Secular Surge: A New Fault Line in American Politics

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Online Appendix

This document provides supporting information for the analyses presented in our book manuscript. It includes the exact question wording of the various survey items that we used to create our indices of Personal Secularism and Personal Non-religiosity as well the indicators used to measure the various political variables that we analyze throughout the manuscript. It also includes further details on the statistical analysis presented in the manuscript. The following is a guide to the page locations within the online appendix of the various pieces of supporting information

1. Question Wording and Response Options

In Table A1, we present the wording of the questions and response options used to measure Personal Secularism and Personal Non-religiosity throughout the manuscript. We begin with the full set of indicators contained in our 2017 Secular America Study, which we draw from in each of chapters 3-8. We then describe the indicators used to measure Personal Secularism and Personal Non-religiosity with the variety of other data sources employed in the manuscript.

Table A1: Question Wording and Response Options for the Indicators of Personal Secularism and Personal Non-religiosity

Question	Response Options
1. 2017 Secular America Study	
Personal Secularism:	
Secular Beliefs: Please tell us how much you agree or disagree with the following statements. (1) Factual evidence from the natural world is the source of true beliefs (Factual evidence) (2) The great books of philosophy and science are the best source of truth, wisdom, and ethics (Great books) (3) It is hard to live a good life based on reason and facts alone (Good life) (4) To understand the world, we must free our minds from old traditions and beliefs (Free minds) (5) When I make important decisions in my life, I rely mostly on reason and evidence (Important decisions) (6) All of the greatest advances for humanity have come from science and technology (Greatest advances) (7) What we believe is right and wrong cannot be based only on human knowledge (Right and wrong) (8) The world would be a better place if we relied less on science and technology to solve our problems (Better place)	(1) Strongly agree (2) Agree (3) Neither agree nor disagree (4) Disagree (5) Disagree strongly
Secular guidance: Scale formed from responses to two questions: (1) Do you consider non-religious beliefs, such as derived from science or philosophy, to be an important part of your life or not?	(1) No guidance (no to question 1) (2) Some guidance (3) Quite a bit of guidance (4) A great deal of guidance

(2) Would you say that non-religious beliefs, such as derived from science or philosophy, provide some guidance, quite a bit of guidance, or a great deal of guidance in your day-to-day life?

Secular identities: Do any of the following terms describe you?

Respondents were presented with religious and secular identities ranging from ecumenical to charismatic/pentecostal to humanist, and to spiritual, but not religious, and were able to choose as many as applied. Our variable is the number of times each respondent chose one of four secular identities: secular, humanist, atheist, and agnostic.

Respondents also were coded as identifying as atheist or agnostic if their response to the question "What is your present religion, if any?" was either "agnostic" or "atheist."

Number of secular identities (secular, humanist, atheist, agnostic) chosen.

Personal Non-religiosity

Worship attendance: Aside from weddings and funerals, how often do you attend religious services?

(1) More than once a week
(2) Once a week
(3) About once a week
(4) Two or three times a month
(5) Once a month
(6) Several times a year
(7) Once or twice a year
(8) Less than once a year
(9) Never

Religious guidance: Scale formed from responses to two questions:

(1) Do you consider religion to be an important part of your life or not?

(2) Would you say that religion provides some guidance, quite a bit of guidance, or a great deal of guidance in your day-to-day life?

(1) No guidance (no to question 1)
(2) Some guidance
(3) Quite a bit of guidance
(4) A great deal of guidance

Frequency of prayer: Other than in worship services, how often do you pray?	(1) More than once a day (2) At least once a day (3) More than once a week (4) At least once a week (5) At least once a month (6) Once in a while (7) A few times a year (8) Seldom (9) Never
Belief in God: On the following, please place yourself on scales between two opposing positions.	Sliding scale ranging from "I am absolutely certain that there is a God" (coded as 0) to "I am absolutely certain that there is no God (coded as 100)
View of the Bible: Which of the following comes closest to your view of the Bible?	(1) The Bible is the actual word of God and is to be taken literally, word for word (2) The Bible is the word of God, but not everything in it should be taken literally, word for word (3) The Bible is a good book because it was written by wise men, but God had nothing to do with it (4) The Bible is a worthless book of superstition and myth.
Religious affiliation (dummy variables for nones): What is your present religion, if any?	Nones responded "nothing in particular"

2. 2018 American Humanist Association Survey

Personal Secularism: Indicators identical to those in the 2017 SAS

Personal Non-religiosity

Religious affiliation (dummy variables for nones): Do you currently identify with a religious group?	Nones responded "no."

Religious guidance: Same as 2017 SAS

Belief in God: Same as 2017 SAS

3. 2010-2012 Secular America Study Panel

Personal Secularism: Indicators identical to those in the 2017 SAS except for secular beliefs

Secular Beliefs: Factual evidence, Great books, Good life, Free minds

Personal Non-religiosity: Indicators identical to those in the 2017 SAS

4. Convention Delegate Studies (2012 Convention Delegate Study, 2016 Convention Delegate Study, 2016 State Convention Delegate Study)

Personal Secularism: Indicators identical to those in the 2017 SAS except for secular beliefs

Secular Beliefs: Factual evidence, Great books, Good life, Free minds

Personal Non-religiosity

Worship attendance: Aside from weddings and funerals, how often do you attend religious services?

(1) More than once a week
(2) Once a week
(3) Once or twice a month
(4) A few times a year
(5) Seldom
(6) Never

Religious guidance: Same as 2017 SAS

5. 2016 American National Election Studies Pilot Study

Secularists: Respondents who identify as atheists or agnostics and attend religious services infrequently (a few times a year or less often)

Non-religionists: Respondents who attend worship services infrequently, but do not identify as atheists or agnostics

Religionists: Respondents who attend worship services frequently (once or twice a month or more often) and do not identify as atheists or agnostics

In Table A2, we present the question wording and response options for various other religious, secular and political orientations analyzed in the manuscript. These variables are organized by the chapters in which they appear.

Table A2: Question Wording and Response Options for Indicators of Religious, Secular, and Political Orientations

Question	Response Options
Chapter 2	
Political Leaders Talking about Religion and Religious Leaders Involved in Politics (2017 SAS)	
(1) In general, would you say that political leaders in America…..	(1) Often talk about religious faith and prayer (2) Sometimes talk about religious faith and prayer (3) Never talk about religious faith and prayer
(2) Is that too much, not enough, or about the right amount	(1) Too much (2) Not enough (3) About the right amount
3) In general, would you say that most religious leaders…..	(1) Are often involved in politics (2) Are sometimes involved in politics (3) Are never involved in politics
(4) Is that too much, not enough, or about the right amount?	(1) Too much (2) Not enough (3) About the right amount

Reasons for leaving religion: Please tell us how important each of the following was in your decision to leave your old religion. (2017 SAS)

(1) I felt that my old religion was too mixed up in politics.

(2) I no longer shared the beliefs of the religious group.

(3) I felt there were too many constraints on my life.

(4) I lost confidence in my religion's leaders.

(5) I stopped believing in God.

(1) Very important
(2) Somewhat important
(3) Not very important
(4) Not at all important

<u>Chapter 4</u> (All 2017 SAS)

Church-State Issues: Please tell us whether you agree or disagree that each of the following things should be permitted under the U.S. Constitution.

Public school children say the Pledge of Allegiance, which refers to "one nation under God."

A copy of the Ten Commandments is displayed in a county court house.

A state legislature declares Christianity to be the official religion of the state.

A public high school prohibits students from wearing religious symbols, such as a Christian cross, a Jewish yarmulke (skullcap), or a Muslim headscarf.

While headgear is generally not allowed in driver's license photos, a devout Muslim is permitted to wear a headscarf in her photo.

For religious reasons, a florist refuses to provide flowers at same-sex weddings.

Houses of worship lose their tax-exempt status if they publicly endorse political candidates.

(1) Strongly agree
(2) Agree
(3) Neither agree nor disagree
(4) Disagree
(5) Strongly disagree

Presidential Civil Religion: How would you evaluate the following activities by presidents of the United States, regardless of party?	Sliding scale ranging from "Completely acceptable" (100) to "Completely unacceptable" (0)
The President praying in public	
The President talking about his personal faith	
The President endorsing religion in general	
The President invoking God with the Oath of Office	

<u>Chapter 5</u> (All 2017 SAS)

Secular Activities: People seek to understand the world and their lives in a variety of ways. Some people rely on secular perspectives (or secularism), meaning that they view the world in non-religious, humanist, or rational ways. How often do you do the following things?	(1) Never (2) Occasionally (3) Frequently
Think deeply about secularism as a way of understanding the world	
Read books, articles, and websites about secularism as a way of understanding the world	
Discuss with family and friends secularism as a way of understanding the world	
Gather with larger groups of people who share a secular perspective	
Try to convince others of your views on secularism as a way of understanding the world	
Belong to a group that promotes secularism as a way of understanding the world	
Civic Engagement: See "A Closer Look 5.1"	

<u>Chapter 6</u> (All 2017 SAS, 2010-2012 SAS Panel)

Party Images of Religious and Secular Groups: We are also interested in what you think about some particular groups. For each of the following groups, please let us know whether you think that the members of this group are mainly Democrats, mainly Republicans or a pretty even mix of both.

