



Do Millennials See Climate Change as More Than Just a Meme?

Investigator

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Acknowledgements

Thank you to Dr. Edward Maibach, Dr. Anthony Leiserowitz, and Dr. Connie Roser-Renouf from the George Mason University Center for Climate Change Communication and Yale Project on Climate Change Communication for granting use of the Climate Change in the American Mind dataset and for their support in completing this study. Additional thanks to James Wyatt at Climate Nexus for teaching me about the power of R and being so gracious with his time in helping me.

Cover Image

State Farm (2015). Retrieved from <https://flic.kr/p/GCc3Rd> through a Creative Commons public domain license.

Suggested citation

Kuppa, S. (2018). Do Millennials See Climate Change as More Than Just a Meme?. Washington, DC: Johns Hopkins University, Energy Policy and Climate Program.

Introduction

Millennials have been touted as the generation that will do something about global warming. Recent social and political campaigns have hinged their tactics on the widespread idea that young people are more likely to act on climate change than older Americans. Some social science supports the notion that members of younger generations care more about societal values like environmentalism than older generations.¹ Conversely, other social scientists studying generational differences have found evidence that younger generations, instead of becoming more societally engaged than their elders, are less likely to engage in civic matters like environmental activism.² Lack of civic engagement among Millennials may reduce their likelihood of engaging in collective action on global warming.

Almost a decade ago, this latter argument was supported by an analysis of 2009-2010 survey data from the Yale Project on Climate Change Communication and the George Mason University Center for Climate Change Communication³ that concluded that there is, “no predictable portrait of young people when it comes to global warming.” The study defined young people as between the ages of 18 and 35 in 2010. As these individuals in the Millennial generation have aged, begun to pay taxes, purchase goods and services, and vote in elections it is important to look again at their climate change beliefs and attitudes.

In order to find out whether Millennials had become more engaged since 2010 than other generations, I used survey data collected between October 20-November 1, 2017 from the Yale/Mason Climate Change in the American Mind project to look for age group differences. The survey was comprised of 1,304 American adult respondents and the average margin of error for the full sample was +/- 3 percentage points at the 95% confidence level.⁴ In 2017, Millennials are 12-36, Gen Xers are 37-52, Baby Boomers are 53-71, and members of the Silent generation are 72-89. Details on the survey can be found in the methodology section of this paper.

Based upon this analysis of recent global warming public opinion data, little has changed

¹ Inglehart, R. and Norris, P. (2016). Trump, Brexit, and the rise of populism: economic have-nots and cultural backlash. HKS Faculty Research Working Paper Series RWP16-026. *University of Michigan Institute for Social Research and the Harvard John F. Kennedy School of Government*. Retrieved from <https://research.hks.harvard.edu/publications/workingpapers/citation.aspx?PubId=11325&type=FN&PersonId=83>.

² Twenge, J., Campbell, K., and Freeman, E. (2012). Generational differences in young adults' life goals, concern for others, and civic orientation, 1966-2009. *Journal of Personality and Social Psychology*, 102(5), 1045-1062. Retrieved from <https://www.apa.org/pubs/journals/releases/psp-102-5-1045.pdf>.

³ Feldman, L., Nisbet, M.C., Leiserowitz, A., & Maibach, E. (2010). The climate change generation? Survey analysis of the perceptions and beliefs of young Americans. *George Mason University Center for Climate Change Communication and Yale Project on Climate Change Communication*. Retrieved from <http://environment.yale.edu/climate-communication-OFF/files/YouthJan2010.pdf>.

⁴ Leiserowitz, A., Maibach, E., Roser-Renouf, C., Rosenthal, S., Cutler, M., and Kotcher, J. (2017). Politics & global warming, October 2017. *Yale University and George Mason University*. New Haven, CT: *Yale Program on Climate Change Communication*. Retrieved from <http://climatecommunication.yale.edu/wp-content/uploads/2017/12/Global-Warming-Policy-Politics-October-2017.pdf>.

generationally in the intervening years.

Main findings:

- Overall, Millennials demonstrate similar or less engagement on global warming than older generations.
- Millennials are less likely to discuss global warming with their friends and family than the older generations (p. 4).
- Belief in global warming (p. 8), its importance (p. 5), and perceived efficacy in addressing the problem (p. 12) are no greater among Millennials than any other generation.
- Liberal Millennials are less likely than liberals of other generations to have thought a lot about global warming before taking the survey (p. 15) and less likely to believe that people in the U.S. are being harmed now by global warming (p. 17).

