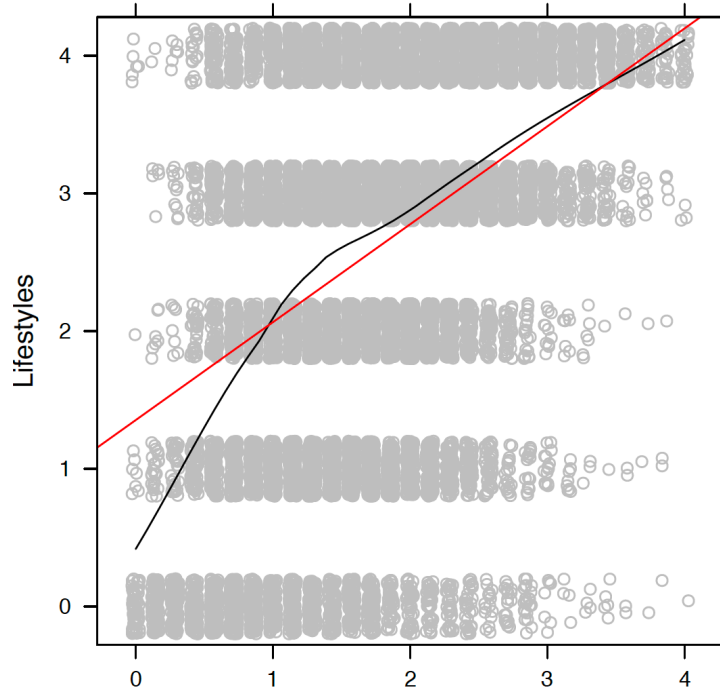
**Figure A4: Item Analysis of the “Fewer Problems” Value Item**



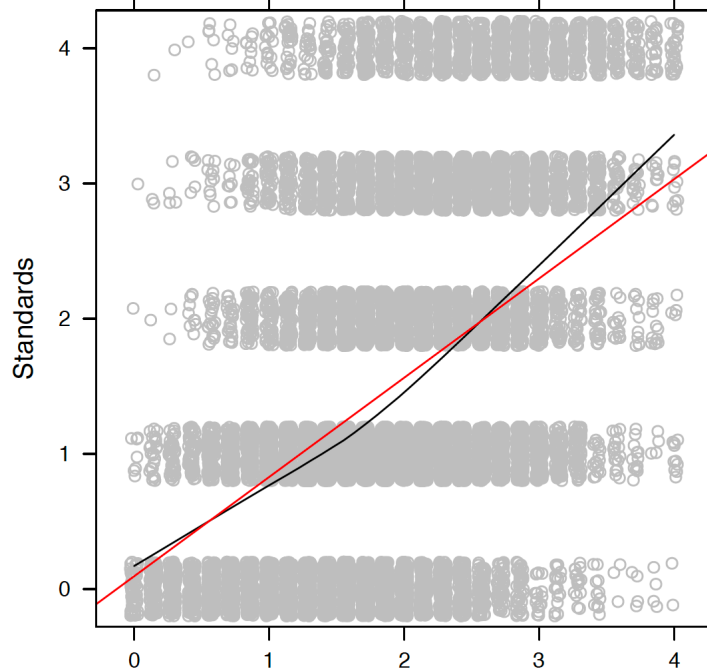
**Figure A5: Item Analysis of the “Changing Norms” Value Item**



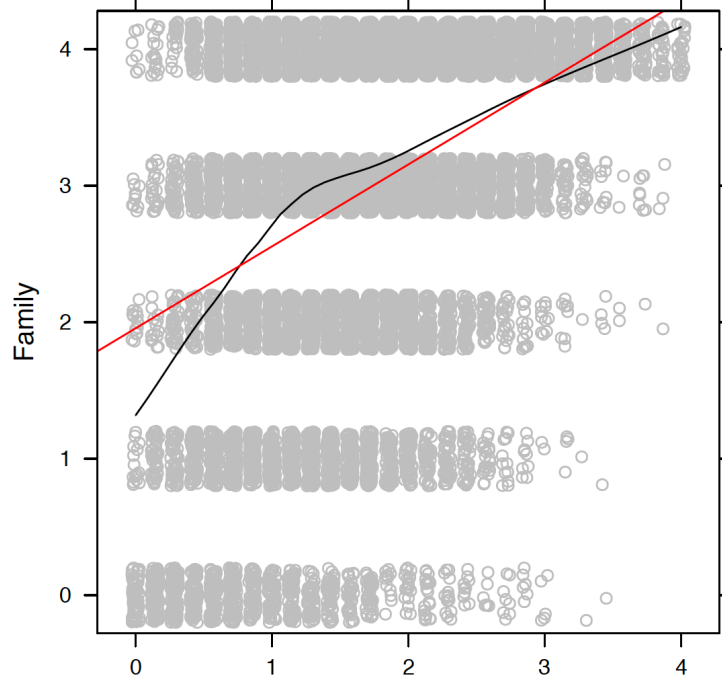
**Figure A6: Item Analysis of the “Newer Lifestyles” Value Item**