(1) Mainly Republicans
(2) Mainly Democrats
(3) A pretty even mix of both

Evangelical Christians
People who aren't religious
Religious people
Atheists

Party Identification: Respondents answered two questions

Generally speaking, do you usually think of yourself as a Republican, a Democrat, an independent, or what?

(1) Republican
(2) Democrat
(3) Independent
(4) Other party (open-ended textbox)
(5) No preference

<If Democrat or Republican> Would you call yourself a strong [Democrat/Republican] or a not very strong [Democrat/Republican]?

(1) Strong
(2) Not very strong

<If independent or other party or no preference> Do you think of yourself as closer to the Republican Party or to the Democratic Party?

(1) Closer to the Republicans
(2) Closer to the Democrats
(3) Neither

Ideological Identification: Here is a scale on which the political views that people might hold range from extremely liberal to extremely conservative. Where would you place yourself on this scale?

Sliding scale ranging from extremely liberal (100) to extremely conservative (0), with "moderate" at the midpoint (50)

Moral Relativism, Humanitarianism, and Egalitarianism: All included in a question battery that began with: "In each row below, there are two statements. Please read the two statements and then click on where your own position is."

Moral relativism	Sliding scale ranging from "What is morally right and what is morally wrong will never change regardless of how much the world around us changes" (0) to "The world is always changing and we should adjust our view of moral behavior to those changes." (100)
Humanitarianism	Sliding scale ranging from "People tend to pay more attention to the well-being of others than they should" (0) to "A person should always be concerned about the well-being of others" (100)
Egalitarianism	Sliding scale ranging from "This country would be better off if we worried less about how equal people are" (0) to "If people were treated more equally in this country, we would have many fewer problems" (100)

Authoritarianism: Which one is more important for a child to have?

Independence vs. respect for elders	(1) Independence (2) Respect for elders (3) Both are equally important
Considerate vs. well-behaved	(1) Being considerate (2) Well behaved (3) Both are equally important

Cultural Issues

Same-sex marriage: How should the law define marriage?	Sliding scale ranging from "Only as a union between one man and one woman" to "As a union between two people regardless of their gender"
Abstinence only education: Sex education programs in the public schools should only teach students about abstinence as a way of preventing pregnancy and sexually transmitted diseases.	(1) Strongly agree (2) Agree (3) Neither agree nor disagree (4) Disagree (5) Disagree strongly

Affect toward gay men and lesbians: Feeling thermometer rating of "Gay men or lesbians"	Thermometer scale ranging from 0 to 100
Science Issues	
Federal funding of science and technology: The federal government should make science and technology programs a higher priority	Strongly agree to disagree strongly
Environmental regulation: What do you think about stricter environmental laws?	Sliding scale ranging from "Stricter environmental laws and regulations cost too many jobs and hurt the economy" to "Stricter environmental laws and regulations are worth the cost to preserve the environment"
Evolution: Evolution by natural selection is the best explanation for life on earth.	Strongly agree to disagree strongly
Global warming: Global warming is large a man-made problem.	Strongly agree to disagree strongly
Vaccines: The health benefits of vaccinations generally outweigh the risks.	Strongly agree to disagree strongly
Social Welfare Issues	
Government services and spending: Some people think the government should provide fewer services, even in areas such as health and education, in order to reduce spending. Other people feel it is important for the government to provide many more services even if it means an increase in spending. Where would you place yourself on this scale?	Sliding scale from "Government provide many fewer services, reduce spending" to "Government provide many more services, increasing spending"
Health insurance: What is the best way to deal with the rapid rise in medical and hospital costs?	Sliding scale from "Create a government insurance plan to cover all medical and hospital expenses for everyone" to "All medical expenses should be paid by individuals through private insurance plans"
Government vs. free market: Where would you place yourself on the following scale?	Sliding scale from "We need a strong government to handle today's complex economic problems" to "The free market can handle these problems without government being involved"

U.S. Role in World Affairs: Do you think it is better for the future of our country if we take an active part in world affairs or if we stay out of world affairs?	Sliding scale ranging from "Take an active part in world affairs" to "Stay out of world affairs"
Immigration: What is the best way to deal with illegal immigration?	Sliding scale ranging from "Provide a way for illegal immigrants to pay fines to eventually become U.S. citizens" to "Send illegal immigrants back to their home countries permanently"

<u>Chapter 7</u> (All 2012 and 2016 CDS)

Ideological Identification: Below 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?	Numbered scale ranging from 1 for "Extremely liberal" to 7 for "Extremely conservative"
Abortion: Which one of the opinions expressed below best agrees with your view on the abortion issue?	(1) By law, abortion should never be permitted. (2) The law should permit abortion only in the case of rape, incest, or when the woman's life is in danger. (3) The law should permit abortion for reasons other than rape, incest, or danger to the woman's life, but only after the need for the abortion has been has been clearly established. (4) By law, a woman should always be able to obtain an abortion as a matter of personal choice.
Defense spending: Some people believe that we should spend much less money for defense. Others feel that defense spending should be greatly increased. Where would you place yourself on the following scale?	Numbered scale ranging from 1 for "Defense spending should be greatly increased" to 7 for "Defense spending should be greatly decreased."
Thermometer ratings: Gay men and lesbians, Christian fundamentalists, Feminists, Atheists	

<u>Chapters 8 and 9</u> (2016 SCDS)

Ideological Identification: Below 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?	Numbered scale ranging from 1 for "Extremely liberal" to 7 for "Extremely conservative"

Cultural Issues

Abortion: Which one of the opinions expressed below best agrees with your view on the abortion issue?	(1) By law, abortion should never be permitted. (2) The law should permit abortion only in the case of rape, incest, or when the woman's life is in danger. (3) The law should permit abortion for reasons other than rape, incest, or danger to the woman's life, but only after the need for the abortion has been has been clearly established. (4) By law, a woman should always be able to obtain an abortion as a matter of personal choice.
Same-sex marriage: How should the law define marriage?	Numbered scale ranging from 1 for "Only as a union between one man and one woman" to 7 for "As a union between two people regardless of their gender"
Services for same-sex weddings: Some people think that business owners who provide wedding-related services should be allowed to refuse services to same-sex couples. Other feel business owners should be required to provide wedding-related services regardless of the couple's sexual orientation. Please circle the number that best represents your position.	Numbered scale ranging from 1 for "Business owners should be allowed to refuse services to same-sex couples" to 7 for "Business owners should be required to provide wedding-related services regardless of the couple's sexual orientation

Social Welfare Issues

Government services and spending: Some people think the government should provide fewer services, even in areas such as health and education, in order to reduce spending. Other people feel it is important for the government to provide many more services even if it means an increase in spending. Where would you place yourself on this scale?	Sliding scale ranging from 1 for "Government provide many fewer services, reduce spending" to 7 for "Government provide many more services, increasing spending"
Free college: The government should make tuition at public colleges and universities free for anyone who wants to attend.	Scale from "Disagree strongly" to "Agree strongly"

Nativist Issues	All are scales ranging from "Disagree strongly" to "Agree strongly"
Border wall: To reduce levels of illegal immigration into the U.S., we should build a wall on the U.S. border with Mexico.	
English requirement: It is important that everyone in the United States learns to speak English.	
Travel ban: People from countries in which Islamic terrorist organizations have a significant presence should be barred from entering the U.S. until we have a better system in place for identifying individuals who are terrorist threats.	
Environmental Issues: What do you think about environmental laws? Please circle the number that best represents your position.	Numbered scale ranging from 1 for "We should protect the environment even if it decreases our standard of living" to 7 for "We should protect our standard of living even if it harms the environment"
Defense spending: Some people believe that we should spend much less money for defense. Others feel that defense spending should be greatly increased. Where would you place yourself on the following scale?	Numbered scale ranging from 1 for "Defense spending should be greatly increased" to 7 for "Defense spending should be greatly decreased."
Political Style (Party commitment, ideological commitment, purist-pragmatist norms, interparty compromise): See "A Closer Look 8.1"	

<u>Chapter 9</u> (2016 ANES Pilot Study)

Feeling Thermometer Ratings: Gays and lesbians, feminists, transgender people, blacks, Hispanics, Muslims

Racial Resentment: Agreement or disagreement with four statements:

Irish, Italians, Jewish and many other minorities overcame prejudice and worked their way up. Blacks should do the same without any special favors.

