National Security and Climate Change

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Certain scientific subjects are often divisive or technical, which makes those topics difficult to discuss with audiences outside the scientific sphere. One way of getting around this obstacle is to cater scientific communication to different target audiences to cut through any audience biases. In order to accomplish that, a communicator needs to understand the relationship between audiences’ worldviews, and what they know, feel, and do regarding the subject at hand, and then how that relationship influences the types of media audiences trust and to which they respond positively. The following study investigates the worldviews of a military audience with respect to climate change and found that its results are congruent with past studies on worldview and how it impacts the issues people care about. The study also found that the messenger for scientific communication can be important to influencing this audience regarding the subject of climate change.
Introduction

The purpose of this research is to analyze the relationship between people’s worldviews and their feelings, knowledge, and actions regarding climate change, and how that relationship influences what information sources and communication methods they trust and positively respond to. In this case, an audience of young Air Force and Army officer candidates is under analysis, though this research can be expanded to many different audiences. It is important that research and findings regarding the issue of climate change reach as many ears as possible. For that to happen, our society needs to understand how different types of audiences think and react to scientific communication methods.

Background

Effectively communicating critically important information is a genuine challenge, especially in today’s world of social media-perpetuated misinformation and the popularity of highly biased news outlets as primary information sources. Scientific discovery is a topic that needs to be shared effectively with people and cut through the biases they have. This project specifically investigates climate change communication for a young, military audience of ROTC cadets.

The cultural cognition of risk, “asserts that people’s beliefs about risk are shaped by their core values” [1]. The theory is based on a framework of worldviews along two axes: hierarchy-egalitarianism and individualism-communitarianism. These axes represent people’s preferences for how society should be organized. A purely hierarchal worldview applies to people who think rights and privileges should be distributed based on well-defined social characteristics, like gender, education level, wealth, etc. A purely egalitarian worldview applies to people who think rights and privileges should be distributed equally regardless of social characteristics. Pure individualism applies to those who think individuals should secure the conditions they need to thrive without collective assistance, while pure communitarianism applies to those who think the interests of society should take precedence over individual ones, and that society should help secure the conditions individuals need to thrive [1]. Most people lie on a spectrum of these views, with various combinations of individualism-communitarianism, hierarchy-egalitarianism, and other combinations and levels of belief. Regarding climate change, the seeming public apathy has often been attributed to a possible lack of knowledge or comprehension regarding climate change research, but the literature on cultural cognition reveals a more complicated
landscape. During a cultural cognition study on the impact of scientific literacy on the concern for climate change, Kahan et al found that the most knowledgeable hierarchal-individualists were actually the least concerned with climate change while the most knowledgeable egalitarian-communitarians were the most concerned. Both knowledge and cultural cognition are key to understanding the issues people care about, and how those people are, “motivated to fit their interpretations of scientific evidence to their competing cultural philosophies” [2].

Military members have an interesting perspective on the world because they are taught to respect the views of hierarchy and their peers. A military unit is the quintessential example of communitarianism where the good of the whole outweighs the good of one individual and hierarchy since orders are given and followed from the top-down. Because of this dynamic, this study investigated how the hierarchal versus egalitarian and individual versus communitarian worldviews, as well as how ROTC cadets think, feel, and act on the subject of climate change, connect to each other and influence the climate change communication method to which they would respond positively. In this research, a “positive response” is when the participant agrees with scientifically backed statements about climate change data.

Methods

A pre-survey was created which included questions about demographic information, climate attitudes, and the cultural cognition worldviews [see Appendix B for a full copy of the survey]. The survey was created in Qualtrics, a standard tool for creating, distributing, and analyzing surveys online. The participants were then randomly shown one of two climate change videos: 1) a TED presentation by retired Rear Admiral David Titley, a well-known and experienced climate change advocate and speaker to military audiences; or 2) a video presentation by ROTC Cadet Madison Moran on the 2019 report Implications of Climate Change for the U.S. Army, published by the U.S. Army War College, and written by professors and officers from the Army, the U.S. Air Force, NASA, and other defense agencies around the world [3].

A post-survey was administered after the participants watched their randomly assigned video, which included questions that gauged if, how, and why their views on climate change were affected, and how the video they watched either did or did not influence those changes [see Appendix B for a full copy of the survey]. The following hypotheses, some of which are based on the cultural cognition literature, were explored during this research:
1. Respondents who score high on the individualism scale are less likely to view climate change as an emergency in their climate change attitudes.

2. Respondents who score high on the hierarchal scale are more likely to respond positively to the TEDTalk by Rear Admiral Titley than the video report by Madison Moran.

3. Respondents who score high on the communitarian scale are less likely to be more worried about climate change in light of the COVID-19 pandemic.

4. More conservative respondents are less likely to view climate change as an emergency than more liberal respondents.

5. A less experienced military audience is less likely to know of DoD climate change research and reports.

The response pool consisted of Utah State University Air Force and Army ROTC cadets in the age range of 18 to 44 years old, and the respondents have one semester to 5 years of undergraduate education, making them a much younger subset of the larger, more age-and-experience diverse US Air Force and Army branches.

Results & Discussion

For this study, only 59 usable responses were collected, 54 of which were complete (meaning the respondents completed the demographic, climate attitude, cultural cognition, video, and video response sections of the survey). The 5 partially complete responses were missing either the cultural cognition or video and video response sections.

1. Respondents who score high on the individualism scale are less likely to view climate change as an emergency in their climate change attitudes.

The results of this study are consistent with other studies on cultural cognition. ROTC students who are more individualistic on the cultural cognition scale tend to not think about climate change or think climate change is less important, compared to ROTC students who are more communitarian. This result supports the first hypothesis (Fig. 2, 3). Figures 1 – 5, 6, and 10, depicting the correlation between climate attitudes and cultural cognition, derive from the average scores for each respondent within the individualistic-communitarian and hierarchal-egalitarian blocks of questions from the survey. The \( r \) and \( p \)-values shown on each of the aforementioned figures indicate, respectively, the correlation direction (positive or negative \( r \)-
value trendline), the strength between the independent and dependent variables (absolute value of the $r$-value) and the probability that the data is random ($p$-value of 0.05 or less means data is not likely to be random) [see Appendix A for detailed explanation of correlation plots].