**Figure A7: Item Analysis of the “Moral Standards” Value Item**



**Figure A8: Item Analysis of the “Traditional Family” Value Item**



### **III. Discussion of the Importance of Egalitarianism and Moral Traditionalism to American Public Opinion and Political Behavior**

Rokeach defines a value as “an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence” (1973, 5; see also Schwartz 1992; Schwartz and Bilsky 1987). Values thus constitute for individuals what is “good” and “bad” in the world and theoretically animate attitudes and behaviors across all realms of human experience. However, scholars have not always agreed upon which values to examine.

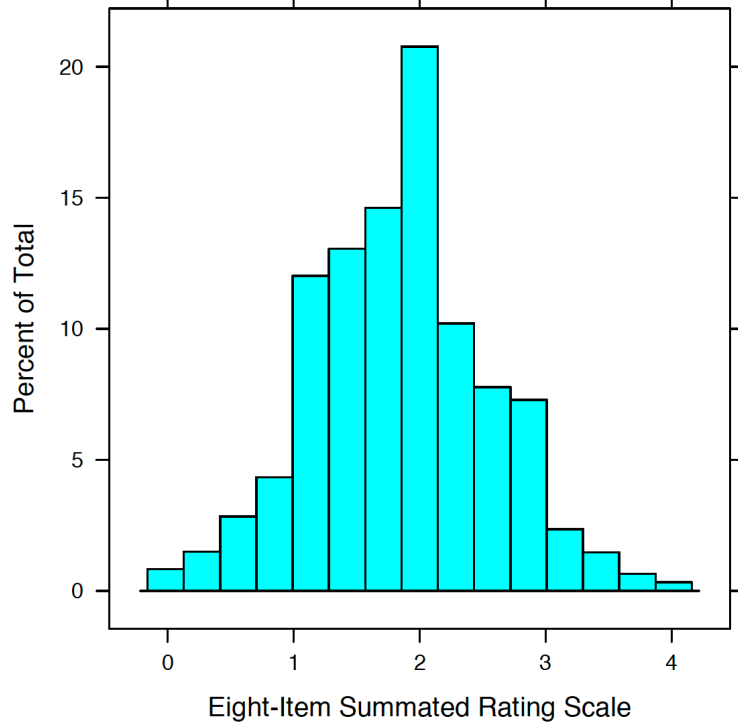
Feldman (2003), for example, incisively notes that determining the precise values to incorporate into scholarly analyses is an elusive task, but a wealth of prior work suggests that two cultural values, egalitarianism and moral traditionalism, are indispensable for understanding Americans’ approach to the political world. Egalitarianism, which captures the belief that social and economic inequality is problematic and demands government redress, is perhaps the iconic value in American political life (e.g., Lane 1959). Differences regarding the extent to which one believes that inequality exists and is harmful, as opposed to unavoidable and even necessary, shape elite party competition and public opinion alike (Gerring 1998; Goren 2012). Egalitarianism influences attitudes toward social welfare spending (Feldman and Zaller 1992; Goren 2001, 2008; Jacoby 2006), political candidates (Feldman 1988) and racial policies (Gilens 1995; Kinder and Sanders 1996), and it also relates to partisan and ideological identifications (Keele and Wolak 2006; Lupton et al. 2020).