Generations of slavery and discrimination have created conditions that make it difficult for blacks to work their way out of the lower class.

Over the past few years, blacks have gotten less than they deserve.

It's really a matter of some people not trying hard enough; if blacks would only try harder they could be just as well off as whites.

(1) Agree strongly
(2) Agree somewhat
(3) Neither agree nor disagree
(4) Disagree somewhat
(5) Disagree strongly

White Racial Advantage: Randomly-selected halves of the sample were asked either the first set or the second set of questions

First set:

(1) "Does your skin color make your everyday life easier for you, make it harder, or does it not make any difference?"

Numbered scale ranging from "A great deal easier" to "A great deal harder"

(2) "How much does being white grant you unearned privileges in today's society?"

Scale ranging from "A great deal" to "Not at all"

(3) "To what extent do white people have certain advantages that minorities do not have in this society?"

Scale ranging from "A great deal" to "Not at all"

(4) "Does having white skin generally give whites more opportunities in their everyday lives, fewer opportunities, or does it not make any difference?"

Numbered scale ranging from 1 for "A lot more opportunities" to "A lot fewer opportunities"

Second set:

(1) "Does being white help you, hurt you, or make no difference for you personally in today's society?	Scale ranging from "Helps a great deal" to "Hurts a great deal"
(2) "How many advantages do white people have that minorities do not have in this society?"	Scale ranging from "A great many" to "none"
(3) "How many disadvantages do white people have that minorities do not have in this society?"	Scale ranging from "A great many" to "none"
(4) "Compared to other groups, do white people generally have an advantage, a disadvantage, or does it not make any difference?"	Scale ranging from "Large advantage" to "Large disadvantage"

Religious Exemptions: Two issues:

(1) Refuse wedding-related services to same-sex couples: Two questions (a) Do you think business owners who provide wedding-related services should be allowed to refuse services to same-sex couples if same-sex marriage violates their religious beliefs, or do you think business owners should be required to provide services regardless of a couple's sexual orientation? (b) How strongly do you feel that way?	(1) Should be required to provide, feel very strongly (2) Should be required to provide, feel moderately strongly (3) Should be required to provide, feel a little strongly (4) Should be allowed to refuse, feel a little strongly (5) Should be allowed to refuse, feel moderately strongly (6) Should be allowed to refuse, feel very strongly
(2) Contraceptive coverage exemption: Two questions (a) Do you think employers who object to birth control and other contraceptives on religious grounds should or should not be exempt from the requirement that health insurance for their workers cover prescription birth control? (b) How strongly do you feel that way?	(1) Should not be exempt, feel very strongly (2) Should not be exempt, feel moderately strongly (3) Should not be exempt, feel a little strongly (4) Should be exempt, feel a little strongly (5) Should be exempt, feel moderately strongly (6) Should be exempt, feel very strongly

Social Welfare Issues

Government services and spending: Some people think the government should provide fewer services even in areas such as health and education in order to reduce spending. Suppose these people are at one end of a scale, at point 1. Other people feel it is important for the government to provide many more services even if it means an increase in spending. Suppose these people are at the other end, at point 7. And, of course, some other people have opinions somewhere in between, at points 2, 3, 4, 5 or 6. Where would you place yourself on this scale, or haven't you thought much about this?	Numbered scale ranging from 1 for "Government provide many fewer services, reduce spending a lot" to 7 for "Government provide many more services, increasing spending a lot"
Paid parental leave: Do you favor, oppose, or neither favor nor oppose requiring employers to offer paid leave to parents of new children?	Scale ranging from "Favor a great deal" to "Oppose a great deal"
Minimum wage: Should the minimum wage be raised, kept the same, lowered but not eliminated, or eliminated altogether?	(1) Raised (2) Kept the same (3) Lowered (4) Eliminated
Health insurance: Do you favor an increase, decrease, or no change in government spending to help people pay for health insurance when they can't pay for it all themselves?	Scale ranging from "Increase a great deal" to "Decrease a great deal"
Child care: Do you favor an increase, decrease, or no change in government spending to help working parents pay for child care when they can't pay for it all themselves?	Scale ranging from "Increase a great deal" to "Decrease a great deal"
Syrian Refugees: Do you favor, oppose, or neither favor nor oppose allowing Syrian refugees to come to the United States?	Scale ranging from "Favor a great deal" to "Oppose a great deal"

Birthright Citizenship: Randomly selected halves of the sample asked different versions of the question

Version 1: Do you favor, oppose, or neither favor nor oppose changing the U.S. constitution so that the children of unauthorized immigrants do not automatically get citizenship if they are born in this country?	Scale ranging from "Favor a great deal" to "Oppose a great deal"
Version 2: Do you favor, oppose, or neither favor nor oppose children of unauthorized immigrants automatically getting citizenship if they are born in this country?	Scale ranging from "Oppose a great deal" to "Favor a great deal"

Economic Mobility: Three questions

(1) How much opportunity is there in America today for the average person to get ahead?	Scale ranging from "None" to "A great deal"
(2) Compared to your parents, do you think it is easier, harder, or neither easier nor harder for you to move up the income ladder?	Scale ranging from "A great deal harder" to "A great deal easier"
(3) Do you think people's ability to improve their financial well-being is now better, worse, or the same as it was 20 years ago?	Scale ranging from "A great deal worse" to "A great deal better"

2. Descriptive Statistics for Measures of Secularism and Non-Religiosity

Table A3 displays descriptive statistics for our indicators of non-religiosity and secularism—all recoded to range from 0 for the least secular position to 1 for the most secular position—in the 2017 Secular America Study (SAS). There is a relatively wide distribution of scores on nearly all of our measures, although non-religiosity has more variation than secularism.

To gauge the stability of our indicators over time, the last column of the table shows the correlations between all the secularism indicators in the second and fourth waves of the 2010-2012 SAS panel. While random measurement error produces some instability in all survey measures, our indicators of non-religion—religious practices, devotion, and beliefs—are still highly stable over time. As shown in previous research, identification as a "none" is a bit more variable (Putnam and Campbell 2010). The indicators of secularism are less stable, but their correlations over time still are relatively large.

Table A3: Descriptive Statistics for and Stability of Measures of Secularism and Non-Religiosity

	2017 Descriptive Statistics						
	Mean	Standard Deviation	N	10th percentile	Median	90th percentile	Stability (Wave 2-Wave4 Correlation)
Secularism							
Factual evidence the source of true beliefs	.66	.24	2999	.5	.75	1.0	.47
Great works of philosophy and science best source of truth	.54	.26	3000	.25	.5	1.0	.58
Hard to live good life based on reason and facts alone	.52	.28	3000	.25	.5	1.0	.38
Free our minds from old traditions and beliefs	.52	.29	3000	0	.5	1.0	.50
Important decisions based on reason/ evidence	.67	.23	2997	.5	.75	1.0	___[a]
Greatest advances from science/technology	.59	.27	2999	.25	.5	1.0	___[a]
Right and wrong not based only on knowledge	.58	.27	2999	.25	.5	1.0	___[a]
World better if relied less on science/ technology	.42	.28	2997	0	.5	.75	___[a]
Secular guidance	.25	.32	3000	0	0	.67	.61
Number of secular identities	.08	.17	3000	0	0	.25	.64
Non-Religiosity							
Worship attendance (reversed)	.64	.37	2999	.125	.75	1.0	.89
Religious guidance (reversed)	.60	.41	2999	0	.67	1.0	.80
Frequency of prayer (reversed)	.43	.39	3000	0	.25	1.0	.86
Belief in God (reversed)	.27	.32	2998	0	.11	.86	.79
View of the Bible	.40	.32	2999	0	.33	1.0	.79
No Religious Affiliation[b]	.25	.43	2999	0	0	1	.56

Source: 2017 Secular America Study and 2010-2012 Secular America Panel Study, Waves 2 and 4
Note: All variables range from 0 for the least secular orientation to 1 for the most secular orientation.
[a] Secular belief item not included in the 2010-2012 SAS panel
[b] Respondents who chose "nothing in particular" as their religious affiliation.