1. Millennials are not more engaged with—or concerned about—global warming than older generations

Millennials are less likely to discuss global warming with those around them

Almost a third of Millennials have never discussed global warming with their family and friends, compared to 24% of Gen Xers, 21% of Baby Boomers, and 23% of Silent Generation members (Table 1).

Table 1 | Discussing global warming

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
How often do you discuss global warming with your family and friends?					
	%	%	%	%	%
<i>Often</i>	6	4 ⁵	7	8	8
<i>Occasionally</i>	32	30	32	35	29
<i>Rarely</i>	37	36	37	36	40
<i>Never</i>	25	31	24	21	23
<i>n=</i>	1304	427	323	434	120
<i>Percent of n</i>		33%	25%	33%	9%
Chi-square $p < .05$					

⁵ Within the tables, percentages were rounded to the nearest whole number. Therefore, percentages within a category may total slightly higher or lower than 100%.

Global warming has equal personal importance across generations

The issue of global warming is not of any greater importance to Millennials than it is to members of the other generations. Twenty-nine percent of Millennials say the issue of global warming is either “extremely important” or “very important” (29%), which is statistically equivalent to the 33% of Gen Xers, the 31% of Baby Boomers, and the 27% of Silent Generation members who say the same (Table 2).

Table 2 | Personal importance of global warming

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
How important is the issue of global warming to you personally?					
	%	%	%	%	%
<i>Extremely important</i>	12	12	13	12	8
<i>Very important</i>	19	17	20	19	19
<i>Somewhat important</i>	37	38	38	35	39
<i>Not too important</i>	19	20	17	20	17
<i>Not at all important</i>	14	13	12	15	17
<i>n</i>=	1305	427	321	436	121
<i>Percent of n</i>		33%	25%	33%	9%

Chi-square *n.s*

Almost 1 in 5 Millennials say they have not given any thought to global warming—the same as the Silent Generation

Millennials (18%) are as likely as Silent Generation members (19%) to say that they had “not at all” thought about global warming before today. Less than half of Millennials (47%) say that they had thought about global warming “a lot” or “some,” compared to majorities of Gen Xers (58%) and of Baby Boomers (59%) (Table 3).

Table 3 | Amount of prior thought about global warming

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
How much had you thought about global warming before today?					
	%	%	%	%	%
<i>A lot</i>	22	18	24	25	19
<i>Some</i>	32	29	34	34	34
<i>A little</i>	32	34	32	31	28
<i>Not at all</i>	14	19	11	11	19
<i>n=</i>	1307	428	323	435	121
<i>Percent of n</i>		33%	25%	33%	9%

Chi-square $p < .01$

Worry about global warming increased from 2009-2010

In 2009-2010, there were no differences by generation on worry about climate.⁶ By 2017, generational membership does make a significant difference in worry about global warming: younger generations are more worried than older generations. When it comes to concerns about global warming, 68% of Millennials are “very worried” or “somewhat worried” as are 68% of Gen Xers. Just over half of older generations are worried: 57% of Baby Boomers and the 56% of the Silent Generation. Among all age groups, respondents who are “very worried” have increased by 10% since 2010. The national average was 12% in 2010 and is now 22% (Table 4).

Table 4 | Worry about global warming

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
How worried are you about global warming?					
	%	%	%	%	%
<i>Very worried</i>	22	23	25	20	15
<i>Somewhat worried</i>	42	45	43	37	41
<i>Not very worried</i>	23	19	21	26	27
<i>Not at all worried</i>	14	13	12	16	17
<i>n=</i>	1304	426	322	435	121
<i>Percent of n</i>		33%	25%	33%	9%

Chi-square $p < .05$

⁶ See Table 3 in Feldman et. al., 2010.

2. Millennials are as likely as other generations to correctly perceive the reality and causes of global warming

Belief in global warming is similar across the generations

Like in 2010, there is currently no significant difference in belief about global warming between the generations. In 2009-2010, only 57% of people said that they believed that global warming is happening.⁷ Since then, there have been massive gains. In 2017, 71% of adults believe that global warming is happening. Of the remaining 29% of adults, slightly more are unsure about the existence of global warming (15%) than think it does not exist (13%) (Table 5).