Moral traditionalism is now an operative value as cultural concerns have risen to the fore as an elite-level cleavage (e.g., Highton 2012; Layman et al. 2010). This value represents the belief that newer lifestyles are contributing to moral decay and that traditional family arrangements promote a healthy society. Moral traditionalism shapes attitudes toward prominent culture war issue such as abortion (Weisberg 2005), same-sex marriage (Brewer 2003; Sherkat et al. 2011) and transgender rights (Flores et al. 2018), and, as with egalitarianism, it is associated with partisan and ideological attachments (Keele and Wolak 2006; Layman 1997; Layman and Green 2006).

Moreover, research documents the connection between political polarization and value preferences (Hetherington 2009; Jacoby 2014). Jacoby, for example, describes the sharp distinction between Democrats’ (liberals’) and Republicans’ (conservatives’) value preferences as a “culture war.” Democrats and liberals are much more likely to rank egalitarianism as an important value, whereas moral traditionalism is most salient to Republicans and conservatives. He writes, “The close association between individual values and political orientations may help explain why polarization, itself, is so pronounced” (Jacoby 2014, 769).

#### IV. Distribution of the Core Value Orientations Scale, 1988-2016 ANES

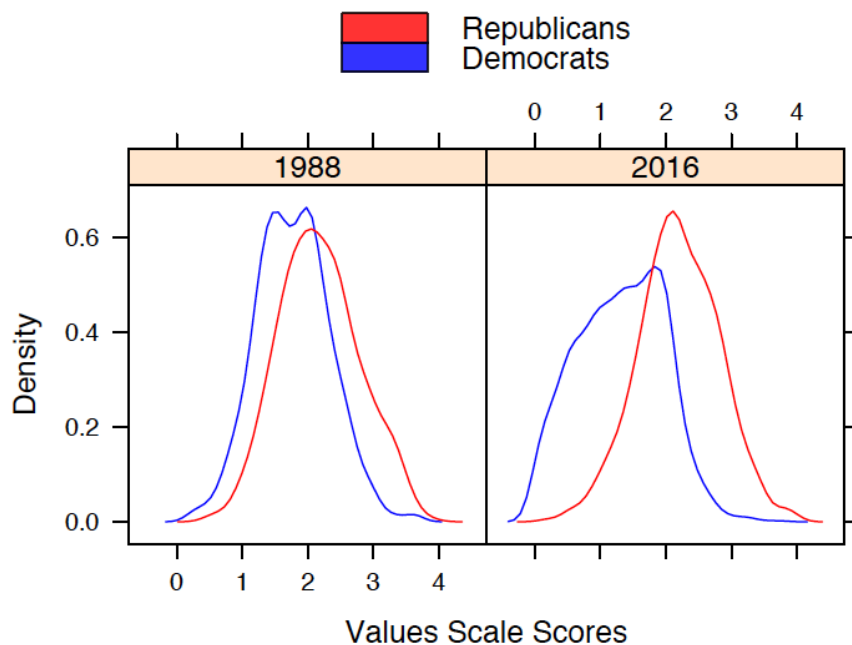
Figure A9: Distribution of the Core Value Orientations Scale, 1988-2016 ANES



**V. Discussion and Distribution of the Core Value Orientations Scale among Democrats and Republicans, 1988 and 2016 ANES**

Figure A10 below shows the distribution of the core value orientations scale for Democrats (in blue) and Republicans (in red) in both 1988 (left panel) and 2016 (right panel). The graph shows first that Democrats and Republicans maintain distinct value orientations scores. Democrats (Republicans) have been more (less) egalitarian and more morally progressive (traditional) than Republicans (Democrats) since at least 1988. Additionally, Figure A10 indicates that Democrats and Republicans exhibit significantly larger value differences today compared to a generation ago: Democrats are more egalitarian and morally progressive now relative to the past, whereas Republicans now possess less egalitarian and more morally traditional values. This descriptive evidence provides reason to suspect that widening value divisions may correspond to increasingly polarized affective political evaluations.<sup>1</sup>

**Figure A10: Distribution of the Core Value Orientations Scale among Democrats and Republicans, 1988 and 2016 ANES**



<sup>1</sup> We also note that difference of means tests show that Democrats' and Republicans' value orientations scores differ substantially in 1988 (mean difference=0.398,  $p<0.05$ ) and 2016 (mean difference=0.885,  $p<0.05$ ), and that the difference in 2016 is significantly greater than in 1988 (difference in differences = 0.487,  $p<0.05$ ).

