Supporting Information

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Panel Survey

Data were collected by GfK Ltd. GfK Ltd. utilizes random digit dialing and address-based sampling to recruit a probability sample of survey participants. Participants without internet are provided online access when necessary. Interview dates were from October 19, 2012 to October 29, 2012 and from October 14, 2016 to October 24, 2016. Although panels facilitate the strongest causal inferences possible with observational data, not all approaches to panel analysis are equally powerful. For example, although lagged dependent variable approaches to panel analysis have been common, they easily mislead about the causes of change (1). Specifying random effects or mixed models introduces confounding bias by using both between-individual and within-individual variations (2). By relying strictly on within-person variation over time, fixed effects estimators are not affected by confounding from unmeasured time-invariant factors (3). As a result, fixed effects panel analysis greatly reduces the risk of omitted variable bias (2). By focusing exclusively on within-person change over time, each person in the 2012 panel serves as his/her own control for their 2016 voting behavior. As a result, all stable characteristics of the individual, such as education, gender, race, etc., are eliminated as potentially spurious causes of association.

To account for factors that may have changed over time but are excluded from the model, I also include a wave variable representing all other systematic change over time between 2012 and 2016 (that is, changes over time that affect all respondents equally, regardless of cause). By eliminating spurious relationships based on stable individual differences and controlling for the average effects of all other unmeasured influences, fixed effects panel analyses provide the most rigorous test of causality possible with observational data.

Dependent Variables.

Republican thermometer advantage. Please rate (Donald Trump/Hillary Clinton/Mitt Romney/Barack Obama) on a thermometer that runs from 0° to 100°. Rating above 50° means that you feel favorable and warm toward him/her, and rating below 50° means that you feel unfavorable and cool. Democratic candidate ratings were subtracted from Republican thermometer ratings, and this scale from −100–100 was collapsed into 20 evenly spaced categories.

Republican vs. Democratic vote choice. If the presidential election was held today, which candidate would you vote for? If volunteer not planning to vote: if you were going to vote, which candidate would you prefer? Includes only those respondents who reported voting for one of the two major party candidates and who were independently validated to have voted by Catalist, LLC after the election. Republican candidate preference (one); Democratic candidate preference (zero).

Independent Variables.

Looking for work. Which statement best describes your current employment status? Unemployed or temporarily laid off = 1; else = 0.

Personal finances (better). We are interested in how people are getting along financially these days. Would you say that you and your family living here are better off, worse off, or just about the same financially as you were a year ago? Five-point scale.

Personal effects of trade (better). Think about the increasing amount of trade between the United States and other countries. Do you think this has helped you and your family financially, hurt you and your family financially, or has it not affected your family's financial situation? Four-point scale from hurt my family a lot financially to helped my family a lot financially.

On trade. Some people think that the United States should have more trade agreements with other countries. Others believe that the United States should have fewer trade agreements. Of course, some other people have opinions somewhere in between. Where would you place yourself on this scale, or have you not thought much about this? Seven-point scale from fewer to more.

On immigration. On immigration, some people argue that US policy should focus on (returning illegal immigrants to their native countries/creating a pathway to US citizenship for illegal immigrants). Other people argue that US policy should focus on (creating a pathway to US citizenship for illegal immigrants/returning illegal immigrants to their native countries). Still others are somewhere in between. Where would you place yourself on this scale, or have you not thought much about this? Seven-point scale from anti- to proimmigration.

On China. There are different views about China. Some people see China as more of an opportunity for new markets and economic investment, while others see it as a threat to our jobs and security. Still others are somewhere in between. Which view is closer to your own? Seven-point scale from threat to opportunity.

Perceived candidate opinions (all issues). Where would you place (Hillary Clinton/Barack Obama/Donald Trump/Mitt Romney) on this scale?

Perceived distance of (Democratic/Republican) candidate on issues. Constructed by calculating absolute distance between self and each candidate placement.

National economy (better). Thinking about the economy in the country as a whole, would you say that, over the past year, the nation's economy has gotten better, stayed about the same, or gotten worse? Five-point scale.

SDO (primary). There are many kinds of groups in the world: men and women, ethnic and religious groups, nationalities, political factions. How much do you support or oppose these ideas about groups in general? For each statement, select a number from 1 to 10 to show your opinion. (Ends of scale marked with extremely oppose—extremely favor.) SDO is mean of four 10-point scales. In setting priorities, we must consider all groups. We should not push for group equality. Group equality should be our ideal. Superior groups should dominate inferior groups.