3. Panel Attrition and Demographic Representativeness across the Waves of the 2010-2012 Secular America Study Panel

In Table A4, we show the rates of panel attrition across waves 2-4 of the Secular America Study Panel (SAS panel). We show the percentage of wave 1 respondents who participated in waves 2, 3, and 4. Also, since the paper's analysis begins with wave 2, we show the percentage of wave 2 respondents who participated in waves 3 and 4.[1] We also compare the unweighted and weighted samples in waves 2-4 to each other and to the sample of the 2012 American National Election Study (ANES, weighted by its full sample weight)—the ANES survey most proximate to the time period of our panel study. We see that, despite panel attrition, the demographic profile of SAS respondents remains virtually unchanged across panel waves. Also, when the sampling weights are applied, the sample in each wave closely matches the weighted 2012 ANES sample.

[1] To increase the sample size for each wave of the SAS panel, Knowledge Networks allowed wave 1 respondents who did not participate in the wave 2 survey to return to participate in either the wave 3 or wave 4 surveys (or both). The percentage of wave 3 respondents who did not participate in wave 2 was 7.33. Among wave 4 respondents, the percentage who did not participate in wave 2 was 7.22 and the percentage who did not participate in waves 2 or 3 was 2.97. However, for our analysis (in Table 4) of the effects of political and secular orientations on each other over time, we include only the respondents who participated in all four SAS panel waves.

Table A4: Panel Attrition Rates and Demographic Profiles of Panel Waves

		Secular America Panel					
	2012 ANES	Wave 2		Wave 3		Wave 4	
	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
Attrition Statistics							
% of wave 1 respondents	—	72.45	—	58.48	—	46.41	—
% of wave 2 respondents	—	—	—	74.80	—	68.62	—
Race							
White	70.92	75.01	68.24	75.54	68.29	76.13	68.32
Black	11.92	8.38	11.02	7.92	10.97	7.37	11.01
Hispanic	11.12	9.39	14.11	9.47	14.10	9.49	13.97
Other Race	6.04	6.23	6.63	7.08	6.63	7.02	6.69
Gender							
Male	47.93	52.38	48.31	53.80	48.31	54.11	48.29
Female	52.07	47.62	51.69	46.20	51.69	45.89	51.71
Age (median)	48	43	44	44	44	44	44
Education (at least)							
% HS Grad	89.74	87.17	86.99	86.83	86.94	87.39	86.98
% Bachelor's	29.44	31.69	28.05	30.82	28.87	32.37	27.96
% Advanced	10.52	11.26	9.96	11.62	9.93	12.11	9.69
Income							
< $35,000	37.14	36.09	41.40	34.91	41.82	33.64	40.86
$35,000-79,999	31.50	37.14	33.96	37.96	33.90	38.60	34.71
$75,000 +	31.36	26.77	24.64	24.64	24.28	27.76	24.43
Religious Affiliation							
None	24.16	40.70	21.54	40.72	21.58	40.26	19.89
Evangelical Protestant	23.44	16.40	22.41	17.33	24.59	14.81	21.24
Mainline Protestant	14.41	12.15	14.61	11.36	12.61	12.90	14.16
Catholic	22.15	17.44	23.98	18.10	24.72	19.28	27.52

Source: 2010-2012 Secular America Panel Study and 2012 American National Election Study

4. Exploratory Factor Analysis of Religious and Secular Identities

In Table A5, we show the estimates from an exploratory factor analysis of all of the religious and secular identity variables in the 2017 SAS. The first factor clearly represents secular identity as the dummy variables for humanist, secular, atheist, and agnostic all load strongly and no other variables have sizeable loadings. The second factor seems to represent evangelical religion as both "born again/evangelical" and charismatic/ Pentecostal identities have strong loadings. The third factor is somewhat confusing. The strong loadings of "ecumenical" and "mainline" suggest that this represents liberal or mainline religion. However, the strong loading of the fundamentalist dummy points in the opposite direction. The final factor seems to capture non-traditional religion as both "non-traditional believer" and "spiritual but not religious load strongly."

Table A5: Exploratory Factor Analysis of Religious and Secular Identities

Identities	Factor 1	Factor 2	Factor 3	Factor 4
Ecumenical	0.0601	-0.0346	0.6639	-0.0184
Mainline	-0.0248	-0.1818	0.7061	-0.0971
Charismatic/Pentecostal	0.0935	0.7582	-0.0904	0.0133
Fundamentalist	0.0225	0.2809	0.5228	0.0556
Born Again/Evangelical	-0.1133	0.6809	-0.0109	-0.1563
Non-Traditional Believer	0.1272	0.0388	-0.0574	0.6955
Spiritual but not Religious	-0.1280	-0.1502	-0.0358	0.7381
Humanist	**0.6462**	0.1581	0.0481	0.1866
Secular	**0.7409**	0.0036	0.0607	-0.0286
Atheist	**0.6053**	-0.0897	-0.1379	-0.3014
Agnostic	**0.5197**	-0.1486	0.0217	0.0716
Eigenvalue	1.75	1.32	1.20	1.05
% of Variance Explained	15.88	11.97	10.87	9.59

Source: 2017 Secular America Study
Note: Entries are obliquely rotated principal components factor loadings. N = 2,986.

5. Exploratory Factor Analysis of Secularism and Non-Religiosity

Table A6 presents the results of an exploratory factor analysis of all of the non-religiosity and secularism indicators. The analysis yielded three factors. The first factor represents non-religiosity as all of the measures of lack of religious devotion load quite strongly on it. The second factor seems to capture secularism as secular guidance and five of the secular belief indicators load strongly. The moderately-strong correlation between the two factors suggests that they are related, but distinct.

The analysis also produced a third factor on which reactions to the three secular belief statements worded in a non-secular direction (hard to live, right and wrong, and world better) load strongly. This creates the appearance that secular beliefs are two-dimensional, but it is likely an artifact of having oppositely-worded statements—some statements worded in a secular direction and some worded in a non-secular direction—in the same question battery.

Table A5: Exploratory Factor Analysis of Non-Religiosity and Secularism Indicators

	Factor 1	Factor 2	Factor 3
Non-Religiosity Indicators			
Worship attendance	0.7969	0.0336	0.0155
Religious guidance	0.8081	0.0775	-0.0198
Frequency of prayer	0.7400	0.0804	-0.1535
Belief in God	0.5521	0.1466	-0.3592
View of the Bible	0.5374	0.1418	-0.3488
No Religious Affiliation	0.6996	0.0317	0.5437
Secularism Indicators			
Factual evidence source of true beliefs	-0.0263	0.7076	-0.0192
Great works best source of truth	0.1498	0.7727	0.0743
Hard to live based on reason alone	-0.2954	0.2762	0.5948
Free minds from old traditions and beliefs	0.1829	0.6505	0.1044
Important decisions based on reason/evidence	0.0416	0.6385	-0.0729
Greatest advances from science/technology	0.1140	0.6591	-0.0772
Right and wrong not based only on knowledge	-0.3665	0.2336	0.5203
World better if relied less on science/technology	-0.1126	-0.1413	0.5630
Secular guidance	-0.2990	0.4539	-0.3952
Secular identity	0.0609	0.1821	-0.6417
Eigenvalue	5.55	1.87	1.40
% of Variance Explained	34.72	11.32	8.77
Correlation with Factor 2	.29	___	
Correlation with Factor 3	-.30	-.32	

Source: 2017 Secular America Study
Note: All variables are coded to range from least secular to most secular. Entries are obliquely rotated principal components factor loadings. N = 2,986.

6. Non-Random Measurement Error and the Structure of Secular Beliefs

Wording statements in opposite directions is standard practice in survey research and is meant to guard against positive response bias (Weisberg 2005). However, Green and Citrin (1994) argue that it may introduce a different bias: "response set" bias in which, rather than responding to each item independently, respondents use their response to the

first item in the battery to "anchor" their responses to the remainder of the items. This means that errors in the measurement of one survey item may not be independent of measurement errors for other survey items. This non-random measurement error may bias the covariance between all of the items upward, enlarging the positive correlations between similarly-worded items and pushing the negative correlations between oppositely-worded items toward zero. In this case, analyses that assume that measurement errors are random—as exploratory factor analysis does—may produce misleading results, showing that the indicators produce separate factors when, in reality, all of the items tap into the same attitudinal dimension. Green and Citrin note that to uncover the true latent variable structure underlying the items in this sort of battery, it is necessary to employ confirmatory factor analysis and allow for the possibility of non-random (or correlated) measurement errors in the observed indicators.