## **VI. Discussion of the Conditional Models Predicting Affective Polarization, 1988-2016**

### **ANES**

Table A1 below presents the results of models predicting each of three measures of affective polarization in which our value polarization measure is interacted with time. Thus, the models show the changing over time relationship between value polarization and individuals' affective responses to the major political parties, ideological groups and political candidates, respectively, controlling for other factors. Note that these results are used to produce the marginal effects plots shown in manuscript Figure 1.

Given the conditional nature of the model, the coefficient for the core value polarization constitutive term can only be interpreted when the time variable is zero (Friedrich 1982). Thus, the coefficients for the variable represent the relationship between value polarization and each affective polarization measure in the first year of our analysis, 1988. Here, we see that the coefficients are positive and statistically significant in two of the three models, indicating that value polarization was related to emotional responses to ideological groups and candidates, but not parties, even a generation ago. Namely, individuals who maintained extremely egalitarian and morally progressive values in 1988 were more likely than individuals with more moderate value orientations to rate liberals and Democratic party candidates more favorably than conservatives and Republican party presidential candidates, respectively. The opposite was true for individuals who maintained extremely anti-egalitarian and morally traditional values at that time. The coefficient for the interaction term involving core value polarization and time is statistically significant across all three models. Therefore, we conclude that the relationship between core value extremity and citizens' affective evaluations of toward parties, ideological groups and candidates has increased significantly over time.

**Table A1: Conditional Models Predicting Affective Polarization, 1988-2016 ANES**

| The Over Time Influence of Value Polarization on Affective Polarization |                  |                           |                   |
|---|------------------|---------------------------|-------------------|
| <b>Variable</b>   | <b>Parties</b>   | <b>Ideological Groups</b> | <b>Candidates</b> |
| Issue extremity   | .100*<br>(.014)  | .127*<br>(.012)           | .121*<br>(.014)   |
| Sorting   | .341*<br>(.014)  | .413*<br>(.012)           | .240*<br>(.015)   |
| Value polarization  | .040<br>(.035)   | .129*<br>(.031)           | .100*<br>(.036)   |
| Time  | .013*<br>(.002)  | .007*<br>(.002)           | .028*<br>(.002)   |
| Value polarization*Time   | .019*<br>(.006)  | .021*<br>(.006)           | .021*<br>(.007)   |
| Political interest  | .145*<br>(.014)  | .020<br>(.012)            | .161*<br>(.014)   |
| Education   | -.054*<br>(.014) | .051*<br>(.012)           | -.044*<br>(.014)  |
| Age   | .077*<br>(.016)  | .060*<br>(.014)           | .080*<br>(.017)   |
| Income  | -.035*<br>(.012) | .034*<br>(.011)           | .001<br>(.013)    |
| Church attendance   | -.032*<br>(.009) | .028*<br>(.007)           | -.026*<br>(.009)  |
| Black   | .130*<br>(.009)  | -.077*<br>(.008)          | .087*<br>(.010)   |
| Hispanic  | .064*<br>(.010)  | -.035*<br>(.009)          | .032*<br>(.010)   |
| Female  | .037*<br>(.006)  | -.019*<br>(.006)          | .040*<br>(.007)   |
| South   | -.002<br>(.007)  | .014*<br>(.006)           | -.012<br>(.007)   |
| Constant  | .067*<br>(.020)  | -.064*<br>(.018)          | .053*<br>(.020)   |
| $R^2$   | .244             | .339                      | .251              |
| N   | 6,231            | 6,144                     | 6,239             |

Cell entries are unstandardized OLS coefficients (standard errors in parentheses). \* p < .05.



## VII. Conditional Models Predicting Affective Polarization, Including a Multiplicative Interaction Term Involving Issue Extremity and Time, 1988-2016 ANES

Table A2 below presents results of regression model specifications identical to those featured above in Table A1, although here we also include in each model a multiplicative interaction term involving issue extremity and time. Notably, core value polarization's estimated substantive over time relationship to each of the three affective polarization measures is identical to that estimated in Table A1. Also interesting is our finding here that issue extremity has not become more relevant for understanding citizens' emotional responses to political parties or candidates over time, controlling for other factors.