Economic context. Median income (in $1,000s), percentage unemployed, and percentage manufacturing employment were all obtained from the American Community Survey 5-y cumulative estimate and matched to respondents by zip code.

Cross-Sectional Survey

Data were collected by Amerispeak/NORC at the University of Chicago. Using address-based probability sampling, interviews were conducted in either English or Spanish from October 14, 2016 to October 28, 2016. Respondents could choose to be interviewed online or by telephone.

Dependent Variables.

Trump thermometer advantage. Please rate (Donald Trump/Hillary Clinton) on a thermometer that runs from 0° to 100°. Rating above 50° means that you feel favorable and warm toward him/her, and rating below 50° means that you feel unfavorable and cool. Clinton candidate ratings were subtracted from Trump thermometer ratings, and this scale from −100 to 100 was collapsed into 20 evenly spaced categories.

Trump vote preference. If the presidential election was held today, which candidate would you vote for? If not planning to vote: if you were going to vote, which candidate would you prefer? Republican candidate preference in response to either question = 1; all other responses, including third parties = 0.

Trump/Clinton vote. If the presidential election was held today, which candidate would you vote for? If volunteer not planning to vote: if you were going to vote, which candidate would you prefer? Includes only those respondents who reported voting for either Trump or Clinton. Trump preference (one), Clinton preference (zero).

Independent Variables.

Concern about future expenses (α = 0.75). Next, (I'm going to read you) is a list of things that some people worry about, and others do not. Please tell us how worried you are about each of the following things (are you very worried, somewhat worried, not too worried, or not at all worried?). That you will not be able to afford the health care services you and your family need? About not having enough money for retirement? About not being able to afford the cost of education for yourself or a family member? Mean of three items on four-point scales; high indicates most concerned.

Support better safety net. Government should spend more of our taxes providing a financial safety net for all Americans. Federal taxes should be cut, even if it means cutting back on government programs and services. Mean of two five-point scales.

American way of life threatened (agree). How worried are you that the American way of life is under threat? Five-point scale.

China as opportunity. These days, there are different views about China. Some people see China as more of an opportunity for new markets and economic investment, while others see it as a threat to our jobs and security. Still others are somewhere in between. Which view is closer to your own? Three-point scale.

Support for immigration (α = 0.78). Please indicate whether you favor or oppose each of the following proposals addressing immigration: (*i*) provide a path to citizenship for some illegal aliens who agree to return to their home country for a period of time and pay substantial fines, (*ii*) increase border security by building a fence along part of the US border with Mexico, (*iii*) return illegal immigrants to their native countries. Mean of three five-point scales.

Support for international trade. Do you favor or oppose the federal government in Washington negotiating more free trade agreements? Thinking about the increasing amount of trade between the United States and other countries, do you think this has helped the US economy, hurt the US economy, or not affected the US economy? Mean of two items on five-point scales.

Domestic prejudice. Next, we have some questions about different groups in our society. We are going to show you a seven-point scale on which the characteristics of the people in a group can be rated from extremely hardworking to extremely lazy or violent to peaceful. In the first statement, a score of one means that you think almost all of the people in that group tend to be "hardworking/peaceful." A score of seven means that you think most people in the group are "lazy/violent." A score of four means that you think that most people in the group are not closer to one end or the other. Each respondent's mean rating of outgroups was subtracted from their mean rating of their ingroup on the same scales.

Perceived discrimination against high-status groups > low-status groups (α = 0.78). How much discrimination is there in the United States today against each of the following groups? A great deal, a lot, a moderate amount, a little, none at all. Race: subtracted white–black score (each on five-point scale), where high indicates more discrimination; therefore, the difference represents the extent to which a respondent feels that the white majority experiences greater discrimination than the minority group. Gender: subtracted men–women score (each on five-point scale), where high indicates more discrimination; therefore, the difference represents the extent to which an R feels that men experience greater discrimination than women. Religion: subtracted Christian–Muslim score (each on five-point scale), where high indicates more discrimination; therefore, the difference represents the extent to which an R feels that Christians experience greater discrimination than Muslims. Mean of these three variables created index of perceived discrimination against high-status groups.

1. Gunasekara FI, Richardson K, Carter K, Blakely T (2014) Fixed effects analysis of repeated measures data. *Int J Epidemiol* 43:264–269.
2. Firebaugh G, Warner C, Massoglia M (2013) Fixed effects, random effects, and hybrid models for causal analysis. *Handbook of Causal Analysis for Social Research*, ed Morgan SL (Springer, New York), pp 113–132.
3. Allison PD (2009) *Fixed Effects Regression Models* (SAGE, Los Angeles).