Table 5 | Belief in global warming

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
Do you think that global warming is happening?					
	%	%	%	%	%
Yes	71	72	75	69	68
Don't know	15	14	16	16	18
No	13	13	10	15	13
n=	1304	427	321	436	120
Percent of n		33%	25%	33%	9%
Chi-square <i>n.s</i>					

⁷ See Table 6 in Feldman et. al., 2010.

Only the Silent Generation is unconvinced that global warming is mostly human-caused

Millennials (58%), Gen Xers (59%), and Baby Boomers (50%) are similar when it comes to believing that global warming is “caused mostly by human activities.” Half or more of those generations say that to be true. However, only a minority of members of the Silent Generation agree that global warming is “caused mostly by human activity” (38%) (Table 6).

Table 6 | Beliefs about the causes of global warming

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
Assuming that global warming is happening, do you think it is...					
	%	%	%	%	%
<i>Caused mostly by human activities</i>	54	58	59	50	38
<i>Caused mostly by changes in the environment</i>	31	30	28	33	44
<i>Neither because global warming isn't happening</i>	6	5	5	7	7
<i>Other</i>	9	7	8	11	12
n=	1302	427	322	434	119
<i>Percent of n</i>		33%	25%	33%	9%

Chi-square $p < .01$

Only 4 in 10 of Millennials believe that global warming is harming people in the U.S.

Forty percent of Millennials say that people in the United States are being harmed now. Less than half of other generations say the same: 47% of Gen Xers, 42% of Baby Boomers, and 36% of members of the Silent generation (Table 7).

Table 7 | Timing of global warming harm

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
When do you think global warming will start to harm people in the United States?					
	%	%	%	%	%
<i>They are being harmed now</i>	42	40	47	42	36
<i>In 10 years</i>	12	13	10	11	13
<i>In 25 years</i>	12	14	13	10	12
<i>In 50 years</i>	11	12	11	11	10
<i>In 100 years</i>	11	11	10	12	7
<i>Never</i>	12	10	10	14	22
n=	1301	425	322	433	121
<i>Percent of n</i>		33%	25%	33%	9%

Chi-square $p < .05$

3. Almost 3 in 10 Millennials say that “all” or “none” of their friends share their views on global warming

Twelve percent of Millennials say that “all” their friends shared their views on global warming compared to 5% of Gen Xers, 6% of Baby Boomers, and 6% of the members of the Silent Generation. Similarly, 17% of Millennials say that “none” of their friends share their views on global warming whereas 13% of Gen X’ers, 11% of Baby Boomers, and 14% of the Silent Generation say that they have “none” of their friends share their views (Table 8).

Table 8 | Sharing views on global warming

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
How many of your friends share your views on global warming?					
	%	%	%	%	%
<i>All</i>	7	12	5	6	6
<i>Most</i>	28	23	31	31	28
<i>Some</i>	26	23	28	27	31
<i>A few</i>	24	25	23	25	22
<i>None</i>	14	17	13	11	14
<i>n=</i>	1303	425	322	435	121
<i>Percent of n</i>		33%	25%	33%	9%

Chi-square $p < .05$

4. Across generations, Americans feel equally unsure that we can successfully address global warming

There is no significant difference between the generations in believing that human action can reduce global warming. In fact, fewer adults overall (5%) believe that humans can reduce global warming and will do so successfully than they did in 2009-2010 (10%) (Table 9).⁸

Table 9 | Expected outcome of human action to reduce global warming

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
Which of the following statements comes closest to your view?	%	%	%	%	%
<i>Humans can reduce global warming, and we are going to do so successfully</i>	5	6	6	5	4
<i>Humans could reduce global warming, but it's unclear at this point whether we will do what's needed</i>	48	46	51	46	51
<i>Humans could reduce global warming, but people aren't willing to change their behavior; so, we're not going to</i>	25	28	24	22	22
<i>Humans can't reduce global warming, even if it is happening</i>	15	13	13	19	16
<i>Global warming isn't happening</i>	7	7	7	8	7
n=	1304	426	323	434	121
<i>Percent of n</i>		33%	25%	33%	9%

Chi-square *n.s*

⁸ See Table 9 in Feldman et. al., 2010.