**Table A2: Conditional Models Predicting Affective Polarization, Including a Multiplicative Interaction Term Involving Issue Extremity and Time, 1988-2016 ANES**

| The Over Time Influence of Value Polarization on Affective Polarization |                  |                    |                  |
|---|------------------|--------------------|------------------|
| Variable  | Parties          | Ideological Groups | Candidates       |
| Issue extremity   | .122*<br>(.032)  | .040<br>(.028)     | .098*<br>(.033)  |
| Issue extremity*Time  | -.004<br>(.006)  | .018*<br>(.005)    | .005<br>(.006)   |
| Sorting   | .341*<br>(.014)  | .412*<br>(.012)    | .240*<br>(.015)  |
| Value polarization  | .037<br>(.035)   | .141*<br>(.031)    | .103*<br>(.036)  |
| Time  | .015*<br>(.003)  | -.000<br>(.003)    | .026*<br>(.003)  |
| Value polarization*Time   | .019*<br>(.006)  | .019*<br>(.006)    | .020*<br>(.007)  |
| Political interest  | .145*<br>(.016)  | .020<br>(.012)     | .161*<br>(.014)  |
| Education   | -.054*<br>(.014) | .050*<br>(.012)    | -.045*<br>(.014) |
| Church attendance   | -.032*<br>(.009) | .027*<br>(.007)    | -.026*<br>(.009) |
| Income  | -.034*<br>(.012) | .032<br>(.011)     | .001<br>(.013)   |
| Age   | .077*<br>(.016)  | .060*<br>(.014)    | .081*<br>(.017)  |
| Black   | .129*<br>(.009)  | -.075*<br>(.008)   | .087*<br>(.010)  |
| Hispanic  | .064*<br>(.010)  | -.034*<br>(.009)   | .032*<br>(.010)  |
| Female  | .037*<br>(.006)  | -.018*<br>(.006)   | .040*<br>(.007)  |
| South   | -.002<br>(.007)  | .015*<br>(.006)    | -.012<br>(.007)  |
| Constant  | .058*<br>(.023)  | -.027<br>(.020)    | .063*<br>(.024)  |
| $R^2$   | .244             | .341               | .251             |
| N   | 6,231            | 6,144              | 6,239            |

Cell entries are unstandardized OLS coefficients (standard errors). \*  $p < .05$ ; two-tailed tests.

**VIII. Predicting Affective Polarization, Excluding Issue Extremity and Sorting, 1988-2016 ANES**

Table A3 below presents results of regression model specifications identical to those featured in manuscript Table 1, but the models here omit the issue extremity and sorting variables. We specify these models to avoid concerns that issue extremity and sorting introduce post-treatment bias into our estimates if value polarization itself causes citizens to possess more extreme political issue attitudes and to align their partisan and ideological identities. The results of these alternative model specifications are substantively similar to those presented in manuscript Table 1, although the estimated relationship between value extremity and the three affective polarization measures is considerably stronger in these models.

**Table A3: Predicting Affective Polarization, Excluding Issue Extremity and Sorting, 1988-2016 ANES**

| The Relationship between Value Polarization and Affective Polarization |                  |                    |                  |
|--|------------------|--------------------|------------------|
| Variable   | Parties          | Ideological Groups | Candidates       |
| Value polarization   | .273*<br>(.013)  | .435*<br>(.012)    | .303*<br>(.013)  |
| Political interest   | .218*<br>(.014)  | .180*<br>(.013)    | .291*<br>(.014)  |
| Education  | -.048*<br>(.012) | .059*<br>(.011)    | -.021<br>(.012)  |
| Age  | .069*<br>(.014)  | .060*<br>(.013)    | .072*<br>(.014)  |
| Income   | -.032*<br>(.011) | .025*<br>(.010)    | -.016<br>(.011)  |
| Church attendance  | -.012<br>(.007)  | .049*<br>(.007)    | -.014*<br>(.007) |
| Black  | .091*<br>(.008)  | -.119*<br>(.007)   | .052*<br>(.008)  |
| Hispanic   | .034*<br>(.009)  | -.058*<br>(.008)   | .009<br>(.009)   |
| Female   | .031*<br>(.006)  | -.024*<br>(.005)   | .032*<br>(.005)  |
| South  | .007<br>(.006)   | .013*<br>(.005)    | -.002<br>(.006)  |
| Year fixed effects   | ✓                | ✓                  | ✓                |
| Constant   | .120*<br>(.016)  | -.054*<br>(.015)   | .086*<br>(.016)  |
| $R^2$  | .139             | .247               | .209             |
| N  | 9,953            | 9,650              | 9,956            |

Cell entries are unstandardized OLS coefficients (standard errors). \*  $p < .05$ ; two-tailed tests.