Table S1. Mean change over time in key independent variables among self-reported and validated voters, 2012–2016 panel

Change in	Change among all self-reported voters	Change among validated voters	Change among validated Republicans	Change among validated Democrats	Scale
Party identification (Democrat)	−0.04*	−0.04*	0.02	−0.01	1–3
Personal economic hardship					
Household income	0.28***	0.28***	0.43**	0.26*	1–21
Looking for work	−0.02**	−0.02**	−0.02	−0.03*	0–1
Personal financial situation (better)	0.11***	0.08*	0.21***	−0.03	1–5
Personal effects of trade (better)	0.07	0.07	0.01	0.13*	1–5
Own issue opinions					
On trade	−0.32***	−0.34***	−0.80***	0.08	1–7
On immigration	0.35***	0.40***	0.29**	0.55***	1–7
On China	−0.03	−0.01	−0.09	0.04	1–7
Perceived distance of Democratic candidate on issues					
On trade	0.69***	0.72***	1.05***	0.37***	0–6
On immigration	0.09	0.02	−0.02	−0.05	0–6
On China	0.24***	0.23***	0.30**	0.10	0–6
Perceived distance of Republican candidate on issues					
On trade	0.34***	0.40***	0.22**	0.60***	0–6
On immigration	0.42***	0.51***	0.19	0.76***	0–6
On China	−0.05	−0.02	−0.17*	0.17	0–6
SDO	0.16**	0.16*	0.34***	0.02	1–10
National economy	0.08**	0.09**	0.24***	0.01	1–5

Note that economic variables are coded so that improvement is the higher score, and looking for work is a dummy variable, indicating if the respondent is currently looking for work. Own issue opinions are coded so that high scores indicate protrade, proimmigration, pro-China. Increasing levels of SDO have positive scores. *$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.

Table S2. Net change in voting for the Republican candidate attributable to change over time in independent variable (Table S1) and effect size from fixed effects coefficients (Table 1)

Change in	Over time mean change	ΔPredicted probability of Republican vs. Democratic vote among validated voters [95% CI]
Party identification (Democrat)	−0.037 (1–3 scale); 2.073 → 2.036	+0.0146 [0.0119, 0.0174]
Perceived distance of Democratic candidate on issues		
On trade	+0.721 (0–6 scale); 1.195 → 1.916	+0.0949 [0.0489, 0.1409]
On immigration	+0.015 (0–6 scale); 2.328 → 2.343	+0.0012 [0.0005, 0.0020]
On China	+0.228 (0–6 scale); 1.726 → 1.954	+0.0208 [0.0091, 0.0324]
Perceived distance of Republican candidate on issues		
On trade	+0.400 (0–6 scale); 1.192 → 1.592	−0.0465 [−0.0700, −0.0231]
On immigration	+0.510 (0–6 scale); 2.124 → 2.634	−0.0511 [−0.0739, −0.0283]
On China	−0.024 (0–6 scale); 1.691 → 1.667	+0.0021 [0.0010, 0.0031]
SDO	+0.157 (1–10 scale); 3.773 → 3.930	+0.0106 [0.0044, 0.0169]

Calculations are based on the fixed effects model for vote choice among validated voters (Table 1) using the mean change of the central variable over time (Table S1) to calculate the difference in the predicted probabilities of Republican vote choice. Entries in column 2 represent the change over time from wave 0 to wave 1. Column 3 shows the changes in the predicted probability of voting for the Republican presidential candidate based on change in one variable at a time, with positive changes indicating shifts toward more Republican votes and negative change indicating shifts toward Democratic votes. All other variables are held at their wave 0 means. Fig. 2 summarizes the net effect of major changes on Republican vs. Democratic voting.

Table S3. Economic predictors of Republican candidate support: fixed effects panel analysis, 2012–2016

	Republican thermometer advantage		Republican/Democrat vote	
Change in	Coefficient	*t* Value	Coefficient	*z* Value
Party identification (Democrat)	−1.097	−5.440***	−2.199	−14.665***
Personal economic hardship				
Household income	−0.010	−0.250	−0.004	−0.120
Looking for work	−0.568	−1.250	−0.719	−0.902
Personal financial situation (better)	0.057	0.480	−0.077	−0.481
Personal effects of trade (better)	−0.282	−2.810**	−0.042	−0.256
Immediate economic context				
Area unemployment × wave	−0.072	−1.240	−0.097	−0.879
Area percentage manufacturing × wave	0.019	1.040	−0.011	−0.353
Area median income × wave	−0.017	−3.090**	-0.005	−0.631
National economy	−0.833	−7.600***	−1.173	−7.930***
Wave (2012–2016)	0.793	1.300	0.858	0.819
Constant	15.180	21.510***	8.015	10.651***
Sample size	1,194		891	

For analysis of Republican thermometer advantage, sigma_u = 4.04; sigma_e = 2.57; and rho = 0.71. Fixed effects ordinary least squares regression was used to analyze change in Republican thermometer advantage; fixed effects logit regression was used to analyze Republican versus Democratic vote. $^{**}P < 0.01$, $^{***}P < 0.001$.