We did that for our indicators of secular beliefs and we show the results in Table A6. We began by estimating both one-factor and two-factor models in which we treat each observed indicator as having measurement error,[2] but assume that the measurement errors for all of the observed indicators are random (i.e. uncorrelated with each other). The results closely parallel those from the exploratory factor analysis. On the single-factor model, the items worded so that agreement denotes greater secularism (factual evidence, philosophy and science, must free minds, important decisions, and greatest advances) all have very strong positive loadings. Non-religious guidance and secular identity also have

[2] To provide a scale for the latent variables, we set the factor loading on one observed indicator to one. For the single-factor model, that indicator is agreement with the "factual evidence" statement. For the two-factor model, we set to one the loadings of the factual evidence variable on the first factor and agreement with the "hard to live a good life" statement on the second factor.

strong and positive loadings on that factor. The loadings on the three secular belief indicators worded in a non-secular direction (hard to live a good life, right and wrong, and world better) are negative, as we would expect, and statistically significant. However, their absolute values are generally smaller than those of the factor loadings for the positively worded belief items.

In the two-factor model, we assume that the belief items worded in a secular direction constitute one factor and the belief items worded in a non-secular direction constitute another factor. Now, all of the items have strong positive and statistically significant loadings on their respective factors, and the goodness-of-fit statistics (chi-square, CFI, and RMSEA) suggest that the two-factor model is a much better fit to the data than the single-factor model. The chi-square difference test between the two-factor and one-factor model is very significant ($p<.0001$).[3] In short, when we assume random measurement error, confirmatory factor analysis, like exploratory factor analysis, suggests that there are two separate dimensions of secular beliefs.

[3] All of the chi-square difference tests were computed using the Satorra-Bentler formula.

Table A6: Confirmatory Factor Analyses of Secular Beliefs

	Models with Random Measurement Error			Model with Non-Random Measurement Error
Indicator	(1) One-factor model	(2) Two-factor model		(3) One-factor model
		Factor 1	Factor 2	
Factual evidence source of true beliefs	1.00[a]	1.00[a]	—	1.00[a]
Great books of philosophy/ science best source of truth	1.29 (.07)	1.30 (.07)	—	1.30 (.08)
Hard to live good life based on reason alone	-.38 (.08)	—	1.00[a]	-.88 (.09)
Free minds from old traditions and beliefs	1.11 (.08)	1.11 (.08)	—	1.11 (.09)
Important decisions based on reason/ evidence	.96 (.06)	.94 (.06)	—	1.02 (.08)
Greatest advances from science/ technology	1.23 (.09)	1.21 (.09)	—	1.31 (.10)
Right and wrong not based only on knowledge	-.42 (.08)	—	.99 (.07)	-.90 (.09)
World better if relied less on science/technology	-.80 (.10)	—	1.19 (.18)	-1.35 (.11)
Measurement error covariance	0	0	0	.008 (.001)
Correlation between factors	_	-.44		_
χ^2 (df)	381.25 (20)	133.04 (19)		114.11 (19)
Difference in χ^2 from model 1 (df)[b]	—	190.98 (1)		522.08 (1)
CFI[c]	.813	.941		.951
RMSEA[d]	.078	.045		.041
N=3,000				

Source: 2017 Secular America Study
Note: Top entries are unstandardized confirmatory factor loadings. Standard errors are in parentheses. All factor loadings are statistically significant at p<.01.
[a] Constrained to equal one for model identification.
[b] Chi-square difference testing uses the Satorra-Bentler scaled chi-square difference test.
[c] Comparative fit index
[d] Root mean square error of approximation

However, accounting for the possibility of non-random measurement errors in our secular beliefs items casts considerable doubt on that conclusion. We account for non-random measurement error by allowing the measurement error for each of the eight

observed indicators of secular beliefs to be correlated with the measurement error for every other beliefs indicator.[4] The results, presented in the last column of the table, show that the loadings of all eight indicators of secular beliefs on a single factor are relatively strong and statistically significant, with positive loadings for the positively worded items and negative loadings for the negatively worded items.

The test of the difference in chi-squares between this model and the one-factor model with random measurement error is highly significant, and both the CFI and RMSEA statistics indicate that a single-factor model accounting for non-random measurement error provides a much better fit to the data. In fact, the goodness of fit statistics for the single-factor model with correlated measurement error indicate that it fits the data just as well as, if not better than, the two-factor model with random measurement error. In short, it appears that the two-dimensional structure of secularism that we observed in the exploratory factor analysis was generated artificially by non-random measurement error. Underlying our eight belief indicators is a single dimension of secular beliefs.

7. Confirmatory Factor Analysis of Personal Secularism and Non-Religiosity

We contend that, while related, secularism and non-religiosity are distinct orientations. To evaluate that, we employ confirmatory factor analysis of our secular and non-religious indicators in the 2017 SAS, estimating two confirmatory factor models—one with all the variables loading on a single factor, the other with our secularism indicators

[4] Following Green and Citrin (1994), we constrain all of the correlations between measurement errors to be equal, estimating a single error covariance parameter for all of our observed indicators of secular beliefs.

loading on one factor and our indicators of non-religiosity.[5] Both models treat secular guidance, secular identity, and all of the indicators of non-religiosity as having random measurement error.[6] To account for the non-random measurement errors across the indicators of secular beliefs, we allow the measurement errors for all of our belief indicators to be correlated with each other. Table A7 displays the results.

[5] We estimate all of the confirmatory factor and structural equation models in the book manuscript with Mplus 8.2, using full information maximum likelihood (FIML) estimation with robust standard errors and applying the SAS's full-sample sampling weights ("MLR" estimation in Mplus). This produces estimates for all of the observations in the sample, even those with missing values on the variables in the model (unless they are missing on all of the observed endogenous variables).

[6] All of the confirmatory factor models in the manuscript follow a standard set of assumptions for measurement models. The covariances between the measurement errors and the latent variables and between the measurement errors and the structural disturbance terms are all set to zero, and the factor loading for one observed indicator of each latent variable is set to one. For the single-factor model, that indicator is worship attendance. For the two-factor model, the indicators are worship attendance and agreement with the "factual evidence" statement.

Table A7: Confirmatory Factor Analyses of Secularism and Non-Religiosity

			Two-Factor Model			
	One-Factor Model		Secularism Factor		Non-Religiosity Factor	
Indicators	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
Secularism						
Factual evidence source of true beliefs	1.000	___	1.000	___	___	___
Great works best source of truth	1.448	.10	1.332	.08	___	___
Hard to live based on reason alone	-1.265	.11	-1.009	.09	___	___
Free minds from old traditions and beliefs	1.398	.11	1.202	.09	___	___
Important decisions based on reason/evidence	1.060	.08	1.016	.07	___	___
Greatest advances from science/technology	1.487	.11	1.346	.09	___	___
Right and wrong not based only on knowledge	-1.308	.12	-1.030	.09	___	___
World better if relied less on science/technology	-1.504	.12	-1.397	.10	___	___
Secular guidance	0.891	.10	0.989	.08	___	___
Secular identity	1.016	.08	0.825	.06	___	___
Non-Religiosity						
Religious guidance	3.184	.26	___	___	1.000	___
Religious attendance	2.558	.21	___	___	0.801	.02
Frequency of prayer	3.244	.25	___	___	1.017	.02
Belief in God	2.738	.20	___	___	0.811	.03
View of the Bible	2.599	.19	___	___	0.767	.03
No Religious Affiliation	1.096	15			0.391	.04
Correlation between latent factors	___	___	.75			
Goodness of Fit						
χ^2 (df)	1688.02 (103)		1102.62 (102)			
χ^2 scaling correction factor	2.07		2.04			
CFI	.80		.88			
RMSEA	.072		.057			
Satorra-Bentler difference in χ^2 (df)	___		292.22 (1)			
N = 3,000						

Source: 2017 Secular America Study
Note: Coefficients are unstandardized maximum likelihood coefficients. All coefficients are statistically significant at p<.001.

All of the factor loadings are statistically significant in both models. However, while the loadings for the non-religiosity variables are noticeably larger than those for the secularism indicators in the one-factor model, these factor loadings are more comparable in the two-factor model. Moreover, taking into account non-random measurement error in the secular belief indicators, the negative loadings for the items worded in a non-secular direction are generally as strong as the positive loadings for the pro-secular indicators. Perhaps most importantly, the two-factor model has a smaller value of the chi-square test of overall model fit, a smaller value of the root mean square error of approximation (RMSEA), and a larger value of the comparative fit index (CFI)—all indicating a better fit to the data (Bollen 1989). An appropriate test of whether the difference in fit is statistically significant is provided by the difference in the chi-square values for the two models, and the difference here is very significant.[7] In short, secularism is not just the opposite of religiosity. It is a distinct orientation.