## IX. Conditional Models Predicting Affective Polarization, Excluding Issue Extremity and Sorting, 1988-2016 ANES

Table A4 below presents results of regression model specifications identical to those featured above in Table A1, but the models here omit the issue extremity and sorting variables. The results of these alternative model specifications are substantively identical to those presented in Table A1. Namely, we again observe that the relationship between value polarization and citizens' affective evaluations of parties, candidates and ideological groups has strengthened over time, findings that are evidenced by the uniformly statistically significant coefficients for the multiplicative interaction terms involving our value polarization variable and time.

**Table A4: Conditional Models Predicting Affective Polarization, Excluding Issue Extremity and Sorting, 1988-2016 ANES**

| The Relationship between Value Polarization and Affective Polarization |         |                    |            |
|--|---------|--------------------|------------|
| Variable   | Parties | Ideological Groups | Candidates |
| Value polarization   | .183*   | .327*              | .220*      |
|  | (.027)  | (.025)             | (.027)     |
| Time   | .014*   | .010*              | .029*      |
|  | (0.002) | (.002)             | (.002)     |
| Value polarization*Time  | .020*   | .025*              | .020*      |
|  | (.005)  | (.005)             | (.005)     |
| Political interest   | .212*   | .147*              | .237*      |
|  | (.012)  | (.011)             | (.012)     |
| Education  | -.047*  | .053*              | -.030*     |
|  | (.012)  | (.011)             | (.012)     |
| Age  | .068*   | .061*              | .073*      |
|  | (.014)  | (.013)             | (.014)     |
| Income   | -.033*  | .033*              | .000       |
|  | (.011)  | (.010)             | (.011)     |
| Church attendance  | -.010   | .057*              | -.003      |
|  | (.007)  | (.007)             | (.007)     |
| Black  | .091*   | -.121*             | .047*      |
|  | (.008)  | (.007)             | (.008)     |
| Hispanic   | .035*   | -.061*             | .002       |
|  | (.009)  | (.008)             | (.009)     |
| Female   | .031*   | -.024*             | .031*      |
|  | (.006)  | (.005)             | (.006)     |
| South  | .007    | .011*              | -.004      |
|  | (.006)  | (.005)             | (.006)     |
| Constant   | .118*   | -.053*             | .086*      |
|  | (.015)  | (.014)             | (.015)     |
| $R^2$  | .138    | .230               | .193       |
| N  | 9,953   | 9,650              | 9,956      |

Cell entries are unstandardized OLS coefficients (standard errors). \*  $p < .05$ ; two-tailed tests.

**X. Cross-Lagged Panel Models Predicting Value Polarization and Affective Polarization, (control variables shown), 1992-1996 ANES**

Table A5 below presents the results of models identical to those shown in manuscript Table 2, except here we present the full list of control variables. We omitted the control variables from manuscript Table 2 due to space limitations.

**Table A5: Panel Models Predicting Value Polarization and Affective Polarization, 1992-1996 ANES**

Testing for the Reciprocal Influence of Value Polarization and Affective Polarization