Table S4. Cross-sectional analysis of predictors of Trump support, 2016

	Trump thermometer advantage		Trump vote preference		Trump/Clinton vote	
Predictors	Coefficient	*t* Value	Coefficient	*z* Value	Coefficient	*z* Value
Party identification (Democratic)	−2.340	−25.010***	−1.107	−14.050***	−1.822	−13.880***
Education (not college graduate)	0.173	1.140	0.140	0.880	0.068	0.260
Race (white)	1.203	6.990***	0.591	3.080**	1.216	4.250***
Gender (female)	−0.548	−4.030***	−0.009	−0.060	−0.473	−2.070*
Age	−0.196	−4.380***	0.019	0.420	−0.151	−2.010*
Religiosity	0.029	1.130	0.033	1.290	0.063	1.450
Economic hardship/anxiety						
Income	0.017	0.960	0.048	2.600**	0.031	1.060
Looking for work	0.065	0.250	0.173	0.590	−0.035	−0.080
Concern about future expenses	0.042	0.430	−0.023	−0.230	0.016	0.100
Perceptions of family finances (better)	−0.001	−0.020	0.047	0.610	0.124	0.950
Support better safety net	−0.337	−4.180***	−0.154	−1.870	−0.350	−2.570*
Immediate economic context						
Median income	0.000	0.550	0.000	−1.210	0.000	−1.700
Unemployed, %	−3.107	−1.500	−2.832	−1.310	−6.116	−1.760
Manufacturing, %	0.686	0.630	−1.122	−1.090	−0.760	−0.420
Perceived status threat						
Perceive discrimination against high-status groups > low-status groups	0.565	8.060***	0.345	4.630***	0.572	4.600***
American way of life threatened	0.129	1.360	0.243	2.200*	0.330	1.930*
SDO	0.107	2.390*	0.077	1.720	0.144	1.940*
Domestic prejudice	0.098	1.580	0.124	1.960*	0.139	1.420
Support for isolationism	0.262	2.960**	−0.106	−1.200	0.266	1.750
China as opportunity	0.231	1.990*	0.080	0.680	0.354	1.900
Support for immigration	−0.776	−9.510***	−0.815	−10.020***	−1.050	−8.160***
Support for international trade	−0.302	−4.400***	−0.182	−2.650**	−0.315	−2.830**
National superiority	0.046	0.540	0.159	1.800	0.149	1.020
National economy (better)	−0.824	−10.970***	−0.376	−5.350***	−0.739	−6.210***
Terrorist threat	−0.135	−1.380	0.203	1.890	−0.079	−0.480
Constant	22.839	23.490***	2.640	2.610**	8.987	5.340***
R^2/pseudo-R^2	0.69		0.56		0.78	
Sample size	2,600		2,845		2,175	

Data were collected by Amerispeak/NORC, October 2016. All variables are described in detail in *Cross-Sectional Survey*. Trump thermometer rating is on a 20-point scale. Trump vote preference is dichotomous, indicating support for Trump (one) or anyone else (zero). Trump/Clinton vote is a dichotomous indicator of voting for Trump (one) or Clinton (zero), with third party voters eliminated. Trump thermometer advantage is analyzed using ordinary least squares regression. Trump vote preference and Trump/Clinton vote are analyzed using logit regression. *$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.

Table S5. Accounting for the impact of education in cross-sectional data: partial models, 2016