8. Analysis of Nonattitudes in the Personal Secularism Index

To get a sense of the degree to which the normal distribution of our personal secularism index is due to nonattitudes, we compare its measurement properties across education groups. If a primary reason why respondents tend to be clustered in the middle of the index is that they are expressing nonattitudes, then we should see less variation and tighter clustering in personal secularism for less well-educated respondents than for better

[7] The chi-square fit statistics that are produced by the MLR estimator are scaled to make them robust to non-normality and non-independence of observations. Thus, chi-square difference testing must use the scaled difference in chi-square test suggested by Satorra and Bentler (1994). The difference test in Table 1 was computed using the Satorra-Bentler formula.

educated respondents. Moreover, because a classic indication of nonattitudes in survey measures is instability in respondents' positions on the measures across waves of a panel survey, we also should see less stability in personal secularism across the waves of our SAS panel study for less-educated respondents than for better-educated respondents. Accordingly, we compare 2017 SAS respondents in three education groups—people with high school degrees or less education, people with some college but no bachelor's degree, and people with bachelor's or advanced degrees—on two measures of variation in personal secularism—the standard deviation and interquartile range (the difference between the 25th and 75th percentiles of the variable)—and two measures of clustering around the middle position of the index: the percentage of respondents between a score of .45 and .55 on our zero-to-one scale and the percentage of respondents between scores of .40 and .60 on the scale. We also compare the panel stability of personal secularism—specifically the correlation between personal secularism in wave 2 and personal secularism in wave 4 of the 2010-2012 SAS panel study—of respondents in these three education groups. For the sake of comparison, we undertake the same analyses for non-religiosity, ideological identification, and attitude on government services and spending. We show the results in Table A8.

The table shows that while there is somewhat less variation in personal secularism than in non-religiosity or the two political orientations, there is little evidence of systematic differences in that variation across education groups. The standard deviation and interquartile range of personal secularism and the interquartile range do increase with education, but not by much. And, there is virtually no difference across education groups in the percentage of respondents clustered between .45 and .55 or between .40 and .60 on the

personal secularism scale. Meanwhile, on the most widely accepted indicator of nonattitudes—stability across panel waves—there is no evidence of differences across education groups. The correlation between personal secularism in wave 2 of our panel and personal secularism in wave 4 is essentially the same across the three levels of education. In short, if a good indication of nonattitudes is difference across education groups in the dispersion of a variable around the mean and in the variables stability across panel waves, we do not find a great deal of evidence of nonattitudes.

In fact, if there is any such evidence of nonattitudes in Table A8, it is in the political orientations, not in personal secularism or non-religiosity. There is more variation and less clustering around the mean for non-religiosity than for secularism and non-religiosity is more stable over time than personal secularism. And, except for the interquartile range, there is no evidence of any difference in variation or stability in non-religiosity across education groups. For ideological identification and view on levels of government services and spending, however, there are more differences across education groups. The interquartile range of both variables are noticeably larger for respondents with college degrees than for respondents who only have a high school degree (or do not have even that) and the degree of clustering around the middle value of these variables is noticeably less for better-educated people than for less-educated citizens. The stability of ideological identification across panel waves does not vary across education levels, but stability in government services and spending attitudes clearly does. Services and spending views are a good bit more stable for better-educated people than for their less-educated counterparts.

are unfamiliar with the ideas contained in our indicators or are having a hard time understanding the concepts, that should be most evident among less well-educated respondents. Accordingly, the clustering of responses around the middle position of survey scales and the instability of respondents' orientations toward secularism across panel waves—response instability in panel surveys is the classic indicator of nonattitudes (Converse 1964)—should be greatest among our least-educated respondents.

So, we compared three indicators of variation and clustering of personal secularism—the index's standard deviation, its interquartile range, and the percentage of respondents falling in the middle range of the scale—across education levels. We also compared the correlation between respondents' levels of personal secularism in waves 2 and 4 of our panel study across education groups. And, we compared all of this to the same analyses for non-religiosity and two political orientations (ideological identification and attitude about levels of government services and spending). We show the results in our online appendix and there is no evidence of systematic variation across education groups in the variation, clustering, or stability of personal secularism. In fact, there is more education-related variation in these things for political orientations than for personal secularism. In short, we have no reason to believe that the distribution of personal secularism is due to nonattitudes, at least not to any greater degree than for other variables in survey data.

8. Full Estimates of Models of the Relationship between Secular Orientations and Party Identification

In Table A8, we present the full set of estimates—summarized in Figure 6.3 of the book manuscript—of our structural equation model of the relationships between secularism and non-religiosity on the one hand and party identification on the other hand. The first set of estimates is for our measurement models of non-religiosity and personal secularism—the confirmatory factor analyses with the indicators of non-religiosity loading on one latent variable and the indicators of secularism loading on a separate latent variable. As in Table A8, all of the indicators load strongly and significantly on their respective factors.

Table A8: Structural Equation Model of the Relationship between Secular Orientations and Party Identification

	Coefficient	Standard Error
Measurement Model		
Non-relig → Religious attendance	1.000	___
Non-relig → Religious guidance	1.255	0.033
Non-relig → Frequency of prayer	1.298	0.044
Non-relig → Belief in God	1.059	0.046
Non-relig → View of the Bible	1.000	0.042
Non-relig → No religious affiliation	0.553	0.051
Secularism → Factual evidence	1.000	___
Secularism → Great books	1.380	0.095
Secularism → Hard to live on reason alone	-1.086	0.104
Secularism → Free minds	1.310	0.104
Secularism → Secular guidance	1.034	0.098
Secularism → Secular identity	0.883	0.075
Secularism → Important decisions	1.056	0.088
Secularism → Greatest advances	1.415	0.107
Secularism → Right and wrong	-1.081	0.100
Secularism → World better	-1.484	0.118
Structural Model		

Non-relig → Party ID	-0.133	0.077
Secularism → Party ID	1.176	0.160
Education → Party ID	0.052	0.029
Income → Party ID	-0.181	0.048
Female → Party ID	0.101	0.015
Age → Party ID	0.082	0.038
South → Party ID	-0.010	0.020
Northeast → Party ID	0.006	0.025
West → Party ID	-0.035	0.022
White → Party ID	-0.148	0.021
Married → Party ID	-0.015	0.018
Evangelical→ Party ID	-0.102	0.029
Mainline → Party ID	-0.040	0.031
Catholic → Party ID	-0.018	0.025
Education → Non-relig	0.003	0.021
Income → Non-relig	0.145	0.033
Female → Non-relig	-0.055	0.011
Age → Non-relig	-0.032	0.028
South → Non-relig	-0.035	0.014
Northeast → Non-relig	-0.016	0.016
West → Non-relig	0.012	0.017
White → Non-relig	0.132	0.015
Married → Non-relig	-0.048	0.012
Evangelical→ Non-relig	-0.352	0.018
Mainline → Non-relig	-0.241	0.017
Catholic → Non-relig	-0.214	0.016
Education → Secularism	0.040	0.011
Income → Secularism	0.075	0.016
Female → Secularism	-0.022	0.006
Age → Secularism	-0.010	0.014
South → Secularism	-0.005	0.008
Northeast → Secularism	-0.003	0.008
West → Secularism	0.009	0.008
White → Secularism	0.027	0.007
Married → Secularism	-0.007	0.006
Evangelical→ Secularism	-0.132	0.011
Mainline → Secularism	-0.074	0.009
Catholic → Secularism	-0.066	0.008

Goodness of Fit
χ^2 (df) = 2273.52 (284)
CFI = .80
RMSEA = .053

N = 2499

Source: 2017 Secular America Study
Note: Coefficients are unstandardized maximum likelihood coefficients.

The next set of estimates are for the "structural" portion of the model: the relationships that secularism and non-religiosity have with party identification, controlling for a host of sociodemographic control variables; and the effects of the control variables on non-religiosity and secularism. As we saw in Figure 6.3, the connection of secularism to partisanship is strong and statistically significant while the relationship between non-religiosity and party identification is weak and non-significant.

9. Full Estimates of the Cross-Lagged Effects Model for Party Identification

In Table A9, we present the full set of estimates—including the measurement model coefficients and the effects of the sociodemographic control variables—of the model of cross-lagged effects between non-religiosity and secularism on the one hand and party identification on the other hand (using data from waves 2-4 of the SAS panel).[8] The cross-lagged model estimates are summarized in Figure 6.6 in the book manuscript.