As shown in Fig. 1, most Republican respondents lie on the hierarchal-individualism quadrant (most respondents in general are Republican, which leads to most respondents lying in this quadrant). A total of 17 politically diverse respondents fall into the individual-egalitarian quadrant. Almost no respondents lie within the hierarchal-communitarian quadrant, conflicting with the earlier assumption about how the military is structured to be a hierarchal-communitarian entity. For this audience (Utah State ROTC cadets) at least, the military mindset is apparently not (yet) dominant.

![Compass graph for cultural cognition scores. This shows where individual respondents lie on the hierarchal-egalitarian and individual-communitarian scales.](image)

**Fig. 1.** Compass graph for cultural cognition scores. This shows where individual respondents lie on the hierarchal-egalitarian and individual-communitarian scales.

Fig. 2 suggests a negative, albeit weak, correlation showing that most respondents in the individualistic side of the scale do not spend much time thinking about climate change. As shown in Fig. 3, there was a statistically significant negative correlation between individualistic worldview and perceived importance of climate change.
Most respondents in the individualistic side of the scale indicated that they do not spend much time thinking about climate change. 

Likewise, ROTC students who score high on the hierarchy cognition scale tend to not think about or think climate change is very important as compared to egalitarian ROTC students (Fig. 4, 5).
2. Respondents who score high on the hierarchal scale are more likely to respond positively to the TEDTalk by Rear Admiral Titley than the video report by Madison Moran.

This hypothesis concerns correlations between respondents’ hierarchy-egalitarian cultural cognition scores and how they responded to the video they were randomly assigned to watch. The ANOVA test [see Appendix A] of the hierarchy-egalitarian average scores and how much the respondents agreed or disagreed with the presenter’s “call to action” in the video resulted in a \(Pr(>F)-value\) of 0.005. This suggests a significant correlation between the hierarchy-egalitarian
score and the extent to which respondents agreed with the call to action presented in the video, regardless of which video it was. Respondents who moderately disagree to slightly agree with the call to climate action presented in the videos tend to lean more hierarchal, while respondents who moderately to strongly agree with the action calls tend to lean more neutral to egalitarian (Fig. 6). There was no statistical difference across the two videos and the individual-communitarian score, with relation to the extent to which respondents agreed or disagreed with the presenter’s call to action in the video as shown by ANOVA test [$Pr(>F) = 0.91$, see Appendix A]; agreeing or disagreeing with the presenter’s opinion is not explained by which video was watched, the individual-communitarian score [$Pr(>F) = 0.32$] or the hierarchy-egalitarian score [$Pr(>F) = 0.33$].

![Box-and-whisker plot of hierarchy-egalitarian scores and the extent to which respondents agree with the call to action presented in the video they watched. The boxes shown for each level of agreement indicate the hierarchal-egalitarian score spread for that agreement level, and the thick line within each box is the average hierarchal-egalitarian score for that box/data spread.](image)

**Fig. 6.** Box-and-whisker plot of hierarchy-egalitarian scores and the extent to which respondents agree with the call to action presented in the video they watched. The boxes shown for each level of agreement indicate the hierarchal-egalitarian score spread for that agreement level, and the thick line within each box is the average hierarchal-egalitarian score for that box/data spread.

The survey revealed no statistically significant difference between respondents who viewed the video by Rear Admiral Titley versus the video by Cadet Madison Moran and the extent to which those respondents agreed or disagreed with the call to action presented in those videos—a result inconsistent with the second hypothesis. One particular point of interest is that of the respondents who watched Rear Admiral Titley’s video, agreement level with his call to climate action spread into the “strongly agree” category, which did not occur for the respondents who viewed Cadet Moran’s video (Fig. 7).
Generally, the importance of climate change to respondents before versus after watching either video had a close to significant change as indicated by a paired $t$-test [see Appendix A for a detailed explanation] of the “importance of climate change” scale before and after respondents viewed either video [$p$-value = 0.06]. Fifteen respondents qualitatively expressed the reasons their opinion regarding this question did not change. They wrote: they already agreed with the opinion expressed in the video; they felt no new/not enough information was presented to them; or they did not watch the entire video.

There was no significant change for how worried respondents feel about climate change before versus after watching either video as indicated by a paired $t$-test of the “extent of worry about climate change” before and after watching either video [$p$-value = 0.12].

![Fig. 7. Box-and-whisker plot of Rear Admiral Titley video versus Cadet Madison Moran video groups and the extent to which those groups agree with the call to action presented in the videos. The boxes show the spread of agreement for each video group. The thick black line in the boxes indicates the mean response for each group, and as shown it is the same for both ($Pr(>F)$-value = 0.91).](image)

Interestingly though, respondents who watched the video by Cadet Moran reported that climate change was more important to them personally after watching the film as compared to before watching the film, as indicated by a paired $t$-test with a $p$-value of 0.028, a highly significant correlation (Fig. 8). These same respondents, however, indicated no change in their level of worry about climate change before versus after watching her video as shown by a paired $t$-test [$p$-value = 0.77]. Respondents who watched the video by Rear Admiral Titley did not report a significant difference between how important climate change was to them before or after watching his video (Fig. 9).
Fig. 8. Box-and-whisker plot of respondents who watched Madison Moran’s video and how their opinion on the importance of climate change compares before and after watching her video. The thick line is the mean response score, and as shown it is higher after watching the video than it was before the video, which indicates that respondents who watched her video came away from it with a viewpoint that climate change was more important to them than it was beforehand.

Fig. 9. Box-and-whisker plot of respondents who watched Rear Admiral Titley’s video and how their opinion on the importance of climate change compares before and after watching his video. The thick line is the mean response score, and as shown it is unchanged before and after respondents watched his video which indicates that there was no change in this group of respondents’ perceived level of climate change importance after watching this particular video.

3. Respondents who score high on the communitarian scale are less likely to be more worried about climate change in light of the COVID-19 pandemic.

One of the questions in the survey [Q22, see Appendix B] was used to explore how worried respondents are about climate change in light of the current COVID-19 pandemic, to see how their cultural cognition correlates to their concern levels of two simultaneous emergencies in the world. Results suggest that respondents with a more individualistic worldview are less concerned about climate change in terms of the current pandemic than respondents with a more
communitarian worldview, which is the opposite of the third hypothesis for this project, but still supports cultural cognition literature and studies (Fig. 10).

Fig. 10. Extent of worry about climate change during the COVID-19 pandemic for communitarian versus individual cultural cognition scores. The communitarian-individualism scores significantly correlate with the extent of concern about climate change in terms of the pandemic (absolute value of $r = 0.52$), as well as a significant difference between the two worldviews and their responses to this question ($p$-value $< 0.0001$). Most individualistic respondents are less concerned, while most communitarian respondents are more concerned.