5. Millennials are as likely as other generations to change their mind about global warming

Age is not a good indicator for predicting whether or not a person could easily change their mind about global warming. On average, 3% of Americans “strongly agree” that they could easily change their minds about global warming and 35% of Americans “strongly disagree” that they could change their minds (Table 10).

Table 10 | Willingness to change mind about global warming

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
I could easily change my mind about global warming.					
	%	%	%	%	%
<i>Strongly agree</i>	3	3	4	1	3
<i>Somewhat agree</i>	24	23	25	24	28
<i>Somewhat disagree</i>	38	42	35	37	38
<i>Strongly disagree</i>	35	33	36	38	32
<i>n=</i>	1302	424	323	435	120
<i>Percent of n</i>		33%	25%	33%	9%

Chi-square *n.s*

6. Millennials are just as likely to say there is a scientific consensus as other generations

Millennials are just as likely to say that the vast majority of climate scientists believe that human-caused global warming is happening as are other generations. Just over half of Millennials (53%) say that more than 75% of scientists think that global warming is happening, as do 50% of Gen Xers, 51% of Baby Boomers, and 52% of the Silent Generation (Table 11).

Table 11 | Perception of a scientific consensus

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
To the best of your knowledge, what percentage of climate scientists think that human-caused global warming is happening?					
	%	%	%	%	%
<i>Greater than 75%</i>	52	53	50	51	52
<i>50%-75%</i>	22	22	22	23	22
<i>Less than 50%</i>	26	25	28	26	27
<i>n=</i>	1303	426	322	435	120
<i>Percent of n</i>		33%	25%	33%	9%

Chi-square *n.s*

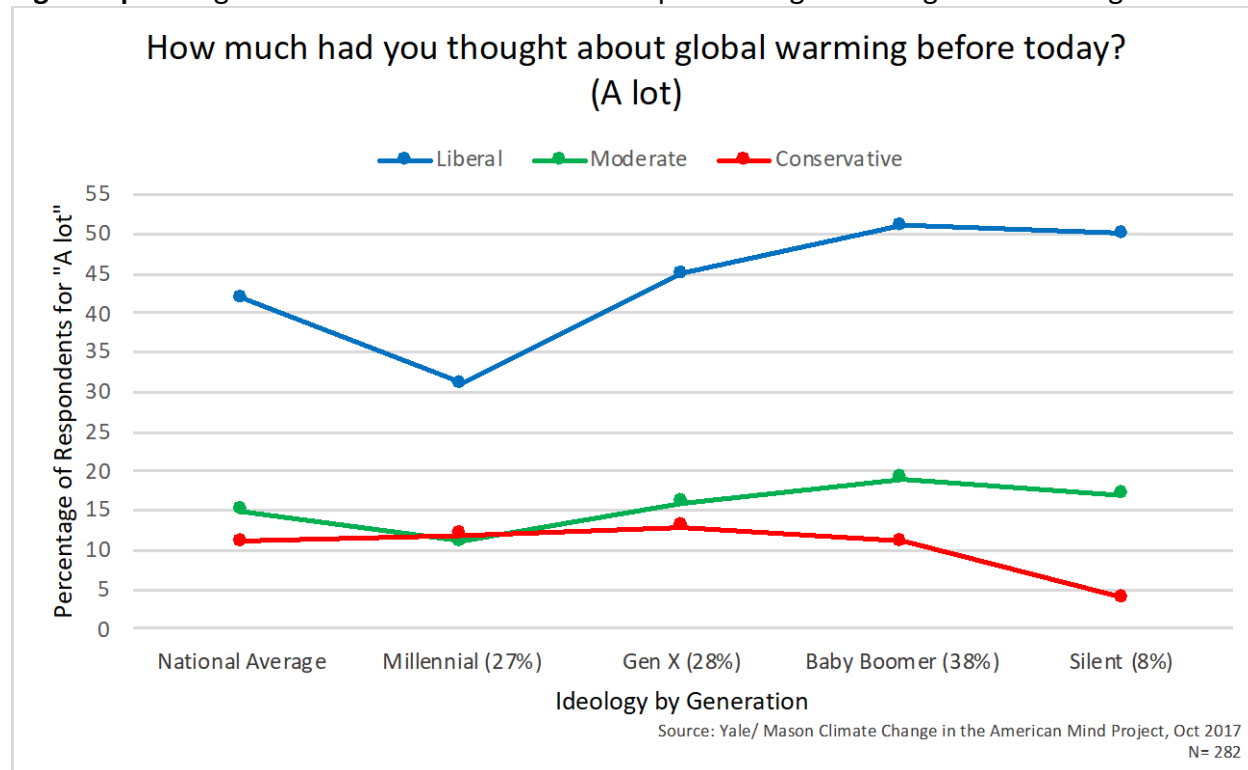
7. Political Ideology is a better indicator of global warming beliefs than generational membership