The first set of estimates are our confirmatory factor estimates, with the loading of latent party identification on observed party identification constrained to be equal to one and the loadings of the non-religiosity and secularism indicators constrained to be equal across panel waves for the purposes of model identification (Wiley and Wiley 1970; Bollen 1989). The next set of estimates are for the key structural parameters of our cross-lagged

[8] The model for each political attitude or identification includes cross-lagged relationships between the political variable and both secularism and non-religiosity, as well as cross-lagged influences of secularism and non-religiosity on each other. Other work (e.g. Patrikios 2008;(D. E. Campbell et al. 2018)) also employs cross-lagged models to assess reciprocal connections between political variables and non-religious and secular variables. However, none of that work directly compares the cross-lagged relationships that non-religiosity and secularism have with political orientations, as we do here.

models: the stabilities of the latent variables across panel waves and the cross-lagged relationships between party identification and both secularism and non-religiosity.[9] It is not surprising that when we correct for measurement error in those orientations and in non-religiosity and secularism, they are all highly stable—stability coefficients are all above .84.

[9] To illustrate the estimation of our cross-lagged models, we show the full set of estimates for party identification in the supporting information.

Table A9: Estimates of Structural Equation Models of Cross-Lagged Effects between Party Identification and Secular Orientations

	Coefficient	Std. Error
Measurement Model[a]		
Latent Party ID → Observed Party ID	1.000	___
Non-relig → Religious attendance	1.000	___
Non-relig → Religious guidance	1.268	0.060
Non-relig → Frequency of prayer	1.131	0.067
Non-relig → Belief in God	0.875	0.071
Non-relig → View of the Bible	0.829	0.060
Non-relig → No religious affiliation	0.504	0.045
Secularism → Factual evidence	1.000	___
Secularism → Great books	1.261	0.086
Secularism → Hard to live on reason alone	-0.410	0.095
Secularism → Free minds	0.901	0.088
Secularism → Secular guidance	0.876	0.094
Secularism → Secular identity	0.599	0.072
Structural Model		
Stabilities[b]		
Party ID_t →Party ID_{t+1}	0.969	0.020
$Secularism_t$ → $Secularism_{t+1}$	0.847	0.037
$Non\text{-}relig_t$ → $Non\text{-}relig_{t+1}$	0.949	0.012
Cross-Lagged Effects[b]		
$Secularism_t$ → Party ID_{t+1}	0.068	0.041
Party ID_t → $Secularism_{t+1}$	0.018	0.008
$Non\text{-}relig_t$ → Party ID_{t+1}	-0.010	0.019
Party ID_t → $Non\text{-}relig_{t+1}$	0.014	0.007
$Non\text{-}relig_t$ → $Secularism_{t+1}$	0.091	0.017
$Secularism_t$ → $Non\text{-}relig_{t+1}$	0.101	0.025
Effects of Controls on Party ID[c]		
$Education_2$ → Party $ID_{3/4}$	-0.016	0.026
$Income_2$ → Party $ID_{3/4}$	-0.009	0.015
$Female_2$ → Party $ID_{3/4}$	-0.005	0.006
Age_2 → Party $ID_{3/4}$	0.001	0.015
$White_2$ → Party $ID_{3/4}$	-0.006	0.009
$Evangelical_2$→ Party $ID_{3/4}$	0.007	0.011
$Catholic_2$ → Party $ID_{3/4}$	-0.007	0.009
$Mainline_2$ → Party $ID_{3/4}$	-0.003	0.009
$South_2$ → Party $ID_{3/4}$	0.004	0.007
$Married_2$ → Party $ID_{3/4}$	-0.003	0.007
Child at $Home_2$ → Party $ID_{3/4}$	-0.007	0.008
$West_2$ → Party $ID_{3/4}$	0.002	0.010
$Northeast_2$ → Party $ID_{3/4}$	0.009	0.011

Effects of Controls on Secularism[c]		
Education$_2$ → Secularism$_{3/4}$	0.014	0.017
Income$_2$ → Secularism$_{3/4}$	0.007	0.016
Female$_2$ → Secularism$_{3/4}$	0.001	0.005
Age$_2$ → Secularism$_{3/4}$	0.000	0.013
White$_2$ → Secularism$_{3/4}$	-0.005	0.006
Evangelical$_2$→ Secularism$_{3/4}$	-0.021	0.008
Catholic$_2$ → Secularism$_{3/4}$	0.006	0.007
Mainline$_2$ → Secularism$_{3/4}$	0.005	0.008
South$_2$ → Secularism$_{3/4}$	0.003	0.007
Married$_2$ → Secularism$_{3/4}$	-0.002	0.006
Child at Home$_2$ → Secularism$_{3/4}$	-0.008	0.006
West$_2$ → Secularism$_{3/4}$	-0.004	0.007
Northeast$_2$ → Secularism$_{3/4}$	-0.016	0.007
Effects of Controls on Non-relig[c]		
Education$_2$ → Non-relig$_{3/4}$	0.008	0.017
Income$_2$ → Non-relig$_{3/4}$	0.001	0.009
Female$_2$ → Non-relig$_{3/4}$	0.002	0.004
Age$_2$ → Non-relig$_{3/4}$	-0.017	0.010
White$_2$ → Non-relig$_{3/4}$	0.015	0.006
Evangelical$_2$→ Non-relig$_{3/4}$	0.0001	0.007
Catholic$_2$ → Non-relig$_{3/4}$	0.0001	0.006
Mainline$_2$ → Non-relig$_{3/4}$	0.010	0.007
South$_2$ → Non-relig$_{3/4}$	-0.003	0.006
Married$_2$ → Non-relig$_{3/4}$	-0.002	0.004
Child at Home$_2$ → Non-relig$_{3/4}$	-0.003	0.005
West$_2$ → Non-relig$_{3/4}$	0.005	0.006
Northeast$_2$ → Non-relig$_{3/4}$	0.007	0.005
Goodness of Fit		
χ^2 (df) = 3100.37 (1168)		
CFI = .89		
RMSEA = .038		
N = 1170		

Source: 2010-2012 Secular America Panel Study (waves 2-4)
Note: Coefficients are unstandardized maximum likelihood coefficients.
[a] The factor loadings for observed indicators of secular, non-religious, and political orientations are constrained to be equal across panel waves.
[b] The stability effects and cross-lagged effects between waves 2 and 3 and between waves 3 and 4 are constrained to be equal.
[c] Control variables are measured in wave 2. The effects of wave 2 control variables on party identification and secular and non-religious orientations in wave 3 and in wave 4 are constrained to be equal.

Despite this impressive stability, we find that lagged party identification is significantly related to change in both secularism and non-religiosity. Stronger identification with the Democratic Party is associated with increases in both orientations.

The sizes of these lagged coefficients pale in comparison to the stabilities for each variable, but we would not expect the politics-based changes in secular orientations to be large, given the corrections for measurement error and a period of less than one year between each panel wave, Cumulatively, these results could represent substantial change, with Democrats and liberals growing markedly less religious and more secular than Republicans and conservatives over time. This suggests that politics itself may have contributed to the recent growth of both non-religion and secularism.

What about the reverse relationship? Are non-religion and secularism related to increases in Democratic identification? For non-religiosity, the answer is no. It does not have a significant connection to change in any of the political variables. A lack of religion does not encourage greater liberalism or Democratic loyalty. In contrast, secularism has a statistically significant lagged influence on partisanship, ideology, and same-sex marriage attitudes. Actively secular tendencies are associated with moving toward stronger identification with the Democratic Party and liberalism, and more support for same-sex marriage.

The rest of the estimates are for the effects of control variables. We show their effects on change in party identification, secularism, and non-religiosity.

10. Estimating "Within-Person Effects" with the Secular America Study Panel

As we noted in "A Closer Look 6.1" in the book manuscript, cross-lagged effects models capture what quantitative methodologists call "between-person effects." They tell us the extent to which change in one variable can be predicted from existing differences between individuals on another variable (Hamaker, Kuiper, and Grasman 2015). For

example, the cross-lagged model estimates in Table A9 tell us that people who are more secular at one time point are more likely than people who are less secular to grow more Democratic between that and future time points. They also indicate that people who are more Democratic in their party identification at one time point are more likely than people who are more Republican to grow both more secular and more non-religious between that and future time points. The cross-lagged-effects estimates allow us to rule out the possibility that secularism's relationship to party identification is due entirely to secularism being endogenous to partisanship—in other words, party identification causing change in secularism. They also allow us to rule out the possibility that this relationship is due entirely to party identification being endogenous to secularism—to secularism causing change in partisanship. In short, the cross-lagged results suggest that there is a reciprocal relationship over time between secularism and party identification.

However, because there may be "unmeasured variables" (variables not in our data or accounted for in our models) that are related to levels of secularism at the first time point and to change across time in party identification, we are unable to say for sure that those other factors did not cause the change in Democratic loyalty or the changes in secularism and non-religiosity. Because our cross-lagged models include controls for a range of sociodemographic characteristics—education, income, gender, age, race, religious affiliation, marriage status, the presence of children in the home, and region—we can be sure that the relationships between secularism and changes in party identification and between party identification and changes in secularism are not due to these orientations' mutual relationships with these sociodemographic factors. However, we cannot be sure that we have included all relevant control variables in our models. So, we cannot be certain

that secularism causes change in partisanship or that partisanship causes change in personal secularism and non-religiosity.