Respondents were asked to give their reasoning for their concern level regarding climate change during the current pandemic in a qualitative response. Of respondents who said they were more concerned about climate change, they reported feeling this way because they have more time to worry about climate change or that they are concerned about the increased use of single-use plastics during this time. Of respondents who reported they are less concerned about climate change, they feel this way because they see no connection between climate change and COVID-19, the pandemic is a more visible threat, the shutdowns across the world have led to improved air quality and decreased pollution levels, or they feel there is nothing that can be done to reverse the effects of climate change. The respondents who reported they feel neutral about climate change during the pandemic feel this way for similar reasons to the respondents who feel less concerned. However, the neutral respondents still acknowledged climate change as an issue that concerns them, mentioning, ‘climate change could play into the future generations of the world’, ‘climate change is a more extensive problem that existed before COVID-19’, and ‘climate change continues to progress [and] we are seeing a rise in diseases/risks that are directly correlated to the climate’. This shows that climate change is still a threat to this subset of respondents, and they still want solutions to this vital issue.
4. More conservative respondents are less likely to view climate change as an emergency than more liberal respondents.

The politicization of important topics like climate change is an important factor to consider when analyzing an audience’s response to climate change data and communication methods [4]. Most of the respondents in this survey self-identify as Republican (Fig. 1), and, as the data shows, political leaning has a significant negative correlation with the extent to which respondents think about climate change \( r = -0.36, p\text{-value} < 0.01 \). Political leaning does not necessarily correlate with whether or not respondents think climate change is happening, as shown by ANOVA test of political leaning on a scale of 1-5 (1- very liberal, 5- very conservative) and how certain respondents are about if climate change is happening \( Pr(>F) = 0.54 \). Respondents who identify as more liberal think more about climate change than those who are more conservative. The data we collected only partially supports the fourth hypothesis.

5. A less experienced military audience is less likely to know of DoD climate change research and reports.

The fifth and final hypothesis for this study concerns how much this audience knows about climate change in general and how much they know about Department of Defense climate change concerns and research. The majority of respondents are not aware of DoD climate change research (Fig. 11), and subsequently do not have strong opinions regarding the positions of DoD climate change researchers—specifically, whether they think climate change is or is not happening (Fig. 12), or what the cause of climate change is (Fig. 13), which supports the hypothesis. However, most respondents indicated they have some level of knowledge about climate change in general (Fig. 14).

![Fig. 11. Pie chart of how familiar the respondents are with Department of Defense climate change research and reports. Most respondents are not at all aware of the research the DoD has done regarding climate change and its impacts to national security and global stability.](image-url)
Fig. 12. Pie chart of respondents’ views on DoD climate researchers regarding whether DoD researchers think climate change is or is not happening. Most respondents do not know enough to have a strong opinion on this topic.

Fig. 13. Pie chart of respondents’ views on DoD climate researchers regarding the cause of climate change. Just like in Fig. 10, most respondents do not know enough to have a strong opinion on this topic.

Fig. 14. Graph of how knowledgeable about climate change respondents consider themselves to be. Most respondents consider themselves as having some knowledge of climate change in general, and the graph has a fairly normal distribution.
Conclusion

This study supports the existing research and hypotheses for cultural cognition. For ROTC cadets at Utah State University, the data shows a general lack of concern and thought regarding climate change amongst individual-hierarchal respondents, which indicates that climate change is not an emergency threat to them, while climate change is viewed as an emergency by egalitarian-communitarian respondents. This finding reinforces the notion that scientific communicators should take the cultural cognition studies and literature into consideration when crafting narratives for various audiences. Specifically, those narratives should frame the messages to suit a hierarchal-individualistic audience in a way that does not threaten their worldview and encourages them to be open to climate change data. This is crucial to convincing more people that climate change is a threat that requires our immediate attention.

Generally, the importance of climate change to respondents before versus after watching either video had a close to significant change (based on the \( p\)-value of 0.06 and the small dataset). This means we either have a majority of the audience who agrees with the opinions and information presented in the videos so nothing regarding their level of agreement changed, or the opposite and the audience needs more information and/or a way of interpreting the information that suits their values better. The hierarchy-egalitarian cognition score is a reasonable predictor of how respondents agree/disagree with a speaker's call to action regarding climate change, regardless of who the speaker is. However, whether or not there is an influence in how respondent's perceive the importance of climate change does seem to correlate with who the speaker is. Based on the data, respondents who viewed the video by a peer, Cadet Madison Moran, reported feeling that climate change was more important to them after watching her video versus how they felt before watching it. The respondents who viewed the video by Rear Admiral Titley, a climate expert, reported no change in how they felt about the importance of climate change after watching his video versus before watching it. A peer was more influential than an authority figure to this audience, suggesting that the messenger matters in climate communication. Authority does not equal influence, and therefore the scientific community should carefully consider the personal connections speakers have to an audience rather than relying on disconnected experts and authority figures to influence audiences.
Even with a more pressing emergency at the front of people's minds, respondents with a higher communitarian score are still worried about climate change more than those with a higher individualism score. A majority of respondents indicated they feel neutral about climate change given the ongoing COVID-19 pandemic, yet many of these respondents still acknowledged climate change as a threat in their qualitative responses, as mentioned previously. Despite the visibility and urgency of the current pandemic, to these respondents climate change is still a topic they care about and want to find solutions for. The scientific community should still be pressing forward with solutions to multiple issues and advocating for support.

Political leaning has a moderate correlation with the extent to which respondents think about climate change, but not with whether or not respondents think climate change is happening. Further exploration is needed to see if there is a correlation between political leaning/affiliation with hierarchy-egalitarianism or individualism-communitarianism scores, but Fig. 1 suggests that a correlation is likely, with Republican respondents generally thinking climate change is less of an emergency than Democrat respondents based on the cultural cognition scale.

Given how few respondents reported that they know about DoD climate change research and reports (1.69% fully aware and 32.2% somewhat aware), it can be concluded that if the DoD wants its officers to be cognizant of its findings, then it needs to improve the visibility of its climate change research amongst its members, especially those within ROTC programs who are still in training and have limited exposure to issues the DoD cares about. This could be accomplished by ROTC headquarters implementing climate discussion (as it pertains to national/global security strategy) into the ROTC curriculum, or through internal efforts within individual ROTC detachments to ensure DoD climate concerns are researched and discussed by cadets while they are in the program.