In order to understand how political ideology plays a role in each generation's beliefs about climate change, I looked at the effects of both on climate change public opinion.

Liberals of older generations say they have thought "a lot" about global warming before today.

Thirty-one percent of Liberal Millennials say they have thought "a lot" about global warming before today while 45% of Gen Xers, 51% of Baby Boomers, and 50% of members of the Silent Generation say the same. Within moderates and conservatives, there is not much of a difference between the generations. Liberal Millennials resemble their moderate (11%) and conservative (12%) peers more than other liberals of older generations. Additionally, moderates and conservatives of all generations are about equally as likely to have thought "a lot" about global warming before today (Figure 1; Table, Appendix A).

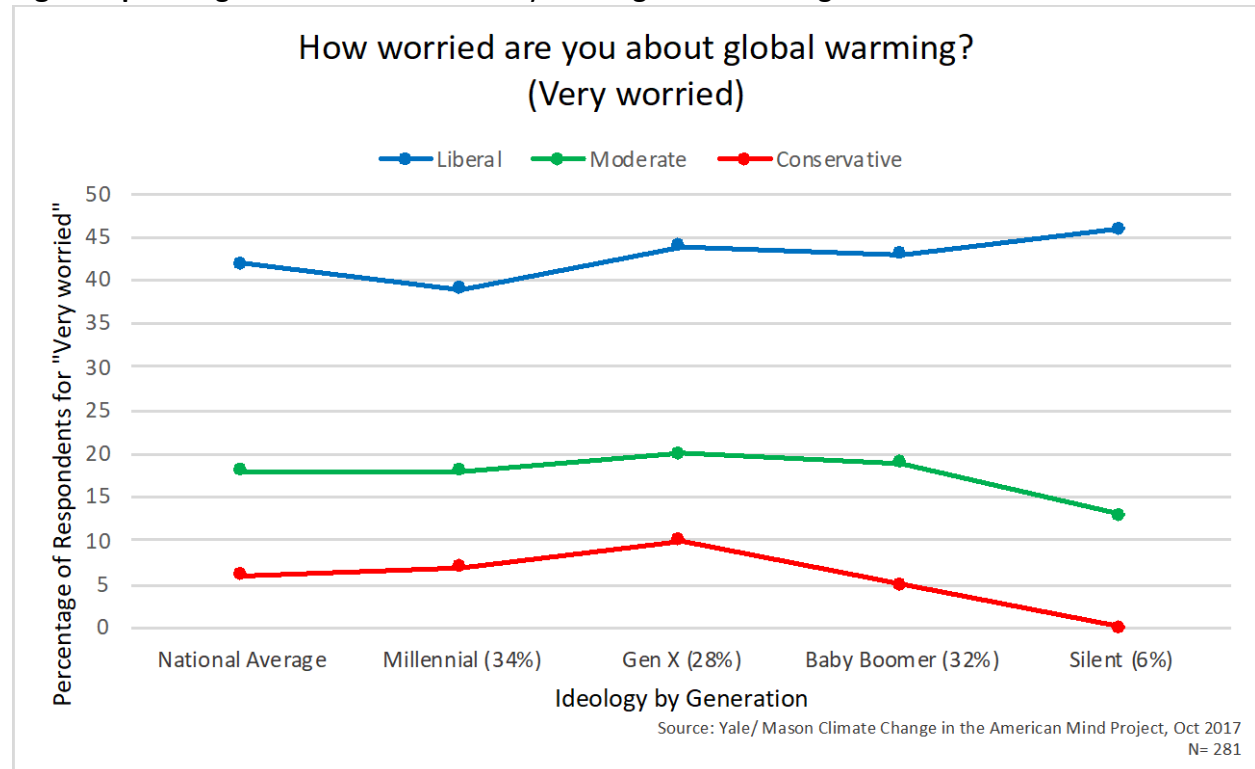
Figure 1 | Ideological differences in the amount of prior thought about global warming