| First wave (independent) variables                 | Second wave (dependent) variables |        |            |          |            |            |
|--|-----------------------------------|--------|------------|----------|------------|------------|
|  | Model 1                           |        | Model 2    |          | Model 3    |            |
|  | Value pol.                        | Party  | Value pol. | Ideology | Value pol. | Candidates |
| Value polarization <sub>92</sub>                   | .184*                             | .118*  | .197*      | .086*    | .193*      | .050       |
|  | (.048)                            | (.044) | (.047)     | (.043)   | (.047)     | (.046)     |
| Party thermometer differences <sub>92</sub>        | .063                              | .332*  | —          | —        | —          | —          |
|  | (.044)                            | (.038) |            |          |            |            |
| Ideological group therm. differences <sub>92</sub> | —                                 | —      | .078       | .472*    | —          | —          |
|  |                                   |        | (.048)     | (.040)   |            |            |
| Candidate thermometer differences <sub>92</sub>    | —                                 | —      | —          | —        | .030       | .289*      |
|  |                                   |        |            |          | (.043)     | (.040)     |
| Sorting <sub>92</sub>                              | .134*                             | .133*  | .111*      | .069     | .140*      | .123*      |
|  | (.053)                            | (.048) | (.056)     | (.048)   | (.052)     | (.052)     |
| Issue extremity <sub>92</sub>                      | .004                              | .088*  | .007       | .017     | .012       | .090*      |
|  | (.041)                            | (.038) | (.049)     | (.038)   | (.040)     | (.039)     |
| Political interest <sub>92</sub>                   | .009                              | .046   | .012       | -.008    | .012       | .075       |
|  | (.042)                            | (.039) | (.041)     | (.039)   | (.042)     | (.041)     |
| Church attendance <sub>92</sub>                    | .044                              | .026   | .060       | -.011    | .042       | -.021      |
|  | (.045)                            | (.040) | (.046)     | (.042)   | (.045)     | (.044)     |
| Education <sub>92</sub>                            | .009                              | -.042  | .007       | .103*    | .008       | -.062      |
|  | (.049)                            | (.045) | (.049)     | (.044)   | (.049)     | (.047)     |
| White <sub>92</sub>                                | -.001                             | .006   | -.016      | -.148    | -.003      | .037       |
|  | (.083)                            | (.078) | (.083)     | (.076)   | (.083)     | (.080)     |
| Black <sub>92</sub>                                | .039                              | .012   | .043       | -.190*   | .039       | .063       |
|  | (.083)                            | (.079) | (.083)     | (.077)   | (.083)     | (.080)     |
| Income <sub>92</sub>                               | .044                              | .056   | -.019      | .035     | .039       | .050       |
|  | (.049)                            | (.044) | (.040)     | (.043)   | (.048)     | (.047)     |
| Age <sub>92</sub>                                  | -.076                             | .030   | -.070      | .058     | -.075      | -.022      |
|  | (.040)                            | (.038) | (.040)     | (.039)   | (.040)     | (.039)     |
| Female <sub>92</sub>                               | .041                              | .057   | .045       | .014     | .039       | .014       |
|  | (.040)                            | (.037) | (.040)     | (.037)   | (.040)     | (.039)     |
| South <sub>92</sub>                                | -.015                             | -.052  | -.019      | -.032    | -.015      | -.064      |
|  | (.040)                            | (.037) | (.040)     | (.037)   | (.040)     | (.039)     |
| Constant <sub>92</sub>                             | .370                              | .040   | .360       | .368     | .388       | .561       |
|  | (.348)                            | (.327) | (.348)     | (.325)   | (.348)     | (.338)     |
| Number of observations                             | 597                               | 597    | 597        | 597      | 597        | 597        |

Cell entries are unstandardized OLS coefficients (standard errors). \* p < .05; two-tailed tests.

## **XI. Discussion of the Relationship between Value Polarization and Three Measures of Affective Polarization, Conditional on Levels of Elite Polarization (DW-NOMINATE scores), 1988-2016**

Table A6 below presents the results of models specified identically to those shown in Table A2, although here we substitute time for the difference in the estimated first dimension DW-NOMINATE House chamber median between Democrats and Republicans for each year that we examine.<sup>2</sup> Given our theoretical contention that heightened elite polarization drives the observed over time increase in the correlation between value polarization and affective polarization, we specify this model in order to ensure that our election year variable adequately proxies for elite polarization. The House polarization variable has been recoded to range from 0 (1988) to 1 (2016) for the purpose of this analysis.

We use these model estimates to produce Figure A11, which features the estimated marginal effect of value polarization on our three measures of affective polarization across levels of the House polarization variable. The results are substantively identical to those presented in manuscript Figure 1.