The small dataset used for this study is not ideal as the small size can skew the results. This dataset only includes Army and Air Force ROTC cadets from Utah State University, which again skews the data. Conducting a similar study at multiple ROTC detachments from across the country would give a more diverse dataset to analyze.

When piecing together the conclusions regarding cultural cognition, the first step is understanding how the audience thinks and feels regarding the subject. Step two is using diverse messengers who closely relate to the audience, a communicator who they can trust and has their best interests in
mind. The last step is for the messenger to frame the information in such a way that they create an environment where accepting sound science does not threaten the audience’s worldviews [2]. In layman’s terms, the science must be packaged differently based on characteristics of the target audiences.

Lastly, for the results of hypothesis two, 30 respondents watched Cadet Madison Moran’s video, while 24 respondents watched Rear Admiral Titley’s video. Of those respondents, about 67% reported they watched all of Cadet Moran’s video while about 63% reported they watched all of Rear Admiral Titley’s video. This difference may contribute to the conclusion that respondents who watched Cadet Moran’s video indicated the importance of climate change to them changed after watching her video versus before watching it, whereas for Rear Admiral Titley there was no significant change in that opinion. This would need to be further explored, but it is stated as a possible source of error and data skewing for this particular hypothesis. Again, this is the flaw of having a small dataset to analyze.

How much factual information an audience knows about a topic is a fine starting point to comprehending that audience’s perspective on that topic; but, as the results of this study have shown, it is not the only piece to the puzzle of how to inspire a group of people. Tailoring messages according to a particular audience’s shared values can improve the efficacy of communication efforts. Mastering not just research, but the techniques of effective communication, is paramount for the world now and into the future; if climate research falls onto deaf ears, combative political and social action would likely be delayed past the point of no return. This is a gamble our global society cannot afford to make.

Acknowledgments

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References


Appendix A

A *t-test* is a statistical analysis tool which compares the means of two groups to show how significant the differences between the groups are. For this study, a *paired t-test* was used. This test compares the means between two variables for the same subject. For example, a paired t-test could be used to compare cholesterol levels in 2010 and cholesterol levels in 2020 for a single group of subjects. The *t-score*, which says how similar or different the variables being compared are, is calculated using the following formula [5]:

\[
t = \frac{(\sum D)/N}{\sqrt{\frac{\sum D^2 - (\sum D)^2/N}{(N-1)(N)}}}
\]

where \(\Sigma D\): Sum of the differences (X-Y)

\(\Sigma D^2\): Sum of the squared differences (X-Y)^2

\((\Sigma D)^2\): Sum of the differences squared

Once the *t-score* is calculated, the *p-value* is found using a *t-distribution table* (available in statistics manuals and textbooks) and the *degree of freedom* for the dataset (subtract 1 from the sample size). For this study, an *alpha level*— the level of confidence in the null hypothesis subtracted from 100%— of 5% (0.05) was used when finding the *p-value*. The *p-value* is the probability the outcome occurred by chance; it is the evidence against a null hypothesis. Smaller *p-values* at or below 0.05 (5%) mean results are significant and likely did not occur by chance.

For this study, a paired t-test was used to see if there was a change in how respondents viewed the importance of climate change and how worried they felt before and after watching their randomly assigned video (Figs. 1 and 2).
Fig. 1. Paired t-test results for the importance of climate change before versus after respondents watched their randomly assigned video. The *p-value* of 0.06 indicates an almost, but not quite, significant change regarding the importance of climate change before versus after watching either video.

```r
## Paired t-test
## data:  w$CA_importB and w$CA_importA
## t = -1.8673, df = 53, p-value = 0.06739
```

Another paired t-test was used to see if there was a difference in the importance of climate change and level of worry about climate change to respondents before versus after the specific video they watched (Figs. 3–5).

Fig. 2. Paired t-test results for the extent of worry about climate change before versus after watching either video. The *p-value* = 0.12 which indicates no significant change regarding how worried respondents are before versus after watching either video.

```r
## Paired t-test
## data:  w$CA_worryB and w$CA_worryA
## t = -1.5471, df = 53, p-value = 0.1278
```

Fig. 3. Paired t-test results for respondents who viewed Cadet Moran’s video and how the importance of climate change to them compared before the video versus after. The *p-value* = 0.028 which indicates a significant change in respondent’s views on the importance of climate change before versus after watching her video.

```r
## Paired t-test
## data:  wb$CA_importB and wb$CA_importA
## t = -2.3727, df = 19, p-value = 0.02837
```

Fig. 4. Paired t-test results for respondents who viewed Cadet Moran’s video and how worried they are about climate change before versus after her video. The *p-value* = 0.77 which shows no significant change in respondent’s level of worry about climate change before versus after the video.

```r
## Paired t-test
## data:  wb$CA_worryB and wb$CA_worryA
## t = -0.29455, df = 19, p-value = 0.7715
```
### Paired t-test
###
data: wa$CA_importB and wa$CA_importA
t = -1, df = 13, p-value = 0.3356

**Fig. 5.** Paired t-test results for respondents who viewed Rear Admiral Titley’s video and how the importance of climate change to them compared before the video versus after. The *p*-value = 0.33 which indicates no significant change in respondent’s views on the importance of climate change before versus after watching his video.

Another type of analysis used was ANOVA. ANOVA stands for “analysis of variance” and is a statistical analysis similar to a *t-test*, but which compares more variables at a time. For example, an ANOVA test can be used to see if there is a relationship between income and gender for anxiety level at job interviews [6]; income and gender are the independent variables and anxiety level is the dependent variable to be measured.

ANOVA yields a single number called the *f-statistic* and one *p*-value, denoted here as *Pr(>F)*, to help reject or accept the null hypothesis. A *Pr(>F)*-value which is less than or equal to 0.05 is statistically significant. For this study, ANOVA was used to test for correlation between the extent to which respondents agreed with the call to action in the video they watched based on which video they watched and their cultural cognition scores (Figs. 6 – 9).

### ANOVA results for both videos, extent of agreement with call to action in videos, and individual-communitarian scores. The *Pr(>F)*-value is 0.91 which indicates no statistical difference across either video and individual-communitarian score with respect to agreeing/disagreeing with speaker’s call to action.

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**Fig. 6.** ANOVA results for extent of agreement with call to action in videos, and hierarchal-egalitarian scores. The *Pr(>F)*-value here is 0.005, which indicates a statistically significant correlation between hierarchal-egalitarian view and agreeing/disagreeing with speaker’s call to action, regardless of which video was viewed.