Political ideology is a good predictor of those who are very worried about global warming

While Figure 3 shows that there is a clear difference in ideology that contributes to how likely a person is “very worried” about global warming, it also demonstrates that generational membership is not a good predictor of those who are very worried. Millennials are about equally as likely as any other generation to be “very worried” about global warming (Figure 2; Table, Appendix B).

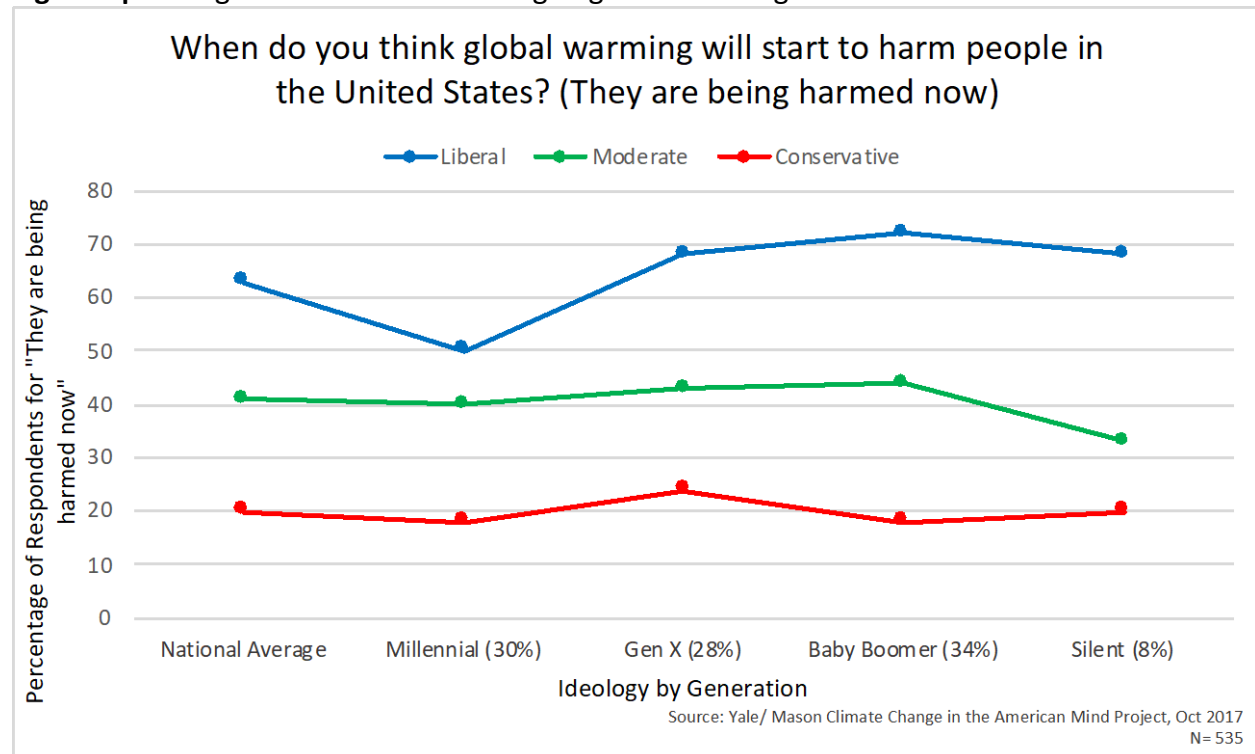
Figure 2 | Ideological differences in worry about global warming



Liberals in older generations are more likely to think that global warming is harming Americans now

Liberal Millennials (50%) are less likely to think that global warming is currently harming people in the United States than liberals of other generations (68% of Gen Xers, 72% of Baby Boomers, and 68% of members in the Silent Generation). Moderates and conservatives are about as likely to think that people in the U.S. are being harmed now regardless of generation (Figure 3; Table, Appendix C).