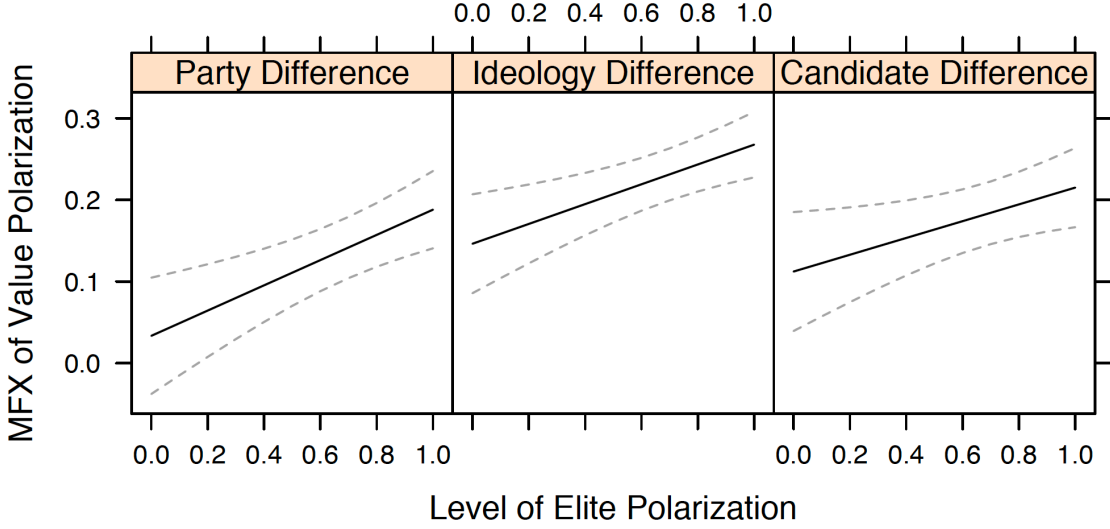
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<sup>2</sup> These estimates were created by Keith Poole (2015) and are freely available on his Voteview website: <http://voteview.com/pmediant.htm>.

**Table A6: Predicting Affective Polarization Conditional on Elite Polarization, 1988-2016**

| The Over Time Influence of Value Polarization on Affective Polarization |                  |                           |                   |
|---|------------------|---------------------------|-------------------|
| <b>Variable</b>   | <b>Parties</b>   | <b>Ideological Groups</b> | <b>Candidates</b> |
| Issue extremity   | .091*<br>(.016)  | .089*<br>(.014)           | .100*<br>(.016)   |
| Sorting   | .311*<br>(.017)  | .365*<br>(.015)           | .223*<br>(.017)   |
| Value polarization  | .034<br>(.036)   | .146*<br>(.031)           | .112*<br>(.037)   |
| House polarization  | .064*<br>(.017)  | .014<br>(.014)            | .138*<br>(.017)   |
| Value pol.*House pol.   | .155*<br>(.046)  | .121*<br>(.039)           | .103*<br>(.047)   |
| Political interest  | .152*<br>(.019)  | .074*<br>(.016)           | .218*<br>(.019)   |
| Education   | -.052*<br>(.015) | .068*<br>(.013)           | -.031<br>(.016)   |
| Church attendance   | -.037*<br>(.010) | .017*<br>(.008)           | -.036*<br>(.010)  |
| Income  | -.041*<br>(.014) | .019<br>(.012)            | -.019<br>(.015)   |
| Age   | .074*<br>(.019)  | .038*<br>(.016)           | .042*<br>(.019)   |
| Black   | .137*<br>(.010)  | -.065*<br>(.009)          | .098*<br>(.010)   |
| Hispanic  | .069*<br>(.011)  | -.030*<br>(.010)          | .036*<br>(.012)   |
| Female  | .039*<br>(.007)  | -.020*<br>(.006)          | .039*<br>(.008)   |
| South   | -.013<br>(.008)  | .012<br>(.007)            | -.016*<br>(.008)  |
| Constant  | .079*<br>(.023)  | -.061*<br>(.019)          | .053*<br>(.023)   |
| <i>R</i> <sup>2</sup>   | .246             | .291                      | .243              |
| N   | 4,751            | 4,665                     | 4,750             |

**Figure A11: Marginal Effect of Value Polarization on Affective Polarization, Conditional on Levels of Elite Polarization (DW-NOMINATE scores), 1988-2016**



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