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**Fig. 7.** ANOVA results for extent of agreement with call to action in videos and hierarchal-egalitarian scores. The *Pr(>F)*-value here is 0.005, which indicates a statistically significant correlation between hierarchal-egalitarian view and agreeing/disagreeing with speaker’s call to action, regardless of which video was viewed.
Fig. 8. ANOVA results for both videos, extent of agreement with speaker’s opinion, and individual-communitarian score. The Pr(>F)-value is 0.32 which indicates agreeing/disagreeing with speaker’s opinion is not explained by which video was watched or the individual-communitarian score.

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<td>51</td>
<td>93.62</td>
<td>1.836</td>
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</tbody>
</table>

Fig. 9. ANOVA results for both videos, extent of agreement with speaker’s opinion, and hierarchal-egalitarian score. The Pr(>F)-value is 0.33 which indicates agreeing/disagreeing with speaker’s opinion is not explained by which video was watched or hierarchal-egalitarian score.

<table>
<thead>
<tr>
<th></th>
<th>Df</th>
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<tr>
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<td>51</td>
<td>97.45</td>
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</table>

The other test used during analysis was a correlation matrix, which is a table that shows the correlation coefficients between sets of variables [7]. Correlation coefficients are used to measure the strength in a relationship between two variables, and the coefficient used for this study was Pearson’s $R$, which can be found using the following equation [8]:

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{(n \Sigma x^2 - (\Sigma x)^2)(n \Sigma y^2 - (\Sigma y)^2)}}$$

where $\Sigma xy = \text{sum of the product of the variables}$

$\Sigma x = \text{sum of the independent variables}$

$\Sigma y = \text{sum of the dependent variables}$

$\Sigma x^2 = \text{sum of the squared independent variables}$

$\Sigma y^2 = \text{sum of the squared dependent variables}$

$(\Sigma x)^2 = \text{sum of the independent variables squared}$

$(\Sigma y)^2 = \text{sum of the dependent variables squared}$

This is essentially measuring the differences between the standard deviations of the variables and seeing how close in distance those standard deviations are. The denominator of this equation resembles the Pythagorean Theorem; the larger the denominator, which is $\sqrt{C^2} = C$ (the distance between the variables from the Pythagorean Theorem), the smaller $r$ becomes. This means that the
larger the distance is between the variables’ standard deviations, the less correlated they are, and
vice-versa. A small $r$ is a weak correlation, a large $r$ is a strong correlation, and an $r$ value of 0
means no correlation. A positive $r$ value indicates a positive correlation, while a negative $r$ value
indicates a negative correlation. For example, shoe size goes up as foot length goes up, indicating
a positive correlation, while the amount of fuel in a car gas tank goes down as car speed increases,
indicating a negative correlation; eye color has no correlation to level of intelligence and is an
example of a zero-correlation relationship. The $r$ value and the variables can be graphed using
scatter plots to show the relationship between the variables. When the dots on the plot are close to
the $r$ value line, the correlation is strong [8]:

When reporting the strength of the correlation, the absolute value of $r$ is used. Whether $r$ is positive
or negative just tells what type of relationship the variables have. Generally, an $r$ value of 0.4 or
higher is a strong relationship, with 1 being a perfect correlation. For this study, Figs. 2 – 5 and 10
are correlation graphs.
Appendix B

National Security and Climate Change Survey

Q54 National Security and Climate Change Survey  You are invited to participate in a research study by Dr. Sarah Klain (Assistant Professor in Environment and Society), Dr. Robert Davies (Physics Department Professor), and Madison Moran, a student in the Physics department at Utah State University. The purpose of this research is to understand how military audiences react to communication materials. We are also interested in understanding different perspectives and opinions on climate change. This research matters for advancing scientific communication strategies for specific audiences, such as ROTC participants. You are being asked to participate in this research because you are a cadet in an Air Force or Army ROTC program. Your participation in this study is voluntary and you may withdraw your participation at any time for any reason by exiting the survey. Because your participation is anonymous, we will be unable to remove any data you do share from the dataset.

If you take part in this study, you will be asked to complete a web survey. The first part takes approximately 9 minutes to complete, then you will watch an 8 or 16-minute video, then answer follow up questions that will take 5 minutes to complete. You will be randomly assigned to view either the 8 or the 16-minute video. You will be presented with a message about climate change from one of two different people and we seek to understand to what degree your attitude about climate change is affected; we are not sharing complete details about the survey and these videos yet, but at the end of the survey, we will provide a debrief to explain the study more fully. When you complete the survey, you will have the option of inputting your email address in a separate survey to receive compensation for your participation (see below for further details regarding compensation). Your anonymity will be maintained because your email address will in no way be linked to your survey responses. The possible risks of participating in this study include how some questions in this survey may cause emotional distress as they pertain to divisive topics such as world views, political affiliations, and thoughts on climate change data and research.

We will make every effort to ensure that the information you provide remains confidential. All data will be stored on a secure USU box account. Note that online activities always carry a risk of a data breach, but we will use systems and processes that minimize this.

You can decline to participate in any part of this study for any reason and can end your participation at any time by not finishing the survey.

For your participation in this research study you will receive the option of completing a 2-minute survey where you can input your email to enter a $25 Texas Roadhouse gift card raffle,
and/or receive a follow-up fact sheet. If you have any questions about this study, you can contact Sarah Klain at sarah.klain@usu.edu or Dr. Robert Davies at robert.davies@usu.edu. Thank you again for your time and consideration. If you have any concerns about this study, please contact Utah State University’s Human Research Protection Office at (435) 797-0567 or irb@usu.edu.

**By continuing to the next part of the survey, you agree that you are 18 years of age or older, are enrolled in the Utah State Air Force or Army ROTC program, and wish to participate.** You agree that you understand the risks and benefits of participation, and that you know what you are being asked to do. You also agree that if you have contacted the research team with any questions about your participation, and are clear on how to stop your participation in this study if you choose to do so. Please be sure to retain a copy of this form for your records.

- [ ] Agree (1)
- [ ] Disagree (2)

---

*Skip To: End of Survey If National Security and Climate Change Survey You are invited to participate in a research study... = Disagree*
Q88 Click here to download your informed consent form for this study. Please open the link in a new tab to retain your place in the survey.

Q1 In which college are you currently a student? What is your major/area of study?