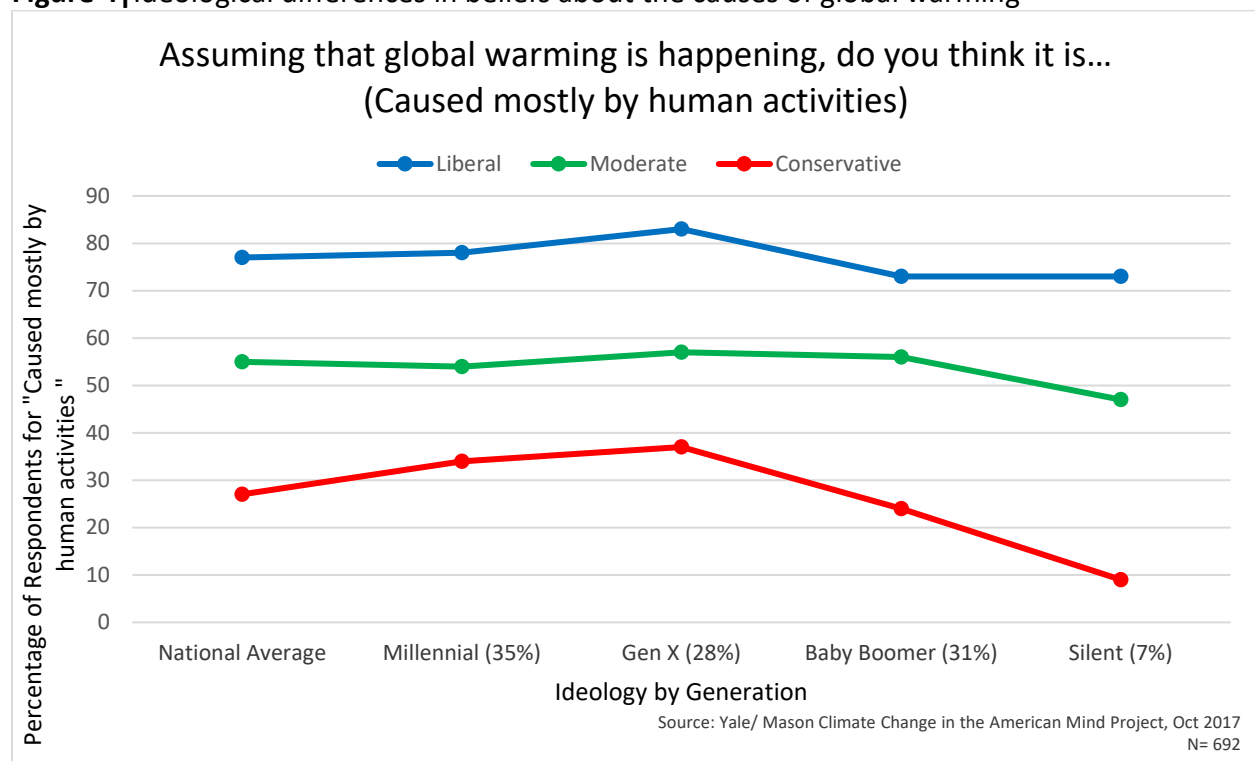
Figure 3 | Ideological differences in timing of global warming harm



Political ideology is a better indicator of whether a person believes that global warming is caused by human activity than generational membership

Liberals of all generations are the most likely to believe that global warming is caused by human activity and with about the same statistical probability. Seventy-eight percent of liberal Millennials say that global warming is caused by human activity. This is similar to the 83% of Gen Xers, 73% of Baby Boomers, and 73% of members of the Silent generation (Figure 4; Table, Appendix D).

Figure 4 | Ideological differences in beliefs about the causes of global warming



Methodology

I used Pew Research Center’s definition of generational age spans, to identify the age range of each generation in 2017 (Table 12).⁹

Table 12 | Age range of each generation in 2017

Millennials (1981-2000)	17—36
Gen X (1965-1980)	37—52
Baby Boomer (1946-1964)	53—71
Silent (1928-1945)	72—89

The following methodology on conducting the survey comes from the *Politics and Global Warming, October 2017* report from the Yale Program on Climate Change Communication and the George Mason University Center for Climate Change Communication:

The data in this report are based on a nationally representative survey of 1,304 American adults, aged 18 and older, 1,109 of whom are registered to vote. The survey was conducted October 20–November 1, 2017. All questionnaires were self-administered by respondents in a web-based environment. The survey took, on average, about 23 minutes to complete.