	Trump thermometer advantage			Trump candidate preference			Trump vs. Clinton vote		
Predictors	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Background									
Party identification (Democrat)	−4.12***	−3.39***	−2.62***	−1.69***	−1.48***	−1.20***	−2.34***	−2.05***	−1.93***
Not college graduate	1.35***	0.99***	0.17	0.64***	0.57***	0.08	1.07***	0.95***	0.13
Race (white)	1.22***	1.03***	1.51***	0.67***	0.60***	0.60**	1.24***	1.19***	1.35***
Gender (female)	−0.73***	−0.74***	−0.51***	−0.22*	−0.19	−0.04	−0.41**	−0.47**	−0.36
Age	−0.21***	−0.15**	−0.27***	0.14***	0.18***	0.06	−0.01	0.02	−0.13*
Religiosity	0.08**	0.06*	0.02	0.05*	0.04*	0.04	0.07*	0.07*	0.06
Income	0.00	0.00	0.02	0.04**	0.04**	0.05**	0.03	0.03	0.05
Economic indicators									
Looking for work		0.12			0.16			0.03	
Concern about future expenses		0.40***			0.32***			0.36**	
Perceptions of family finances (better)		−0.77***			−0.35***			−0.55***	
Support safety net		−1.04***			−0.50***			−0.86***	
Area median income		0.00			0.00			0.00	
Area % unemployed		−3.95			−2.02			−2.17	
Area % manufacturing		4.08**			0.59			1.75	
Status threat									
Perceive discrimination against high-status groups > low-status groups			0.69***			0.41***			0.62***
American way of life threatened			0.38***			0.44***			0.56***
SDO			0.13**			0.09*			0.16*
Domestic prejudice			0.11			0.15*			0.21*
Support for isolationism			0.52***			−0.07			0.43**
China as opportunity/ threat			0.24*			0.10			0.39*
Support for immigration reform			−0.95***			−0.90***			−1.13***
Support for international trade			−0.51***			−0.22**			−0.43***
Constant	18.80***	22.15***	17.35***	0.82*	2.36***	1.73*	3.16***	6.36***	3.45**
Sample size	2,912	2,894	2,616	3,203	3,175	2,868	2,429	2,411	2,193

Data were collected by Amerispeak/NORC, October 2016. Dependent variables are described in *Cross-Sectional Survey*. Trump thermometer rating is on a 20-point scale. Trump vote preference is dichotomous, indicating support for Trump (one) or anyone else (zero); Trump/Clinton vote is a dichotomous indicator of voting for Trump (one) or Clinton (zero), with third party voters eliminated. Trump thermometer advantage is analyzed using ordinary least squares regression. Trump vote preference and Trump/Clinton vote are analyzed using logit regression. *$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.

Table S6. Comparison of unweighted panel survey with benchmark Current Population Surveys (CPS)

Demographics	Unweighted	Weighted	CPS benchmark	Difference
Household income, $				
Less than 30,000	26	25	20	6
30,000–74,000	39	38	34	5
75,000–124,000	24	25	24	0
125,000+	11	13	22	−11
Race/ethnicity				0
White	72	67	64	8
Black	12	11	12	0
Hispanic	10	14	16	−6
Others	6	8	8	−2
Education				0
Less than high school	3	10	12	−9
High school equivalent	38	29	29	9
Some college	23	27	29	−6
Bachelor degree+	36	34	31	5
Home ownership				0
Owner occupied	79	75	67	12
Renter occupied/other	21	25	33	−12
Marital status				0
Currently married	58	59	53	5
Currently single	42	41	47	−5
Sex				0
Male	49	48	48	1
Female	51	53	52	−1
Average difference				−0.04

Data were collected by GfK Ltd. Using weights that correct for demographic imperfections in the sample produced an almost identical pattern of results. Because panelists had aged, weights could be used to correct most imbalances but not to incorporate the youngest voters who were ineligible for inclusion during the first wave of data collection.

Table S7. Comparison of unweighted cross-sectional survey with benchmark Current Population Surveys (CPS)

Demographics	Unweighted	Weighted	CPS benchmark	Difference
Household income, $				
Less than 30,000	29	28	20	9
30,000–74,000	39	37	34	5
75,000–124,000	21	23	24	−3
125,000+	11	13	22	−11
Age, y				
18–34	31	31	30	1
35–49	24	24	25	−1
50–64	28	26	26	2
65 and older	17	19	19	−2
Race/ethnicity				
White	68	64	64	4
Black	12	12	12	0
Hispanic	13	16	16	−3
Others	8	8	8	0
Education				
Less than high school	6	12	12	−6
High school equivalent	24	29	29	−5
Some college	30	26	29	1
Bachelor degree	23	19	31	−8
Graduate degree	17	14	11	6
Home ownership				
Owner occupied	62	67	67	−5
Renter occupied/other	39	33	33	6
Marital status				0
Currently married	47	48	53	−6
Currently single	53	52	47	6
Sex				
Male	44	48	48	−4
Female	56	52	52	4
Average difference				−0.34

Cross-sectional data were collected by Amerispeak/NORC at the University of Chicago. Interviews were conducted in both Spanish and English, and randomly selected respondents could opt to be interviewed via internet or by telephone.