In order to account for the possibility that the reciprocal relationships between secularism, non-religiosity, and political orientations are due to unmeasured variables, we can estimate other models for panel data that capture "within-person effects"—the degree to which differences or changes in one variable for a particular person are associated with differences or changes in another variable for that same person. In these models, each individual panel respondent serves as her or his own control. For example, if changes in a particular individual's level of secularism are associated with increases in how closely she is identified with the Democratic Party, we can be sure that the relationship between secularism and Democratic partisanship do not result from differences in other variables between that person and other individuals.

One way to capture within-person effects is a "first difference" model in which the change in one orientation from one panel wave to the next is regressed on the change in another orientation from one panel wave to the next. This provides a direct assessment of whether individual-level changes in secularism and non-religiosity are associated with individual-level changes in political orientations, or vice-versa (Allison 2009).

We estimate first difference regression models using waves 2 and 4 of our 2010-2012 Secular America Study panel and we show the estimates in Table A10. The variables involved in these regression models are our additive indices of personal secularism and personal non-religiosity and the three political orientations included in both waves 2 and 4 of the SAS panel: party identification, ideological identification, and attitude about same-sex marriage. We computed first differences by taking the difference between the value for

each respondent on the particular variable in wave 4 of the panel study and the value for the same respondent on that variable in wave 2 of the panel study.[10] We then regressed the first difference of the political orientation on the first differences of both secularism and non-religiosity (estimates shown in columns 1 and 2 of the table), regressed the first difference of secularism on the first differences of the political orientation and of non-religiosity (column 3 in the table), and regressed the first difference of non-religiosity on the first differences of the political orientation and of secularism (column 4 in the table).[11]

Table A10: Estimates of First Difference Regression Models of the Relationships between Secularism, Non-Religiosity, and Political Orientations

Political Variable	(1) ΔSecularism → ΔPolitics	(2) ΔNon-Religiosity → ΔPolitics	(3) ΔPolitics → ΔSecularism	(4) ΔPolitics → ΔNon-Religiosity
Party Identification	.01 (.04)	.08 (.04)	.01 (.03)	.05 (.03)
Ideology	.19** (.05)	.12** (.05)	.08** (.02)	.04* (.02)
Gay Marriage	.18** (.06)	.04 (.07)	.05** (.02)	.01 (.01)

Source: 2010-2012 Secular America Study
Note: Unstandardized coefficients with standard errors in parentheses
*p<.05; **p<.01

[10] We coded secularism, non-religiosity, and each of the political variables to range from 0 to 1. So the first-differenced variables range from -1 to 1.

[11] We do not show the effects of first-differenced non-religiosity on first-differenced secularism or of first-differenced secularism on first-differenced non-religiosity in the table. These first difference regressions are contemporaneous models, simply capturing the relationship over the same time period of changes in secular orientations and changes in political orientations. They do not capture the possibility that, for example, prior change in secularism is associated with subsequent change in party identification. Allison (2009) suggests that it is possible to estimate the lagged effects of the first difference of one variable on the first difference in another variable—similar to the cross-lagged effects model. However, the estimates of such models are very sensitive to correctly specifying the lag structure of the independent variable. Incorrect lag specification can lead to misleading results. With only three waves of panel data, it is difficult for us to assess the correct lag structure of the effect of one variable on another. So, we present only the contemporaneous first difference models here.

Our regressions did not find effects of first-differenced secularism on first-differenced party identification or the reverse—effects of first-differenced party identification on first-differenced secularism. However, the effects of change in non-religiosity on change in party identification and of change in partisanship on change in non-religiosity approach statistical significance.

The results for ideology and gay marriage attitudes look similar to those shown in the book manuscript from our cross-lagged models. Increases in both secularism and non-religiosity are associated with increases in liberal ideology while changes in ideology are related to changes in secularism and non-religiosity. Individual-level increases in secularism are also associated with increases in support for gay marriage and changes in gay marriage attitudes are related to changes in secularism. However, there is no reciprocal relationship between first-differenced non-religiosity and first-differenced gay marriage attitudes.

In a recent article in *Psychological Methods*, Hanmaker, Kuiper, and Grasman (2015) introduce a way to estimate within-person effects in the context of a cross-lagged-effects structural equation model. They present a "random intercepts cross-lagged panel model" (RI-CLPM) that has the same structure as the traditional cross-lagged model but includes a random intercept. According to Hanmaker and her colleagues, the cross-lagged effects in a traditional model represent "the extent to which the change in y can be predicted from the individual's prior deviation from the group mean on x" (2015, 104)—in other words, between-person effects. However, with the inclusion of a random intercept in the model, the cross-lagged effects now indicate "the extent to which the change in y can be predicted

from the individual's prior deviation from his or her expected score on the other variable" (2015, 105)—in other words, within-person effects.

In Table A-11, we present the cross-lagged effects estimated from the RI-CLPM for secularism, non-religiosity, and the three political orientations that appear in each of waves 2-4 of the SAS panel.[12] In the model for party identification, there are no statistically significant cross-lagged effects between any of the variables. In the ideology model, the effect of secularism on increases in liberal ideology approaches statistical significance, and the secularism has a significant effect on non-religiosity. In the model for same-sex marriage attitudes, secularism has a statistically-significant effect on individual-level increases in support for gay marriage. The effect of gay marriage attitudes on secularism also approaches statistical significance.

Table A11: Estimates of Cross-Lagged Effects between Political Orientations, Secularism, and Non-Religiosity from the Random Intercept Cross-Lagged Panel Model

Political Variable	Secularism(t) → Politics(t+1)	Non-Religiosity (t) → Politics(t+1)	Politics(t) → Secularism(t+1)	Politics(t) → Non-Religiosity(t+1)	Secularism(t) → Non-Relig (t+1)	Non-Relig(t) → Secularism(t+1)
Party Identification	-.20 (.19)	-.31 (.19)	-.22 (.18)	-.21 (.12)	-.02 (.19)	-.01 (.26)
Ideology	.22 (.13)	.23 (.16)	.06 (.06)	.08 (.05)	.13* (.06)	.16 (.09)
Gay Marriage	.30* (.13)	.17 (.16)	.06 (.03)	-.01 (.04)	.13* (.06)	.13 (.09)

Source: 2010-2012 Secular America Study
Note: Unstandardized coefficients, standard errors in parentheses.
*p<.05; **p<.01

[12] The RI-CLPM requires three waves of data for estimation. So, we cannot estimate RI-CLPM models for the political variables that appear only in waves 3 and 4 of the SAS panel. We estimated the RI-CLPM models with Mplus 8.2, using full information maximum likelihood (FIML) estimation with robust standard errors and applying the SAS's full-sample sampling weights ("MLR" estimation in Mplus). However, the RI-CLPM assumes that variables are measured without error. So, we do not correct for measurement errors in observed indicators and our measures of secularism and non-religiosity are simply additive scales (created in Stata 15).

It is important to note that the cross-lagged effects model captures something different from the first difference model or the RI-CLPM. The cross-lagged model captures the extent to which pre-existing differences between individuals' secularism, non-religiosity, or political orientations are associated with differences in change on other variables. For example, the cross-lagged model estimates tell us that people who are more secular at one time point are more likely than less-secular people to become more Democratic, more ideologically liberal, and more supportive of same-sex marriage. The other two models capture individual-level change—the degree to which variation in secularism, non-religiosity, or political orientations for a given person is associated with change in other orientations for that same person.

We believe the cross-lagged model captures the reciprocal relationships that are most likely to exist between secular orientations and political orientations. For instance, the backlash hypothesis does not necessarily suggest that people who become more liberal or more Democratic also become more non-religious. Rather, it suggests that people who already are more liberal or Democratic are more likely than conservatives and Republicans to move away from religion. Similarly, we think it is unlikely that, especially in a short period like our 2010-2012 SAS panel, people will simultaneously grow more secular and more Democratic (or liberal). It is more likely that secularists will be more likely than religious people to increase their support for liberalism and the Democratic Party. So, we believe our cross-lagged model results represent important reciprocal relationships between secularism, non-religiosity, and American political orientations.

However, it also is iportant that models that capture within-person effects also show reciprocal relationships between secular and political orientations. Even these alternative estimation strategies—capturing the effects of individual-level changes in secularism on individual-level changes in political tendencies—find that secularism is a moving force in politics.