- Caine College of the Arts (1)
- College of Agriculture (2)
- College of Engineering (3)
- College of Humanities and Social Sciences (4)
- College of Natural Resources (5)
- College of Science (6)
- Emma Eccles Jones College of Education & Human Services (7)
- Jon M. Huntsman School of Business (8)
- Undecided/Exploratory (9)

Q2 What year are you in ROTC?

- AS 100/AS 250/MS 1 (1)
- AS 200/MS 2 (2)
- AS 300/MS 3 (3)
- AS 400/MS 4 (4)
- AS 700/AS 800/Extended MS cadet (5)
Q3 How many years have you been in undergraduate level education?

- Less than 1 year (1)
- 1 to 2 years (2)
- 2 to 3 years (3)
- 3 to 4 years (4)
- 4 to 5 years (5)
- More than 5 years (6)
- I am a graduate student (7)

Q4 What is your gender identity?

- Male (1)
- Female (2)
- Gender nonconforming/non-binary (3)
- Prefer not to say (4)

Q5 What is your age range?

- 18 to 25 (2)
- 26 to 34 (3)
- 35 to 44 (4)
- 45 to 54 (5)
Q6 In general, do you think of yourself as a...

- Republican (1)
- Democrat (2)
- Independent (3)
- Other (4)
- No party/not interested in politics (5)

Q7 In general, do you think of yourself as... Very liberal Very conservative

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Q8 In general, do you think of yourself as being affiliated with any religion?

- Yes (1)
- No (2)

Q9 Generally speaking, do you think Earth's climate is changing or not changing?

- Is changing (1)
- Is not changing (2)
- I don't know (3)
Q9A How sure are you that Earth's climate is changing?

<table>
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<tr>
<th>Not at all</th>
<th>Very sure</th>
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<tr>
<td>5</td>
<td>0 ( )</td>
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</table>

Q9B How sure are you that Earth's climate is not changing?

<table>
<thead>
<tr>
<th>Not at all sure</th>
<th>Very sure</th>
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Q10 To what extent do you think human activities are currently playing a role in changing Earth's climate?

- Human activities are currently playing a major role in changing Earth’s climate (1)
- Human activities are currently playing a minor role in changing Earth’s climate (2)
- Human activities are currently not playing a role in changing Earth’s climate (3)
- I have not thought about the relationship between human activities and climate change (4)
Q11 How much do you agree or disagree with the statement of “I could easily change my mind about climate change”?

- Strongly agree (1)
- Moderately agree (2)
- Slightly agree (3)
- Slightly disagree (4)
- Moderately disagree (5)
- Strongly disagree (6)

Q12 On some issues people feel that they have all the information they need in order to form a firm opinion, while on other issues they would like more information before making up their mind. For the issue of climate change, where would you place yourself?

- I need a lot more information (1)
- I need some more information (2)
- I do not need any more information (3)

Q13 How aware are you of current Department of Defense (DoD) research and reports on climate change?

- Fully aware (1)
- Somewhat aware (2)
- Not at all aware (3)
Q14 Which of the following statements comes closer to your own view with respect to DoD climate researchers?

- Most DoD climate researchers think climate change is happening (1)
- Most DoD climate researchers think climate change is not happening (2)
- There is a lot of disagreement among DoD climate researchers about whether or not climate change is happening (3)
- I do not know enough to say (4)

Q15 Which of the following statements comes closer to your own view with respect to DoD climate researchers?

- Most DoD climate researchers think climate change is caused mainly by human activities (1)
- Most DoD climate researchers think climate change is caused mainly by natural changes (2)
- There is a lot of disagreement among DoD climate researchers about the cause of climate change (3)
- I do not know enough to say (4)

Q16 To what extent do you consider yourself to be knowledgeable regarding the issue of climate change?

<table>
<thead>
<tr>
<th>Not at all knowledgeable</th>
<th>Very knowledgeable</th>
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Q17 How much do you trust or distrust the following as a source of information about climate change?
<table>
<thead>
<tr>
<th>Source</th>
<th>Strongly trust (1)</th>
<th>Somewhat trust (2)</th>
<th>Somewhat distrust (3)</th>
<th>Strongly distrust (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer—reviewed journals (2)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<tr>
<td>Formal education (ex. high school, college, graduate school) (3)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Government agencies (ex. Department of Defense, Environmental Protection Agency, Department of Agriculture, National Oceanic and Atmospheric Administration (NOAA)) (4)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Mainstream news media (ex. TV, radio, newspapers, magazines) (5)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<tr>
<td>Popular books (6)</td>
<td>□</td>
<td>□</td>
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<td>□</td>
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<tr>
<td>Friends, family, or non—work related acquaintances (7)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<tr>
<td>Colleagues or Peers (8)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<tr>
<td>The Internet (9)</td>
<td>□</td>
<td>□</td>
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<tr>
<td>Other (please specify) (10)</td>
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</tbody>
</table>
Q18 From which of the following sources have you obtained useful information about climate change? (Check all that apply)

☐ Peer—reviewed journals (2)
☐ Formal education (ex. high school, college, graduate school) (3)
☐ Government agencies (ex. Department of Defense, Environmental Protection Agency, Department of Agriculture, National Oceanic and Atmospheric Administration (NOAA)) (4)
☐ Mainstream news media (ex. TV, radio, newspapers, magazines) (5)
☐ Popular books (6)
☐ Friends, family, or non—work related acquaintances (7)
☐ Colleagues or Peers (8)
☐ The Internet (9)
☐ Other (please specify) (10)

________________________________________________

☐ None of the above (11)

Q19 How important is the issue of climate change to you personally?

<table>
<thead>
<tr>
<th>Not at all important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<td>3</td>
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<td>5</td>
<td></td>
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</tbody>
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Q20 How much have you thought about climate change before today?

- A lot (1)
- A moderate amount (2)
- A minimal amount (3)
- Not at all (4)

Q21 How worried are you about climate change?

Not at all worried

Extremely worried

1 2 3 4 5

0 ()

Q22 Does COVID—19 make you more or less concerned about climate change?

Less concerned

More concerned

1 2 3 4 5

1 ()

Display This Question:
If Does COVID—19 make you more or less concerned about climate change? [ 1 ] >= 4

Q23 Why does COVID-19 make you more concerned about climate change?

Q82 Why does COVID-19 make you less concerned about climate change?
Q83 Why does COVID-19 make you neither more nor less concerned about climate change?

Q24 How often do you discuss climate change in the ROTC courses you take at USU?

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

Q25 How often do you discuss climate change among your ROTC peers?

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)
Q26 How often do you discuss climate change with your ROTC cadre?

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

Q27 How often do you discuss climate change with current or former military members outside of ROTC?