The sample was drawn from GfK’s KnowledgePanel®, an online panel of members drawn using probability sampling methods. Prospective members are recruited using a combination of random digit dial and address-based sampling techniques that cover virtually all (non-institutional) resident phone numbers and addresses in the United States. Those contacted who would choose to join the panel but do not have access to the Internet are loaned computers and given Internet access, so they may participate.

The sample therefore includes a representative cross-section of American adults—irrespective of whether they have Internet access, use only a cell phone, etc. Key demographic variables were weighted, post survey, to match US Census Bureau norms.

The survey instrument was designed by Anthony Leiserowitz, Seth Rosenthal, and Matthew Cutler of Yale University, and Edward Maibach and Connie Roser-Renouf of George Mason University. Average margin of error for the full sample: +/- 3 percentage points at the 95% confidence level.¹⁰

⁹ Pew Research Center (2018). “Definitions.” Demographic Research. Retrieved from <http://www.pewresearch.org/methodology/demographic-research/definitions/>.

¹⁰ Leiserowitz, A., Maibach, E., Roser-Renouf, C., Rosenthal, S., Cutler, M., and Kotcher, J. (2017). *Politics & global warming, October 2017*. Yale University and George Mason University. New Haven, CT: Yale Program on Climate Change Communication. Retrieved from <http://climatecommunication.yale.edu/wp-content/uploads/2017/12/Global-Warming-Policy-Politics-October-2017.pdf>.

Sample demographics

	N (unweighted)	% (weighted)
Total	1304	100
Men	637	48
Women	667	52
Millennial (in 2017)	532	33
Generation X (in 2017)	209	25
Baby Boomer (in 2017)	305	33
Silent Generation (in 2017)	158	9
Less than high school	80	11
High school graduate	340	29
Some college/ Associate degree/ Technical degree	386	29
College graduate	269	17
Post graduate	229	15
<\$25K	167	15
\$25K-\$50K	267	20
\$50K-\$75K	225	17
\$75K-\$100K	202	14
\$100K-\$125K	156	11
>\$125K	287	23
Northeast	227	18
Midwest	312	21
South	469	38
West	296	24

Appendix

Appendix A

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
How much had you thought about global warming before today? (A lot)					
	%	%	%	%	%
<i>Liberal</i>	42	31	45	51	50
<i>Moderate</i>	15	11	16	19	17
<i>Conservative</i>	11	12	13	11	4
n=	282	75	78	106	23
<i>Percent of n</i>		27%	28%	38%	8%
Chi-square $p < .01$					

Appendix B

	National Average	Millennial (17-36)	Gen X (37-52)	Baby Boomer (53-71)	Silent (72-89)
How worried are you about global warming? (Very worried)					
	%	%	%	%	%
<i>Liberal</i>	42	39	44	43	46
<i>Moderate</i>	18	18	20	19	13
<i>Conservative</i>	6	7	10	5	0
n=	281	95	79	89	18
<i>Percent of n</i>		34%	28%	32%	6%
Chi-square $p < .01$					

Appendix C

	National Average	Millennial (30%)	Gen X (28%)	Baby Boomer (34%)	Silent (8%)
When do you think global warming will start to harm people in the United States? (They are being harmed now)					
	%	%	%	%	%
<i>Liberal</i>	63	50	68	72	68
<i>Moderate</i>	41	40	43	44	33
<i>Conservative</i>	20	18	24	18	20
n=	535	162	148	183	42
<i>Percent of n</i>		30%	28%	34%	8%

Chi-square $p < .01$

Appendix D

	National Average	Millennial (35%)	Gen X (28%)	Baby Boomer (31%)	Silent (7%)
Assuming that global warming is happening, do you think it is... (Caused mostly by human activities)					
	%	%	%	%	%
<i>Liberal</i>	77	78	83	73	73
<i>Moderate</i>	55	54	57	56	47
<i>Conservative</i>	27	34	37	24	9
<i>n=</i>	692	242	191	214	45
<i>Percent of n</i>		35%	28%	31%	7%

Chi-square $p < .01$