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

Q28 Have you ever purposefully engaged in any individual, local, regional, or national efforts to combat climate change? (Check all that apply)

- Individual (reducing personal vehicle use, eating a plant-based diet) (1)
- Local (buying goods from local farms, using public transportation) (2)
- National (ex. supporting federal emissions reduction policies) (3)
- I have never purposefully engaged in any efforts to combat climate change (4)

Q53 We are interested in understanding your attitudes about society and government. Please let us know the extent to which you agree or disagree with the following statements.
Q1 The government interferes far too much in our everyday lives.

<table>
<thead>
<tr>
<th>Choose one (4)</th>
<th>Strongly disagree (1)</th>
<th>Moderately disagree (2)</th>
<th>Slightly disagree (3)</th>
<th>Slightly agree (4)</th>
<th>Moderately agree (5)</th>
<th>Strongly agree (6)</th>
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</table>

Q2 Sometimes government needs to make laws that keep people from hurting themselves.

<table>
<thead>
<tr>
<th>Choose one (7)</th>
<th>Strongly disagree (1)</th>
<th>Moderately disagree (2)</th>
<th>Slightly disagree (3)</th>
<th>Slightly agree (4)</th>
<th>Moderately agree (5)</th>
<th>Strongly agree (6)</th>
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</table>

Q3 It's not the government's business to try to protect people from themselves.

<table>
<thead>
<tr>
<th>Choose one (4)</th>
<th>Strongly disagree (1)</th>
<th>Moderately disagree (2)</th>
<th>Slightly disagree (3)</th>
<th>Slightly agree (4)</th>
<th>Moderately agree (5)</th>
<th>Strongly agree (6)</th>
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Q4 We need to dramatically reduce inequalities between the rich and the poor, white and people of color, and men and women.

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<thead>
<tr>
<th>Choose one (1)</th>
<th>Strongly disagree (1)</th>
<th>Moderately disagree (2)</th>
<th>Slightly disagree (3)</th>
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<th>Moderately agree (5)</th>
<th>Strongly agree (6)</th>
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</table>
Q4 Discrimination against minorities is still a very serious problem in our society.

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<thead>
<tr>
<th></th>
<th>Strongly agree (1)</th>
<th>Moderately agree (2)</th>
<th>Slightly agree (3)</th>
<th>Slightly disagree (4)</th>
<th>Moderately disagree (5)</th>
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Q5 It seems like Blacks, women, homosexuals and other groups don't want equal rights, they want special rights just for them.

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<tr>
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<th>Strongly agree (1)</th>
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<th>Slightly agree (3)</th>
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Q6 Society as a whole has become too soft and feminine.

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<tr>
<th></th>
<th>Strongly agree (1)</th>
<th>Moderately agree (2)</th>
<th>Slightly agree (3)</th>
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Q4 The government should do more to advance society's goals, even if that means limiting some freedom and choices of individuals.

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<tr>
<th></th>
<th>Strongly agree (1)</th>
<th>Moderately agree (2)</th>
<th>Slightly agree (3)</th>
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<th>Moderately disagree (5)</th>
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Q5 Government should put limits on the choices individuals can make so they don't get in the way of what's good for society.

<table>
<thead>
<tr>
<th>Choose one (1)</th>
<th>Strongly agree (1)</th>
<th>Moderately agree (2)</th>
<th>Slightly agree (3)</th>
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Q2 Our society would be better off if the distribution of wealth was more equal.

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<th>Choose one (1)</th>
<th>Strongly disagree (1)</th>
<th>Moderately disagree (2)</th>
<th>Slightly disagree (3)</th>
<th>Slightly agree (4)</th>
<th>Moderately agree (5)</th>
<th>Strongly agree (6)</th>
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Q1 We have gone too far in pushing equal rights in this country.

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<tr>
<th>Choose one (1)</th>
<th>Strongly disagree (1)</th>
<th>Moderately disagree (2)</th>
<th>Slightly disagree (3)</th>
<th>Slightly agree (4)</th>
<th>Moderately agree (5)</th>
<th>Strongly agree (6)</th>
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</table>
Q6 The government should stop telling people how to live their lives.

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<tr>
<th>Choose one (1)</th>
<th>Strongly agree (1)</th>
<th>Moderately agree (2)</th>
<th>Slightly agree (3)</th>
<th>Slightly disagree (4)</th>
<th>Moderately disagree (5)</th>
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Q55 Military leaders have known for years about the risks climate change poses to national security. Rear Admiral David Titley is one of them. He is a PhD holding member of the Center for Climate and Security's Advisory Board, and is a nationally known expert in the field of climate, the Arctic, and national security. He is also the Founding Director of the Center for Solutions to Weather and Climate Risk at Penn State University where he is a professor.

Rear Admiral Titley served 32 years in the United States Navy, holding positions such as Deputy Assistant Chief of Naval Operations for Information Dominance. While serving in the Pentagon, he initiated and led the US Navy's Task Force on Climate Change, and after retiring he served as the Chief Operating Officer at the National Oceanic and Atmospheric Administration (NOAA).

Rear Admiral Titley has spoken at numerous universities across the country about climate change as it relates to national security, and has presented on behalf of the Department of Defense at both Congressional Hearings and the Intergovernmental Panel on Climate Change (IPCC).

Please watch this video of Rear Admiral David Titley, USN (retired). Please open the link in a new tab to retain your place in the survey.

Q56 I watched the entire video.

○ Yes (1)

○ No (2)

Q57 Please watch this video of Madison Moran discussing the Army War College Report on climate change. Please open the link in a new tab to retain your place in the survey.
Q58 I watched the entire video

○ Yes (1)

○ No (2)

Q61
Please answer the following questions honestly. Your response is anonymous.

How much do you agree or disagree with the climate change information presented in the video you watched?

○ Strongly agree (1)

○ Moderately agree (2)

○ Slightly agree (3)

○ Slightly disagree (4)

○ Moderately disagree (5)

○ Strongly disagree (6)

Q63 How much do you agree or disagree with the presenter's opinion in the video you watched?

○ Strongly disagree (1)

○ Moderately disagree (2)

○ Slightly disagree (3)

○ Slightly agree (4)

○ Moderately agree (5)

○ Strongly agree (6)
Q65 How much do you agree or disagree with the presenter's "call to action" in the video you watched?

- Strongly agree (1)
- Moderately agree (2)
- Slightly agree (3)
- Slightly disagree (4)
- Moderately disagree (5)
- Strongly disagree (6)

Q67 Did you feel a personal connection to the video you watched?

- Strongly yes (1)
- Somewhat yes (2)
- Neutral (3)
- Somewhat no (4)
- Strongly no (5)

Q69 To what extent do you agree with the following statement after watching this presentation: The US military should not be concerned about climate change.

- Strongly disagree (1)
- Moderately disagree (2)
- Slightly disagree (3)
- Slightly agree (4)
- Moderately agree (5)
- Strongly agree (6)
Q71 Have you changed your opinion on climate change after watching this video?

- Strongly yes (1)
- Yes (3)
- No (4)
- Strongly no (5)

Display This Question:
If Have you changed your opinion on climate change after watching this video? = Strongly yes

Q73 What aspect(s) of the video changed your opinion on climate change? Choose all that apply.

- New information (1)
- My connection to the information presenter (2)
- The opinion presented to me (3)
- The call to action presented to me (4)
- Other (please specify) (5)

Display This Question:
If Have you changed your opinion on climate change after watching this video? = No
Q75 What aspect of the video did NOT change your opinion on climate change? Choose all that apply.

☐ New information (1)

☐ My connection to the information presenter (2)

☐ The opinion presented to me (3)

☐ The call to action presented to me (4)

☐ This study did not provide enough reason for me to change my opinion (5)

☐ Other (please specify) (6)


Display This Question:
If Have you changed your opinion on climate change after watching this video? = Yes

Q77 What aspect of the video changed your opinion on climate change? Choose all that apply.

☐ New information (1)

☐ My connection to the information presenter (2)

☐ The opinion presented to me (3)

☐ The call to action presented to me (4)

☐ Other (please specify) (5)


Display This Question:
If Have you changed your opinion on climate change after watching this video? = Strongly no
Q79 What aspect of the video did NOT change your opinion on climate change? Choose all that apply.

☐ New information (1)

☐ My connection to the information presenter (2)

☐ The opinion presented to me (3)

☐ The call to action presented to me (4)

☐ This study did not provide enough reason for me to change my opinion (5)

☐ Other (please specify) (6)

________________________________________________
Q81 After watching the previous video, how motivated are you to participate in individual action to combat climate change after watching this presentation? Some examples of individual actions include: reducing personal vehicle use, eating a plant-based diet, using less single-use plastic, and shopping second hand more often.

- Very motivated (1)
- Moderately motivated (2)
- Somewhat motivated (3)
- Not at all motivated (4)

Q83 After watching the previous video, how motivated are you to participate in local action to combat climate change after watching this presentation? Some examples of local actions includes: buying from farmers markets, using public transportation, supporting local food and goods merchants/vendors, and voting in local elections for emissions reduction policies.

- Very motivated (1)
- Moderately motivated (2)
- Somewhat motivated (3)
- Not at all motivated (4)

Q85 After watching the previous video, how motivated are you to participate in national action to combat climate change after watching this video? National action includes: supporting policies that reduce greenhouse gases, voting in favor of emissions taxes for corporations, and supporting national or international climate change coalitions.

- Very motivated (1)
- Moderately motivated (2)
- Somewhat motivated (3)
- Not at all motivated (4)
Q87 After watching the previous video, generally speaking, do you think Earth's climate is changing or not changing?

- Is changing  (1)
- Is not changing  (2)

Q89 After watching the previous video, how sure are you that Earth's climate is changing?

Not sure at all | Very sure
---|---
1 | 2 | 3 | 4 | 5

0 ()

Q91 After watching the previous video, how sure are you that Earth's climate is not changing?

Not at all sure | Very sure
---|---
1 | 2 | 3 | 4 | 5

0 ()
Q93 After watching the previous video, to what extent do you think human activities are currently playing a role in changing Earth's climate?

- Human activities are currently playing a major role in changing Earth’s climate (1)
- Human activities are currently playing a minor role in changing Earth’s climate (2)
- Human activities are currently not playing a role in changing Earth’s climate (3)
- I have not thought about the relationship between human activities and climate change (4)

Q95 On some issues people feel that they have all the information they need in order to form a firm opinion, while on other issues they would like more information before making up their mind. After watching the previous video, for the issue of climate change, where would you place yourself?

- I need a lot more information (1)
- I need some more information (2)
- I do not need any more information (3)

Q97 After watching the film, how important is the issue of climate change to you personally?

Not at all important | Extremely important
---|---
1 | 2 | 3 | 4 | 5

0 ()

Q99 After watching the film, how worried are you about climate change?

Not at all worried | Extremely worried
---|---
1 | 2 | 3 | 4 | 5

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Q98 Did you complete the entire study?

- Yes (35)
- No (36)

Q99 You will need to enter your email address in a separate 1-minute survey to receive a follow-up fact sheet from this study. Would you like to do so?

- Yes (23)
- No (24)

Q100 Would you like to receive a copy of the fact sheet of results from this research project?

- Yes (1)
- No (2)

Q101 Would you like to be entered into a raffle to win a $25 gift certificate to Texas Roadhouse?

- Yes (1)
- No (2)
Display This Question:

If Would you like to receive a copy of the fact sheet of results from this research project? = Yes

Q104 If you answered yes to receiving a fact sheet about this study, please enter your email address below. We will only use this email address for the purpose of distributing the fact sheet. It is not linked to the responses you provided in the previous survey you completed.

________________________________________________________________

Display This Question:

If Would you like to be entered into a raffle to win a $25 gift certificate to Texas Roadhouse? = Yes

Q105 If you answered yes to being entered into a gift card raffle, please enter your email address below. We will only use this email address for the purpose of conducting the raffle. It is not linked to the responses you provided in the previous survey you completed.

________________________________________________________________

Q103 We appreciate you taking the time to complete this survey. The purpose of this study is assess the effectiveness of communication strategies tailored to a military audiences on the politicized topic of climate change and the need for climate action. You were shown a video of a fellow ROTC cadet or a high ranking, retired military officer. Both of them discuss the national security implications of climate change and the need to take action to mitigate this threat. Our research will measure if one of these two speakers is more convincing than the other. We also asked questions related to your culture and how that may influence your perception of climate risk and the need for climate action. Specifically, some of our questions focused on the extent to which you associate with hierarchical as compared to egalitarianism decision making structures. Other questions assess the extent to which you prioritize individualism as compared to communitarianism. The results from this study will be useful for helping the climate science community reach specific audiences regarding climate change based on what audiences understand, do, and feel about the subject, as well as their worldview.